530-Z-97-005

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 266, 268, and 271

RIN 2050 AE05

[FRL–5816–6]

Land Disposal Restrictions Phase IV: Second Supplemental Proposal on Treatment Standards for Metal Wastes and Mineral Processing Wastes, Mineral Processing and Bevill Exclusion Issues, and the Use of Hazardous Waste as Fill

AGENCY: Environmental Protection Agency.

ACTION: Supplemental proposed rule.

SUMMARY: This is the third proposed rule related to treatment standards fo certain metal wastes and wastes from mineral processing. EPA is seeking comment on additional proposed provisions and on new data. This proposed rule would revise universal treatment standards (UTS) for twelve metal constituents when they are in hazardous waste. Affected wastes include "TC metal" wastes (those containing high levels of certain metals), mineral processing wastes, and other metal-bearing wastes. These treatment standards are being revised to provide consistency in the LDR standards while minimizing threats to human health and the environment. This proposed rule also addresses the issue of the sampling method for compliance with treatment standards. EPA is seeking comment on a conditional exclusion for secondary mineral processing materials, on co-processing of materials in Bevill-exempt mining units, and on whether certain mineral processing and mining wastes currently excluded from federal hazardous waste regulations warrant regulatory controls. Also included is an exclusion from the definition of solid waste for certain materials reused by wood preserving operations, a clarified policy on EPA-approved variances from hazardous waste treatment, and a prohibition on the use of most hazardous wastes as fill material.

DATES: Comments on this proposed rule must be submitted by July 11, 1997.

ADDRESSES: Commenters must send an original and two copies of their comments to: RCRA Information Center (RIC), Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 401 M. Street, SW, Washington, DC 20460. Commenters must place Docket Number F–97–2P4P–FFFFF on their comments. Hand deliveries of comments should be made to the Arlington, VA, address below. An original and two copies of Confidential Business Information (CBI) must be submitted under separate cover to : RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, 401 M Street, SW, Washington, DC 20460. For information on submittal of comments electronically, see the section called "Electronic Submittal of Comments" in **SUPPLEMENTARY INFORMATION** below.

Public comments and supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The RIC is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, except on Federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page. The index and some supporting materials are available electronically. See the **SUPPLEMENTARY INFORMATION** section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: RCRA Hotline between 9:00 a.m. and 6:00 p.m. EST, toll free at (800) 424–9346; or (703) 412–9810 from Government phones or if in the Washington, D.C. local calling area; or (800) 553–7672 for the hearing impaired. Questions can also be directed to the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460; phone (703) 308–8434. For information on the issue of treatment standards for metal-bearing wastes, ask for Elaine Eby or Anita Cummings. Anita Cummings is the contact for LDR treatment standards for mineral processing wastes and for the issue of grab versus composite sampling methods. For information on secondary mineral processing materials and Bevill issues, call Van Housman at (703) 308–8419 or Stephen Hoffman at (703) 308–8413. Contact Stephen Bergman for questions on the exclusion for wood preserving wastewaters. For information on the capacity analyses, call Bill Kline at (703) 308–8440. For questions on the regulatory impact analyses, contact Paul Borst at (703) 308–0481. For other questions, call Sue Slotnick at (703) 308–8462.

SUPPLEMENTARY INFORMATION:

Availability of Rule on the Internet

Please follow these instructions to access the rule:

From the World Wide Web (WWW), type http://www.epa.gov/rules and regulations. In addition, several technical background documents contained in the docket supporting this rule will be available on the Internet at http://www.epa.gov/offices and regions/oswer.

Electronic Submittal of Comments

In an effort to reduce unnecessary paper use, EPA is asking prospective commenters to voluntarily submit one copy of their comments, in addition to the paper copy, in either of two electronic methods: diskettes or the Internet. Commenters can send their comments to the RCRA Information Center on labeled personal computer diskettes in ASCII (TEXT) format or a word processing format that can be converted to ASCII (TEXT). It is essential to specify on the disk label the word processing software and version/edition as well as the commenter's name. Please use mailing envelopes designed to physically protect the submitted diskettes. To send copies by Internet, address them to: rcra-docket@epamail.epa.gov. All comments sent by Internet must be ASCII files, avoiding the use of special characters and any form of encryption. Comments in electronic format should also be identified by the docket number F–97–2P4P–FFFFF. Commenters should not submit electronically any confidential business information (CBI). EPA emphasizes that submission of comments electronically is not mandatory, nor will it result in any advantage or disadvantage to any commenter. For further information on the electronic submission of diskettes, contact Sue Slotnick at the Waste Treatment Branch, (703) 308–8462, or Rhonda Minnick at (703) 308–8771.

Table of Contents

I. Background
II. Potentially Regulated Entities
III. Revised Treatment Standards for Twelv Metal Constituents in Nonwastewater Forms of TC Metal and Other Wastes
A. Summary
B. Applicability
C. Background
D. Proposal of Revised Treatment Standards for Metal Constituents in TC Metal and Other Metal-bearing Wastes
1. August 22, 1995 Proposed Treatment Standards for TC Wastes
2. Comments to the August 22, 1995 Proposal
3. Development of Revised UTS for TC Metal Wastes

4. Proposed Revision of UTS for Selenium
5. Proposed Revision of UTS for Beryllium
6. Proposed Revision of UTS for Silver
7. Demonstrating Compliance by Grab or Composite Sampling
IV. Revised Treatment Standards for Minera Processing Wastes
A. Summary
B. Discussion
V. Proposal of New Options for Mineral Processing Materials
A. New Option—Land Storage of Secondary Materials
1. General Discussion
2. Criteria for High Volumes of Bevill-Exempt Mining and Mineral Processing Wastes
3. Containment Units
4. Class of Materials Outside of RCRA Jurisdiction
B. New Option—Non-Bevill Materials Used as Alternative Feedstocks
C. High Risk Mining Wastes Excluded by the Bevill Amendment
1. General Discussion
2. Wastes Eligible for the Bevill Exclusio
VI. Proposed Exclusion of Wood Preserving Wastewaters and Spent Wood Preserving Solutions From Classification as Solid Waste under RCRA
A. Background
1. Request for Comment in Land Disposal Restrictions Phase IV Proposed Rule
2. Statutory Remedy Considered by Congress
B. Rationale for Proposal
C. Wastes Commonly Reused by the Wood Preserving Industry
D. Current Regulatory Status of Recycled Wastewaters and Spent Wood Preserving Solutions
E. Proposed Exclusion of Wastewaters and Spent Wood Preserving Solutions that are Recycled
1. General
2. Conditions for Exclusion
3. Process Residuals
4. Notification
5. Conditions Under Which the Exclusion Would No Longer Apply
VII. Proposal to Amend Treatment Variance Rules
A. Background
B. Clarified Regulatory Language
C. The CITGO Variance Under the Proposed Standard
VIII. Ban on Use of Prohibited Hazardous Waste as Fill Material
IX. Capacity Determination
A. TC Metal Wastes
B. Mineral Processing Wastes
C. Phase IV Mineral Processing and TC Metal Wastes Injected Into Underground Injection Control (UIC) Class I Wells
X. State Authority
A. Applicability of Rules in Authorized States
B. Abbreviated Authorization Procedures
C. Effect on State Authorization
D. Less stringent requirements
XI. Regulatory Requirements
A. Regulatory Impact Analysis Pursuant to Executive Order 12866
1. Methodology Section
2. Results
B. Regulatory Flexibility Analysis
C. Unfunded Mandates Reform Act
D. Paperwork Reduction Act
XII. Environmental Justice
A. Applicability of Executive Order 12898
B. Potential Effects
XIII. Appendices

I. Background

In the 1984 Hazardous and Solid Waste Amendments (HSWA) of the Resource Conservation and Recovery Act (RCRA), Congress specified that land disposal of hazardous waste is prohibited unless the waste meets treatment standards established by EPA. HSWA requires that treatment standards must substantially diminish the toxicity or mobility of hazardous waste, so that short- and long-term threats to human health and the environment are minimized. The treatment standards are part of the Land Disposal Restrictions Program.

Today's proposed rule is one part of the collection of land disposal restrictions (LDR) rules known as "Phase IV." They are the latest in a series of LDR rules that establish treatment standards for newly listed and identified wastes, and that resolve other hazardous waste matters. EPA proposed the Phase IV rule in two proposed rules (60 FR 43654, August 22, 1995; and 61 FR 2338, January 25, 1996). It subsequently issued a Notice of Data Availability on Phase IV issues (61 FR 21418, May 10, 1996). The attached proposed rule proposes, in some cases, alternative approaches from those in earlier proposals. These changes in approach are being proposed in response to additional data or comments that were submitted on the previous proposals.

Other issues from the Phase IV notices did not require additional proposal. These are being finalized today in a Phase IV rule appearing elsewhere in today's **Federal Register**. The final rule is titled "Land Disposal Restrictions—Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions from RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions."

EPA estimates that the directly measurable benefits associated with the land disposal restrictions treatment standards in this rule are limited relative to the costs that may be incurred. Therefore, the relative priority of addressing these risks could be questioned. However, we do not believe, for this specific action, that a simple cost effectiveness measure alone provides a sufficient basis for decision-making. As discussed below, the preference for permanent treatment of hazardous wastes is part of the basic policy structure which Congress enacted when it amended RCRA in 1984, and reflects concern over the technological uncertainties regarding risks and long term protectiveness of land disposal and the intent to assure that waste management practices are protective for future generations.

The whole premise of the LDR legislation is that risks posed by land disposal of hazardous wastes are inherently uncertain to evaluate and that land-based units are incapable of long term containment. Land disposal units (such as landfills, surface impoundments, and waste piles) are engineered units that can and have failed in the past with significant consequences to human health and the environment. For this reason, Congress required that hazardous wastes be pretreated before disposal by "treatment [which] should be the best that has been demonstrated to be achievable." Congressional Record of July 25, 1984 (S9178). The technology-based approach of the land disposal restrictions provides a measure of insurance against the potential for failure in these land based units.

Given these facts, and evident Congressional intent, EPA continues to believe that the LDR prohibitions and treatment standards are justified in many instances. EPA sets treatment standards that reduce toxicity and mobility of hazardous constituents (or require recycling), and EPA also requires that the treated wastes be placed in reasonably secure land disposal units. However, EPA does believe that, in some situations, the current LDR rules may not provide the optimum regulatory approach. In those situations, EPA will look to other mechanisms to address those relatively low risk scenarios.

II. Potentially Regulated Entities

Entities potentially regulated by this final rule vary according to the section of the rule. The following table shows the industry categories that may be regulated according to each major section of the rule. The table is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated.

TABLE OF ENTITIES POTENTIALLY AFFECTED BY THE PHASE IV 2ND SUPPLEMENTAL PROPOSAL

Section of the rule	Category	Examples of entities potentially affected
Treatment Standards for TC metal hazardous wastes, characteristic mineral processing wastes, and other metal-bearing wastes.	Small or Large Quantity Generators of Toxicity Characteristic (TC) metal hazardous wastes (D004–D011), characteristic mineral processing waste, or any hazardous waste required to meet the LDR treatment standard for barium, cadmium, chromium, lead, silver, selenium, antimony, beryllium, nickel, thallium, vanadium, or zinc.	Any party that generates greater than 100 kg of hazardous waste or 1 kg of acute hazardous waste, and generates TC metal hazardous wastes or characteristic mineral processing wastes. Major industries generating TC metal wastes include: primary mineral processing, alkalines and chlorine, industrial inorganic chemicals, industrial organic chemicals, blast furnaces and steel mills, metal plating and polishing, aircraft parts and equipment.
	Facilities that treat TC metal hazardous wastes, characteristic mineral processing wastes, and other metal-bearing hazardous wastes.	
Mineral Processing Secondary Materials, and Bevill Issues.	Generators	Any person who generates secondary materials from the primary mineral processing industry that are destined for recovery of mineral values
	Storage and Recycling Facilities	Facilities that store and/or recycle secondary materials from the primary mineral processing industry.
Exclusion for Recycled Wood Preserving Process Wastewaters.	Wood Preserving Facilities	Facilities that generate and reclaim drippage and wastewaters on-site from the wood processing industry.

III. Revised Treatment Standards for Twelve Metal Constituents in Nonwastewater Forms of TC Metal and Other Wastes

A. Summary

EPA is proposing to revise the universal treatment standards (UTS) for twelve metal constituents: barium, cadmium, chromium (total), lead, selenium, silver, antimony, beryllium, nickel, thallium, vanadium, and zinc that can be found in nonwastewater forms of hazardous waste. (Note, vanadium and zinc are not regulated as underlying hazardous constituents in characteristic wastes.) The revised standards for eight of the metal constituents are higher numerical levels (less stringent) than their existing UTS; the revised standards for four of the metal constituents are lower than their existing UTS. In the original Phase IV proposal (August 22, 1995; 60 FR 43582), EPA proposed to apply the UTS to wastes that exhibit the characteristic of toxicity, as measured by the Toxicity Characteristic Leaching Procedure (TCLP). See 40 CFR 261.24. This procedure measures the possibility that a waste may leach toxic metals above a designated concentration level, and so is a measure of the potential mobility of toxic metals in a waste. Currently, TC metal wastes are subject to LDR standards that are the same as the TC levels. However, these levels are typically higher than those for which threats posed by land disposal of the wastes are minimized. *Chemical Waste Management* v. *EPA*, 976 F.2d2, 13–14.26–27 (D.C. Cir. 1992); cert. denied 113 S. Ct. 1961 (1993). Consequently, treatment to levels lower than the characteristic levels normally is required. *Id.* Commenters took issue with the Agency's use of data from previous rulemakings (those establishing UTS) in setting the TC metal standards. After considering comments and new information, EPA believes applying the UTS levels to TC metal waste is still quite valid, but in some cases the new data indicate that the UTS levels should be modified to better reflect the universe of wastes that would now be subject to the standards.

As a result, the Agency is proposing to modify the proposal so that the treatment standards for the following metal wastes would be higher (less stringent) than the current UTS: barium, beryllium, cadmium, nickel, lead, thallium, vanadium, and selenium. The Agency is proposing to lower the UTS for antimony, chromium (total), silver, and zinc. The revised UTS levels for all twelve metal constituents would apply to all wastes, listed or characteristic, that are subject to UTS. In some cases, the proposed increase in UTS still would lower the existing standard (making it more stringent) for the TC metal waste in question. An example is the constituent lead. The current UTS standard is 0.37 milligrams per liter, while the standard for TC metal wastes is 5.0 milligrams per liter, because these wastes have been subject to the TC level rather than to UTS prior to this rule. Today's proposal would revise the UTS level for lead from 0.37 milligrams per liter to 0.75 milligrams per liter TCLP. This would make the lead standard less stringent for listed wastes (and characteristic wastes such as corrosive wastes that are not characteristic for metals), but would lower (make more stringent) the lead standard for TC metal wastes required to meet UTS.

B. Applicability

The new treatment standards would apply to four sets of hazardous wastes. The first is TC metal wastes, which are those found to be characteristic because one of their metal concentrations is higher than the TC level. One group of TC metal wastes would be subject to treatment standards for the first time: those which are found hazardous by testing with the Toxic Characteristic Leaching Procedure (TCLP) but not by the Extraction Procedure that was formerly used. This somewhat arcane distinction (necessitated by statutory language) is discussed in more detail in the following section. EPA proposed standards for all TC metal wastes on August 22, 1995 (60 FR 43582), and today's action would modify the proposed standards, as discussed in detail below. The second set of wastes affected by this rule are currently subject to UTS, so for these wastes, the proposed standards may provide regulatory relief; these are the other characteristic wastes (toxic organic, ignitable, corrosive, or reactive) that contain any of the nine metal constituents as underlying hazardous constituents. The third set of wastes also would generally have less stringent standards. These are listed wastes that are required to treat any of the nine metal constituents to meet the

numerical universal treatment standards. Finally, one last set is being required to meet LDR treatment standards for the first time: mineral processing wastes that exhibit a hazardous waste characteristic. (See 55 FR at 22667 (June 1, 1990) explaining why mineral processing wastes no longer considered eligible for exempt status under the Bevill amendment are classified as "newly identified" for purposes of LDR prohibitions, and, hence, not yet subject to LDRs until EPA adopts regulations expressly prohibiting them from land disposal and establishing treatment standards for them.) The Agency proposed treatment standards for those wastes on January 25, 1996 (61 FR 2359), and today's action seeks comment on revisions to those proposed standards.

C. Background

Land disposal of hazardous wastes is largely prohibited by statute, unless the wastes are treated before land disposal to satisfy treatment standards established by EPA. RCRA sections 3004(d)–(g),(m). In developing these treatment standards, EPA has sought to make the standards as uniform as possible while adhering to the ultimate requirement that the standards be sufficient to minimize threats to human health and the environment. The results are the UTS whereby the Agency has, wherever possible, developed the same numerical limit for a hazardous constituent in all of the hazardous wastes where the constituent is present. See 268.40 and 59 FR 47982, September 19, 1994.

Today's notice reproposes treatment standards for the following toxic metals: barium, cadmium, chromium, lead, selenium, silver, antimony, beryllium, nickel, thallium, vanadium, and zinc. Since it affects the UTS, the following hazardous wastes would be affected: (a) characteristic hazardous wastes where these metals are present as Underlying Hazardous Constituents (See 268.2(l) and 59 FR 47982, September 19, 1994); and (b) listed wastes which have treatment standards for one or more of these metals. In addition, these standards would affect the treatment standards for wastes that exhibit the characteristic of toxicity as measured by the Toxicity Characteristic Leaching Procedure (TCLP) because of the presence of these metals. These include both the wastes that are newly identified because they exhibit the toxicity characteristic (TC), which are not yet prohibited from land disposal, and wastes that were already identified as hazardous under the predecessor leaching protocol, the Extraction Procedure (EP), which remain hazardous because they also exhibit the TC. EPA already promulgated treatment standards for this latter class of wastes (wastes identified as hazardous which exhibit both EP and TC toxicity), but these standards were established at the characteristic level. 55 FR 22520, June 1, 1990.

The D.C. Circuit remanded the standards for lead and chromium as being insufficiently stringent when data indicated that further increments of treatment were technically feasible. 976 F. 2d at 27, 32. These proposed standards would, among other things, respond to that remand. The standards also would satisfy EPA's legal obligations to develop treatment standards for newly identified hazardous wastes within 6 months following the wastes' identification as hazardous, RCRA section 3004(g)(4), subsequently extended by consent decree. (*EDF* v. *Reilly*, Cir No. 89–0598, D.D.C.)

D. Proposal of Revised Treatment Standards for Metal Constituents in TC Metal and Other Metal-bearing Wastes

1. August 22, 1995 Proposed Treatment Standards for TC Wastes

In support of the Phase IV proposal (60 FR 43654), EPA performed a comprehensive re-evaluation of the available treatment performance data from both listed and characteristic wastes for all metal constituents in the UTS table. This analysis was conducted in order to determine whether UTS levels could appropriately be transferred to TC metal wastes. Treatment standards for most of the toxic metals in nonwastewater listed wastes were based upon the performance of High Temperature Metal Recovery (HTMR), based on treatment of hazardous wastes K061, K062 and F006 (59 FR 47998, September 19, 1994). At that time, the Agency determined that both HTMR and stabilization were BDAT and that while the majority of the UTS numbers were based on High Temperature Metal Recovery, stabilization was also capable of treating to the UTS levels. (See USEPA, "Background Document for Treatment Technologies", June 1991; and USEPA, "Metals Recovery Processes for RCRA Hazardous Waste", December 1994). As such, the Agency proposed that the metal UTS should also be the LDR treatment standards for characteristic metal wastes. This resulted in the proposed change of treatment standards for six TC metal constituents (barium, cadmium, chromium (total), lead, selenium and silver). The Agency did not propose a change in the treatment levels for arsenic (D004) or mercury-retort residues (D007), and those constituents are not discussed further in today's notice.

2. Comments to the August 22, 1995 Proposal

In response to the Phase IV proposal, the Agency received numerous comments on the proposed treatment standards. The commenters raised three basic issues with regard to the data used to develop the standards: (1) characteristic metal wastes were extremely variable and that the data used to calculate the treatment standards were not representative of the diversity of TC metal wastes; (2) while both HTMR and stabilization were determined to be BDAT, the standards were based solely on HTMR, a technology not commercially available for many TC metal wastes; and (3) the standards were not uniformly achievable when waste streams with multiple toxic metals were being treated. In light of these concerns, the commenters urged the Agency to obtain additional data that would demonstrate the effectiveness of stabilization on TC metal waste streams and to more fully characterize the diversity of these waste streams.

The following commenters provided the Agency with stabilization performance data: Battery Council International, American Foundrymen's Association, Chemical Waste Management and the Environmental Treatment Council. These commenters provided extensive composite data on the stabilization of various TC metal wastes. While each of the data sets provided information on the various performance levels of stabilization treatment, they did not provide the Agency with the full range of information necessary to re-evaluate or re-calculate the treatment standards based on EPA's BDAT protocol (see USEPA "Final Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/Quality Control Procedures and Methodology", Office of Solid Waste, October 23, 1991). The Agency, convinced that additional data were needed to further assess the treatment of TC metal wastes, attempted to obtain the additional information from the commenters; however, the information/data required by the commenters that would result in the generation of a "BDAT" quality data set has not been forthcoming. The reader is referred to the rulemaking docket for analysis and discussion of the data submittals.

3. Development of Revised UTS for TC Metal Wastes

In response to the concerns raised by the commenters regarding the lack of stabilization data for TC metal wastes, and the concern that some UTS levels may be unachievable by stabilization, the Agency began an effort to obtain additional treatment performance data that better characterized the diversity of metal wastes. During September 1996, EPA conducted site visits at three hazardous waste treatment facilities. These facilities represented different types of treatment operations: one facility was a large commercial TSDF that employed conventional stabilization techniques to treat a wide array of inorganic metal wastes and another was an on-site treatment facility that focused on the stabilization of inorganic metal slag. A third facility was commercial and focused on stabilization of inorganic materials using non-conventional stabilization techniques. During these site visits, the Agency either gathered performance data from company records or requested the collection of actual treatment performance data through sampling and analysis. The facilities provided the Agency with detailed performance data consistent with BDAT protocols (including effluent grab samples).

The performance data represented a wide range of metal-bearing wastes (both listed and characteristic) that the Agency believes represents the most difficult to treat metal-bearing wastes. The types of wastes treated included mineral processing wastes, baghouse dust, battery slag, soils, pot solids, recycling by-products, and sludge. TCLP values in the untreated wastes included 4430 mg/l lead, 1580 mg/l chromium, 82 mg/l barium and 4280 mg/l cadmium. In addition, numerous waste streams contained multiple metals which would be representative of a characteristic waste with UHCs, while other waste streams had significant concentrations of combination metals including: lead and cadmium, barium and lead, and chromium and antimony. The Agency reviewed all the performance data and the facility treatment operations. It determined that at least two of the facilities were well-designed and well-operated and represented BDAT technology for the full range of TC metals and the metal UHCs that are often found in these wastes. The reader is referred to the rulemaking docket for a complete discussion of the site visits and the data collected by the Agency. See item numbers 2, 5,6, 17, 18, 19,and 20 in the docket submittal entitled, *Documents Supporting the Reproposed Treatment Standards for D005, D006, D007, D008, D010, and D011 Wastes and the Proposed Revision to the Universal Treatment Standards for Barium, Cadmium, Chromium (total), Lead, Selenium, Silver, Antimony, Beryllium, Nickel, Thallium, Vanadium and Zinc.* Note again that while EPA has developed data and is proposing new treatment standards for vanadium and zinc, they are not regulated as underlying hazardous constituents.

In addition, between October 1994 and December 1995, the Agency obtained performance data from one HTMR facility based totally on grab samples. (The reader is referred to items 3 and 16 in the aforementioned docket materials for a complete discussion of the HTMR data set.) The assessment of the new data sets began with the calculation of treatment standards for each of the two data sets, i.e., stabilization and HTMR. Next, the Agency compared these treatment levels. Based on this comparison, the Agency selected the highest standard for each metal to establish UTS and to allow for process variability and detection limit difficulties. The Agency believes that this approach is consistent with the intent of UTS and derives limits achievable by both HTMR and stabilization technologies. The new data also confirmed that the other proposed levels (i.e., UTS) proposed on August 22, 1995 for TC metal waste and on January 25, 1996 for mineral processing waste are in fact achievable with grab sampling by both stabilization and HTMR. Therefore, EPA is not proposing to modify any levels except those discussed here.

As a result of this new analysis, the Agency is today proposing to change the treatment standard for the following TC metal constituents as well as their associated UTS: barium, cadmium, chromium, lead, and silver. In addition, the Agency is proposing to change the UTS for antimony, nickel, thallium, vanadium, beryllium, and zinc. With these changes, the Agency is establishing metal treatment standards using performance data based solely on grab samples. EPA used the same methodology, sometimes called "C 99" in calculating today's proposed levels (i.e., the proposed UTS levels) as has been used in past rulemakings (56 FR 41164, August 18, 1991) and the BDAT Background Document for K061 dated August 1991. The table at the end of this section provides information detailing the standards generated by both data sets as well as the newly proposed standards. The Agency discusses next two metals where data are still limited.

4. Proposed Revision of UTS for Selenium

In the Phase IV proposal, the Agency proposed a treatment standard of 0.16 mg/l for nonwastewater forms of D010-selenium (60 FR 43654, August 22, 1995). This number was the UTS level for selenium that was promulgated in the Phase II rule (59 FR 47980, September 19, 1994). Today, the Agency is proposing to change the UTS for selenium to 5.7 mg/l TCLP and retain the current treatment standard of 5.7 mg/l TCLP for D010 waste. This would in effect create a uniform standard of 5.7 mg/l TCLP for nonwastewater forms of selenium. (The Agency received no comment on the proposed wastewater treatment standard for selenium and is not asking for further comment on this issue.)

Several commenters suggested that EPA establish the treatment standard for selenium at the TC level (1.0 mg/l) for nonwastewaters or promulgate a revised treatment standard for D010 based on stabilization performance data. Commenters proposed alternative treatment standards for D010 wastes that ranged from 0.20 mg/l to 10.0 mg/l. The commenters argued that the proposed standard of 0.16 mg/l which was based on the performance of High Temperature Metals Recovery (HTMR) was not achievable by stabilization and that commercial HTMR units may not accept selenium-containing wastes making the technology unavailable, or at least, not suitable as the technology basis for a uniformly-applicable treatment standard. Furthermore, the commenters argued that the Agency did not account for the difficulties in stabilizing wastes containing high levels of selenium in conjunction with the presence of other metals when developing the treatment standard.

One comment focused on the inability to stabilize selenium-containing wastes in the presence of other metals. The commenter stated that they did not feel that 0.16 mg/l TCLP for nonwastewater forms of D010 was routinely achievable utilizing best operating practices. As stated in their comment, selenium has a pH and solubility that is significantly different from other characteristic metals. Selenium's minimum solubility is at a neutral to mildly acidic pH (6.5–7.5), while it is highly soluble in the alkaline pH range (8–12). The other characteristic metals have a minimum solubility in the strongly alkaline pH range (8–12), while their solubility increases at neutral and acidic pH levels. This difference in solubilities, the commenter stated, creates a problem for treating wastes with a mixture of

characteristic metals which include selenium. Since there is a difference in solubilities for the metals depending on the pH of the stabilized wastes, if a neutral pH is maintained in treatment, selenium will not leach but the other metals will, if a high pH is maintained, the selenium will leach while the other metals will not. In light of these distinctly different pH/solubility curves for selenium and other characteristic metals, the commenter believes that the treatment standard for selenium should be established at a higher level. In support of the commenters claims, a laboratory study was submitted showing the leachability of selenium while varying pH and binder to waste ratios.

The Agency has researched the claims made by the commenter and concurs with his assertions. The Agency is convinced that wastes containing selenium concentrations greater than 1.0 mg/l TCLP in the presence of other metals, e.g., cadmium, lead or chromium may encounter difficulties in stabilization due to the different solubility curves noted above. While it may be possible to treat a D010 waste to the proposed treatment standard of 0.16 mg/l TCLP, in the absence of other metal contaminants, the Agency cannot be certain that this would or could occur. The Agency believes that it is more realistic to assume that treatment will occur in the presence of other metals thus limiting the effectiveness of stabilization on selenium. As such, the Agency has decided to propose to maintain the current treatment standard for nonwastewater forms of D010 at 5.7 mg/l TCLP. This standard is based on the stabilization of a D010 waste containing 700 ppm selenium and is considered by the Agency to be the most difficult to treat selenium waste. See the Third rule (55 FR 22574, June 1, 1990.)

The Agency notes that because this treatment standard is above the level of leachable selenium that defines the waste as D010 (1.0 mg/l TCLP), D010 wastes that are generated at a level between 5.7 mg/l and 1.0 mg/l TCLP meet the treatment standard but are still considered to be hazardous wastes (assuming the TCLP value exceeds 1.0 mg/l) and, therefore, must be land disposed in a Subtitle C facility. In addition, since the treatment standard for selenium is above its characteristic level, selenium would not be recognized as an UHC.

The Agency has also decided to propose a change in the UTS for selenium from 0.16 mg/l to 5.7 mg/l TCLP. While the Agency has performance data showing treatment levels for selenium of between 0.16 to 0.29 mg/l TCLP for stabilization and HTMR technologies, these levels seem to be achievable only with extremely low concentrations of selenium in the untreated waste. Therefore, the Agency feels that this standard does not reflect the true diversity of the waste stream, nor is it reflective of the most difficult to treat selenium waste. As such, the Agency feels that 5.7 mg/l TCLP is a better assessment of treatability and a more appropriate standard.

5. Proposed Revision of UTS for Beryllium

In the Phase IV proposal, the Agency proposed to change the UTS for beryllium from 0.014 mg/l TCLP to 0.04 mg/l TCLP, based on composite data (60 FR 43683, August 22, 1995). A commenter was critical of the proposed beryllium level and stated that 0.04 mg/l TCLP was too stringent and not supported by stabilization data. However, the Agency has been unable to obtain, despite repeated efforts, any treatment performance data from that commenter to validate claims that the treatment standard is not achievable. Also, the Agency recognizes that proposing to use composite data was an error, as this is not consistent with BDAT methodology, as discussed above. As such, the Agency is proposing a UTS for beryllium based on available performance data from the stabilization and HTMR facilities described above. These data, which admittedly do not include incoming waste with high beryllium levels, show that the appropriate treatment level is 0.018 mg/l. Therefore, the Agency is today proposing a revised UTS of 0.018 mg/l TCLP (actually 0.02 mg/l, due to rounding) for nonwastewaters based on the performance of HTMR using grab samples. The Agency is however, soliciting comment on whether there are difficulties in treating various beryllium-containing waste streams. The Agency welcomes the opportunity to evaluate any performance data and reminds the reader should any hazardous beryllium production wastes fail to meet the 0.018 mg/l TCLP level (if finalized), the facility may apply for a treatability variance under 40 CFR 268.42.

6. Proposed Revision of UTS for Silver

EPA proposed a concentration level of 0.30 mg/l as the treatment standard for silver nonwastewaters, based on data from the treatment of K061 waste sampled on a composite basis. See 60 FR 43684, August 22, 1995. Citing low human health risks from silver, commenters stated that EPA should not be setting a treatment standard for silver that is lower than the characteristic level of 5.0, and instead should remove silver from the list of TC constituents altogether. Later, EPA issued a Notice of Data Availability which stated that EPA was not prepared to make a decision on whether or not to retain silver on the TC list, but that the Agency was considering two new treatment standard options: a UTS level of 5.0 mg/l, or a level of 5.0 mg/l for D011 while maintaining a UTS of 0.30 mg/l for all other silver-containing waste. See 61 FR 21420, May 10, 1996.

EPA is still studying silver in order to decide on its status as a TC waste, and is not proposing any change to that status in today's notice. However, EPA is proposing a revised UTS, based on the new data on metal constituents discussed above. For silver, the data is based on treatment by High Temperature Metals Recovery and on the preferred method of grab sampling. The data supports a level of 0.11 mg/l for silver nonwastewaters, making the standard more stringent than proposed in either of the earlier notices.

EPA believes that silver wastes are generally recycled due to their economic value and are covered by the special streamlined standards for recyclable materials utilized for precious metal recovery at 40 CFR Part 266.70 Subpart F. There may be little or no land disposal of silver wastes, hence little or no impact of applying a new treatment standard. EPA is today seeking information on quantities of silver nonwastewaters that would be affected by LDR treatment standards, and on whether a level of 0.11 mg/l is achievable for those wastes if they exist. However, as discussed above, standards in the LDR program can be either technology- or risk-based. In the absence of definitive risk information, the Agency sets technology-based standards. Data from both HTMR and stabilization technologies show 0.11 mg/l is achievable for nonwastewaters.

PROPOSED UNIVERSAL TREATMENT STANDARDS FOR TWELVE METAL CONSTITUENTS CALCULATED FROM HTMR AND STABILIZATION SAMPLE SETS*

[Affecting Nonwastewater TC Metal Wastes and Nonwastewater Metal Constituents in All Wastes]

Waste code	Constituent	TC level (mg/l)	Existing UTS level (mg/l TCLP)	HTMR grab samples (mg/l TCLP)	Stabilization grab samples (mg/l TCLP)	Proposed UTS level (revised) (mg/l TCLP)
D005	Barium	100	7.6	3.3	21	21
D006	Cadmium	1.0	0.19	0.20	0.014	0.20
D007	Chromium	5.0	0.86	0.85	0.13	0.85
D008	Lead	5.0	0.37	0.12	0.75	0.75
D010	Selenium	1.0	0.16	0.29	0.12	5.7
D011	Silver	5.0	0.30	0.11	0.0084	0.11
	Antimony		2.1	0.043	0.068	**0.07
	Beryllium		0.014	0.02	0.012	**0.02
	Nickel		5.0	13.6	0.082	13.6
	Thallium		0.078		0.20	0.20
	Vanadium ***		0.23	0.015	1.6	1.6
	Zinc ***		5.3	3.8	4.3	4.3

*The proposed universal treatment standard (UTS) was established by selecting the higher of the two treatment standards that were calculated from stabilized wastes and HTMR residues.

**The proposed UTS levels for antimony and beryllium were rounded up to the nearest 0.01 mg/l TCLP.

***Vanadium and zinc are not underlying hazardous constituents.

7. Demonstrating Compliance by Grab or Composite Sampling

EPA has long preferred that compliance with the LDR standards for nonwastewaters be based on grab samples (a one-time sample taken from any part of the waste), rather than composite samples (a combination of samples collected at various locations for a given waste, or samples collected over time from that waste). This is because "grab samples normally reflect maximum process variability, and thus would reasonably characterize the range of treatment system performance." (See 54 FR at 26605–06, June 23, 1989; 55 FR at 22539, June 1, 1990.) This type of sampling is in keeping with the ultimate objective of the land disposal restrictions program: that all of the hazardous waste to be land disposed be treated in a way that minimizes the threats that land disposal could pose, not just that some average portion of the waste be so treated (a possible result of using composite sampling). In addition, there is an implementation advantage to use of grab sampling, since enforcement for EPA, authorized states, or citizen groups is facilitated if enforcement can be based on individual sampling events (as occurs with grab sampling).

The universal treatment standards for nonwastewaters are consequently enforced on the basis of grab sampling. The revisions to those standards for toxic metals reproposed today would likewise be enforced on the basis of grab sampling, and, in all cases are based on grab sampling data. EPA intends to maintain that regime, with the temporary exception of three wastes: K061, K062, and F006 managed at certain facilities, as described below.

Current treatment standards for hazardous waste K061, K062, and F006 were based partially on the use of composite rather than grab sampling. That is, the data for certain of the hazardous constituents regulated under that standard— namely beryllium, nickel, lead, silver, cadmium, and thallium— were obtained exclusively from composite samples, and the data for vanadium and zinc came partially from composite samples. (See memorandum from Richard Kinch to RCRA Docket dated August 19, 1991, regarding promulgation of K061. See also 57 FR at 37207, August 18, 1992, which explains that K061 standards were transferred to K062 and F006). The BDAT technology for this waste code was High Temperature Metal Recovery (HTMR), and the composite samples used to develop parts of the standard indeed came from HTMR facilities. *Id.* The two HTMR facilities involved in developing the data for the current standards have pointed out in comments to the Phase IV proposal and to earlier LDR rules that they may not be able to achieve the metal treatment standards for these waste codes if enforcement is based on grab sampling, and that such enforcement is unwarranted for their facilities since the underlying data used to develop the treatment standard for these wastes included composite data. (See comments from Horsehead Resource Development Company, Inc. and International Metals Reclamation Company, Inc. in the docket for the Phase IV proposal, 60 FR 43654, August 22, 1995).

EPA is rectifying this problem in the short term by allowing two HTMR facilities, Horse head Resource Development Company Inc. and International Metals Reclamation Company Inc. to comply with the current treatment standards for K061, K062, and F006 through use of composite samples. The two facilities must follow the procedures contained in two documents in appendices to this preamble, entitled "Procedures For Horse Head Development Company to Establish Compliance With RCRA Treatment Standards at 40 CFR 268.40 and 268.48 for K061, K062, and F006 residuals; and "Procedures For INMETCO to Establish Compliance With RCRA Treatment Standards at 40 CFR 268.40 and 268.48 for K061, K062, and F006 residuals."

However, EPA's ultimate intent is to require compliance with UTS on a grab basis for all facilities, including HTMR facilities treating K061, K062, or F006. As discussed above, EPA has received additional grab sample data on metal-bearing hazardous waste that was not available at the time UTS was promulgated. As discussed above, EPA has proposed to use the new data to revise the UTS standards for some constituents. It appears that with the new UTS metal levels proposed in this notice, that HTMR facilities should be able to meet UTS on a grab sampling basis. There are some data (from one facility) supporting this position, and EPA has requested additional data from the other facility, which has indicated it will provide additional data within six

months. Therefore, EPA will consider data received until six months from the date this notice is published in the Federal Register before making a final decision. The Agency will act sooner, if in its judgement there is little likelihood that additional data will be available within six months. Currently the Agency's view is that the UTS levels proposed today can be met by both stabilization and HTMR, and grab sampling must be required in all cases.

IV. Revised Treatment Standards for Mineral Processing Wastes

A. Summary

EPA is proposing to apply Universal Treatment Standards, as revised today, to the newly identified mineral processing wastes. The revised treatment standards can be found in the table at the end of the section in this preamble on treatment standards for TC metal wastes.

B. Discussion

On August 22, 1995 the Agency requested comment on a proposed rulemaking which would apply LDR treatment standards to all characteristic metal wastes (60 FR 43654), and on January 25, 1996 EPA proposed that those same standards apply to mineral processing waste that exhibit a characteristic of hazardous waste. As noted above, such wastes are considered to be "newly identified" for purposes of timing of LDR prohibitions. The comments received suggested that the proposed treatment standards could not be achieved using stabilization treatment; and that more stabilization technology performance data was necessary to set treatment levels for TC metals. Since the receipt of these comments the Agency has conducted site visits to facilities using stabilization technology to treat mineral processing or similar wastes, i.e. TC metal wastes. See Section II above for the discussion of TC metal waste.

The new data from these site visits reaffirm the Agency's position that the mineral processing wastes are similar (i.e., no harder to treat) than those wastes from which the Universal Treatment Standards (UTS) were established. (In addition to the new data on TC metal waste referenced above, see: Modified Background Document dated December, 1996 and BDAT Background Document for TC Metals dated August, 1995; and Background Document for Universal Treatment Standards dated September, 1994). Specifically, the new site visit data came from facilities treating primary or secondary mineral processing (68%); facilities that generated metal-bearing remediation waste (10%), metal manufacturing waste (10%), foundry wastes (6%), and spent metallic wastes (6%), most of which exhibited a characteristic or were listed hazardous wastes. As discussed in section II above, this new data has convinced the Agency that some revisions should be made to the UTS. With these revisions, the Agency concludes that UTS levels are achievable for mineral processing wastes, as for other TC metal wastes.

V. Proposal of New Options for Mineral Processing Materials

Today's proposal seeks comment on several specific options considered by the Agency related to recycling of secondary materials from mineral processing, and to wastes excluded by the Bevill Amendment. This proposal is a supplement to, and not a replacement of, the January 25, 1996 proposed rule.

The first issue pertains to the land storage of hazardous mineral processing secondary materials—that is, sludges, byproducts or spent materials generated by and legitimately recycled within the mineral processing industry sector, which secondary materials would be either identified or listed as hazardous wastes if they are first classified as solid wastes (see 50 FR at 616, n.4, and 627 (Jan. 4, 1985))— and when such storage could occur without the secondary materials being RCRA "solid wastes". The second issue involves whether the wastes generated when a facility uses alternative feedstocks along with Bevill raw materials retain Bevill-exempt status. EPA is proposing and seeking comment on new options for addressing these issues. The final matter addressed is a limited solicitation of comment on the question of whether the risks posed by some wastes which are currently Bevill-exempt warrant future regulatory controls by the Agency.

A. New Option—Land Storage of Secondary Materials

1. General Discussion

In the January 25, 1996, rule, the Agency proposed changes to the current definition of solid waste by providing a conditional exclusion for primary mineral processing secondary materials that are further processed within the industry. Under this approach, mineral processing secondary materials would not be solid wastes if certain conditions are met. These conditions included meeting criteria to ensure that legitimate reprocessing was occurring and that the land-based unit was functioning as a process unit and not a waste disposal unit. These include: a performance standard through groundwater monitoring; technical standard by design and construction; or a determination by a state or EPA Region that the unit is functioning as a process unit. See generally 61 FR at 2339–2351. In response to this proposal, the Agency received 101 comments, many providing the Agency new information about the identification, management, and volumes of particular wastes.

The information from the comments, further analysis of existing data, and new data collected since the January 25, 1996 proposal indicate that mineral processing secondary materials are generated in smaller volumes than EPA previously believed. Further, this new information indicates that a significant number of secondary mineral processing materials are not stored in land-based units. The Agency also has gathered additional data indicating that land-based storage of secondary materials contributes to environmental releases. Based on this information, the Agency questions the necessity of land-based storage units for most of the mineral processing industry.

The Agency today is proposing a new option that would restrict the use of land-based units for secondary materials generated by and recycled within the mineral processing industry. This new option would condition exclusion from being a solid waste on storage in units that are not land-based—typically tanks, containers, or buildings. Thus, if a hazardous secondary material from mineral process is legitimately recycled within another mineral processing operation, it would not be a solid waste provided the storage that precedes the recycling does not entail land placement. This proposal is conceptually the same as the one EPA proposed for the oil-bearing secondary materials generated by and recycled within the petroleum industry. See 60 FR 57753 (Nov. 20, 1995). The Agency would make an exception where there is a volumetric necessity to use land-based storage units to store hazardous secondary materials. The Agency is proposing as the volumetric cut-off 45,000 tons per year for solids and one million tons per year for liquids—consistent with the high volume criteria previously established by the Agency for 20 special mineral processing wastes. (See 54 FR 36629, September 1, 1989). High volume hazardous secondary materials, to the extent that any exist, would be subject to the land storage conditions based on the concepts proposed in the January 25, 1996 Proposed Rule. (See 61 FR at 2345–48). Further, in today's notice EPA is providing information on what types

of tanks, containers, and buildings would be suitable as storage structures. In general, the Agency is proposing that these units be able to contain the secondary materials, but would not require that the units satisfy subtitle C design, operation, and performance standards. (See Non-RCRA Tanks, Containers, and Buildings, EPA, 1997). This approach, again, is analogous to that proposed for oil-bearing secondary materials generated by and recycled within the petroleum industry.

The Agency received comments that land based units were not protective due to uncontrolled releases of hazardous constituents. In evaluating the comments, the Agency identified additional information which characterizes how mineral processing land-based units can release or threaten to release hazardous constituents. (See Damage Cases and Environmental Releases, EPA 1997). Also, the Agency has found that use of land-based units to store hazardous secondary materials is less common than EPA previously believed, indicating that land-based storage may not be such an integral practice of the mineral processing industry. Further, as noted in the preceding paragraph, the information provided by commenters indicates that the volumes of mineral processing secondary materials may be lower than expected, indicating that land-based storage may not always be necessary because comparable quantities of secondary materials from other industrial sectors are typically managed in tanks, containers, and buildings. This information is provided in the RCRA docket for public review and comment. (See Characterization of Mineral Processing Wastes and Materials, EPA 1997).

The information collected by the Agency indicates that mineral processing hazardous secondary materials stored in land-based units can pose actual and potential threats to human health and the environment. Due to particle size reduction, heat, and chemical reactions in the processing steps, metal compounds and other constituents become more mobile and concentrated. (54 FR 36614–36619, September 1, 1989). Specifically, EPA has found cases where land storage (surface impoundments and piles) of hazardous secondary mineral processing materials awaiting recycling increase the potential for groundwater contamination, contaminated runoff, windblown dust, and soil contamination and increase the cost of cleanup. (See Damage Cases and Environmental Releases, EPA, 1997).

In the case of piles, the storage practice of allowing secondary materials to erode due to rainfall and to be carried away by the prevailing winds can pose actual or potential threats to human health and environment and are suggestive of waste disposal practices. (See Damage Cases and Environmental Releases, EPA, 1997). The same is true for surface impoundments where materials are allowed to migrate to contaminate soils and groundwater. In contrast to these practices, most other industries which generally store secondary materials destined for recycling in tanks, containers, or buildings. Further, and more importantly, these land-based storage practices can result in the types of environmental damage that RCRA was designed to prevent.[1] Such materials can be viewed as "part of the waste disposal problem" when stored in land-based units, and hence "discarded" (within the meaning of the statutory definition of solid waste, RCRA section 1004 (27)). *American Mining Congress* v. *EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990). The Agency is proposing conditions that would better define when discard is not occurring, such as storage in a tank, container, or building.

The Agency received sufficient comment on the jurisdictional solid waste issues in the January 25, 1996 rule and requests that commenters direct their comments solely to the new options in today's notice.

As noted earlier, EPA initially found that land-based units at mineral processing sites have historically been a significant part of the production processes typical of the mining and mineral processing industries. (See 61 FR at 2340–41). The Agency reasoned that land-based units were necessary due to large volumes of materials managed by this industry (or, in some cases, due to the heat of the material precluding any other type of immediate handling) and historical practices for the mineral industry. However, the Agency also noted that there is a trend for some mineral processing facilities to manage secondary materials in tanks or other units which provide containment integrity. The Agency believes that the trend toward storage of secondary materials in tanks, containers, and buildings is a function of technological advances, process changes, and sometimes in response to increasing environmental liability.

The Agency's review of comments on the volumes and the management practices of secondary materials generated support the observation that facilities are less likely to use land-based units and are managing more hazardous secondary materials in contained units. Based on the comments received and further evaluation of new data, the Agency has found the volumes of hazardous secondary materials from mineral processing to be much lower than earlier believed. Specifically, EPA found that of the 119 hazardous waste streams, 117 (98 percent) were generated in quantities lower than the respective Bevill high volume cutoffs for solid and liquids. Even more demonstrative is that 79 (48 solid wastes and 31 liquid wastes) of the 119 waste streams are generated in quantities less than 5,000 tons per year. (See Characterization of Mineral Processing Wastes and Materials, EPA, 1997).

EPA's assumption that there was production-related necessity for mineral processing facilities to utilize land-based storage units is also called into question by comparison of other industries' storage practices with respect to comparable metal-bearing wastes which are likewise recycled for metal recovery. For example, electric arc furnace dust from steel smelting (K061) is a similar metal-bearing waste that is also re-processed. K061 is generated at the average rate of 4,662 tons per facility per year. However, K061 is stored in tanks, containers, and buildings, not on the land. There is no evidence that such management poses an undue burden on the generators or processors of K061. Further, there are many similarities between the recycling of K061 and the recycling of hazardous secondary materials by the mineral processing industry. In both cases, metal-bearing dust that bears resemblance to the raw material metal concentrate being smelted is generated as part of a smelting process.

The Agency has seen a trend for mineral processing wastes to be placed in tanks upon generation and treatment. This is the case for spent potliners K088 listed waste, a primary mineral processing waste and one of the remanded smelting wastes. Approximately 23 facilities generate an average of 5,400 tons per year of K088, an aggregate of 125,000 tons per year.[2] One facility, Reynolds Metal Company,

[1] See RCRA Section 1003(b), 42 U.S.C. 6902(b) ("The Congress hereby declares it to be the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.")

[2] EPA Background Document for Capacity Analysis for Land Disposal Restrictions, Volume 1, February 1996.

is able to store and treat almost the entire nation's production of K088 in tanks, containers, and buildings. In the case of spent aluminum potliners, the industry does not appear to be unduly burdened by storing this waste in tanks, containers, or buildings.

Commenters presented little in the way of data or compelling technical reasons why mineral processing hazardous secondary materials cannot be stored in units other than land-based units. One commenter stated that molten copper slag needs to be poured onto the ground because no container would withstand the heat during the cooling process. However, the Agency finds this example unpersuasive because copper slag is one of the special 20 mineral processing wastes and therefore isn't subject to subtitle C regulation (See 261.4(b)(7)). In any case, the copper slag is stored and transported in metal containers prior to being land applied, indicating that land storage is not an exclusive alternative. In addition, the slag is typically put back into the beneficiation or smelting operation within 24 hours, which is a practice indicating immediate reuse and not discard. (Additional discussion on the concept of immediate reuse can be found in Section IV.A.4-Class of Materials Outside of RCRA Jurisdiction.) One commenter stated that red and brown muds from bauxite refining required surface impoundment due to large volumes. Here also the Agency finds this example unpersuasive because red and brown muds are included in the special 20 mineral processing wastes and therefore are not subject to subtitle C regulation (See 261.4(b)(7)). Commenters did not identify any other materials for which land-based storage was a compelled mode of management.

2. Criteria for High Volumes of Bevill-Exempt Mining and Mineral Processing Wastes

High volume is the principal indicator of whether a particular waste is amenable to management under Subtitle C of RCRA. In developing the high volume criterion for special mineral processing waste, the Agency evaluated four methodological issues: (1) The appropriate degree of aggregation of waste streams; (2) the basis for quantitative analysis (facility specific vs. industry wide); (3) the units of measure; and, (4) the types of other wastes to be used as the basis for comparison. (For a detailed discussion on establishing the high volume criteria see 54 FR 15327–31, April 17, 1989). The Agency established a high volume cutoff for solid wastes from mineral processing at 45,000 tons per facility waste stream per year and the high volume cutoff for liquids at one million tons per facility waste stream per year. In the case of extraction/beneficiation wastes, the Agency published a determination that regulation of such wastes under Subtitle C of RCRA was not warranted, primarily because traditional hazardous waste controls applied to large volume mining wastes may be technically infeasible or economically impractical. July 3, 1986 (51 FR 24496). In today's rule, the Agency is soliciting comment on whether large volume secondary materials from mineral processing should similarly be given special consideration. The Agency is soliciting comment on whether large volume secondary materials from mineral processing may require land-based storage because of technical infeasibility or production-related necessity.

Under this new option, (actually a subset of the January 25 proposal) those mineral processing secondary materials that meet or exceed the high volume criteria would be eligible for the conditional exclusion as proposed in the January 25, 1996 Proposed Rule (61 FR 2338). Specifically, if large volume secondary materials are stored on the land, such storage unit must meet either risk based performance standards, or minimum design criteria, or receive a site-specific determination that the unit is a process unit and not a waste disposal unit. 61 FR at 2345–47. The generally applicable conditions related to legitimate recycling and speculative accumulation would also apply. 61 FR at 2342–45. In essence, today's proposal applies one additional condition: to be stored in a land-based unit, the secondary material must be generated on a per waste stream annual basis that meets or exceeds the high volume criteria. The Agency solicits comments on this proposed regulatory approach.

3. Containment Units

EPA has collected information on a variety of tanks, containers, and buildings. The unit must function as a process unit and should be designed to contain the material placed in it with reasonable certainty, that is, the secondary materials must be stored in a way that distinguishes the unit from a waste disposal unit. Generally, a containment unit should be an engineered unit made of non-earthen materials providing structural support. The Agency believes that most containment units currently in use by the mineral industry would meet this description. The Agency's review of currently available tanks, containers, and buildings indicates that wide variety of commercially available units meet or exceed these criteria. The capacity, design, and function of these containment units are as varied as the construction materials. (See Non-RCRA Tanks, Containers, and Buildings, EPA, 1997). This report provides examples of what the Agency considers to be acceptable containment units for the storage of mineral processing secondary materials.

As discussed in this report, an acceptable tank or container must be free standing and not a surface impoundment, be manufactured of a material suitable for storage of its contents, and meet comparable specification as those established by ASTM, API, or other industry standards. Additional descriptions of these standards and examples of acceptable storage units are described in EPA's technical background document. (See Non-RCRA Tanks, Containers, and Buildings, EPA, 1997.) An acceptable building containment unit must be a man-made structure and foundation constructed from non-earthen materials, have walls (which may be removable), and have a roof suitable for diverting rainwater away from the foundation. In considering criteria for tanks, containers, and buildings, EPA is placing special emphasis upon practical considerations, such as the need to transport materials in and out of the unit in a reasonable fashion. The Agency believes that buildings with one or more open doors or removable walls accessible to machinery, such as a front-end loader, are acceptable. The Agency solicits comment as to whether a three sided concrete bunker, with no roof, used to store flue dust is an acceptable building or whether a tank or container needs to be covered or have a fixed or removable lid. Such containment units may be acceptable in geographic regions with sparse rainfall.

The Agency would not require that these units meet full Subtitle C requirement for storage units of hazardous wastes. Specifically, the Subpart J requirements for tanks at 40 CFR 265.190–265.201 would not be required. The Agency believes that an appropriate indicia of containment should include a comparison of how this industry stores its primary feedstocks and products, which is typically in non-subtitle C tanks, containers, or buildings. The Agency believes that it is reasonable not to condition an exclusion on using units that meet all of the subtitle C standards. These standards were not created to demarcate a line between wastes and non-wastes, and, similarly, are not the

necessary benchmark for ascertaining if a unit functions as part of a production process or is being used as a mode of discard. Indeed, even raw materials containment structures would not meet all of the subtitle C requirements. The Agency solicits comment on this approach.

4. Class of Materials Outside of RCRA Jurisdiction

In the January 25 proposal, the Agency stated that the statutory definition of solid waste, as well as the judicial opinions construing it, must be taken into account in addressing EPA's jurisdiction over mineral processing secondary materials. 61 FR 2341. In *American Mining Congress* v. *EPA*, 824 F. 2d 1177 (D.C. Cir. 1987) ("AMC I"), the court found that EPA's jurisdiction does not extend to materials that are destined for immediate reuse in another phase of the industry's ongoing production process. 824 F. 2d at 1186. Subsequent judicial opinions have clarified the narrow scope of AMC I, so that the only absolute bar on the Agency's authority to define recycled secondary materials as solid wastes is to "materials that are destined for immediate reuse in another phase of the industry's ongoing production process' and that have not yet become part of the waste disposal problem.'" *American Mining Congress* v. *EPA*, 907 F. 2d 1179, 1186 (D.C. Cir. 1990) ("AMC II") quoting AMC I, 824 F. 2d at 1186 n2. In the January 25 rule, the Agency focused its attention on land-based units which by their very nature are unable to prevent releases of secondary materials. 61 FR 2342. While storage of secondary materials on the land is one indication of discard, other practices such as lack of immediate reuse is an indication that unit is part of the waste management problem. The Agency has damage case information involving the environmental release of product-like materials being stored for extended periods of time. (See Damage Cases and Environmental Releases, EPA, 1997). Conversely, materials that are immediately reused in a process is a practice indicative of on-going processing that is outside the scope of RCRA subtitle C.

Based on the Agency's study of mineral processing industry practices and review of comments on this subject from the January 25 proposal, the Agency believes initially that there are two categories of materials that are included in the definition of immediate reuse. The first are materials that by their very nature are being continually processed and whose management practices indicate that discard is not occurring. These materials have always been outside of RCRA jurisdiction and are unaffected by this or the January 25 proposal. An example are copper reverts, a refined copper material that falls on the ground when molten copper is transferred within the smelter.[3] The common industry practice is to pick up reverts on an hourly basis and put them back into the smelting process. These are not secondary materials (sludges, spent materials, or byproducts) at all but rather some type of in-process material that is being put to further use. There is no use for reverts other than to be added to a copper smelting operation for continued refining. Further, the Agency is not aware of any case where reverts have been abandoned, discarded, or whose land storage has contributed to environmental problems. Copper reverts have always been outside of RCRA jurisdiction.

The second category are secondary materials whose management practices indicate that ongoing process immediate reuse is occurring. An example of an immediately reused secondary material would be copper flue dust generated from smelting operations. Most facilities routinely store flue dusts for very short periods of time before returning the material to the smelting process. Similar to reverts, copper flue dust has no other use other than to be returned to the smelting process for continued refining. However, unlike reverts, the Agency has information indicating that some flue dusts are stored for extended periods of time and have contributed to environmental problems. (See Damage Cases and Environmental Releases, EPA, 1997). The Agency believes that environmental releases are a function of the length of storage time for these materials.

Defining a particular time period that constitutes immediate reuse raises several considerations. The Agency has found that most mineral processing facilities operate 365 days per year, 24 hours per day. Because of this continuous production schedule, secondary materials that are destined for immediate reuse are routinely placed back into the process on an hourly basis and most are recycled within one or two days. The Agency believes that a time period of two days is an appropriate standard for immediate reuse. This means that a secondary material that is put back into production within two days of generation is outside of RCRA jurisdiction, regardless of whether it is stored on the land. The Agency believes that while most facilities could comply with a much shorter time period, the two day period allows flexibility to perform the major steps necessary for recycling. The Agency believes that there are generally five major steps: (1) Generation of the secondary material; (2) sampling of the material (3) chemical and property analysis of the material; (4) processing decisions; and (5) placing material back into the process.[4] Even if only one of the steps were to occur in a separate eight hour shift the entire sequence would require 40 production hours, which is well within the two day allowable period. The Agency believes that this is a worst case scenario, and certainly within the zone of reasonable durations from which EPA could select a value, because most facilities process materials in a much shorter time period than the two day (48 hour) period.

The Agency realizes there are occasions where a processing device must be taken off line for maintenance. There are occasions where machinery breaks down and extensive repair is needed. In such cases, the facility usually has parallel or backup devices to continue production. Nevertheless, the Agency realizes that this may not always be the case and that sometimes production stops for extended periods of time. The point is that notwithstanding the main line production stoppages, secondary materials destined for immediate reuse are routinely put back into production expeditiously. To make allowance for production stoppages, the Agency is proposing that the tolling of the two day period for immediate reuse would also stop. The tolling would continue on the next production day. Put another way, a production day counts towards one day of the two day limit.

In today's proposal, the Agency is limiting the two day immediate reuse exclusion only to on-site processing, that is, where a material is generated and reused in the same or similar process at the same facility. EPA believes that this is a reasonable interpretation of the "immediate reuse" test articulated in the judicial opinions. Once secondary materials are transferred off-site, the transaction is less continuous, and elements of discard

[3] Reverts are matte and copper spilled in the converter aisle in the process of being transferred to ladles from one part of the smelting process to another. See Memorandum from Roderick Dwyer, National Mining Association, to James Berlow, EPA, August 31, 1995.

[4] These steps are based upon information obtained from the Society of Mining Engineers Mineral Processing Handbook, Volume 2, Section 30—Sampling and Testing, and Section 14G—Purchase of Copper Concentrates and Cement Copper (1985); By-products Recycling at ASARCO. Processing of Drosses, Slages, and Dusts, G. Archer, B. Dunn, and F. Ojebuoboh, The Minerals, Metals, and Materials Society (1991).

such as use of land-based storage can be assessed in determining if management of the material has become part of the waste disposal problem. *AMC II*, 907 F. 2d at 1186. Further, the exclusion does not apply to secondary materials in either category that are managed in a way indicative of disposal.

The Agency solicits comment on the appropriateness of a two day time period; whether there are more practical or appropriate measures of immediate reuse; and whether this exclusion should apply beyond on-site processing. Further, the Agency solicits comment on what other specific materials would qualify under the immediate reuse exception.

B. New Option—Non-Bevill Materials Used as Alternative Feedstocks

The Agency is proposing an option related to the case where a process which generates a waste exemption from subtitle C regulation under the Bevill amendment uses as partial feedstock something other than a Bevill raw material. An example would be a copper beneficiation mill which uses by-products from primary zinc manufacture as an auxiliary feedstock along with copper ore. This new option would limit availability of the Bevill exemption to wastes generated exclusively from the use of Bevill raw materials, namely ores and minerals. Because of the potential additive risk posed by the co-processing of non-Bevill materials, the Agency is proposing an option that would 'prevent contaminants from non-Bevilled materials to be afforded the Bevill exclusion. This option is not an alternative to the option of restricting use of land-based storage units discussed in the section entitled "New Option—Land Storage of Secondary Materials." It is an independent proposal which could be adopted regardless of the Agency's decision on land-based storage units.

In the January 25 proposal, the Agency discussed one option for evaluating wastes generated from these types of co-processing operations. 61 FR at 2351. In order for the waste to qualify for the Bevill exclusion under that proposal, the Agency proposed the following criteria: (1) The waste needs to result from operations that process greater than 50% beneficiation raw materials; (2) the material being co-processed would have to meet the tests for legitimate recycling proposed in the January 25 notice; and (3) the resulting waste could not be "significantly affected" by addition of the co-processed, alternative feedstock. This "significantly affected" test involved comparing wastes generated by processing exclusively Bevill raw materials with wastes from co-processing alternative feedstocks and showing that the addition of the alternative feedstocks did not have either a statistically significant effect; or, in the alternative, an environmentally significant effect. Wastes not "significantly affected" remained the type of waste EPA had determined warrant Subtitle C exemption. 61 FR at 2351.

Most industry commenters supported the 50 percent criteria but disagreed with the need for a quantified legitimacy test and the significantly affected test. Further, industry commenters argued that these tests were unworkable as applied to their wastes. Industry commenters also argued that Congress intended the Bevill Amendment to be interpreted broadly, to include not only solid waste from the extraction, beneficiation, and mineral processing of ores and minerals but also wastes generated when (1) non-Bevill feedstocks are added to a unit that generates a Bevill waste and (2) non-Bevill wastes are added directly to a Bevill waste.

At the outset, it is important to note the distinction between these two scenarios. The new option discussed in today's proposal addresses the first scenario in which non-Bevill feedstocks are co-processed with Bevill raw materials in a unit that generates a Bevill waste. The second scenario, which refers to direct disposal of a non-Bevill waste with a Bevill waste, was addressed in the January 25, 1996 proposed rule and EPA's proposed approach for dealing with that scenario is not being modified by today's notice.[5]

Under today's new option, in order for a waste to qualify for the Bevill exclusion, all feedstocks entering the unit must be solely derived from the extraction, beneficiation or processing of a virgin ore or mineral. This means that only extracted virgin ores used as a feedstock to a beneficiation operation and only concentrates derived from beneficiation and then used as a feedstock to mineral processing would be eligible for the Bevill exclusion. If alternative materials are used as feedstocks, the resulting waste would not be eligible for the Bevill exclusion. For purposes of this proposal, alternative feedstocks include secondary materials generated from mineral processing operations and any materials generated in industries other than mining or mineral processing, regardless of whether the material exhibits a hazardous characteristic.

Under this option, the 50 percent criteria for Bevill eligibility, as discussed in the January 25, 1996 proposed rule at 61 FR 2351, would not be applicable. Similarly, the significantly affected test proposed at 61 FR 2351 would no longer be applicable. Since under today's proposal, any addition of a non-Bevill feedstock would disqualify the resulting wastes from the Bevill exemption, the 50 percent and significantly affected tests would be redundant.

This proposal is based on the following principles. First, the Bevill exemption allows for management of what would otherwise be hazardous waste outside of subtitle C controls. This uncontrolled management has led to instances of, widespread, and serious environmental damage. (See Damage Cases and Environmental Releases, EPA, 1997). In light of this, EPA believes it is sound policy to interpret the scope of the exclusion to the narrowest permissible in order to limit the amount of hazardous waste escaping regulatory control. Second, the Bevill amendment creates an unfortunate incentive to maximize volume of Bevill waste generated. Put another way, there is an incentive to maximize the volume of material processed through the Bevill circuit because the resulting wastes are accorded Bevill exempt status. Compounding the problem, the co-processing can frequently make the resulting wastes more toxic. Again, given the exempt status of the wastes, EPA believes it makes sense to limit the scope of the exemption and reduce this incentive for waste maximization. These points are discussed more fully below. Co-processing of non-Bevill feedstock has changed significantly since the Agency performed its Congressionally mandated studies. When EPA studied extraction, beneficiation, and mineral processing wastes in the 1985 and 1990 Reports to Congress, the Agency did not specifically study the practice of co-processing alternative feedstock with Bevill feedstocks. In the case of beneficiation, the Agency believed this practice was conducted on such a small scale as to warrant little or no mention in the 1985 Report to Congress and 1986 Regulatory Determination. For mineral processing the Agency believed that both co-processing and co-disposal of hazardous materials was performed on such a small scale that it addressed both situations under a general Bevill mixture rule. (See 54 FR 36622–23 and

[5] See Proposed Amendment to Bevill Mixture Rule, 61 FR at 2352. The Agency proposed that Subtitle C requirements would apply when non-Bevill hazardous wastes are disposed with, stored with, mixed with or otherwise combined with Bevill-exempt solid wastes.

also 61 FR 2352). The Agency's continued study of mining and mineral processing indicates that co-processing of non-Bevill feedstocks is becoming much more prevalent. This could be because as EPA has implemented the LDR program, generators have sought alternative outlets for waste rather than paying for the required treatment. For example, copper smelting operations currently process a substantial portion of the nation's F006 listed hazardous electroplating wastes, a practice that did not exist when EPA studied the Bevill special waste, copper slag, produced by this smelting. Based on environmental damages from copper slag and other Bevill wastes, the Agency is concerned about the contribution of contaminants from non-Bevill sources. The Agency seeks additional data on the types, quantities, and management practices of non-Bevill feedstock which are co-processed by units that generate Bevill wastes.[6]

The Agency believes that the addition of hazardous substances from non-Bevill sources only makes the risk posed by exempt mining wastes greater. In light of the environmental damages caused by Bevill wastes, the high cost of remediation, and the contribution of contaminants from non-Bevill feedstocks, the Agency is taking comment on a rigorously narrow reading of the Bevill exemption and proposing this option which removes the Bevill exclusion for wastes that are generated from a unit or device that co-processes non-Bevill alternative feedstocks. Under this option, non-Bevill feedstocks may still be processed in a Bevill device or unit; however, the resulting wastes will not be afforded the Bevill exclusion. The Agency found cases where alternative feedstocks may have contributed to the quantities of hazardous constituents found at mining and mineral processing sites. (See Damage Cases and Environmental Releases, EPA, 1997.) In addition, the Agency has reviewed other damage cases from beneficiation and mineral processing sites and similarly found that non-Bevill materials may have contributed to the environmental problems at these sites. Id. Because of the potential additive risk posed by the co-processing of non-Bevill materials, the Agency is proposing an option that would prevent contaminants from non-Bevill materials being afforded the Bevill exclusion.

The Agency believes that co-processing even nonhazardous alternative feedstocks can also potentially pose additional risks when co-processed in a unit generating Bevill waste. Some alternative feedstocks, while not exhibiting a RCRA hazardous characteristic, often still contain hazardous constituents that ultimately are disposed with the Bevill wastes. These hazardous constituents are found in remediation wastes at mining sites, adding to the cleanup costs. (See Damage Cases and Environmental Releases, EPA, 1997). The Agency's views are influenced in part on *Horsehead Resources Corp.* v. *Browner* 16 F.3d 1246, 1258 where the Court held that "it simply makes no sense to permit Bevill devices to become inadequately regulated dumping grounds for hazardous materials." The Agency is proposing that the co-processing of alternative feedstocks, even those that do not exhibit a characteristic under RCRA, results in the loss of the Bevill exemption for the resulting wastes. The Agency solicits comment on this approach.

There are situations where secondary materials generated from mineral processing would be given Bevill protection. This is when the secondary material is independently classified as a Bevill waste, for example, it is one of the enumerated special mineral processing wastes streams or a beneficiation waste. (See § 261.4(b)(7)). Under today's proposal, the use of a Bevill waste as an alternative feedstock does not change the Bevill status of a resulting waste. For example, copper slag (a special 20 waste) used as an alternative feedstock for a copper beneficiation operation would not change the Bevill status of the resulting tailings. The Agency believes that use of a Bevill waste as an alternative feedstock does not have an overall impact on the toxicity of the resulting waste since any Bevill waste can be land-disposed without regard to co-disposal with another Bevill waste.

The benefits to the option proposed today include a reduction of hazardous substances found in the resulting Bevill wastes and a potential reduction of environmental risks. The environmental cleanup costs due to hazardous substances found at mine and mineral processing sites is significant (See Costs of Remediation at Mine Site, EPA, 1997).

The Agency also believes that this approach could assist in more simpler application of the exemption. The application of the Bevill exemption poses many practical difficulties, especially where non-Bevill feedstocks are co-processed and other industrial wastes are stored and mixed with Bevill feedstocks. There can be a significant implementation burden (e.g., analytical testing, assessing a facility's material balance and operating costs) associated with discerning in some cases whether co-processing of alternative feedstocks is a legitimate form of recycling or simply a method of disposal.

In these instances, as noted earlier, the Bevill exemption creates an incentive to maximize generation of wastes. Any secondary materials, including those that are low volume and highly toxic, that are used as a feedstock in a beneficiation unit are afforded the same Bevill protection as a large volume mining waste. Given that beneficiation units generally recover only a fraction of material in a feedstock (often less than one percent of the volume or weight) the majority of the alternative feedstock ultimately is discarded along with the Bevill waste. Further, the remainder often has contaminant concentrations greater than the Bevill waste. (See Characterization of Mineral Processing Wastes and Materials, EPA, 1997) By clearly defining which feedstocks are derived from the mining of an ore or mineral and therefore Bevill eligible, regulators would be more readily able to determine which wastes found at a mine or mineral processing sites qualify for the Bevill exemption and which do not.

However, there would be negative aspects of this restriction on alternative feedstocks. First, there are limits to EPA's knowledge of environmental damage caused by Bevill wastes. Most Bevill wastes are disposed of in land-based units and the Agency can measure the degree of contamination caused by the overall disposal practice. In many cases it is difficult to distinguish between the contribution of contaminants from alternative feedstocks and contaminants from Bevill-exempt wastes. Some alternative feedstocks may not pose any additive risk to the resulting Bevill wastes, and this option may needlessly restrict legitimate recycling and cause industry to forgo economical recovery of minerals. This may be especially true in the case where the alternative feedstock does not exhibit the toxicity

[6] EPA notes that it has established a different type of rule covering the status of cement kiln dust generated when a cement kiln co-processes hazardous waste fuel along with its normal raw materials. In this case, the cement kiln dust retains Bevill status so long as the dust is not "significantly affected" by the hazardous waste co-processing. 40 CFR 266.112. There is an important distinction between this situation and co-processing in the beneficiation/mineral processing setting which justifies a different regulatory approach. A cement kiln which burns hazardous waste must obtain a subtitle C permit for its hazardous waste storage and combustion activities, and must subject its entire facility (including cement kiln dust management) to RCRA corrective action in the event of releases. There thus are substantial environmental safeguards present which justify a more lenient interpretation of Bevill status.

characteristic (TC). Removing Bevill-exempt status if such materials are used as an alternative feedstock may therefore not result in improved environmental management. A useful means of recycling the alternative feedstock also might be eliminated. The Agency solicits comment on this proposed option generally as well as the specific proposal to eliminate the applicability of Bevill for co-processing nonhazardous materials.

This restriction would not be applicable to materials such as water or acid that are otherwise effective substitutes for commercial products; these materials are not being reclaimed and are not solid wastes. (See 261.2(e)(ii)). The Agency solicits comment on whether there may be situations where water or acid is a solid waste because they are being reclaimed in a Bevill unit and whether the alternative feedstock restriction should apply.

The Agency seeks comment on this option, which would remove the Bevill exclusion for wastes resulting from the co-processing of non Bevill feedstocks. As previously stated, the Agency also seek comments on whether this restriction should apply to all non-Bevill feedstock or only to those that exhibit a hazardous characteristic, specifically the TC. (261.24).

C. High Risk Mining Wastes Excluded by the Bevill Amendment

1. General Discussion

The Agency is presenting new information on threats to human health and the environment from Bevill mining and mineral processing wastes and posing the question of whether certain wastes currently excluded under Bevill warrant further study or regulatory controls. The Agency also is soliciting comment on whether a high volume test or other method should be applied to wastes in order to determine Bevill eligibility.

As part of the information gathering efforts under the Phase IV rulemaking, the Agency has continued to learn more about management practices in the mining and mineral processing industry, and has reached the point where public input would help focus the Agency's future efforts in determining how best to address the risks posed by Bevill wastes. The Agency's concerns include issues involving environmental and natural resource damages from acid mine drainage, the use of cyanide and other toxic chemicals, radioactivity, stability of tailings and waste rock piles, and in-situ mining methods. The Agency prepared a report that includes a history of the Bevill Amendment and the Agency's activities, description of mining practices, information about actual and potential environmental threats caused by mining and mineral processing wastes, and information about new risk assessment techniques that may be applicable to mining wastes. This report is presented in the RCRA docket for review and comment. (See Risks Posed by Bevill Mining Wastes, EPA, 1997). Any regulatory activity regarding the examination of risk posed by Bevill wastes would be addressed in a future rulemaking other than Phase IV.

Based on the information in this report, the Agency is therefore seeking comment on whether reexamination of some Bevill wastes is warranted. In today's notice, the Agency is not proposing any specific change to the current Bevill exclusion nor has it concluded that any particular course of action is most appropriate. Rather, the Agency is presenting new information on risks posed by Bevill wastes and is posing the question of whether some waste streams require additional study or regulatory controls given the availability of new risk assessment techniques. Conversely, the Agency is also soliciting comment on whether more protective environmental practices have been put in place and, if so, whether future regulatory actions are necessary.

2. Wastes Eligible for the Bevill Exclusion

Commenters on the January 25 proposed rule contend that the Agency was proposing to narrow the current Bevill exemption by identifying certain wastes in its technical background documents that would be subject to Subtitle C requirements. The Agency includes a discussion in that document and made it available to the public because EPA believes that it is helpful for all parties to understand which wastes are indeed eligible for the Bevill exclusion for purposes of this rule when finalized. As discussed in previous sections of today's notice, small volume hazardous waste may contribute to the overall risk posed by some Bevill wastes and reduction of these waste streams would be desirable. The Agency currently determines whether Bevill is applicable on a case-by-case qualitative basis. The Agency is soliciting comment on whether to maintain the current qualitative assessment, or establish some other method to determine Bevill eligibility.

In addressing the issue of whether certain wastes should be eligible for the Bevill exclusion, the D.C. Circuit Court of Appeals found that Congress intended the Bevill Amendment to be limited to "special wastes" that are high volume and low hazard.[7] The Agency subsequently defined special wastes to include only extraction/beneficiation wastes and 20 mineral processing wastes. The Agency developed a high volume, low hazard criteria (e.g., 45,000 tons per year for solids, one million tons per year for liquids as generated) for mineral processing waste, consistent with the direction from the D.C. Circuit decisions, but did not apply these criteria on a wastestream by wastestream basis for the previously addressed extraction/beneficiation wastes. 54 FR 36619. Courts have also found that small volume hazardous wastes are outside the scope of Bevill.[8] It is clear from the legislative history that both EPA and Congress intended the "special waste" concept to have a finite scope that did not encompass wastes from operations that produce wastes in volumes similar to other manufacturing operations. 54 FR 15325. Further, the Court in *Horse head Resources* v. *Browner* (16 F.3d 1246, 1258) held that the large volume criteria applies to all Bevill wastes, and not just those from mineral processing.

Under section 3001(b)(3)(A)(ii) of RCRA, the Bevill exclusion is available for "solid waste *from* the extraction, beneficiation and process of ores and minerals" (emphasis added). In determining whether a particular waste is, in fact, from one of these processes, the Agency has generally evaluated whether the waste is "uniquely

[7] "[T]he structure of the Bevill Amendment suggests that Congress intended to single out high-volume 'special wastes' for regulatory suspension when it excluded 'solid waste from the extraction, beneficiation and processing of ores and minerals.'" *Environmental Defense Fund* v. *EPA*, 852 F.2d 1316, 1327 (D.C. Cir. 1988). The Court also decided that "[t]he legislative history of the Bevill Amendment establishes that the key to understanding Congress' intent is the concept of "special waste" articulated in the regulations proposed by EPA on December 18, 1978 following the enactment of RCRA." Id. See 43 FR 58911 (1978) and 50 FR 40293 (1985).

[8] The D.C. Circuit Court of Appeals held that the Agency's attempt to exclude six low volume, high hazard smelting wastes was an "impermissibly over broad interpretation of the Bevill Amendment." *EDF II* at 1330. "Since EPA found that those six smelter wastes are low volume and high hazard wastes, it cannot refuse to list them [as hazardous wastes]." *EDF II* at 1327. The Agency notes that these six smelting wastes (which includes K088 potliners and K064 acid plant blowdown) are generated in quantities greater than most of the non-Bevill secondary materials at issue. "Because the Court explicitly determined that the six smelting wastes are not high volume, low hazard wastes, the generation rates of these wastes can and should serve as a lower bound below which wastes should not be afforded Bevill status." 54 FR 15330 April 17, 1989.

associated" with the enumerated processes. The Agency defines non-uniquely associated wastes to be non-indigenous to mining, small in volume, and generated by many other non-Bevill industrial operations. (See 45 FR 76619, November 19, 1980 and 54 FR 36623, September 1, 1989). Examples of non-uniquely associated wastes include spent solvents, pesticide wastes, and discarded commercial chemicals. In the Agency's view, these wastes are logically viewed as not being "from" mineral processing, beneficiation or extraction and therefore are not subject to the Bevill exclusion.

When applied to ancillary operations located at a mine site, such as degreasing solvents from vehicle maintenance, it is relatively straightforward to apply the uniquely associated principle and determine that the spent solvents are not uniquely associated with mining and therefore are not eligible for the Bevill exclusion. In this example the solvents are small volume, highly toxic, not indigenous to the ore being mined, and commonly generated from other industrial sectors.

However, it becomes more difficult to make such determinations when a small volume material comes into contact with a beneficiated ore or mineral during normal operations. Through contact the small volume material may acquire some of the chemical composition of the Bevill waste (e.g., a solvent absorbs some of the Bevill waste). Having acquired some of the chemical properties of the Bevill waste, under what circumstances, if any, should the solvent be considered a Bevill waste when discarded? Some commenters contend that Congress intended the Bevill Amendment to be interpreted broadly and that the Agency's application of the uniquely associated principle is an impermissible interpretation.[9]

In its studies of the mineral industry, the Agency found several small volume wastes that come into contact with a Bevill waste.[10] These include lead anodes, spent kerosene solvent, and crud from copper solvent extraction and electrowinning; and crucibles, cupels, and acid cleaning solution from gold heap leach operations. All of these small volume wastes are inherently hazardous (they would be hazardous waste when disposed regardless of whether contact occurred). The Agency believes that these wastes may be viewed as not being uniquely associated with mineral processing, beneficiation and extraction, and this conclusion is reflected in the technical background document to the Phase IV proposal. As stated in the previous section, the Agency believes it is sound policy to interpret the scope of the exclusion narrowly in order to prevent Bevill waste from being a dumping ground for hazardous waste and to reduce any incentives for waste maximization. The Agency believes that, given the extent of interest in EPA's practice in this area, solicitation of public comment would help ensure that EPA's application of the Bevill exclusion in particular cases is based on sound policies reflecting public input.

Recognizing that the "uniquely associated" principle can be difficult to apply in certain cases, the Agency is considering whether a simple application of the high volume thresholds to determine Bevill eligibility for beneficiation and extraction wastes discussed above might be preferable to application of the uniquely associated principle. Under this option, there would be no need to consider the non-uniquely associated principle because any waste stream from the extraction, beneficiation, or processing of an ore or mineral that is not high volume would not be a Bevill waste. This option has the advantage of being simple to apply and is consistent with the broad parameters of Congressional intent that Bevill generally applies only to high volume wastes. This option would help prevent additional toxic constituents being disposed with Bevill wastes, encourage recycling, and may result in reduction of cleanup costs. The Agency solicits comment on whether a large volume standard should be a determining factor for Bevill eligibility and, if so, whether the mineral processing high volume standards of 45,000 tons per year per waste stream for solids and one million tons per year per waste stream for liquids are appropriate measures of high volume.

The Agency also solicits public input regarding other potential approaches that could be applied in evaluating whether a particular waste is uniquely associated, and therefore excluded under the Bevill Amendment. One approach would be to adhere to a principle that any material that comes into contact with a Bevill waste, feedstock, or product during normal process operations becomes a uniquely associated Bevill waste when discarded. This approach would be consistent with past determinations that non-contact operations are non-uniquely associated, such as degreasing solvents from vehicle maintenance. The approach, however, would alter some determinations contained in the technical background document to the Phase IV Supplemental Proposal involving contact operations. Lead anodes, spent kerosene solvent, and crud from copper solvent extraction and electrowinning; and crucibles, cupels, and acid cleaning solution from gold heap leach operations, would all be considered uniquely associated and therefore Bevill wastes under this approach. A variation of this approach would be to utilize the contact principle, as stated above, but to consider small volume wastes that exhibit a hazardous characteristic both before and after contact with the Bevill waste, feedstock, or product, as being non-uniquely associated. This option would maintain the determination that non-contact wastes are non-uniquely associated. Where contact is involved, the option may increase the number of uniquely associated wastes identified in the technical background document to the Phase IV Supplemental Proposal. However, lead anodes, spent kerosene solvent, and crud from copper solvent extraction and electrowinning, and crucibles, cupels, and acid cleaning solution from gold heap leach operations would be considered non-uniquely associated (all of these small volume wastes are inherently hazardous—they would be hazardous waste when disposed regardless of whether contact occurred). The Agency solicits comment on whether to stay with the existing qualitative approach, or whether any of the above options provides a clearer and more appropriate definition of the uniquely associated principle. The Agency solicits comment on this and other potential analytical frameworks that the Agency and States could utilize in evaluating whether a particular waste is subject to the Bevill exclusion.

VI. Proposed Exclusion of Wood Preserving Wastewaters and Spent Wood Preserving Solutions From Classification as Solid Waste Under RCRA

Summary: EPA is proposing to amend the regulations under the Resource Conservation and Recovery Act (RCRA) to provide an exclusion from the definition of solid waste for certain materials generated and recycled by the wood preserving industry. Specifically, the provisions would exclude wood preserving wastewaters and spent wood preserving solutions from classification as solid waste under RCRA, provided that they are recycled and reused on-site in the production process for their original intended purpose, the materials are managed to prevent release, and

[9] Comments of the National Mining Association on the supplemental Proposal to Phase IV, April 24, 1996. Docket F-95-PH4A-FFFFF.

[10] Identification and Description of Mineral Processing Sectors and Waste Streams, EPA, 1995.

they meet other conditions specified in the following section. The Agency seeks public comment on this proposal.

A. Background

EPA first raised the possibility of providing a regulatory exclusion from the definition of solid waste for the wood preserving industry's recycled wastewaters in the August 22, 1995 Land Disposal Restrictions (LDR) Phase IV proposed rule (60 FR 43654). In that proposed rule EPA stated that it may be inappropriate to regulate a reclamation process under RCRA when that process is an essential part of production and the materials being reclaimed are not part of the waste disposal problem. We acknowledged that under the current system, it is possible for a wood preserving plant that reclaims its wastewaters as an essential step in the production process to successfully petition EPA for a site-specific variance (even though these wastes contact a drip pad, which is a regulated hazardous waste management unit), provided that the reclamation operation meets the standards and criteria identified under 40 CFR 260.31(b).

Under the current regulatory program, EPA may grant site-specific, case-by-case variances from the definition of solid waste (and therefore from the regulations under RCRA to which persons handling solid and hazardous waste are subject) for materials that are recycled in certain ways, (see 40 CFR 260.30 and 40 CFR 260.31). Any solid waste generator may petition EPA for a variance from the definition of solid waste based upon these criteria.

1. Request for Comment in Land Disposal Restrictions Phase IV Proposed Rule

In the August 22, 1995 LDR proposal, EPA requested comment on granting an exclusion from the definition of solid waste for production wastewaters being reclaimed by the wood preserving industry if the wood preservers could demonstrate on an industry-wide basis that reclamation of these wastewaters when reclaimed meet the eight variance criteria under § 260.31(b). EPA asked for comment on the extent to which the industry as a whole could meet the criteria. We expressed particular interest in the extent to which the industry could show that its reclamation operations meet the criterion under § 260.31(b)(3). This provision requires a demonstration that a material is handled in a manner that minimizes loss before reclamation.

EPA received comments from the wood preserving industry, a state regulatory agency, and a national environmental organization. These comments were noticed in a May 10, 1996 Notice of Data Availability (NODA) at 61 FR 21418 for the LDR proposed rule and were made available for public review as part of the docket for that rule. All comments received to date concerning a possible exclusion for recycled wood preserving wastewaters are currently available in the docket for the August proposal or the NODA.

2. Statutory Remedy Considered by Congress

While EPA was soliciting comment on the feasibility of an exclusion for the industry's recycled wastewaters, Congress was considering action to provide a statutory exclusion from the definition of solid waste for these materials. Congressional staff asked EPA to provide technical review and advice as they developed H.R. 2335, a bill that would have exempted "materials contained, collected, and reused in an on-site production process that prevents releases to the environment" from the definition of solid waste.

As part of this process, EPA staff participated in a number of meetings with Congressional staff and representatives from the wood preserving industry and was able to gather additional information to assist EPA in determining whether or not the industry would be able to successfully meet the evaluation criteria EPA had discussed in the August 22, 1995 **Federal Register** notice. EPA added this information, submitted by both EPA and industry representatives at the request of Congressional staff, to the LDR Phase IV rulemaking docket. This information was not referenced in the May 10, 1996 NODA because EPA had not yet gathered it. It is currently available for review in the docket for the May 10, 1996 NODA.

B. Rationale for Proposal

The August 22, 1995 LDR notice provided no specific regulatory language for an exclusion for the wastewaters generated and recycled by the wood preserving industry because the Agency was at that time soliciting information to determine whether proposing such an exclusion would be justified given the criteria referenced above. Based upon the information EPA received, EPA believes an exclusion is appropriate and therefore, today, EPA is soliciting public comment on a conditional exclusion from the definition of solid waste for wood preserving wastewaters and spent wood preserving solutions that are recycled and reused on-site at a wood preserving plant for their original intended purpose. Under today's approach, wastewaters and spent wood preserving solutions that are recycled on-site for their original intended purpose at a wood preserving facility are not solid wastes if they are recycled in a manner that meets the conditions discussed below. We believe that an exclusion is justified given the degree to which recycling of these materials as evaluated using the criteria set out in 40 CFR 260.31(b) is, on an industry-wide basis, an essential part of the production process and does not contribute to the waste management problem. It is important to clarify that today's proposal is for an exclusion from the definition of solid waste and not for a variance as provided for under 40 CFR 260.30. EPA is simply using the § 260.31(b) variance criteria to aid in an evaluation of whether an industry-wide exclusion is justified. It is only through compliance with the conditions EPA is presenting today that a wood preserving plant would be able to claim the exclusion.

In its comments on the August 22, 1995 **Federal Register** (in a letter dated November 20, 1995, hereafter referred to as "the AWPI letter"), the American Wood Preservers Institute (AWPI) addressed the § 260.31(b) criteria and explained how the wood preservers meet them on an industry-wide basis. AWPI's comments are included in the docket for the August 1995 proposed rule.

As mentioned above, in the August 22, 1995 **Federal Register** notice EPA expressed particular interest in the extent to which the industry could show that its reclamation operations meet the § 260.31(b)(3) criterion that a material be handled before reclamation to minimize loss. Accordingly, EPA is today proposing conditions that should ensure that any facility meeting the conditions would be minimizing loss of its wastewaters and spent wood preserving solutions prior to reclamation. With respect to other criteria under § 260.31(b), EPA believes that the recycling of wastewaters and spent wood preserving solutions is essential to the financial well being of waterborne wood preserving plants (see discussion under section D below and page eight of the AWPI letter) and therefore meets the criteria set out in § 260.31(b)(1) for those plants. Without recycling their wastewater and preservative, wood preserving plants would have to purchase fresh water and preservative and pay for their disposal. It is our understanding that reuse of wastewaters and spent wood preserving solutions is standard practice at waterborne plants, which are subject to zero discharge

requirements under the federal Clean Water Act and therefore, those plants meet the criteria set out in § 260.31(b)(2). The condition that these materials be recycled and reused on-site virtually assures close proximity of the recycling operation to the primary production process (§ 260.31(b)(5)) and that the materials are generated and reclaimed by the same party (§ 260.31(b)(7)). In its letter, AWPI stated that "in both oilborne and waterborne processes, the reclamation operation is located within, and is an integral component of, the production process area." We are also proposing that the exclusion for wastewaters and spent wood preserving solutions being reclaimed be conditioned on the reclaimed materials being used for their original intended purpose when returned to the production process (§ 260.31(b)(6)). It is EPA's understanding (and is stated by AWPI in their letter) that the reused materials, once reclaimed, are returned to the process in substantially their original form (§ 260.31(b)(6)), and that the short amount of time . EPA believes that the industry also meets § 260.31(b)(4) criteria concerning the amount of time between generation and reclamation and reclamation and return to the primary production process § 260.31(b)(4)) supports finding that reclamation is an essential part of the production process. According to AWPI's letter, recoverable materials are reclaimed immediately upon generation at both waterborne and oilborne plants; and are immediately available for reuse at waterborne plants and are available for reuse after 24–48 hours at oilborne plants.

EPA believes that plants meeting the conditions proposed today will be recycling their wastewaters and spent solutions in a manner that is protective of human health and the environment. Today APIARY seeking comment on the regulatory language proposed below that would allow for the implementation of this exclusion.

C. Wastes Commonly Reused by the Wood Preserving Industry

Wood preserving wastewaters containing spent wood preserving solutions are commonly reused by wood preserving plants that use chromated copper arsenate (CCA) as a preservative and by other waterborne plants (as opposed to oilborne plants which use pentachlorophenol or creosote as a preservative). Typical pressure treatment processes involve the reuse of preservatives from work, storage, and mixing tanks for use in the retort. Preservative formulation lost with wastewater or through drippage into the door sumps (which collect liquid outside of the retort) is often collected and fed back into the production process. The industry also commonly reuses both drippage collected from drip pads (as is required under RCRA regulations) and wastewaters that it generates during production. The combination of the economic incentive to make use of existing resources and the regulatory requirements under the Clean Water Act (see 40 CFR Part 429) for the discharge of the industry's effluent waste, including a zero discharge requirement for waterborne plants, make the reuse of wastewater an attractive and necessary alternative to disposal.

D. Current Regulatory Status of Recycled Wastewaters and Spent Wood Preserving Solutions

Under the current regulations, wood preserving wastewaters and spent wood preserving solutions are regulated as solid and hazardous wastes until they are reclaimed by filtration, oil water separation or other means. The reclaimed materials are no longer regulated as solid and hazardous wastes once the reclamation process is completed provided they are used to treat wood. EPA issued a **Federal Register** Notice clarifying the regulatory status of these materials on July 1, 1991 (56 FR 30192). For example, water that is used to wash spent wood preserving solutions from a drip pad is regulated as a solid and hazardous waste under the current system. Once the water containing the spent solutions has been reclaimed, it is no longer considered a solid and hazardous waste if it is put back into the retort or otherwise used to treat wood. See § 261.3(c)(2)(i) (final sentence). (Once the recycled water has been used to treat wood and is ready for discard or further reclamation, it is again regulated as a solid and hazardous waste.)

E. Proposed Exclusion of Wastewaters and Spent Wood Preserving Solutions That are Recycled

1. General

Today EPA is asking for comment on amending the definition of solid waste to exclude wastewaters and spent wood preserving solutions that are recycled from regulation as solid and hazardous wastes if they are managed in a way that meets certain conditions. This would mean that, if this proposal is finalized, wastewaters and spent wood preserving solutions that are currently regulated as solid and hazardous wastes prior to reclamation, would no longer be regulated as solid and hazardous wastes if they are recycled according to the conditions discussed below.

2. Conditions for Exclusion

a. Materials are Recycled and Reused On-Site in the Production Process for Their Original Intended Purpose. Under this proposal, the exclusion would apply only to wastewaters and spent wood preserving solutions that are recycled and reused on-site in the production process for their original intended purpose. As mentioned above, when EPA initially raised the possibility of developing an exclusion for in-process wastewaters recycled on-site at wood preserving plants (60 FR 43654), the Agency said that a decision to grant such an exclusion would be based upon the degree to which the industry could demonstrate that the handling of these materials at wood preserving plants meet the 40 CFR 260.31(b) criteria, on an industry-wide basis. One of these criteria is "whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process * * *" (40 CFR 260.31(b)(6)). By requiring that these materials be used for their original intended purpose, it is our intention that they should be generally reused to treat wood. For example, at many wood preserving plants once water has been used to wash hazardous wastes off drip pads, it is collected and returned to a tank in order to be used to treat wood, with no releases to the environment. Because such a recycling operation (provided that it is managed to prevent releases to the environment) returns the preservative to the process to treat wood and adequately addresses the eight variance criteria, EPA is proposing an exclusion for appropriately managed wastewaters and wood preserving solutions that are reused for their original intended purpose. EPA has not evaluated whether any other use of these materials might merit an exclusion from the definition of solid waste. Therefore, for the purposes of today's proposal "original intended purpose" does not include uses other than treating wood.

b. Materials are Managed to Prevent Release. The exclusion EPA is proposing today would only apply to those materials that are managed to prevent releases to the land and groundwater. This condition is to assure that any plant claiming this exclusion is adequately handling its recyclable wastewaters and spent wood preserving solutions to minimize loss prior to reclamation. Based on our experience, management to prevent releases would include, but not necessarily be limited

to, compliance with the standards for drip pads under Subpart W of 40 CFR Parts 264 and 265 and maintenance of the sumps receiving the wastewaters and spent solutions from the drip pad and retort to prevent leaching into the land and groundwater.

This exclusion would not apply to wastewaters and spent wood preserving solutions that are at any time managed in a surface impoundment. We would not consider this type of operation to be adequate management of these materials to minimize loss prior to reclamation.

c. Units Can Be Visually or Otherwise Determined to Prevent Releases. In order for EPA to adequately assure compliance with the condition to prevent releases to the land and groundwater, the Agency proposes to require that any plant claiming this exemption assure that inspectors are able to visually or otherwise determine that the plant is preventing such releases. For example, an inspector should be able to visually or otherwise ascertain whether the bottom and sides of a sump (which is often made of concrete) are preventing releases to the land and groundwater. This could be assured by having a secondary containment system that could be observed or by providing a means to easily empty a sump to allow for inspection or through other means.

d. Drip Pads Must Comply with Subpart W Standards. The exclusion that EPA is proposing today would require any plant claiming the exclusion and collecting or managing its wastes on a drip pad to comply with the regulatory drip pad standards referenced above. EPA has recognized that there is a potential for certain plants that are currently large quantity generators to be newly classified as conditionally exempt small quantity generators (CESQG) (see 40 CFR 261.5) solely by virtue of the exclusion proposed today. Unless EPA explicitly requires compliance with the Subpart W drip pad standards as EPA proposes to do, were a plant to avail itself of this new generator status, it would not be compelled to comply with these requirements. The Agency is convinced that a plant's failure to comply with the drip pad standards under RCRA would result in failure to meet the 40 CFR 260.31(b) variance criteria (See, e.g., 260.31(b)(3)). Therefore, the Agency is proposing that in order to qualify for this exclusion, a plant would need to comply with the Subpart W drip pad standards regardless of whether that plant generates no more than 100 kg of hazardous waste per month (which is the definition of a CESQG under 40 CFR 261.5(a)) once its wastewaters and spent wood preserving solutions are excluded from the definition of solid waste under this provision.

It is not EPA's intent or belief that the proposed exclusion for recycled wood preserving wastewaters and spent solutions in any way reduces the obligations that wood preserving plants have under 40 CFR Part 264, Subpart W and Part 265, Subpart W, including the requirements for drip pads and the requirements under § 264.570(c) and § 265.440(c) for response to infrequent and incidental drippage in storage yards. EPA requests comment from any party who believes it does reduce these requirements.

3. Process Residuals

The Agency wishes to emphasize that today's proposed exclusion from the definition of solid waste for wood preserving wastewaters and spent wood preserving solutions which are recycled and reused on-site in the production process for their original intended purpose at wood preserving plants pertains only to these materials. The proposed exclusion does not apply to residuals which may be produced from, i.e., derived from, these wastewaters and spent wood preserving solutions. Process residuals derived from these excluded wastewaters and spent wood preserving solutions continue to meet the hazardous waste listing description for EPA hazardous waste numbers FO32, FO34 and FO35 (See § 261.31(a)) and must be managed as RCRA hazardous wastes.

4. Notification

Today the Agency is also seeking comment on whether a plant claiming the proposed exclusion should be required to place a notification form to that effect in its files on-site and/or required to submit it to either EPA or a state regulatory authority so that an inspector is able to review it. The notification form would identify, among other things, the specific dates for which a wood preserving plant was claiming this exclusion.

5. Conditions Under Which the Exclusion Would No Longer Apply

Today EPA is also seeking comment concerning the conditions under which the proposed exclusion, once claimed, would no longer apply. For example, among other things, EPA seeks comment on whether the spill of a small quantity of excluded material would void the exclusion for only the spilled material or for all of the wastewaters and spent wood preserving solutions generated by the plant and, if so, for how long.

VII. Proposal to Amend Treatment Variance Rules

Summary: EPA is also proposing today to clarify the regulatory standard under which variances from treatment standards adopted to implement the Land Disposal Restrictions (LDR) program are decided, see 40 CFR 268. 44 (a) and (h), to explicitly reflect EPA's long-standing and reasonable interpretation that a treatment variance can be granted when treatment of the waste to the level or by the method specified in the regulations is not appropriate, whether or not it is technically feasible to treat the waste to that level or by that method. In addition, EPA is clarifying that, in EPA's view, the one such variance (involving CITGO Petroleum) adopted through rulemaking under the existing regulations using the "not appropriate" test satisfies the clarified regulations just as it satisfied the existing rules. To eliminate any ambiguity, EPA is considering recodifying the CITGO variance under the clarified standard; the Agency requests comment on this approach.

A. Background

Under RCRA section 3004(m), EPA is required to promulgate treatment standards for a hazardous waste which "specif[y] those levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." RCRA section 3004(m)(1). These treatment standards are typically expressed as constituent concentration limits; however, in some cases the treatment standard is specified as a method of treatment. LDR treatment standards typically must be satisfied before a hazardous waste is land disposed. To satisfy RCRA Section 3004(m), EPA has chosen to promulgate treatment standards based on performance of the "best demonstrated available technology" (BDAT), see 51 FR 40, 572, 40, 578 (Nov. 7, 1986); provided such standards are not established at a point beyond which threats are minimized. See *Hazardous Waste Treatment Council* v. *EPA*, 886 F.2d 355, 361–66 (D.C. Cir. 1989) (upholding establishing technology-based treatment standards as a reasonable construction of section 3004(m)), *cert. denied*, 498 U.S. 849 (1990) (*"HWTC III"*).

When EPA decided to implement RCRA section 3004(m) by means of technology-based treatment standards, the Agency recognized that there may be

wastes for which the treatment standards would be unachievable or for which the treatment standards would be inappropriate. 51 FR at 40605–06 (Nov. 7, 1986). For such wastes, EPA established standards and procedures for granting so-called treatment variances. 40 CFR 268.44. A treatment variance establishes an alternative LDR treatment standard for the waste in question. 40 CFR 268.44(o). Section 268.44(a) states: "where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition the Administrator for a variance from the treatment standard. The petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from the wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods."

This same standard applies when a treatment variance is granted on a site-specific basis, see 268.44 (h), although site-specific variances may be processed without rulemaking. 53 FR at 31199–200 (August 17, 1988).

EPA has consistently interpreted the 40 CFR 268.44 treatment variance provision as creating two independent tests under which treatment variance applications can be considered: first, where the waste in question cannot be treated to the levels or by the methods established in the rules; and second where such treatment may be feasible but nevertheless "not appropriate". See 61 FR 55718 at 55720–21 (Oct. 28, 1996); 53 FR at 31200 (August 17, 1988); 55 FR 8666, 8760 (March 8, 1990); 61 FR 18780, 18811 (April 29, 1996). The test based on unachievability requires a demonstration that the waste's physical or chemical properties differ from those used to establish the treatment standard and must include a demonstration that the waste "cannot be treated to specified levels or by specified methods" (see second sentence of 268. 44 (a) and (h)). The "not appropriate" test is not elaborated upon in the rule. In the Agency's experience, treatment variances approved under the "not appropriate" test are often based on the totality of site-and waste-specific circumstances at any given site. EPA has most often approved treatment variances using the "not appropriate" test in situations where imposition of BDAT treatment, while technically feasible, nevertheless is unsuitable or impractical from a technical standpoint, for example when the treatment standard would result in combustion of large amounts of soil or wastewater, given that EPA's policy is that combustion of large amounts of contaminated media is generally inappropriate. See 55 FR at 8760, 8761. EPA has also approved treatment variances using the "not appropriate" test in situations where imposition of BDAT treatment would lead to environmentally counterproductive results, notably by creating disincentives to engage in remediation, see 61 FR at 55720–22; 54 FR 15566, 15568 (October 10, 1989); 55 FR at 8760–62; 61 FR at 18812; and EPA believes its long-standing interpretation that 40 CFR 268.44 provides two separate, independent tests under which treatment variance applications can be evaluated to be a reasonable reading of the regulatory language. In particular, the clause in the first sentence of 268. 44 (a) that waste "*cannot* be treated to the specified level" is mirrored in the second sentence of the rule, where a demonstration must be made that "waste *cannot* be treated to specified levels or by specified methods" (emphasis added). The second sentence of the rule—referring to a demonstration that the waste differs chemically or physically—thus relates to the first treatment variance test: technical infeasibility. It does not (or need not be read to) apply to situations where treatment is "not appropriate", since this test on its face deals with situations where wastes can be treated to a specified level or by a specified method, but it is inappropriate to do so. However, commenters on previous EPA actions have pointed out that the language of the rule is ambiguous, in that it might be read to require a demonstration that a waste is physically or chemically different along with a showing that the waste cannot be treated to a specified level or by a particular method whenever a treatment variance is sought, even if such treatment would be inappropriate; this was not EPA's intent.[11] Given the importance of treatment variances to the various EPA remediation programs, see 55 FR at 8760–61 and *National Electrical Manufacturers Association* v. *EPA*, 99 F.3d 1170, 1171 (D.C. Cir. 1996), EPA presently believes it better to re-draft 40 CFR 268.44 to explicitly conform with the Agency's long-standing and reasonable interpretation of the regulatory standards for treatment variances and to remove possible confusion. This proposed clarification is included in today's notice. EPA is further clarifying that the one national treatment variance finalized thus far using the "not appropriate" test would also satisfy the clarified regulations being proposed today. This is the treatment variance recently granted to CITGO Petroleum Co. 61 FR 55718 (Oct. 28, 1996). In EPA's view, the revision of the treatment variance regulations it is proposing today simply clarifies, and in no way changes, the current standards for evaluating treatment variances; therefore, by definition the variance already issued to CITGO under the current regulations and standard would satisfy the clarified regulations. However, to remove any ambiguity on the status of CITGO's treatment variance, and the standard it must meet, EPA is considering whether it would be better to re-codify the variance under the clarified regulations (should the Agency finalize that part of today's proposal).

B. Clarified Regulatory Language

EPA is proposing to revise 40 CFR 268.44 (a) and (h) to clarify that there are two separate and independent tests for approving treatment variances. The amended rule (if finalized) would thus explicitly conform with EPA's long-standing and reasonable interpretation that treatment variances may be granted for either of two independent reasons: 1) where, due to physical or chemical differences in the waste matrix, the waste cannot be treated to the level used as the basis for the treatment standard (or, in those few instances where the treatment standard is a method of treatment, where the method physically cannot be performed); and 2) where it is inappropriate to require treatment to the level or by the method set out in the regulations although such treatment is technically possible.

In EPA's experience, approval of treatment variances based on the "inappropriate" test depends largely on site-and waste-specific circumstances. Therefore, the Agency is not proposing detailed regulatory criteria for approving variances based on the "inappropriate" standard. Based on our implementation of the program to date, some examples of where variances based on the "inappropriate" test might be approved are where the treatment standard is unsuitable from a technical standpoint, as when it would result in combustion of large amounts of soil or

[11] The Environmental Technology Council and the Louisiana Environmental Action Network (LEAN) have petitioned for review of a particular treatability variance and are arguing that the provision can only be read in this manner. *LEAN* v. *EPA*, no. 97– (D.C. Cir.). EPA disagrees and believes its present long-standing interpretation to be a reasonable construction of the rule's language, and to be amply supported on policy grounds. 61 FR at 55721.

other media that contain hazardous waste or where imposition of the treatment standard can reasonably be found to increase risks for example, by discouraging optimized remediation of land disposal units. A specific example of this second situation would be at a remediation site where the cost of LDR treatment would lead a reasonable remediator to choose the legally permissible option of managing wastes within an "area of contamination" (which would not trigger LDRs and would likely involve little or no waste treatment) over a more protective option of removing the wastes for treatment and disposal (which would trigger LDRs) (see 55 FR at 8760). Situations where imposition of the BDAT treatment standard (or specified treatment method) could expose site workers to immediate dangers, such as from explosion or fire and situations where an innovative technology that, while not BDAT, results in significant treatment and shows significant promise could be other examples of cases where the BDAT standard (or specified treatment method) might be inappropriate. EPA specifically solicits comment as to whether these circumstances (or other circumstances) are reasonable formulations of circumstances where treatment variances based on the "inappropriate" test might be considered and on whether EPA should, in future rulemakings, further define regulatory criteria for variances approved based on the "inappropriate" test.

In all cases, treatment variances must result in an alternative treatment standard which would have to be satisfied before the waste could be land disposed. These alternative treatment standards must comply with the statutory standard of RCRA Section 3004(m) by minimizing threats to human health and the environment.

Some commenters on previous EPA actions have questioned EPA's legal authority to vary from treatment standards based on BDAT absent a finding that the BDAT standard is outright unachievable because of physical or chemical differences in the waste. EPA disagrees for the following reasons.

First, the "minimize threat" standard in RCRA Section 3004 (m) allows EPA latitude in determining what levels or methods of treatment minimizes short- and long-term threats to human health and the environment. Not only is the statute ambiguous on the degree to which threats must be minimized (see *HWTC III*, 886 F.2d at 372 (concurring opinion)), but the legislative history to section 3004 (m) states explicitly that the treatment standards are not to be technology-forcing. See 131 Cong. Rec. S 9178 (daily ed., July 25, 1984) (statement of Sen. Chaffee); see also 56 FR at 12355 (March 25, 1991); 55 FR 6640–43 (Feb. 26, 1990); *Chemical Waste Management* v. *EPA*, 976 F.2d 2, 15–16 (treatment standard need not be based on BDAT, in this case, treatment standards for ignitable, corrosive, or reactive wastes) (D.C. Cir. 1992).

Second, EPA does not believe that RCRA Section 3004(m) requires, or Congress intended, that EPA impose technically inappropriate technologies even when they arguably could lead to lower treatment levels. For example, EPA has generally based the national LDR treatment standards for organic contaminants in wastewaters on technologies other than incineration (or other combustion), even though such organics could be treated to lower levels if the wastewaters were incinerated. This is because incineration (or other combustion) is not normally an appropriate technology for wastewaters, notwithstanding its capability of achieving lower constituent concentration levels than conventional wastewater treatment. See 55 FR 8761. Similarly, EPA has long believed that combustion of large volumes of contaminated soil, such as much of the soil routinely encountered during CERCLA remedial actions or RCRA corrective actions, is inappropriate and would yield little, if any, environmental benefit over non-combustion treatment options. In other situations, EPA has found that imposition of the BDAT standard, while technically possible, provides a strong incentive for facility owner/operators to choose legal remedial alternatives that minimize applicability of the RCRA land disposal restrictions (e.g., consolidating and capping waste within an area of contamination), a result obviously not contemplated by Congress in enacting the land disposal restriction. EPA believes that in the limited situations where an existing treatment standard is reasonably found to be inappropriate because imposition of the BDAT standard is technically inappropriate or would increase risks, including risks posed by continued land disposal, the facts would also indicate that the alternative standard set out in the treatment variance legitimately minimizes threats posed by land disposal, taking into account both the land disposal that has already occurred and that which will occur. In this regard, EPA notes that the Agency believes it can be argued that where imposition of the BDAT standard results in treatment technically inappropriate to the matrix at hand or in foregoing other, substantial environmental benefits, that standard is not "best." See 61 FR at 55724 and at 55721 (citing case authority).

Finally, some commenters on previous EPA actions have expressed serious concern that considering treatment variances in situations where application of the nationally applicable LDR standard might cause a net environmental detriment could subject EPA to a form of "environmental blackmail," where the Agency might be pressured to adjust an appropriate treatment standard in order to allow less treatment as part of site remediation and, therefore, this approach should be precluded. While EPA agrees that the net environmental detriment approach should be carefully applied in consideration of site-and waste-specific circumstances, EPA does not agree with commenters who suggested it be precluded. In implementing its various remedial programs, EPA has found that there simply are situations where federal law provides a legal alternative to leave wastes in place, and direct application of the existing treatment standards may create an incentive to utilize that legal alternative. *Id.*; 54 FR at 41566–569. It is at least worth examining through the treatment variance process whether there is an alternative that serves the dual statutory objectives of safe remediation and pretreatment before land disposal.

C. The CITGO Variance Under the Proposed Standard

It is EPA's view that the treatability variance granted to CITGO Petroleum, 55 FR 55718 (Oct. 28, 1996), remains valid under the clarified treatment variance standard proposed in this notice. CITGO operates a large (26 acre) surface impoundment which must be closed. The impoundment contains approximately 375,000 tons of wastewater treatment sludge listed as hazardous wastes F037 and F038. The State of Louisiana, EPA's Region 6, and the company all believe the best way to close the unit is to remove the sludge, treat it through air sparging to remove and destroy the most hazardous constituent (benzene) to levels achievable by BDAT, treat cyanide and metals to levels achievable by BDAT, and treat semi-volatile hazardous constituents significantly, although not to levels meeting the BDAT standard. (While the alternative treatment standards established in the treatment variance for semi-volatiles are, for some constituents, significantly higher than the treatment standard based on BDAT,

the semi-volatile constituents are treated and, in any case, are not the constituents in the CITGO waste that drive its risk to human health or the environment.) Treatment residues are then disposed in a commercial subtitle C landfill. CITGO successfully removed and treated approximately 600,000 tons of sludge by this method before the LDR prohibition for F 037/038 wastes took effect. Treatment of the remaining sludge to meet standards reflecting performance of BDAT (in this case, almost certainly some type of combustion process) is likely to be cost-prohibitive and, at the least, creates an incentive for the company to seek to avoid triggering LDR requirements even if it means forgoing optimal closure of the impoundment. The federal rules do provide closure options by means other than waste removal. The closure rules provide that an impoundment can close with wastes in place provided it can satisfy the standards for post-closure care of a landfill. 40 CFR 265.111, 265.228 and 265.310. EPA found that CITGO would likely pursue these options, delaying if not precluding closure by removal, and possibly resulting in no treatment of the hazardous sludges at all. For these reasons, EPA found that the treatment technology on which the standard is based is not appropriate for this waste because imposition of the requirement would likely result in a net environmental detriment. 55 FR at 55719–722. The alternative treatment standard requires the same level of treatment which had proved successful on the 600,000 tons of sludge before the LDR prohibition took effect.

In EPA's view, these facts satisfy the "not appropriate" test in the clarified treatment variance regulations proposed today, just as they satisfy the existing rules. EPA has already found that the situation presented in CITGO's treatment variance application meets the standards of 40 CFR 268.44 (a) and (h) as the Agency interprets and implements them. By definition, if EPA amends 40 CFR 268.44 (a) and (h) to explicitly conform to the Agency's longstanding and reasonable interpretation of the treatment variance regulations, then the one national variance (CITGO) approved under the current regulations would meet the terms of the new, clarified, regulations. EPA, however, recognizes that the same ambiguity that commenters have identified in the current 268.44 (a) and (h) regulations underlies EPA's approval of the CITGO treatment variance. EPA therefore requests comment on whether the Agency should eliminate any ambiguity over the CITGO treatment variance by re-codifying the variance under the clarified regulations (assuming EPA finalizes this portion of today's proposal).

VIII. Ban on Use of Prohibited Hazardous Waste as Fill Material

SUMMARY: EPA is today supplementing its March 2, 1995 proposal (60 FR at 11732) to ban the placement of prohibited hazardous wastes (that is, wastes prohibited from land disposal unless they meet land disposal restrictions treatment standards, including wastes that initially exhibited a characteristic of hazardous waste but no longer do at the point they are placed as fill material) as a fill material. This proposal would ban use as fill unless the waste meets the LDR treatment standard applicable to it, and either of two conditions are satisfied: (a) The placement occurs exclusively in a regulated unit (i.e. a unit, like a landfill, which is subject to subtitle C regulation); or, (b) the person intending to utilize the hazardous waste as fill material is able to make a demonstration to the appropriate regulatory officials that the placement of the waste will be protective of human health and the environment (within the meaning of RCRA section 3004(d)(1)), taking into account the factors enumerated in RCRA section 3004(d)(1)(A), (B), and (C), as well as all possible exposure pathways, i.e., exposure pathways that may reasonably occur at the specific site. As EPA explains more fully in today's supplemental notice, this demonstration must be made "to a reasonable degree of certainty," as set out in RCRA section 3004(d)(1). By "fill material," EPA means prohibited waste used in place of such materials as sand or dirt which fills in significant levels of depression in the land, such as gullies or ditches. Revised regulatory language is provided to help clarify the scope of the proposal, and the process for demonstrating that the use is safe.

A. General Discussion

The basis for this proposal is essentially the same as EPA originally proposed. Utilization of prohibited hazardous wastes as fill material is, in the abstract, the least protective type of land disposal in that there are no commercial specifications or necessary physical constraints on the placement of the waste. There thus are no safeguards to prevent exposure to humans or to the environment from the hazardous constituents that are released, and no barriers stopping the releases from occurring. The types of potential exposure pathways include direct exposure via inhalation, ingestion (particularly by small children), dermal contact, surface runoff, and leaching to groundwater. Human exposure can also occur via indirect exposure pathways, such as ingestion of fish, animals, fruits or vegetables which have been contaminated by hazardous constituents released from the fill area. The number of environmental exposure pathways are just as numerous.

This potential for harm is confirmed by many damage incidents caused by utilization of wastes as fill material. The damage incidents include sites now on the Superfund National Priorities List, and an incident of direct human exposure (resulting in elevated blood lead levels in children) when prohibited hazardous wastes were used as fill material in a residential area. See summaries in the administrative record.

If one assumes that utilization of wastes as fill material is a type of hazardous waste recycling activity,[12] the current RCRA rules would classify it as a type of "use constituting disposal." 40 CFR 261.2(c)(1). The rules then provide that a use constituting disposal can legally occur if the hazardous wastes are incorporated into a product, undergo a chemical reaction so as to be inseparable by physical means, and meet all treatment standards established under the Land Disposal Restrictions (LDR) program applicable to the hazardous waste incorporated into the waste-derived product. 40 CFR 266.20(b). In adopting these standards, EPA was not certain that any of these uses could be conducted in a protective manner. 50 FR at 646, 647 (Jan. 4, 1985); 53 FR at 17605 (May 17, 1988). However, the Agency was unwilling to prohibit all such uses—the likely effect of imposing full-scale subtitle C

[12] See 45 FR at 33093 (May 19, 1980); 48 FR at 14985 (April 4, 1983); and 60 FR at 14732 (March 2, 1995) where EPA noted that in most cases that this activity is a sham use. This is due to the marginal nature of the claimed recycling activity (replacing dirt to fill depressions), resemblance of the activity to uncontrolled waste dumping, and likelihood that hazardous constituents in the wastes are just being gotten rid of. Thus, the threshold step in determining whether disposition of hazardous waste as fill material is legal is to determine if this is a "use" at all, or simply is sham recycling, i.e., land disposal pure and simple. See *United States v. Marine Shale Processors*, 81 F.3d 1361, 1365 (5th Cir. 1996) ("sham recycling, as opposed to legitimate recycling, occurs when the hazardous waste purportedly recycled contributes in no significant way to the production of the product allegedly resulting from the recycling") *id.*, at 1366 (endorsing so-called toxics along for the ride concept, whereby it is relevant in assessing whether an activity is sham recycling to determine what hazardous constituents contribute to the alleged recycling activity and conceivably to find that an activity is a sham if the hazardous constituents do not contribute significantly).

controls—and also felt that imposition of the LDR treatment standard requirement afforded some level of protection. 53 FR at 17605.

Because utilization of hazardous wastes as fill material is lacking in any control, EPA has concluded that this current conditioned deferral of regulation should not apply to the activity. This conclusion is directly founded in the language and policy of the LDR statutory provisions. Land disposal of hazardous wastes is prohibited unless the prohibition on disposal "is not required in order to protect human health and the environment" taking into account the uncertainties associated with assessing safety of land disposal, including the difficulty of making long-term predictions of wastes' behavior, and the persistence, toxicity, mobility, and bioaccumulative propensity of wastes' hazardous constituents. RCRA section 3004(d)(1) (repeated in 3004 (e)(1) and (g)(5) as well). Ordinarily, land disposal occurring after hazardous wastes have been treated to satisfy the standards established by EPA pursuant to section 3004(m) (which standards are to assure that short- and long-term threats to human health and the environment posed by land disposal of the waste "are minimized") will sufficiently ensure the requisite protectiveness. RCRA section 3004(m)(1). However, the ultimate requirement of protectiveness remains even after hazardous wastes have been treated. 60 FR at 14473; 56 FR at 41168 (August 19, 1991); *NRDC* v. *EPA*, 907 F.2d 1146, 1171–72 (D.C. Cir. 1990) (dissenting opinion).

EPA is indicating here that the existing LDR treatment standards do not result in this requisite minimization of threats when hazardous wastes are to be utilized as fill material. Thus, there is no treatment of which EPA is aware that can be determined, in the absence of site-specific investigation, to adequately minimize the threats posed by this form of land disposal. See RCRA section 3004(m)(1) which requires EPA to establish "levels or methods of treatment, *if any*, which minimize short- and long-term threats" (emphasis added). Accordingly, EPA has proposed to modify the BDAT treatment standards for all hazardous wastes to make clear that wastes treated to meet these standards may still not be utilized as fill material absent a site-specific demonstration as described in 40 CFR 266.20(b)(2). Similarly, EPA is finding that the ultimate protectiveness standard in RCRA sections 3004 (d)(1), (e)(1) and (g)(5) remains unsatisfied, even after hazardous wastes are treated to meet existing LDR standards, if the wastes' ultimate disposition is as fill material (again, unless the site-specific demonstration described above is made).

B. Deferral of Ban Pending Study

Some commenters on the original proposal have contended that EPA should defer action on the proposed ban on hazardous waste as fill until risks could be studied further. The Agency disagrees that further studies are needed in order to go forward with the proposed action. While the commenter is correct that nonhazardous slags have been used for many years as fill, the Agency has the responsibility to ensure that residues from hazardous waste treatment are appropriately regulated, and this requires a minimization of threats to human health and the environment prior to land placement as fill, and ultimate protectiveness of the actual disposal.

As EPA explained at proposal, the treatment standards do not assure the requisite minimization of threat or ultimate safety for a number of reasons. 60 FR at 14473. In particular, the standards do not regulate the total metal content of a waste, typically requiring only reduction in metal constituents' mobility, as measured by the TCLP. However, when evaluating use as fill material, the total concentration of metals is highly important due to the number of exposure pathways (including direct inhalation and ingestion) which do not depend on leaching to release hazardous constituents. *Id.* In addition, the TCLP (or any single leaching test) may not be the appropriate means of evaluating potential for leaching given the wide range of potential conditions to which hazardous waste utilized as fill could be exposed. See 62 FR at 1994–95 (January 14, 1997). In addition, since the existing LDR standards are technology-based rather than risk-based, EPA does not believe that they are an adequate surrogate for determining that threats have been minimized when one takes into account the uncontrolled use as fill. 60 FR at 14473.

EPA is planning to further identify and assess risks from major current uses of High Temperature Metal Recovery (HTMR) slags from treatment of K061, K062, and F006 wastes. However, EPA is concerned that use of any hazardous waste, including HTMR slag, as a fill material represents a marginal use for which regulatory authorities would lose the ability to understand where it is placed or how much is used, making generic risk analysis extremely difficult. Fill material might be used in any setting, without any controls. While road construction projects at least include supervision of activities with regard to, for example wetlands and waterways, fill could be placed directly in sensitive areas without any type of regulatory agency approval. Further, fill may be placed in virtually unlimited amounts, while use in road construction (whether road bed or top coating) often is limited by the extent of road being built, as well as supervision by highway agencies. As such, exposures and risks posed by use as fill are extremely dependent on site specific circumstances, and we do not think at this time that the Agency will be able to set national levels of toxic constituents that would be safe in all fill settings.

C. Site Specific Approval Process

This is not to say, however, that it is impossible to utilize a treated hazardous waste as a fill material. EPA's current thinking is that the current treatment standards are inadequate, and that EPA is unable to develop other standards that would be sufficient to assure protection, absent further site-specific investigation. EPA noted in the March 2, 1995 proposal that if someone could show that a specific use as fill was safe, it would be allowed. EPA is proposing revised, more detailed regulatory language to require, in addition to requiring these wastes (like all other prohibited wastes) to meet LDR standards before disposal, that a site-specific demonstration (for each intended fill site) be made showing that the treatment has minimized all potential threats posed by the placement of the waste fill material, and assured ultimate safety of the disposal. This demonstration would be made either to the EPA Region where the fill site is located, or, in the case of States authorized to operate this part of the program, to the authorized State. The demonstration would have to address all potential exposure pathways posed by the particular fill site, would specifically have to address the land disposal protectiveness factors set out in the statute at section 3004(d)(1) (A), (B), and (C), plus address all exposure pathways to humans or to the environment that are reasonably likely to occur, and would have to demonstrate safety "to a reasonable degree of certainty." The burden of making the demonstration is on the applicant. See RCRA section 3004(d)(1) likewise assigning the burden of proof to the applicant in the case of no-migration petitions.[13] Comments are

[13] There are similarities in this type of demonstration and the no-migration test required to show that it is safe to dispose of hazardous wastes

requested on the revised regulatory language.

D. Application of the Ban To Decharacterized Wastes

Further, EPA wishes to make clear that the proposed rule would apply to all hazardous wastes subject to Land Disposal Restriction prohibitions. This includes all wastes that are identified or listed as hazardous at the point they are generated, and thus includes wastes that are listed as a result of the mixture and derived from rules. In addition, the rule applies to wastes that initially exhibit a characteristic but no longer exhibit that characteristic at the point they are land disposed (i.e., used as fill material). This means that if a person intends to utilize a characteristic hazardous waste as fill material, and treats the waste so that it no longer exhibits a characteristic, the rule nevertheless applies. See *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 12–14 (land disposal prohibitions apply to wastes that are hazardous when generated; thus, the prohibition—i.e., the substantive LDR requirements—continues to attach to characteristic wastes that no longer exhibit a characteristic when they are land disposed). These so-called decharacterized wastes could nevertheless continue to pose the same types of substantial harm when utilized as fill material as wastes still identified or listed as hazardous at the point of disposal. This is because decharacterization does not necessarily remove or immobilize hazardous constituents. *Id.*, 55 FR 22655. Consequently the proposed prohibition would apply to all initially hazardous wastes.

E. Clarification of Scope of Ban (definition of "fill")

Commenters indicated some confusion over the definition of "fill." EPA has slightly altered the definition of "fill material" from that proposed in the March 2, 1995 notice. That definition stated essentially that fill material was used as a substitute for low-grade materials to raise land levels, fill in depressions, and so forth. Today's supplemental language preserves the key concept that fill material raises land levels, fills in significant depressions (such as gullies or ditches) but removes any suggestion that there is an intent test associated with the definition. EPA wishes to avoid situations where hazardous waste fills in areas but some other use is claimed for the material that arguably makes it a different type of activity. As stated at original proposal, the Agency is acting to stop prohibited hazardous wastes from being used in an uncontrolled manner, in substantial volumes to fill in space (at least without a detailed demonstration and finding that the use is protective). The reference in the definition to filling in significant spaces makes clear that uses which have the incidental effect of filling or leveling, such as use as road-base or use a fertilizer or other uses that are subject to commercial specifications or physical constraints but incidentally fill in space in addition to other functions, are not included within the definition of "fill material." Also, the prohibition does not apply to materials used as legitimate ingredients in asphalt or concrete.

Some significant concerns were raised by producers of K061-slag over the scope of the proposed ban, in particular as it would apply to road building operations. EPA wishes to clarify that (as noted above), use as road bed, and use as road "top coat" are not intended to be banned under the proposed fill provisions. While there may be some ambiguity in these terms, EPA intends to allow further study use of legitimate road construction materials, meeting any specification set by the highway department in the State in which the material is used. While some filling of depressions may of course occur in road construction, EPA would not consider this use as fill, unless the depressions were well beyond what is necessary for road construction. EPA has provided some new regulatory language to clarify the scope of the proposal and welcomes further comment to help refine the definition.

In addition, EPA is proposing to add the prohibition to 40 CFR 268.40, as well as to the use constituting disposal provision in 40 CFR 266.20. This would make clear that this action both implements the LDR provisions and modifies the existing treatment standards to the extent prohibited wastes are used as fill material.

F. Other Clarifications

A commenter maintained that the proposed ban should not apply to vitrified material, arguing that by definition vitrified materials do not pose a threat to human health and the environment. This cannot be presumed *a priori*, however. Vitrification technology, for example, does not reduce total metal concentrations in treatment residue in which metals could be available to the environment via many of the exposure pathways present when the wastes are placed on the land without control, i.e. utilized as fill material. See the discussion above indicating why total metal concentrations remain critical in evaluating the protectiveness of this type of land disposal. Likewise, vitrified wastes may contain undestroyed organics, or insufficiently immobilized metals which likewise are capable of posing harm when placed on the land in this uncontrolled manner. For these reasons, at this time EPA does not believe vitrified material should be exempt from the ban.

Finally, a number of commenters questioned whether the prohibition would apply to situations where prohibited wastes are landfilled, or whether it would apply to remediation activities, including those carried out pursuant to RCRA corrective action or Superfund authorities. EPA wishes to clarify that the prohibition would only apply to situations where recycling is involved, "use as fill" being a term of art referring to a situation where prohibited wastes are being legitimately recycled in a manner constituting disposal through use as a fill material. *United States* v. *Marine Shale Processors*, 81 F.3d at 1365. (As noted above, see fn. 4 *supra*, EPA is skeptical that this claimed use is legitimate recycling.) Thus, the rule would not apply to situations where prohibited wastes are land disposed and an incidental effect of the disposal is to fill in depressions (as in remediation situations where treated soils are returned to the ground and raise a gradient). The policy basis for the distinction is that disposal of prohibited wastes is typically heavily regulated (for example, through subtitle C unit standards, or, in remediation situations, through site specific regulatory oversight; see 61 FR 18782 (April 29, 1996)). In these situations, the existing LDR treatment standards should be sufficient to assure that the threats posed by land disposal of wastes are being minimized. Thus, the only situation covered by the prohibition would be the uncontrolled placement of prohibited hazardous wastes (including treatment residues from these wastes) outside the system of safeguards which normally would ensure that threats to human health and the environment are minimized. This situation is where the prohibited wastes are being recycled legitimately as fill material—assuming it is possible to make this showing—pursuant to 40 CFR 266.20(b).

---

that are not treated to satisfy the treatment standards that EPA establishes. However, because the wastes have been treated, the demonstration need not satisfy the no-migration test. Rather, ultimate safety would have to be demonstrated, taking into account the specific factors Congress noted as essential to ultimate land disposal safety determinations and considering all exposure pathways that are reasonably likely to occur.

IX. Capacity Determination

A. TC Metal Wastes

EPA is not proposing to revise any capacity variance decision for TC metal wastes. However, after considering new information and comments in response to the originally proposed rule (August 22, 1995; 60 FR 43654) and Notice of Data Availability (May 10, 1996; 61 FR 21418), EPA has performed an updated capacity analysis to better reflect the current available and required capacity for the universe of wastes that would now be subject to the standards. For background information on data sources, methodology, and details of the capacity analysis for these wastes covered in this rule, see "Background Document for Capacity Analysis for Land Disposal Restrictions—Phase IV (Second Supplemental): Toxicity Characteristic Metal Wastes and Newly Identified Mineral Processing Wastes (Proposed Rule)." Based on the results of the capacity analysis, EPA proposes to not grant a national capacity variance for the TC metal wastes, including soil and debris, covered by today's proposed rule.

B. Mineral Processing Wastes

As discussed in Section IV, Proposal of New Options for Mineral Processing, EPA is considering several regulatory options for the newly identified recycled mineral processing wastes. Two of these options are expected to significantly increase the estimate of required capacity discussed in the proposed rule. One option, which would require storage of materials to be recycled in the equivalent of RCRA regulated tanks, containers, or buildings prior to recycling, is expected to result in a moderate increase in required capacity. The other option, which would prohibit the introduction of any secondary material into any mining or mineral processing unit that generates a Bevill-exempt waste, is expected to result in a larger increase in required capacity. Nevertheless, the Agency expects that any such increases can be readily met by available on-site or off-site capacity, and therefore is not changing the proposed national capacity variance determination for most of these wastes.

Three waste streams that now appear to be lacking adequate capacity are Medusa scrubber blowdown, Anderson filter media rinsate, and furnace building washdown as generated by the elemental phosphorus processing industry. A major generator of these waste streams, the FMC Corporation's Pocatello, Idaho facility, has stated that these waste streams pose unique treatability problems and that a two-year national capacity variance is needed to develop and construct treatment capacity (Phase IV Notice of Data Availability, 61 FR 21418, May 10, 1996). On August 21, 1996, FMC submitted additional data to the docket for the supplemental proposed rule (61 FR 2338, January 25, 1996, RCRA Docket F–95–PH4A–FFFFF). After careful review of the additional data, the Agency has initially determined that these wastes would require a national capacity variance, and therefore is proposing to grant a two-year national capacity variance for these three waste streams.

Regarding characteristically hazardous arsenic nonwastewaters and High Mercury Subcategory nonwastewaters (i.e., 260 mg/kg and above total mercury), EPA had proposed to grant a one-year national capacity variance. However, treatment data submitted by commenters and data collected by the Agency from site visits to commercial waste treatment facilities indicate that the newly identified mineral processing wastes do not contain arsenic and mercury at levels that could not be treated to UTS. Thus, the Agency is no longer proposing to grant a capacity variance for these wastes.

Details of the methodology and estimates of affected facilities and waste quantities are provided in the capacity analysis background document.

C. Phase IV Mineral Processing and TC Metal Wastes Injected Into Underground Injection Control (UIC) Class I Wells

Class I injection wells currently inject approximately 10 to 11 million tons of newly identified mineral processing and TC metals waste (D004–D011). These waste volumes vary in amounts from facility to facility and are generally disposed on-site. None of the mineral processing facilities transport their waste off-site or currently have the necessary capacity to treat their waste on-site by BDAT. Some facilities generating TC metal waste that are unable to dispose or treat their waste on-site may send their waste to a commercial facility. However, these commercial facilities must be approved for the disposal of these restricted waste. For those facilities affected by the prohibitions which are unable to make a successful no-migration demonstration, constructing a treatment facility on-site would be the only permissible alternative in meeting LDR treatment standards for their hazardous wastes. The Agency remains steadfast in its belief that for those facilities affected by the Land Band prohibitions which are unable to make a successful no-migration demonstration, constructing a treatment facility on-site would require a substantial amount of economic resources and effort. The EPA believes that, at this time, a reasonable amount of time should be given to construct necessary treatment facilities. Therefore, the Agency is granting a two-year capacity variance for these wastes. The Agency requested comments on capacity determinations, generation, characteristics, and management of these wastes at Class I injection well facilities in the proposed supplemental rule on January 25, 1996. However, no specific applicable comments on potentially affected Class I facilities were received for the mineral processing or for TC wastes in the August 22, 1995 proposed rule. The Agency is again requesting this information and additionally asks that it include mixed-radioactive waste. This information may assist the Agency in determining whether the Land Disposal Program Flexibility Act of 1996 may further minimize the impact of this rulemaking on Class I injection well facilities disposing decharacterized waste that is presently being treated as Phase IV hazardous. The Agency estimates that the 10 to 11 million tons of this currently injected waste may be reduced by as much as 4 to 5 million tons annually at Class I nonhazardous facilities.

X. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Parts of today's rule are proposed pursuant to sections 3004(d) through (k), and 3004(m) (42 U.S.C. 6924(d) through (k), and 6924(m)) of RCRA, a section added by HSWA. These parts are those provisions regarding the treatment standards for metal bearing wastes and mineral processing wastes. Therefore, the Agency is proposing to add the requirement to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all states regardless of their authorization status. States may apply for interim or final authorization for the HSWA provisions in Table 1, as discussed in the following cection of this preamble. The Agency is also proposing to modify Table 2 in 40 CFR 271.1(j) to indicate that the treatment standards are self-implementing provisions of HSWA.

Other parts of today's proposed rule would not be effective in authorized States since the requirements would not be imposed pursuant to HSWA. These parts relate to the definition of solid waste and include storage of mineral processing secondary materials, the type of feedstocks used in Bevill-exempt mining units, and the exclusion of certain wood preserving wastewaters and spent wood preserving solutions. Thus, these requirements will be applicable only in those States that do not have final authorization. In authorized States, the requirements will not be applicable until the State revises its program to adopt equivalent requirements under State law.

B. Abbreviated Authorization Procedures

In the Phase IV proposal dated August 22, 1995, EPA proposed a set of streamlined authorization procedures that would apply to new rules that were minor or routine in nature. This procedure was designed to expedite the authorization process by reducing the scope of a State's sebmittal for authorization, to a State certification and copies of applicable regulations and statutes. EPA would then conduct a short review of the State's request, primarily consisting of a completeness check (see 60 FR 43686 for a full description of the proposed procedures).

In the HWIR-Media proposed rule, EPA proposed another set of abbreviated authorization procedures for more significant rulemakings, called Category 2 (see 61 FR 18780, April 29, 1996). In this latter proposal, EPA designated the procedures outlined in the August 1995 Phase IV proposal as Category 1. EPA in this notice, also presented an expanded discussion on the need for and the intent of the streamlined procedures.

Today, EPA is requesting comment regarding under which Category should the authorization of States for the proposed provisions be placed. EPA believes that the proposed revisions to the universal treatment standards, and the new waste exclusions should be placed in Category 1. EPA believes that these provisions will not significantly expand the scope of the RCRA program, and will be easily adopted by States. EPA proposed modified Category 1 authorization process for mineral processing wastes on January 25, 1996 (61 FR 2364). Today's proposal modifies the management scheme for these materials from what was proposed in the January 25, 1996 notice, but does not propose new authorization procedures, except that the procedures in the January 1996 notice would apply only to situations in which the mineral processing waste volumes are high enough to be eligible for the special conditional exclusion made available to them at 261.4 in this proposed rule. EPA will consider public comments on that proposal when finalizing the authorization procedures. EPA will address which authorization procedures will apply to this rule either in the final HWIR-Media rule or the final Phase IV rule, whichever is promulgated first.

C. Effect on State Authorization

As noted above, EPA would implement today's proposal in authorized States until they modify their programs to adopt these rules and the modification is approved by EPA. Because parts of the rule is proposed pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State must modify its program to adopt this proposed regulation will be determined by the date of promulgation of the final rule in accordance with § 271.21(e). This deadline can be extended in certain cases (see section § 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In most cases, EPA expects that it will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in § 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

D. Less Stringent Requirements

Section 3009 of RCRA allows States to impose standards that are more stringent than the Federal program (see 40 CFR 270.1(l)). Thus, for those Federal changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. The parts of the rule that EPA views as less stringent are the exclusion for processed wood preserving wastewaters, and the revised universal treatment standards for antimony,

barium, beryllium, cadmium, lead, nickel, selenium, thallium, and vanadium. However, EPA believes that these proposed changes improve the RCRA program, thus EPA will strongly encourage States to adopt and become authorized for these provisions when they are finalized.

XI. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is "significant." The Order defines a "significant" regulatory action as one that "is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order."

The Agency estimated the costs of today's proposed rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance cost and economic impacts for newly listed and identified wastes affected by this rule. Newly identified mineral processing wastes covered under this rule include 118 mineral processing wastes identified as potentially characteristically hazardous. Also covered under this rule are TC metal wastes including foundry sands and secondary lead slags. Finally, this rule covers a conditional exclusion from the definition of solid waste for wood preserving wastewaters and spent wood preserving solutions that are recycled on-site for their original purpose. EPA estimates the total compliance cost of the rule is $55 million annually, and concludes that this rule is significant according to the definition in E.O. 12866. The Office of Management and Budget has reviewed this rule.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's proposed rule for newly identified mineral processing wastes, followed by a presentation of the cost, economic impact and benefit results may be found in the background document, "Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Second Supplemental Proposed Rule for Newly Identified Mineral Processing Wastes and TC Metal Wastes," which was placed in the docket for today's proposed rule.

1. Methodology Section

The Agency estimated the volumes of waste affected by today's rule to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (including first-order measures such as the estimated percentage of compliance cost to industry or firm revenues), and benefits (including estimation of pollutant loadings reductions, estimation of reductions in exceedences of health-based levels, and qualitative description of the potential benefits.) The procedure for estimating the volumes of formerly Bevill-exempt mineral processing wastes, and TC metal wastes affected by today's proposed rule is detailed in the background document "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule for Newly Identified Mineral Processing Wastes and TC Metal Wastes," which was placed in the docket for today's proposed rule.

2. Results

a. Volume Results. EPA estimates that there are 29 mineral commodity sectors potentially affected by today's rule, including an estimated 136 facilities that generate 118 streams of newly identified mineral processing wastes. The estimated volume is 20 million tons. Based on public comment and Agency research, the Agency believes that the potentially affected TC metal universe (other than mineral processing wastes) is limited to certain lead-bearing D008 hazardous wastes. Of the affected TC metal universe, the Agency estimates there are 791 non-ferrous foundries that generate approximately 300,000 tons of hazardous foundry sands. EPA did not prepare an estimate of volumes of potentially excluded wood preserving wastewaters and spent wood preserving solutions for this rulemaking.

b. Cost Results. For the option presented in today's rule that prohibits land storage of mineral processing residues (below the high volume threshold) prior to being recycled, EPA estimates these expected case compliance costs to be $8.4 million. The estimated cost range for this option is between a minimum of $5.2 million and a maximum of $13 million. This range reflects uncertainty surrounding both the quantity of these materials generated and the proportion of that quantity that is considered characteristically hazardous by EPA.

For the option in today's rule that limits the Bevill exemption to wastes generated exclusively from the use of Bevill raw materials, EPA estimates the expected compliance costs of this option are $36.6 million. The range of compliance costs for this option varies from a minimum of $31.8 million to a maximum of $42 million.

Together, the expected case compliance costs for both options related to mineral processing are $45 million with a range between $37 million and $55 million.

For comparison, EPA evaluated two additional alternative options to the first EPA option in today's rule prohibiting land storage of mineral processing residues above high volume threshold. The first alternative option would require that in addition to prohibiting land storage, mineral processing residues would be required to be stored in units such as tanks, containers and buildings that meet RCRA Subtitle C Part 264 standards (Subpart I standards for containers, Subpart J standards for tanks and Subpart DD standards for containment buildings). In addition, this option assumed that the Bevill exemption is limited to wastes generated exclusively from the use of Bevill raw materials. EPA estimates expected case compliance costs for this option to be $58 million with a range of $46 million to $75 million.

The second alternative option for which EPA estimated compliance costs for today's rule models the placement of newly identified mineral processing residues into land based units such as surface impoundments and waste piles. This option models no design or performance standards for the units and no legitimacy or "significantly affects" test for the placement of mineral processing residues into either Bevill process units or non-Bevill process units. EPA estimates expected case compliance costs for this alternative option to be $0.2 million.

The cost results for these options are a function of two factors: (1) The expense associated with purchasing new storage units or upgrading existing storage units, and (2) the transfer of some mineral processing residues either from recycling to disposal resulting in increased costs or from disposal to recycling resulting in a cost savings.

For TC metal hazardous wastes, the Agency estimates that incremental costs resulting from the promulgation of the

proposed treatment standards for TC nonwastewaters are $10 million annually. Based on public comment and data collected from commercial hazardous waste treaters EPA believes that the many D008 TC lead wastes are already treated to these proposed levels when waste handlers treat to the current treatment standards. Therefore, no additional treatment reagent or capital equipment associated with treatment is required with these wastes. Other data submitted by the American Foundrymen's Society indicates that additional treatment reagents may be required to meet proposed UTS for foundry wastes. EPA has evaluated these data and determined that additional reagent may be required for foundry wastes such as sands and baghouse dusts to treat cadmium to the proposed levels. Detailed information on EPA's estimate of costs associated with this treatment of foundry sands can be found in the regulatory impact analysis placed in the docket.

For conditionally excluded wood preserving wastewaters and spent wood preserving solution, EPA believes that the conditional exclusion from the definition of solid waste will result in cost savings rather than imposing costs on wood preserving facilities. First, this conditional exclusion retains existing regulatory alternatives for the wood preserving industry. It is likely that the exclusion will provide regulatory relief to wood preserving facilities that as a result of not having to count spent wastewasters in their monthly hazardous waste generation rate are able to classify themselves as small quantity generators (SQGs) that generate between 100 and 1000 kilograms per month. For wood preserving facilities that are able to qualify as SQGs, no Biennial Reporting System reporting requirements apply. 40 CFR 262.41. Furthermore, SQGs have longer accumulation times of 180 days compared to 90 days with large quantity generators. 40 CFR 262.34(d). Longer accumulation times mean less expensive transportation for off-site shipments. Wood preserving facilities that are able to qualify as conditionally-exempt small quantity generators (CESQGs) would be subject to even fewer regulatory requirements. See 40 CFR 261.5.

c. Economic Impact Results. Economic impacts from today's rule for mineral processing facilities may or may not be substantial for selected mineral processing sectors depending on the actual storage and management of mineral processing residues prior to being recycled. First order economic impacts are expressed in terms of a percentage of compliance costs to the economic value of the minerals that are produced. In the expected case scenario of the two proposed options combined to limit the exclusion from RCRA jurisdiction of wastes from Bevill process units to those process units to those that receive only virgin materials and to condition the exclusion from RCRA for mineral processing residues being recycled to those residues which are stored in non-land based units up to 5 of the 29 commodity sectors are expected to incur compliance costs equal to or greater than 3 percent of the economic value of the mineral commodities produced under the Agency's proposed option in today's rule. These sectors include: cadmium, lead, mercury, pyrobitumens, mineral waxes & natural asphalt, and selenium. The range of percentages in these sectors is between 3 percent (selenium) and 173 percent (mercury). Because many of these sectors are actually co-processed with other mineral commodity sectors, these impacts may be distributed over the economic value of the other minerals, rather than concentrated solely on the mineral commodity associated with generating the waste. The exception is the primary lead sector would incur expected case compliance costs equal to approximately 13 percent of that sector's sales. EPA solicits comment on the economic impacts to the primary lead sector and other affected sectors resulting from this combined option and each option separately. EPA solicits specific public comment on the potential for lost revenues to mineral processing facilities with Bevill process units (e.g., beneficiation units and high volume mineral processing units) that are unable to receive secondary materials as alternative feedstocks that are generated from outside of the mineral processing industry.

Because the Agency believes that there are no incremental costs associated with today's proposed rule for handlers of many D008 TC metal hazardous wastes and wood preserving facilities that recycle wood preserving wastewaters and spent wood preserving solutions, EPA believes that there are no economic impacts to generators of these materials. For TC hazardous foundry sands, EPA estimates that incremental costs attributable to this rule are less than one percent of industry revenues and therefore should not create a significant impact to these facilities. More detailed information on this estimate can be found in the regulatory impact analysis placed into today's docket.

d. Risk Screen Estimate Results. The Agency has estimated the quantifiable individual results for newly identified mineral processing wastes associated with today's proposed rule to be above levels of concern for cancer and noncancer risks for specific mineral processing streams in both groundwater and nongroundwater pathways. Screening risk results suggest that individual cancer and non-cancer risks may be decreased below 1 x 10 -5 and below a reference dose ratio of 1 in a number of mineral processing facilities. These screening results are linked primarily with mineral processing wastewaters stored in surface impoundments prior to reuse. The data used to calculate these results are based on the groundwater pathway as well as other potential routes of exposure such as air or surface water. The risk screening results indicate that the highest individual risks are associated with exposure through groundwater and surface water pathways. These results are also limited to a subset of the mineral processing universe being regulated today where the Agency has collected data from individual mineral processing facilities. EPA also notes that in completing these individual risk results that the entire mass of hazardous constituents available for release in the waste management unit was available for release through pathway. This results in overestimation in risk due to double counting of constituent mass. To address this factor, EPA conducted mass balance calculations for all non-groundwater release pathways. These calculations indicate that this potential overestimate would result in negligible bias because only a very small percentage of hazardous constituents in the waste mass is available for release. In addition, EPA did not conduct these mass balance calculations for the groundwater pathway because limitations in the methodology for which individual groundwater risks were calculated. The Agency believes that the potential bias in risk results for both surface impoundments and waste piles is low.

EPA requests comment on how constituents' mass should be partitioned across pathways to yield more accurate risk estimates. As stated above the Agency's efforts to evaluate benefits for mineral processing wastes was limited to calculations for central tendency and high-end individual risk. Due to data limitations, the Agency was unable to evaluate benefits including population benefits. In general, the Agency's experience has been that it is unusual to predict high population risks unless

there is an unusually large water well supply impacted by the facility because ground water contamination generally moves slowly and locally.

Although the regulatory impact analysis completed for today's rule does not address benefits associated with ecological risk reduction and a decrease in natural resource damages, based on a review of available information on damage incidents associated with mining and mineral processing operations,[14] the Agency's experience is that, while these types of benefits are extremely difficult to quantify, this rule may produce benefits in the area of ecological risk reduction and reduced natural resource damage.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 *et seq.*, when an agency publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions).

With respect to mineral processing facilities that are small entities, EPA believes that EPA's proposed option in today's rule will not pose a significant impact to a substantial number of these facilities. EPA identified 22 firms owning 24 mineral processing facilities that are small businesses based on the number of employees in each firm. Under the Agency's proposed option, zero firms out of the 24 identified incurred estimated compliance costs that exceed 1 percent of reported firm revenues. In assessing the regulatory approach for dealing with small entities affected by the TC metal treatment standards in today's proposed rule, the Agency had to consider that due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11–12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given this statutory constraint, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to regulate the land disposal of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated.

Notwithstanding these statutory constraints, for the reasons discussed above in the economic impact section on nonferrous foundries, the Agency does not believe that today's proposed rule will have a significant impact on a substantial number of small entities in TC metals sector based on the results discussed above in the economic impact section.

EPA has also clarified in today's rule that petitioners of restricted wastes that wish to obtain a treatment variance do not have to show technical infeasibility when the treatment technology is not appropriate to the waste. Because this clarification does not impose an adverse economic impact to any small entity that is either generator of restricted waste or an owner/operator of a treatment, storage or disposal facility managing such waste that is petitioning the Agency for a variance from the treatment standard, EPA is certifying that there is no significant impact to a substantial number of small entities potentially affected by this clarification.

Finally, with respect to wood preserving facilities that recycle spent wood preserving solutions and wood preserving wastewaters on-site for their original purpose, EPA believes that today's conditional exclusion for these materials will not pose a significant impact on a substantial number of these firms. As stated above, the conditional exclusion does not alter existing regulatory alternatives and provides greater flexibility for wood preservers in calculating monthly generation rates of hazardous wastes. EPA believes that this will result in a cost savings to these firms rather than imposing additional waste management costs.

C. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a statement to accompany any rule where the estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, will be $100 million or more in any one year. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of the rule and is consistent with the statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly impacted by the rule.

EPA does not believe that today's proposed rule will result in significant impacts to small governments and moreover that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate. As stated above, the private sector is not expected to incur costs exceeding $100 million per year. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act.

D. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA: OSWER ICR No. 1442.15 would amend the existing ICR approved under OMB Control No. 2050–0085. This ICR has not been approved by OMB and the information collection requirements are not enforceable until OMB approves the ICR. EPA will publish a document in the **Federal Register** when OMB approves the information collection requirements showing the valid OMB control number. Until then, persons are not required to respond to collections of information in this ICR.

Copies of this ICR may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740. Include the ICR number in any request.

The annual public reporting and recordkeeping burden for this collection of information is estimated to be 16 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing

[14] See Human Health and Environmental Damages from Mining and Mineral Processing Wastes, Technical Background Document Supporting the Supplemental Proposed Rule Applying Phase IV Land Disposal Restrictions to Newly Identified Mineral Processing Wastes, U.S. Office of Solid Waste, U.S. Environmental Protection Agency, December 1995; Ecological Risk Assessment Southshore Wetlands for the Kennecott Utah Copper Salt Lake City, Utah. Working Draft March 4, 1996; May 7, 1996 letter from Max H. Dodson, Assistant Regional Administrator for Ecosystem Protection and Remediation, U.S.E.P.A. Region VIII to Michael Shapiro, Director, Office of Solid Waste, U.S.E.P.A.

and maintaining information, and comply with any previously applicable instructions and requirements, train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Send comments on the Agency's burden reduction, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection of techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, D.C. 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence.

XII. Environmental Justice

A. Applicability of Executive Order 12898

EPA is committed to address environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agencies goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities.

B. Potential Effects

Today's proposed rule covers high-metal wastes ("TC metal wastes," hazardous mineral processing wastes, and mineral processing materials. The rule involves not one site, but will possibly affect many facilities nationwide, with the potential for impacts to minority or low-income communities. Today's proposal is intended to reduce risks to human health and the environment, and to benefit all populations. It is not expected to cause any disproportionate impacts to minority or low income communities versus affluent or non-minority communities.

The Agency is soliciting comment and input from all stakeholders, including members of the environmental justice community and members of the regulated community. The Agency is interested in receiving additional information and/or comment on the following:

1. Information on facilities with surface impoundments that have evaluated potential ecological, human health (taking into account subsistence patterns and sensitive populations) and socioeconomic impacts to minority or low-income communities.

2. Information on hazardous materials stored, used, and transported in the community.

XIII. Appendices

Appendix 1—Sampling Procedures for Horsehead Resource Development Company, Inc.

EPA has established the following procedures which will be used by Horsehead Resource Development Company, Inc. ("HRD") to demonstrate compliance with RCRA treatment standards for K061, K062, and F006 residuals ("the residuals"). U.S. EPA enforcement of the treatment standards applicable will be either on the basis of the Phase I and Phase II procedures, or on the Sampling Protocol below. Nothing in this document should be read to in any way affect EPA's ability to obtain samples or other information under Section 3007 of RCRA.

Phase I Procedure

U.S. EPA may collect an 8-hour composite sample of dhe residuals as they are produced. The 8-hour composite sample will be based on eight grab samples, one taken every hour, with compositing and testing performed in accordance with the Sampling Protocol. Upon request, HRD will be supplied on-site with splits of all samples. U.S. EPA will perform a TCLP test on the 8-hour composite sample of the residuals. If the results of the TCLP test do not exceed the applicable numerical limits specified in 40 CFR 268.40 or 268.48, the residuals will be determined to be in compliance with the applicable treatment standards set forth in those provisions.

If the results of the test exceed any of the applicable numerical limits specified in 40 CFR 268.40 or 268.48, such results will only be used to initiate the Phase II Procedure to be followed as described below, and will not be the basis for any determination of noncompliance.

Phase II Procedure

If further action is required as a result of the Phase I Procedure, the following Phase II Procedure will be conducted:

a. U.S. EPA will inform HRD of the results of the Phase I testing and concurrently provide HRD with copies of such results and all supporting information.

b. HRD will provide to U.S. EPA, upon request, the TCLP results of a composite sample of the residuals collected by HRD that includes the period during which U.S. EPA collected the 8-hour composite sample. The sampling preparation and testing procedure used by HRD for this requested composite sample will be in accordance with the Sampling Protocol.

c. If the results of the TCLP tests on the HRD composite sample do not exceed the applicable numerical limits specified in 40 CFR 268.40 or 268.48, the residuals will be determined to be in compliance with the applicable treatment standards set forth in those provisions.

Sampling and Analysis Protocol

HRD will use the following sampling and analysis protocol for K061, K062, or F006 residuals produced at its facilities.

1. Grab samples of the wastes are taken every two hours of operation from the product stream.

2. All of the two-hour interval samples are blended to form a daily composite.

3. The daily composite is riffled down to approximately 100 grams, which is added to the sample container used for the production lot composite.

4. When the production composite is completed (four to seven days), the residuals in the composite sample container are riffled to produce approximately 300 grams composite, which is prepared for TCP testing.

5. The TCLP and QA/QC procedures utilized are those described in Method 1311 (TCLP) of *SW-846—Test Methods for Evaluating Solid Waste* (U.S. EPA Office of Solid Waste and Emergency Response).

Appendix 2—Sampling Procedures For International Metals Reclamation Company, Inc.

EPA has established the following procedures which will be used by International Metals Reclamation Company, Inc. ("INMETCO") to demonstrate compliance with RCRA treatment standards for K061, K062, and F006 ("slag"). U.S. EPA enforcement of the treatment standards applicable will be either on the basis of Procedures I and II, or on the Sampling Protocol or as described below. Such demonstration will be deemed sufficient for compliance purposes. To the extent that U.S. EPA may exercise jurisdiction to determine the compliance of INMETCO's slag with applicable treatment standards, the compliance determination will be based either on the attached Sampling Protocol or on the procedures described below. Nothing in these procedures should be read to in any way affect EPA's ability to obtain samples or other information under Section 3007 of RCRA.

Phase I Procedure

U.S. EPA may collect or direct the collection of a composite sample of INMETCO's slags as they are produced during a period of up to 24 hours. If U.S. EPA representatives wish to collect the samples themselves, they will comply with all safety requirements and procedures specified by INMETCO. The composite sample will be based on grab samples, one taken from each slag tap that occurs during the period of up

to 24 hours specified by EPA, with compositing and testing performed in accordance with the Sampling Protocol. EPA understands that slag is tapped from INMETCO's furnace most frequently during nighttime hours. Upon request, INMETCO will be supplied on-site with splits of all samples taken by EPA. U.S. EPA will perform a TCLP test on the composite sample of the slag. If the results of the TCLP test do not exceed the applicable numerical limits specified in 40 CFR 268.40 or 268.48, the slag will be determined in compliance with the applicable treatment standards set forth in those provisions.

If the results of the test exceed any of the applicable numerical limits specified in 40 CFR 268.40 or 268.48, such results will be used, if at all, only to initiate the Phase II Procedure described below, and will not be the basis for any determination of noncompliance.

Phase II Procedure

If further action is required as a result of the Phase I Procedure, the following Phase II Procedure will be conducted:

a. U.S. EPA will inform INMETCO of the results of the Phase I testing and concurrently provide INMETCO with copies of such results and all supporting information.

b. Upon request, INMETCO will provide to U.S. EPA, the TCLP results for a composite sample of slags produced by INMETCO during a period not to exceed one month, which period may be selected by INMETCO provided that it will include the day on which U.S. EPA collected the composite sample tested during Phase I. The sample preparation and testing procedure used by INMETCO for this requested composite sample will be in accordance with the Sampling Protocol.

c. If the results of the TCLP tests on the composite sample described in paragraph 2.b. above do not exceed the applicable numerical limits specified in 40 CFR 268.40 or 268.48, the slag will be determined to be in compliance with the applicable treatment standards set forth in those provisions.

Sampling and Analysis Protocol

INMETCO will use the following sampling and analysis protocol for high temperature metals recovery slag produced at its facility.

1. A grab sample of INMETCOs slag will be taken from every slag tap.

2. The grab samples from slag taps occurring during a period not to exceed one month will be blended to form a composite sample of at least 100 grams in weight. The composite sample will be prepared for TCLP testing.

3. The TCLP and QA/QC procedures utilized will be those described in Method 1311 (TCLP) of *SW-846: Test Methods for Evaluating Solid Waste* (U.S. EPA Office of Solid Waste and Emergency Response).

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 266

Energy, Hazardous waste, Recycling, Reporting and recordkeeping

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: April 18, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, Title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for Part 148 continues to read as follows:

Authority: Section 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*

2. Section 148.18 is amended by redesignating paragraphs (a) through (c) as (b) through (d) respectively, and by adding paragraph (a) to read as follows:

§ 148.18 Waste specific prohibitions—newly listed and identified wastes.

(a) Effective [*Insert date 2 years from date of publication of the final rule*], the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D004—D011 (as measured by the Toxicity Characteristic Leaching Procedure); mixed D004-D011 TC/radioactive wastes; characteristic hazardous wastes from mineral processing operations; and mixed characteristic hazardous mineral processing wastes/radioactive wastes are prohibited from underground injection.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

3. The authority citation for Part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y) and 6938.

4. Section 261.2(c) is amended by revising paragraph (c) (3) to read as follows:

§ 261.2 Definition of Solid Waste.

* * * * *

(c) * * *

(3) *Reclaimed.* Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed. However, all secondary materials generated within the primary mineral processing industry (other than hazardous wastes listed in Subpart D of this part) are solid wastes when reclaimed unless excluded under § 261.4(a) (15) and (16).

* * * * *

4. Section 261.3(a) is amended by revising the first sentence of paragraph (a)(2)(i), and by revising paragraph (a)(2)(iii) to read as follows:

§ 261.3 Definition of hazardous waste.

(a) * * *

(2) * * *

(i) It exhibits any of the characteristics of hazardous waste identified in Subpart C. * * *

* * * * *

(iii) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D of this part solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C of this part. (However, nonwastewater mixtures are still subject to the requirements of part 268 of this chapter, even if they no longer exhibit a characteristic at the point of land disposal.)

* * * * *

6. Section 261.4 is amended by adding paragraphs (a)(9)(iii), (a)(15), and (a)(16), and by revising paragraph (b)(7) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(9) * * *

(iii) Wood preserving wastewaters and spent wood preserving solutions that are recycled and reused on-site in the production process for their original intended purpose at wood preserving plants; provided that these wastewaters and spent wood preserving solutions are managed to prevent release to the land and the groundwater and that the units can be visually or otherwise determined to prevent such releases; and provided that if these wastewaters are collected or managed on drip pads, those pads are in compliance with the regulatory drip pad standards, regardless of whether the plant would generate less than 100 kg per month of hazardous waste once such wastewaters and spent wood

preserving solutions are excluded under this provision.

* * * * *

(15) Large volume streams of secondary materials (other than hazardous wastes listed in Subpart D of this Part) generated within the primary mineral processing industry from which minerals, acids, or water values are recovered by a primary mineral processing industry production process, provided that:

(i) The material contains recoverable amounts of minerals, acids, or water;

(ii) The materials are not accumulated speculatively (as defined at § 261.1(c)(8));

(iii) The secondary material is generated in a quantity over 45,000 tons per year per waste stream as generated for solid wastes and one million tons per year per waste stream as generated for liquids wastes.

(iv) The owner or operator provides a notice to the Regional Administrator or State Director, identifying the following information: the types of materials to be recycled and the location of the recycling process; and the annual quantities expected to be placed in land-based units; and,

(v) The materials are stored or otherwise managed in process units. A "process unit" is a tank, container, containment building or other unit that is not land-based. A process unit also can include a pile or surface impoundment that:

(A) Is designed and operated so as to satisfy any of the following alternative performance conditions:

(1) The owner or operator ensures that the unit satisfies a groundwater protection standard not exceeding: the maximum contaminant level (MCL) for metals in Appendix VIII of Part 261 (antimony, arsenic, barium, beryllium, cadmium, chromium (total), lead, mercury, nickel, selenium, silver, and thallium); weak acid dissociable cyanide level of 0.2 ppm; the corrosivity standard in § 261.22 (an aqueous solution with a pH equal to or less than 2.0 or equal to or greater than 12.5); and the ignitability standard in § 261.21 at a location no further than 150 meters from the unit boundary. To demonstrate that this condition is satisfied, the unit must have a groundwater monitoring system consisting of a minimum of one upgradient well and three downgradient wells. Such monitoring wells must be capable of detecting, sampling, and assessing whether the groundwater protection standard is satisfied pursuant to the provisions of 40 CFR 258.51 (except for 40 CFR 258.51(b), 258.53, and 258.54). If a release is detected at levels exceeding the groundwater protection standard, the owner/operator must perform corrective action which attains the groundwater protection standard. During the time when the standard is exceeded, no further mineral processing secondary materials may be placed in the unit; or,

(2) Satisfies any of the following design standards: for surface impoundments or piles containing free liquids, is constructed to have the equivalent transmissivity of a liner comprised of a 40 mil geomembrane liner on 12 inches of soil with at least 10<-5> cm/sec hydraulic conductivity; and for piles not containing free liquids, is located on concrete, asphalt, or soil any of which have the equivalent transmissivity of three feet of clay with 10<-7> cm/sec hydraulic conductivity; or

(3) Receives a site-specific determination from the Regional Administrator or the State Director that the unit is a process unit and not a waste disposal unit because the unit is designed and operated to minimize releases to the environment and generally is not part of the waste disposal problem. This determination shall consider prevention of adverse affects on ground-water quality, surface water quality, and air quality considering the factors set out in 40 CFR 267.10.

(B) However, process units do not include any wastewater treatment surface impoundment whose discharge is ultimately regulated under either section 402 or 307(b) of the Clean Water Act (including facilities which have eliminated the discharge of wastewater).

(16) Secondary materials generated within the primary mineral processing industry from which minerals, acids, or water are recovered and are stored in tanks, containers or buildings meeting the following minimum integrity standards: the tank or containment unit should be an engineered structure with a man-made floor, walls, and a roof all of which are made of non-earthen materials providing structural support, the tank or container must be free standing and not a surface impoundment (as defined in 40 CFR 260.10), be manufactured of a material suitable for storage of its contents, and meet appropriate specifications such as those established by either ASTM, API, or UL standards. The minimum criteria for a building is that the structure must be man-made, constructed from non-earthen materials, and have a roof suitable for diverting rainwater away from the foundation.

* * * * *

(b) * * *

(7) Solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate, rock, and overburden from the mining of uranium ore), except as provided by § 266.112 of this chapter for facilities that burn or process hazardous waste. Solid wastes from the beneficiation of ores and minerals must be uniquely associated with and originate from the extracted ore or mineral that undergoes one or more of the following activities in preparation for mineral processing: crushing, grinding, washing, dissolution, crystallization, filtration, sorting, sizing, drying, sintering, pelletizing, briquetting, calcining to remove water and/or carbon dioxide, roasting, autoclaving and/or chlorination in preparation for leaching (except where the roasting and/or autoclaving sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation, ion exchange; solvent extraction/electrowinning; precipitation, amalgamation, and heap, dump, vat, tank, and in situ leaching. For purposes of § 261.4(b)(7), alternative feedstocks, which are secondary materials or materials not naturally occurring in the extracted ore or mineral undergoing beneficiation, are not eligible for the hazardous waste exclusion. For the purposes of § 261.4(b)(7), solid waste from the processing of ores and minerals originate solely from a beneficiation activity and includes only the following wastes as generated:

(i) Slag from primary copper processing;

(ii) Slag from primary lead processing;

(iii) Red and brown muds from bauxite refining;

(iv) Phosphogypsum from phosphoric acid production;

(v) Slag from elemental phosphorous production ;

(vi) Gasifier ash from coal gasification;

(vii) Process wastewater from coal gasification; (viii) Calcium sulfate wastewater treatment plant sludge from primary copper production;

(ix) Slag tailings from primary copper processing;

(x) Fluorogypsum from hydrofluoric acid production;

(xi) Process wastewater from hydrofluoric acid production;

(xii) Air pollution control dust/sludge from iron blast furnaces; (xiii) Iron blast furnace slag;

(xiv) Treated residue from roasting/leaching of chrome ore;

(xv) Process wastewater from primary magnesium processing by the anhydrous process;

(xvi) Process wastewater from phosphoric acid production;

(xvii) Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production;

(xviii) Basic oxygen furnace and open hearth furnace slag from carbon steel production;

(xix) Chloride process waste solids from titanium tetrachloride production;

(xx) Slag from primary zinc processing.

* * * * *

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

7. The authority citation for Part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6934.

8. Section 266.20(b) is amended by redesignating the existing paragraph (b) as (b)(1), and adding a new paragraph (b)(2) to read as follows:

§266.20 Applicability.

* * * * *

(b) * * *

(2) In addition, prohibited hazardous waste (including wastes that exhibit a characteristic at the point they are generated but no longer exhibit a characteristic at the point they are used as fill material) may be used as a fill material only if the Regional Administrator or State Director first finds, on a site-specific basis, to a reasonable degree of certainty, that the fill material will be used in a manner protective of human health and the environment and which minimizes short-term and long-term threats posed by the land disposal of the waste as fill, considering the following factors:

(i) The long term uncertainties associated with land disposal;

(ii) The goal of managing hazardous waste in an appropriate manner in the first instance;

(iii) The persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous waste and their hazardous constituents;

(iv) All pathways of exposure to hazardous constituents to which human or environmental receptors could reasonably be exposed; and,

(v) Other factors relating to protectiveness of human health and the environment, as appropriate.

(vi) This approval is unnecessary if the fill area is a regulated unit. By, "fill material," EPA means any prohibited hazardous waste used in place of such materials as natural soil or sand, the man-made addition of which to land levels the land, occupies space in the land, or fills in man-made or naturally occurring significant depressions in land (for example, ditches, gullies, channels, holes, ruts, trenches or the like), whether or not the addition of the prohibited hazardous waste is intended to achieve a purpose unrelated to the leveling land, occupying space in the land, or filling in man-made or naturally occurring depressions in land.

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

9. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart C—Prohibitions on Land Disposal

10. Section §268.32 is added to read as follows:

§268.32 Waste specific prohibitions—toxicity characteristic metal wastes.

(a) Effective August 11, 1997, the following wastes are prohibited from land disposal: the wastes specified in 40 CFR 261 as EPA Hazardous Waste numbers D004—D011 (as measured by the Toxicity Characteristic Leaching Procedure) and soil and debris contaminated with these wastes; characteristic hazardous wastes from mineral processing operations; and, soil and debris contaminated with characteristic hazardous wastes from mineral processing operations.

(b) Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with radioactive wastes mixed with EPA Hazardous waste numbers D004—D011 (as measured by the Toxicity Characteristic Leaching Procedure) and with characteristic mineral processing wastes.

(c) Between May 12, 1997 and May 12, 1999, radioactive waste mixed with D004—D011 (as measured by the Toxicity Characteristic Leaching Procedure) wastes and/or soil and debris, or mixed with characteristic mineral processing wastes, may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in §268.5(h)(2) of this Part.

(d) The requirements of paragraphs (a) and (b) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under §268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under §268.44; or

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to §268.5, with respect to these wastes covered by the extension.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in §268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes) in excess of the applicable Universal Treatment Standard levels of §268.48 of this Part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

* * * * *

Subpart D—Treatment Standards

11. Section 268.40 is amended by revising paragraph (e), adding paragraph (h), and amending the Table of Treatment Standards by revising the entries D004—D011; F006; F007; F008; F009; F011; F012; F019; F024; F032; F034; F035; F037; F038; F039; K001; K002; K003; K004; K005; K006; K007; K008; K015; K021; K022; K028; K046; K048; K049; K050; K051; K052; K061; K062; K069; K086; K087; K088; K100; K115; K161; P013; PO73; P074; P099; P103; P104; P110; P114; U032; U051; U144; U145; U146; U204; and U205 to read as follows:

§268.40 Applicability of Treatment Standards.

* * * * *

(e) For characteristic wastes (D001–D043) that are subject to treatment standards in the following table "Treatment Standards for Hazardous Wastes," and are not managed in a wastewater treatment system that is regulated under the Clean Water Act (CWA), that is CWA-equivalent, or that is injected into a Class I nonhazardous

deep injection well, all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, "Table UTS," prior to land disposal as defined in § 268.2(c) of this part.

* * * * *

(h) The hazardous wastes included in the "Treatment Standards for Hazardous Wastes" table are prohibited from use as a fill material, as defined at § 266.20(b) of this Part, unless and until the placement of the waste or waste residue is demonstrated and determined to be protective of human health and the environment as set out in § 266.20(b) of this Part, or the fill area is a regulated unit.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
*	*	*	*	*	*
D004 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Arsenic	7440–38–2	1.4 and meet § 268.48 standards [8].	5.0 mg/l TCLP and meet § 268.48 standards.[8]
D005 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Barium	7440–39–3	1.2 and meet § 268.48 standards [8].	21 mg/l TCLP and meet § 268.48 standards.[8]
D006 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Cadmium	7440–43–9	0.69 and meet § 268.48 standards [8].	0.20 mg/l TCLP and meet § 268.48 standards.[8]
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only).	Cadmium	7440–43–9	NA	RTHRM
D007 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Chromium (Total)	7440–47–3	2.77 and meet § 268.48 standards [8].	0.85 mg/l TCLP and meet § 268.48 standards.[8]
D008 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Lead	7439–92–1	0.69 and meet § 268.48 standards [8].	0.75 mg/l TCLP and meet § 268.48 standards.[8]
	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only).	Lead	7439–92–1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organolead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only).	Lead	7439–92–1	NA	MACRO.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code[4]
D009[9]	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory).	Mercury	7439–97–6	NA	IMERC; OR RMERC.
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory).	Mercury	7439–97–6	NA	RMERC.
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury. (Low Mercury Subcategory).	Mercury	7439–97–6	NA	0.025 mg/l TCLP and meet § 268.48 standards.[8]
	All D009 wastewaters	Mercury	7439–97–6	0.15 and meet § 268.48 standards[8].	NA.
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only).	Mercury	7439–97–6	NA	AMLGM.
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only).	Mercury	7439–97–6	NA	IMERC.
D010[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Selenium	7782–49–2	0.82 and meet § 268.48 standards[8].	5.7 mg/l TCLP and meet § 268.48 standards[8]
D011[9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Silver	7440–22–4	0.43 and meet § 268.48 standards[8].	0.11 mg/l TCLP and meet § 268.48 standards[8]
*	*	*	*	*	*
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total)[7]	57–12–5	1.2	590.
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440–43–9	NA	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Silver	7440–22–4	NA	0.11 mg/l TCLP.
		Cadmium	7440–43–9	NA	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590.
		Cyanides (Amenable) [7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590.
		Cyanides (Amenable) [7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
*	*	*	*	*	*
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440–43–9	NA	0.20 mg/l TCLP.
		Chromium (Total) [7]	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590.
		Cyanides (Amenable) [7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590.
		Cyanides (Amenable) [7].	57–12–5	0.86	30.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7].	57–12–5	0.86	30
*	*	*	*	*	*
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.)	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
*	*	*	*	*	*
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or penta-chlorophenol.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
*		*	*	*	*
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air floatation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	*	*	*	*
		Antimony	7440–36–0	1.9	0.07 mg/l TCLP.
		*	*	*	*
		Barium	7440–39–3	1.2	21 mg/lTCLP.
		Beryllium	7440–41–7	0.82	NA.
		Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
		*	*	*	*
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
		Silver	7440–22–4	0.43	0.11 mg/l TCLP.
		*	*	*	*
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	*	*	*	*
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	NA
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Cyanides (Total) [7]	57–12–5	1.2	590
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
*	* * *	*	*	*	*
K015	Still bottoms from the distillation of benzyl chloride.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
*	* *	*	*	*	*
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56–23–5	0.057	6.0.
		Chloroform	67–66–3	0.046	6.0.
		Antimony	7440–36–0	1.9	0.07 mg/l TCLP.
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
*	* *	*	*	*	*
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
*	* *	*	*	*	*
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439–92–1	0.69	0.75 mg/l TCLP.
*	* *	*	*	*	*
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	*	*	*	*

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
		*	*	*	*
K049	Slop oil emulsion solids from the petroleum refining industry.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
		*	*	*	*
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
		*	*	*	*
K051	API separator sludge from the petroleum refining industry.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
		*	*	*	*
K052	Tank bottoms (leaded) from the petroleum refining industry.	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		*	*	*	*
		Lead	7439–92	10.69	NA
		Nickel	7440–02–0	NA	13.6 mg/l TCLP.
*	*	*	*	*	*
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440–36–0	NA	0.07 mg/l TCLP.
		Arsenic	7440–38–2	NA	5.0 mg/l TCLP.
		Barium	7440–39–3	NA	21 mg/l TCLP.
		Beryllium	7440–41–7	NA	0.02 mg/l TCLP.
		Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Mercury	7439–97–6	NA	0.025 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Selenium	7782–49–2	NA	5.7 mg/l TCLP.
		Silver	7440–22–4	NA	0.11 mg/l TCLP.
		Thallium	7440–28–0	NA	0.20 mg/l TCLP.
		Zinc	7440–66–6	NA	4.3 mg/l TCLP.
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
K069	Emission control dust/sludge from secondary lead smelting.—Calcium Sulfate (Low Lead) Subcategory.	Nickel	7440–02–0	3.98	NA.
		Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
	Emission control dust/sludge from secondary lead smelting.—Non-Calcium Sulfate (High Lead) Subcategory.	NA	NA	NA	RLEAD.
*	*	*	*	*	*
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	*	*	*	*
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead 7439–92–1	0.69	0.75 mg/l TCLP..	
K087	Decanter tank tar sludge from coking operations.	*	*	*	*
		Lead 7439–92–1	0.69	0.75 mg/l TCLP..	

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code[4]
K088	Spent potliners from primary aluminum reduction.	*	*	*	*
		Antimony	7440–36–0	1.9	0.07 mg/l TCLP.
		*	*	*	*
		Barium	7440–39–3	1.2	21 mg/l TCLP.
		Beryllium	7440–41–7	0.82	0.02 mg/l TCLP.
		Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		*	*	*	*
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
		Silver	7440–22–4	0.43	0.11 mg/l TCLP.
		*	*	*	*
*	*	*	*	*	*
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
		Lead 7439–92–1	0.69	0.75 mg/l TCLP..	
*	*	*	*	*	*
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		NA	NA	CARBN; or CMBST	CMBST.
*	*	*	*	*	*
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts.[10].	Antimony	7440–36–0	1.9	0.07 mg/l TCLP.
		Arsenic	7440–38–2	1.9	5.0 mg/l TCLP.
		Carbon disulfied	75–15–0	3.8	4.8 mg/l TCLP.
		Dithiocarbamates (total).	NA	0.028	28.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
		Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
*	*	*	*	*	*
P013	Barium cyanide	Barium	7440–39–3	NA	21 mg/l TCLP.
		Cyanides (Total)[7]	57–12–5	1.2	590.
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
*	*	*	*	*	*
P073	Nickel carbonyl	Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
P074	Nickel cyanide	Cyanides (Total[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
		Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
*	*	*	*	*	*
P099	Potassium silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590.
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
		Silver	7440–22–4	0.43	0.11 mg/l TCLP.
*	*	*	*	*	*
P103	Selenourea	Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
P104	Silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590.
		Cyanides (Amenable)[7].	57–12–5	0.86	30.
		Silver	7440–22–4	0.43	0.11 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code [4]
*	* *	*	*	*	*
P110	Tetraethyl lead	Lead	7439–92–1	0.69	0.75 mg/l TCLP.
*	* *	*	*	*	*
P114	Thallium selenite	Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
*	* *	*	*	*	*
U032	Calcium chromate	Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
*	* *	*	*	*	*
U051	Creosote	*	*	*	*
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
*	* *	*	*	*	*
U144	Lead acetate	Lead	7439–92–1	0.69	0.75 mg/l TCLP.
U145	Lead phosphate	Lead	7439–92–1	0.69	0.75 mg/l TCLP.
U146	Lead subacetate	Lead	7439–92–1	0.69	0.75 mg/l TCLP
*	* *	*	*	*	*
U204	Selenium dioxide	Selenium	7782–49–2	0.82	5.7 mg/l TCLP
U205	Selenium sulfide	Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
*	* *	*	*	*	*

Footnotes to Treatment Standards Table 268.40:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in § 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in § 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems are not subject to treatment standards. (See § 268.1(c)(3)and (4)).

[9] These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards. (See 40 CFR part 148.1(d)).

[10] Between August 26, 1996, and August 26, 1997, the treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technolgy code CMBST at § 268.42 Table 1 of this part, for nonwastewaters; and, biodegradation as defined by the technolgy code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technolgy code CMBST at § 268.42 Table 1 of this part, for wastewaters.

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42 (b).

* * * * *

12. Section 268.44 (a) and (h) are revised to read as follows:

§ 268.44 Variance from a treatment standard.

(a) EPA may grant a treatability variance if:

(1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from waste analyzed in developing the treatment standard, the waste cannot be so treated; or

(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.

* * * * *

(h) EPA may grant a treatability variance if:

(1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the

physical or chemical properties of the waste differs significantly from waste analyzed in developing the treatment standard, the waste cannot be so treated; or

(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.

* * * * *

13. The universal treatment standards table in § 268.48 is amended by revising the entries in the column under "II. Inorganic constituents" for antimony, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, thallium, vanadium, and zinc to read as follows:

§ 268.48 Universal treatment standards

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable]

Regulated constituent common name	CAS[1] No.	Wastewater standard: Concentration in mg/l[2]	Nonwastewater standard: Concentration in mg/kg[3] unless noted as "mg/l TCLP"
* * * *	*	*	*
II. Inorganic Constituents:			
Antimony	7440–36–0	1.9	0.07 mg/l TCLP.
* * * *	*	*	*
Barium	7440–39–3	1.2	21 mg/l TCLP.
Beryllium	7440–41–7	0.82	0.02 mg/l TCLP.
Cadmium	7440–43–9	0.69	0.20 mg/l TCLP.
Chromium (Total)	7440–47–3	2.77	0.85 mg/l TCLP.
* * * *	*	*	*
Lead	7439–92–1	0.69	0.75 mg/l TCLP.
* * * *	*	*	*
Nickel	7440–02–0	3.98	13.6 mg/l TCLP.
Selenium[5]	7782–49–2	0.82	5.7 mg/l TCLP.
Silver	7440–22–4	0.43	0.11 mg/l TCLP.
* * * *	*	*	*
Thallium	7440–28–0	1.4	0.20 mg/l TCLP.
Vanadium[5]	7440–62–2	4.3	1.6 mg/l TCLP.
Zinc[5]	7440–66–6	2.61	4.3 mg/l TCLP.

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may compl with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[4] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[5] These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).

[6] Between August 26, 1996, and August 26, 1997, these constituents are not "underlying hazardous constituents" as defined at § 268.2(i) of this Part.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

14. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

Subpart A—Requirements for Final Authorization

15. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the **Federal Register**, and by adding the following entries to Table 2 in chronological order by effective date in the **Federal Register**, to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	FEDERAL REGISTER reference	Effective date
* *	* *	*	* *
[*Insert date of publication of final rule in the* FEDERAL REGISTER [FR].	Land Disposal Restrictions Phase IV Second Supplemental Proposal.	[*Insert FR page numbers*].	[*Insert date of 90 days from date of publication of final rule*].
* *	* *	*	* *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	FEDERAL REGISTER reference
* *	* *	*	* *
[*Insert date 90 days from date of publication of final rule*].	Prohibition on land disposal of TC-metal wastes and wastes from mineral processing.	3004(g)(4)(c) and 3004(m)	[*Insert date of publication of final rule*] [*Insert FR volume and page numbers*]. [Same as above]
[*Insert date 2 years from date of publication of final rule*].	.....	3004 (m).	
* *	* *	*	* *

* * * * *

16. Section 271.28 is added to read as follows:

§ 271.28 Streamlined authorization procedures.

(a) The procedures contained in this section may be used by a State when revising it program by applying for authorization for the requirements in part 268 that are in effect as of (insert effective date of final rule), provided a State is authorized for Land Disposal Restrictions rules up to and including those in effect as of May 8, 1990.

(b) An application for a revision of a State's program for the provisions stated in paragraph (a) of this section shall consist of:

(1) A certification from the State that its laws provide authority that is equivalent to and no less stringent than the provisions specified in paragraph (a), and which includes references to the specific statutes, administrative regulations and where appropriate, judicial decisions. State statutes and regulations cited in the State certification shall be fully effective at the time the certification is signed;

(2) Copies of all applicable State statutes and regulations; and

(3) Certification from the State that its laws provide authority that is equivalent to and no less stringent than the provisions specified in paragraph (c) of this section.

(c) Within 30 days of receipt by EPA of a State's application for final authorization to implement a rule specified in paragraph (a) of this section, if the Administrator determines that the application is not complete, the Administrator shall notify the State that the application is incomplete. This notice shall include a concise statement of the deficiencies which form the basis for this determination. The State must also include a written assurance that the State has the legal authority to implement the key requirements of this rule. The State program must demonstrate:

(1) That it can distinguish land-based units receiving mineral processing residuals from those units operating as waste disposal units, based in part on factors set out in 40 CFR 261.4(a)(14) and 40 CFR 267.10;

(2) That it imposes preventive measures (including design and operating conditions) on these units;

(3) That it establishes groundwater protection criteria;

(4) That it requires groundwater monitoring;

(5) That it detects and remediate releases of hazardous constituents from the unit to groundwater should such releases occur; and

(6) The State program must provide for public participation in the process of developing requirements for particular land-based units.

(d) For purposes of this section, an incomplete application is one where:

(1) Copies of applicable statutes or regulations were not included;

(2) The statutes or regulations relied on by the State to implement the program revisions are not yet in effect;

(3) The State is not authorized to implement the prerequisite RCRA rules as specified in paragraph (a) of this section; or,

(4) In the certification, the citations to the specific statutes, administrative regulations and where appropriate, judicial decisions are not included or incomplete.

(e) Within 60 days after receipt of a complete final application from a State for final authorization to implement a rule or rules specified in paragraph (a) of this section, absent information in the possession of EPA, the Administrator shall publish an immediate final notice of the decision to grant final authorization as follows:

(1) In the **Federal Register**;

(2) In enough of the largest newspapers in the State to attract Statewide attention; and,

(3) By mailing to persons on the State agency mailing list and to any other persons whom the Agency has reason to believe are interested.

(f) The public notice under paragraph (e) of this section shall summarize the State program revision and provide for an opportunity to comment for a period of 30 days.

(g) Approval of State program revisions under this section shall become effective 60 days after the date of publication in the **Federal Register** in accordance with paragraph (e) of this section, unless a significant adverse comment pertaining to the State program revision discussed in the document is received by the end of the comment period. If a significant adverse comment is received, the Administrator shall so notify the State and shall, within 60 days after the date of

publication, publish in the Federal Register either:

(1) A withdrawal of the immediate final decision; or

(2) A document containing a response to comments and either affirming that the immediate final decision takes effect or reversing the decision.

[FR Doc. 97–11637 Filed 5–9–97; 8:45 am]

BILLING CODE 6560–50–P