



**Response to Comments  
Document: Land Disposal  
Restrictions--Phase IV Final  
Rule Promulgating Treatment  
Standards for Metal Wastes;  
Mineral Processing Secondary  
Materials and Bevill Exclusion  
Issues; Treatment Standards  
for Hazardous Soils; and  
Exclusion of Recycled Wood  
Preserving Wastewaters;  
Volume 13: Comments Related to First  
Supplemental Proposed Rule (January  
25, 1996): Clarification of Bevill  
Exclusion for Mining Wastes, Changes  
to the Definition of Solid Waste for  
Mineral Processing Wastes, Treatment  
Standards for Characteristic Mineral  
Processing Wastes, and Associated  
Issues**

**LDR Phase IV Rulemaking, Supplemental Proposal;  
January 25, 1996 (61 FR 2338)**

**Commenter List**

<b>Number</b>	<b>Name(s)</b>
COMM1	National Mining Association
COMM2	PTI Environmental Services
COMM3	The Ferroalloys Association
COMM4	Heritage Environmental Services, Inc
COMM5	Marine Shale Processors, Inc
COMM6	U S Department of Energy
COMM7	American Electric Power
COMM8	Arizona Public Service Company
COMM9	Institute for Interconnecting and Packaging Electric Circuits
COMM10	Lead Industries Association, Inc
COMM11	New York State Department of Environmental Conservation
COMM12	Anson County ACTUS, Chapter of the Blue Ridge Environmental Defense League
COMM13	Avocet Tungsten, Inc
COMM14	Chemgold Inc
COMM15	General Motors Corporation
COMM16	Public Service Electric and Gas Company
COMM17	Chemical Waste Management, Inc
COMM18	DuPont White Pigment and Mineral Products
COMM19	Westinghouse Electric Corporation
COMM20	U S Borax Inc
COMM21	Association of Container Reconditioners
COMM22	SCM Chemicals Inc
COMM23	Montana Department of Environmental Quality
COMM24	Homestake Mining Company
COMM25	KRONOS Inc
COMM26	Jersey Central Power & Light Company
COMM27	Union Carbide Corporation

**Commenter List (continued)**

<b>Number</b>	<b>Name(s)</b>
COMM28	South Carolina Electric and Gas company
COMM29	Sonora Mining Corporation
COMM30	Chemical Waste Management
COMM31	Laidlaw Environmental Services Inc
COMM32	Kodak
COMM33	International Precious Metals Institute
COMM34	Institute of Scrap Recycling Industries Inc
COMM35	Metal Industries Recycling Coalition
COMM36	ASARCO
COMM37	Sierra Club's Midwest Office and the Mining Impact Coalition of Wisconsin, Inc
COMM38	Phelps Dodge Corporation
COMM39	Solite Corporation
COMM40	Kennecott Corporation
COMM41	Environmental Defense Fund
COMM42	Phosphorus Producers Environmental Council
COMM43	Precious Metals Producers Battle Mountain Gold Company Barrick Gold Corporation Echo Bay Mines Independence Mining Company Santa Fe Pacific Gold Corporation
COMM44	Battery Council International
COMM45	The Fertilizer Institute
COMM46	Cyprus Amax Minerals Company
COMM47	Safety-Kleen Corp
COMM48	SKW Metals & Alloys, Inc
COMM49	Kemura Pigments Inc
COMM50	New Jersey Natural Gas Company
COMM51	South Jersey Gas Company
COMM52	Robert Lucht Mining Engineer and Geologist

**Commenter List (continued)**

<b>Number</b>	<b>Name(s)</b>
COMM53	INCO LTD INCO United States, Inc International Metals Reclamation Company, Inc
COMM54	RSR Corporation
COMM55	Copper & Brass Fabricators Council, Inc
COMM56	Utility Solid Waste Activities Group Edison Electric Institute American Public Power Association National Rural Electric Cooperative Association
COMM57	Newmont Gold Company
COMM58	National Mining Association
COMM59	Brush Wellman, Inc
COMM60	Brush Wellman Inc
COMM61	Brush Wellman Inc
COMM62	Brush Wellman
COMM63	Brush Wellman, Inc
COMM64	Utah Mining Association
COMM65	Aluminum Company of America
COMM66	Rio Algom Mining Corp
COMM67	BHP Copper
COMM68	Molycorp Inc
COMM69	Molycorp, Inc
COMM70	FMC
COMM71	U S Department of Defense
COMM72	Uranium Resources, Inc
COMM73	Copper Range Company
COMM74	U S Department of Interior
COMM75	Recyclers of Copper Alloy Products Inc
COMM76	Kerr-McGee Corporation
COMM77	The Aluminum Association
COMM78	Rhone-Poulenc

**Commenter List (continued)**

<b>Number</b>	<b>Name(s)</b>
COMM79	The Colorado Mining Association
COMM80	Molten Metal Technology
COMM81	OxyChem
COMM82	Horsehead Resource Development Company, Inc
COMM83	Electronics Industries Association
COMM84	Chemical Manufacturers Association
COMM85	Nevada Mining Association
COMM86	U S Borax
COMM87	Kennecott
COMM88	California Mining Association
COMM89	Arizona Department of Environmental Quality
LCOMM1	American Gas Association
LCOMM2	Environmental Technology Council
LCOMM3	U S Department of Agriculture
LCOMM4	The Ferroalloys Association
LCOMM5	Association of Battery Recyclers Inc
LCOMM6	Northern Plains Resource Council
LCOMM7	MISSING
LCOMM8	State of Wyoming Department of Environmental Quality

<b>1</b>	<b>DEFINITION OF SOLID WASTE AND JURISDICTION</b>	<b>1-1</b>
1.1	<b>Whether Mineral Processing Secondary Materials Recycled Within the Industry Should be Considered Solid Waste</b>	<b>1-1</b>
1.1.1	Support	1-2
1.1.2	Commenters Recommend Broadening the Exclusion	1-2
1.1.3	Commenters Recommend Limiting the Exclusion	1-2
1.1.4	No Change in the Definition of Solid Waste is Necessary	1-3
1.1.5	The Proposed Rule Would Expand RCRA Regulation	1-3
1.1.6	The Proposed Rule is Discriminatory	1-5
1.1.7	Encouragement of Environmental Protection/Recycling and Remining	1-6
1.1.8	Other General Comments	1-8
1.1.9	Offsite Transfer of Recyclable Materials	1-11
1.1.10	Sector-Specific Comments	1-12
1.2	<b>Solid Waste Issues</b>	<b>1-12</b>
1.2.1	Revision of the Definition of Solid Waste	1-12
1.2.2	Issues of Process and Disposal	1-13
1.2.3	Element of Discard	1-16
1.2.4	Issues of "Main" and "Ancillary" Operations	1-17
1.2.5	Land-Based Unit Issues	1-17
1.2.6	Definition of "Secondary Materials"	1-19
1.2.7	Other Solid Waste Issues	1-19
1.2.8	Sector Specific Comments	1-20
1.3	<b>Jurisdiction</b>	<b>1-21</b>
1.3.1	AMC Court Cases	1-23
1.3.2	Other Jurisdictional Issues	1-25
1.3.3	Sector-Specific Issues	1-26
1.4	<b>General Principles for Redefining Solid Waste Within the Mineral Processing Sector</b>	<b>1-27</b>
1.4.1	Spent Materials/By-products/Sludges	1-27
1.4.2	Determination by Type of Unit	1-28
<b>2</b>	<b>PROPOSED REGULATORY SCHEME</b>	<b>2-1</b>
2.1	<b>General Issues</b>	<b>2-1</b>
2.1.1	Comments on Expanding the Scope of the Proposed Regulatory Scheme	2-2
2.1.2	Comments on the Conditional Exclusion Approach	2-5
2.1.3	Specific Changes to the Existing Regulatory Language as Raised by Commenters	2-8

2.1.4 Generally Applicable Conditions	2-11
<b>2.2 Conditions Relating to Legitimate Recycling</b>	<b>2-11</b>
2.2.1 General Issues	2-11
2.2.2 Specific Changes to Regulatory Language as Raised by Commenters	2-13
2.2.3 Support for the Agency's Views on Conditions Relating to Legitimate Recycling	2-15
2.2.4 Opposition to the Agency's Views on Conditions Relating to Legitimate Recycling	2-16
<b>2.3 Concentrations of Recoverable Mineral and Acid -- Alternative Tests</b>	<b>2-24</b>
2.3.1 General Comments	2-24
2.3.2 Ore Cutoff Grade	2-26
2.3.3 Normal Operating Range	2-29
2.3.4 Efficiency Standard	2-31
2.3.5 Economic Test	2-33
2.3.6 Other Test Issues	2-36
<b>2.4 Constraints on Nonrecoverable Hazardous Constituents</b>	<b>2-40</b>
2.4.1 General Issues	2-40
2.4.2 Comments Regarding the Existence of Non-Indigenous Hazardous Constituents	2-42
2.4.3 Ratio Test	2-42
2.4.4 Frequency of Testing Mineral Processing Secondary Materials	2-52
<b>2.5 Speculative Accumulation</b>	<b>2-52</b>
2.5.1 General Support	2-52
2.5.2 General Opposition	2-52
2.5.3 Comments Regarding the Extension of the Twelve-Month Storage Period	2-53
2.5.4 Specific Changes to Regulatory Language as Raised by Commenters	2-54
<b>2.6 One-Time Notification</b>	<b>2-55</b>
2.6.1 Support for One Time Notification	2-55
2.6.2 Opposition to One-Time Notification	2-55
<b>2.7 Groundwater Protection Standards</b>	<b>2-56</b>
2.7.1 General Comments	2-56
2.7.2 Overlap with State Programs, Jurisdiction	2-61
2.7.3 Classification of Disposal Units	2-64
2.7.4 Rule Language	2-67
<b>2.8 Groundwater Protection Standard -- Alternative 1</b>	<b>2-69</b>
2.8.1 General	2-69
2.8.2 MCLs	2-72
2.8.3 Corrective Action	2-77
2.8.4 Point of Compliance	2-81
<b>2.9 Groundwater Protection Standard -- Alternative 2</b>	<b>2-83</b>
<b>2.10 Groundwater Protection Standard -- Alternative 3</b>	<b>2-89</b>

2 11	Unit Closure	2-95
2 12	Basic Unit Integrity	2-101
2 13	General Comments on Units and Secondary Materials Outside the Scope of this Proposal	2-107
2 13 1	General Comments on Wastewater Treatment Impoundments	2-107
2 13 2	LDR Applications to Secondary Materials	2-110
2 13 3	General Comments on Secondary Materials Generated by Outside Industries and Listed Hazardous Wastes	2-110
2 13 4	Support for Characterizing Secondary Materials as Hazardous Waste	2-112
3	GENERAL COMMENTS ON ALTERNATIVE APPROACHES	3-1
3 1	General Comments on Status Quo	3-1
3 2	General Comments on Applying Solid Waste Changes Only to Spent Materials	3-2
3 3	General Comments on National Mining Association Approach	3-3
3 4	General Comments on the Iron and Steel Industry Approach	3-5
3 5	General Comments on Alternatives Suggested by Environmental Groups	3-6
4	BEVILL ISSUES	4-1
4 1	Addition of Mineral Processing Secondary Materials to Units Processing Bevill Raw Materials	4-1
4 1 1	Authority	4-1
4 1 2	Rule Language	4-3
4 1 3	Legitimate Recovery	4-4
4 1 4	50 Percent Raw Materials	4-5
4 1 5	Significantly Affected Test	4-6
4 1 6	Alternative Methods for Determining Significant Changes to the Bevill Waste	4-10



4 1 7	Comments on the Status of Units Receiving Mineral Processing Secondary Materials	4 11
<b>4 2</b>	<b>Mixing of Mineral Processing Hazardous Wastes with Bevill Wastes</b>	<b>4-11</b>
4 2 1	Support Proposed Amendments to Bevill Mixture Rule	4-11
4 2 2	Oppose Proposed Rule Language	4-12
4 2 3	Opposition to the Scope of the Proposed Mixture Rule	4 16
4 2 4	Opposition Based on Congressional Intent and Legislative History of the Bevill Amendment	4-20
4 2 5	The Revised Mixture Rule Provides No Human Health or Environmental Benefits	4-24
4 2 6	LPA's Support Documents Do Not Support Agency Conclusions	4-25
4 2 7	Recommendations and Alternative Approaches	4-26
<b>4 3</b>	<b>Re-mining Previously Generated Mineral Processing Wastes</b>	<b>4-29</b>
<b>4 4</b>	<b>Data References</b>	<b>4-31</b>
<b>5.</b>	<b>MINERAL PROCESSING WASTES COVERED BY THIS RULE</b>	<b>5-1</b>
<b>5.1</b>	<b>Clarification of the Beneficiation/Processing Distinction</b>	<b>5-1</b>
<b>5.2</b>	<b>Interpretation of the Uniquely Associated Principle</b>	<b>5-6</b>
<b>5.3</b>	<b>Status of the Identification Document</b>	<b>5-13</b>
<b>5.4</b>	<b>Specific Sector Reports</b>	<b>5-17</b>
5 4 1	Alumina/Aluminum	5-17
5 4 2	Beryllium	5-19
5 4 3	Boron	5-25
5 4 4	Chrome/Ferrochrome/Ferrochrome-Silicon	5-26
5 4 5	Copper	5-27
5 4 6	Elemental Phosphorus	5-49
5 4 7	Gold/Silver and Mercury	5-62

5 4 8 Lead	5-73
5 4 9 Lightweight Aggregates	5-74
5 4 10 Molybdenum	5-75
5 4 11 Phosphoric Acid	5-76
5 4 12 Platinum Group Metals	5-79
5 4 13 Rare Earths	5-79
5 4 14 Selenium	5-88
5 4 15 Tellurium	5-88
5 4 16 Titanium	5-88
5 4 17 Uranium	5-91
5 4 18 Zinc	5-94
<b>5.5 General Comments on the Identification Document</b>	<b>5-94</b>
<b>5.6 Other Related Issues</b>	<b>5-95</b>
<b>5.7 Data References</b>	<b>5-9</b>
<b>6. COMMENTS ON OTHER SUPPORTING MATERIAL</b>	<b>6-1</b>
<b>6.1 General Comments on Mining Waste Releases and Environmental Effects for the State of California</b>	<b>6-1</b>
6 1 1 Pine Creek Operation of U S Tungsten	6-2
6 1 2 U S Tungsten's Owens Lake Solid Waste Disposal Site	6-2
6 1 3 Pichacho Mine	6-3
6 1 4 Homestake Mining Company's McLaughlin Mine	6-3
6 1 5 Sonora Mining Corp , Jamestown Mine	6-4
<b>6.2 Comments on Other Supporting Documents</b>	<b>6-5</b>
6 2 1 Comments on the Human Health and Environmental Damages Document	6-5
6 2 2 Comments on Mining Waste Releases and Environmental Effects Summaries for the State of Arizona	6-16
6 2 3 Comments on the Mining Waste Releases and Environmental Effects Summaries for the State of New Mexico	6-17
6 2 4 Comments on the Mining Waste Releases and Environmental Effects Summaries for the State of Nevada	6-18
6 2 5 Comments on Identification and Description of Mineral Processing Sectors and Waste Streams Report	6-19
6 2 6 Comments on Remanded Smelting Wastes Technical background Document, December 1995	6-20
6 2 7 Comments on Technical Resource Document Extraction and Beneficiation of Ores and Minerals, Volume 4, Copper, August 1994	6-20
6 2 8 Comments on EPA Site Visit Reports to Mines and Mineral Processing Facilities	6-21
6 2 9 Comments on the Trip Report of Site Visit to Magma Copper and Cyprus Miami	

Copper Mines	6-22
6 2 10 Comments on Mineral Processing Facilities Placing Mixtures of Exempt and Non-Exempt Wastes in On-Site Waste Management Units	6-23
6 2 11 Comments on Background Document for Mineral Processing Wastes	6-23
<b>7 APPLICABILITY OF THE TCLP TO MINERAL PROCESSING WASTES</b>	<b>7-1</b>
<b>7.1 Support for Agency Position on the Applicability of the TCLP</b>	<b>7-1</b>
<b>7.2 Opposition to the Agency Position on the Applicability of the TCLP</b>	<b>7-1</b>
7 2 1 TCLP Does Not Reflect Actual Landfill Conditions	7-1
7 2 2 Specific Opposition to the TCLP	7-3
7 2 3 Dilution and Attenuation Factors	7-4
<b>7 3 Agency Has Not Provided Sufficient Evidence to Support Rulemaking</b>	<b>7-5</b>
7 3 1 The Agency Has Not Satisfied the Court Standard	7-5
7 3 2 Specific Arguments Against Evidence Cited by the Agency	7-6
<b>7 4 Support for the SPLP</b>	<b>7-8</b>
7 4 1 SPLP is a Better Predictor of Conditions Mineral Processing Wastes Will Face	7-9
7 4 2 Support for SPLP Based on Side-by-Side Comparison of SPLP and TCLP	7-9
7 4 3 Specific Reasons for SPLP Support	7-14
7 4 4 Proposed Modifications to the SPLP	7-14
<b>7.5 Contingent Management Proposal</b>	<b>7-15</b>
<b>7.6 Miscellaneous Comments</b>	<b>7-16</b>
<b>7.7 Data References</b>	<b>7-17</b>
<b>8. OTHER REMANDS</b>	<b>8-1</b>
<b>8 1 Five Remanded Minerals Processing Wastes</b>	<b>8-1</b>
8 1 1 General Support/Opposition	8-1
8 1 2 Waste-Specific Support for Listing Revocation	8-3
<b>8.2 Lightweight Aggregate Mineral Processing Wastes</b>	<b>8-6</b>
<b>8.3 Mineral Processing Wastes From the Production of Titanium Tetrachloride</b>	<b>8-7</b>
8 3 1 Support the Agency's Proposal	8-7
8 3 2 Oppose Agency proposal	8-8

# **1. Definition of Solid Waste and Jurisdiction**

## **1.1 Whether Mineral Processing Secondary Materials Recycled Within the Industry Should be Considered Solid Wastes**

### **1.1.1 Support**

**Comment:** Seven (7) commenters explicitly expressed general support for the Agency's proposal to conditionally exclude mineral processing secondary materials from the definition of solid waste and as a consequence, from RCRA Subtitle C regulations (COMM22, COMM35, COMM40, COMM47, COMM53, COMM70, COMM74) One commenter added that the Agency is correct in recognizing that subjecting mineral processing secondary materials to current definition of solid waste is not appropriate for determining when these materials are subject to RCRA Subtitle C regulations (COMM22) Another commenter qualified its support for the exclusion with the stipulation that the criteria for exclusion be designed to "prevent substantial discard and ensure that the units in which these materials are managed do not become 'part of the waste disposal problem'" (COMM53)

**Response:** Comment noted

**Comment** Four (4) commenters agreed with the Agency that the proposed rule would encourage recycling efforts and environmental protection (COMM40, COMM47, COMM53, COMM70) Specifically, one commenter believed that the encouragement of recycling and reclamation in this rulemaking will reduce waste and pollution from virgin materials processing, limit depletion of natural resources, and save energy Recycling would also promote RCRA's pollution prevention goals, enhance economic efficiency, and help reduce the U S balance of payments deficit (COMM53) One commenter supported the Agency's incorporation of elements of the Metal Industries Recycling Coalition (MIRC)'s recommended recycling approach (COMM35)

**Response:** Comment noted

### **1.1.2 Commenters Recommend Broadening the Exclusion**

**Comment:** Many commenters who agreed with the general intent of the proposed rule suggested modifications to the approach or the regulatory language Four commenters recommended broadening the conditional exclusion for mineral processing materials to include other materials, as well as materials that are generated outside the mineral processing industry (COMM35, COMM36, COMM47, COMM53) One specifically suggested including all secondary materials that (1) are sent for metals recovery at a legitimate recycling facility, and (2) are managed in accordance with conditions designed to prevent substantial release of the contaminants to the environment (COMM53) One commenter specified that the extension should apply to those materials that are reprocessed by the mineral processing industry (such as fire assay materials and circuit boards) Without this expansion, the commenter believes that valuable materials will be disposed of rather than recovered, leading to loss of resources and environmental harm (COMM36) Another commenter suggested that the exclusion also should apply to mineral processing materials recycled off-site or at legitimate recycling facilities in other industries (COMM37)

**Response** The Agency believes that this request is beyond the scope of this rulemaking It is more appropriately dealt with under the Agency's more comprehensive efforts to amend the definition of solid waste The Agency in fact indicated explicitly that it would not consider these issues when proposing the rule (see 61 FR at 2348 and 62 FR at 26051) The Agency notes further that there is no

question that inter-industry reclamation can involve solid wastes, and that therefore there are additional policy and legal considerations involved should an exclusion for inter-industry materials be considered. These issues are beyond the scope of this proceeding in any case, which deals only with the LDR prohibition of mineral processing wastes, and the consequent issue of which mineral processing secondary materials being reclaimed are solid and hazardous wastes.

**Comment:** Another commenter suggested including the language "all metal-bearing recyclable materials, regardless of whether they are characteristically hazardous, that are legitimately recycled." This commenter also requested that the Agency clarify that the exclusion would not affect present exemptions from the definition of solid waste for non-mineral processing industries (COMM35).

**Response:** Listed hazardous wastes are not eligible for the conditional exclusion from the definition of solid waste found in today's rule. By listing a secondary material as a hazardous waste, the Agency has made a specific determination that the material is a solid waste, even when recycled. The Agency has in fact evaluated each listed waste against the criteria set out at 50 FR at 641 and 53 FR at 526-27 and determined that all of the listed wastes should still be classified as solid and hazardous wastes when recycled by reclamation. A separate 1988 background document (see rulemaking docket for 53 FR 519) likewise supports this previous determination. Today's rule does not adversely affect existing exemptions from the definition of solid waste for non-mineral processing industries.

**Comment:** A third commenter specifically recommended that EPA modify the proposed exclusion to ensure consistency with the court findings cited by the Agency in interpreting the definition of solid waste. The commenter requested that the Agency explicitly state that solid wastes are only those materials which are truly disposed of, not including materials used in normal, on-going production processes (COMM58).

**Response:** The Agency appreciates the commenter's request to ensure that its interpretation of the definition of solid waste is consistent with judicial opinions in this regard. The Agency does not, however, agree that solid wastes are only those wastes "truly disposed of." In *American Mining Congress v. EPA*, 824 F.2d 1177 (D.C. Cir. 1987) (*AMC I*), the court found that in some respects previous rules exceeded the statutory grant of authority because, at least with respect to the mineral processing (and petroleum) industries, the rules asserted authority over secondary materials that were not "discarded." 824 F.2d at 1193 (discarded being the key term in the statutory definition of solid waste, RCRA section 1004 (27)). Subsequent judicial opinions have sharply limited the 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)). Courts have further made clear that a material need not be literally thrown away before it can be classified as "discarded" and hence solid waste (e.g., see *AMC II*, 907 F.2d at 1186). In today's final rule, EPA is making clear its determination that "immediate reuse" means reintroduction into the production process without storage, i.e., that storage of a secondary material, by definition, means that immediate reuse is not occurring. The Agency is not attempting, with this rule, to regulate those materials destined for "immediate reuse" as defined here.

### 1.1.3 Commenters Recommend Limiting the Exclusion

**Comment:** One commenter believed that the exclusion as proposed is too broad and should be narrowed. The commenter specifically opposed exemptions that would allow primary metals facilities to accept materials from off-site sources and remain exempt from RCRA, unless a similar exemption is established for secondary metals facilities (COMM54).

**Response:** In this proposal, the Agency is only addressing secondary materials from primary mineral processing facilities. Addressing non-primary metals facilities is beyond the scope of this rulemaking.

**Comment:** The commenter suggested that the exclusion be limited to the mineral processing industry in order to avoid definition problems and the possibility of confusion over RCRA requirements for secondary smelters (COMM44).

**Response:** In this proposal, the Agency is only addressing secondary materials from primary mineral processing facilities. Addressing non-primary metals facilities is beyond the scope of this rulemaking.

**Comment:** A commenter recommended that the Agency explicitly state that mineral processing secondary materials would not be classified as solid wastes when recycled legitimately at the location at which the secondary material was originally generated (COMM31).

**Response:** In today's final rule, EPA has explicitly stated that mineral processing secondary materials are not classified as solid wastes when reclaimed legitimately on site in situations in which the recycling and storage (if applicable) activities meet the terms of the conditional exclusion contained therein. The conditional exclusion also is not limited to on-site reclamation operations.

#### **1.1.4 No Change in the Definition of Solid Waste is Necessary**

**Comment:** One commenter expressed satisfaction with the current regulatory definition of solid waste and believes any changes would be unnecessary. Specifically, the commenter indicated that the precious metal industry involves limited "processing," processing residuals are routinely reprocessed to recover minerals, and therefore are not solid wastes. For these reasons, the commenter believed that the proposed LDRs would not significantly impact this industry (COMM43).

**Response:** Comment noted.

#### **1.1.5 The Proposed Rule Would Expand RCRA Regulation**

**Comment:** Six (6) commenters expressed concern that the rule may expand rather than narrow the regulatory definition of solid waste. One common concern expressed by these commenters is the view that some beneficiation and processing wastes, as well as the units in which they are managed, will be classified as solid wastes or solid waste units as a result of the proposed rule. As a consequence, they would be subject to Subtitle C requirements or other land disposal restrictions. This contradicts EPA's attempts to simplify regulations, as regulatory burdens and complications in the form of RCRA hazardous waste requirements would actually increase (COMM36, COMM43, COMM46, COMM85, COMM58, COMM67). One commenter, believing that the proposed rule will expand RCRA requirements to production operations which are currently not subject to RCRA regulation, supported the conclusion of the Solid Waste Definition Task Force that these materials are intermediates, co-products, and in-process materials, not wastes, and should not be regulated under RCRA (COMM67).

**Response:** This rule does not expand RCRA jurisdiction into production processes. The Agency is asserting jurisdiction over the storage of mineral processing secondary materials prior to reclamation. Today's rule also creates a conditional exclusion from the definition of solid waste that will encourage recycling of mineral processing waste streams, and discourage land-based storage, i.e. encourage "properly conducted recycling" (RCRA section 1003(a)(6)). This rule does simplify the regulatory status of mineral processing wastes by eliminating the regulatory distinctions among mineral

processing sludges, by-products, and spent materials Only mineral processing wastes destined for disposal---placement in land-based non-production units (see RCRA section 3004(k))--- are subject to the LDRs

**Comment:** One commenter added that the Agency "seriously underestimates" the industry's desire to avoid RCRA requirements for smelters and land-based processing units (COMM36)

**Response:** The Agency understands industry's position and assumes it will avail itself of the opportunities afforded in this rule to avoid RCRA Subtitle C requirements by meeting criteria for exclusion from the definition of solid waste EPA at the same time believes that the final rule addresses the Agency's concerns that wastes from mineral processing can cause environmental damage to ground water and surface water when placed in piles and ponds due to the corrosive and toxic characteristics of the wastes EPA believes that this rule will encourage safe recycling of these materials while ensuring that discarded materials are properly treated and disposed

**Comment:** One commenter provided an additional reason for opposing the redefinition of solid waste the Agency should not change the definition of solid waste, pending the more general revision of the definition of solid waste (COMM43)

**Response:** The Agency's approach seeks to encourage legitimate recycling while preventing "sham" recycling and ensuring adequate protection of human health and the environment As stated in today's final rule, secondary materials from primary mineral processing are excluded from the definition of solid waste only if they meet the terms of the conditional exclusion (principally, reclamation without land storage), or have received a site-specific determination from a State or EPA Region that a particular pile of solid mineral processing secondary materials stored on an approved pad is (in essence) not part of the waste disposal problem The Agency believes that nearly all mineral processing facilities currently legitimately recycling secondary materials should be able to meet these requirements In response to the commenter's statements regarding delaying further action until the redefinition of solid waste has been completed, the Agency is promulgating these standards now in response to court-ordered deadlines, and in conjunction with the Phase IV Land Disposal Restrictions In effect, the conditional exclusion will reduce the cost and regulatory burden of the LDR treatment requirements on affected parties The Agency also believes that it can make industry sector-specific revisions to the nationally applicable solid waste definition rules, rather than wait for the national effort to conclude A similar rule was in fact proposed for the petroleum sector and is due to be finalized in the first half of 1998 The Agency believes that promulgating the treatment standards and the conditional exclusion at the same time provides maximum clarity to the regulated community regarding waste management requirements and metal recovery incentives

**Comment:** Three commenters believed that the proposed rule will adversely affect normal industry production processes by subjecting more process materials to RCRA regulation (COMM57, COMM36, COMM58)

**Response:** The Agency believes that in promulgating standards to ensure legitimate recycling and the environmentally safe handling of secondary materials it has adopted a reasonable balance among the objectives of resource recovery, non-interference with production processes, and protection of human health and the environment Although industry may interpret these efforts as an expansion of the definition of solid waste, the Agency also is establishing criteria by which secondary materials explicitly can be excluded from the definition of solid waste In most (if not all) cases, the Agency believes that facilities can and will meet these criteria and thus secondary materials will not be subject to Subtitle C requirements. Further, the Agency believes that its final rule simplifies the current regulations by clearly defining a set of reasonable and tractable storage conditions, and by eliminating the regulatory distinctions among sludges, by-products, and spent materials generated within the primary minerals industry. The Agency does not believe this rule will create serious disincentives to recycling

**Comment:** One commenter believed the rule as currently written will create significant disincentives for achievement of Agency goals as stated in the preamble. (COMM67)

**Response:** The Agency disagrees with the commenter. The Agency believes that its final rule will achieve the goals stated in the preamble, i.e., to promote safe recycling of mineral processing in the absence of obstacles currently hindering these activities. The option provided by the Agency for exclusion from the definition of solid waste will allow legitimate recycling to continue unhindered. This rule removes rather than adds disincentives to legitimate recycling by creating a conditional exclusion from the definition of solid waste.

### 1.1.6 The Proposed Rule is Discriminatory

**Comment:** Four (4) commenters opposed EPA's proposed exclusion of certain secondary mineral processing materials from RCRA Subtitle C on the grounds that it is discriminatory in various ways (COMM5, COMM35, COMM54, COMM2). One commenter believed that the exclusion would establish "relatively lenient" management requirements for mineral processing wastes that are inconsistent with EPA's pending proposal to ban the use of waste-derived products as "fill" and the proposed HWIR exit levels. The commenter requested an explanation for why "fill products are subject to full Subtitle C regulation, while similar secondary mineral processing materials are exempt from these regulations in this proposal." The commenter requested that EPA either justify the establishment of disparate regulations for similar materials, withdraw the proposed exclusion for mineral processing waste, or implement similar exclusions for all other waste-derived products (COMM5).

**Response:** The principal commenter on this point was Marine Shale, adjudicated to be a sham recycler (S 81 F, 3d at 1380-84). Nonetheless, the Agency appreciates the commenter's concerns that the proposals were potentially discriminatory. The difference between the two practices is that intra-industry recovery of secondary materials raises questions as to whether the materials are "discarded," given the nexus with the production process. Use of hazardous waste as fill (Marine Shale's mode of alleged recycling), on the other hand, presents no such jurisdictional questions. In fact, in most cases, there is great doubt as to whether this practice is recycling at all, but instead land disposal.

**Comment:** Two commenters opposed the establishment of separate definitions for the primary mineral processing industry and the rest of the metals industry (COMM35, COMM54). One commenter asserted that the Agency has not shown that either the processes or the environmental impacts of mineral processing and secondary metal-bearing materials processing are significantly different from each other. According to one commenter, different definitions of solid waste within the metals recycling industry would result in confusion and disruption of established recycling relationships among primary and secondary mineral processors. Therefore, the commenter encouraged the Agency to extend the proposed exclusion to recyclable materials in other metal industry sectors. The commenter believed that addressing the entire metals recycling industry in one rule would be more efficient than issuing separate rulemakings in the future. The commenter added that the same basis for the conditional exclusion --that secondary materials are "safely managed and legitimately recycled"-- could be applied to the rest of the metals industry (COMM35).

**Response:** Addressing other metals facilities outside the primary mineral processing industry is beyond the scope of this rulemaking, which deals only with the LDR prohibition of mineral processing wastes, and the consequent and pertinent issue of which mineral processing secondary materials being reclaimed are solid and hazardous wastes.

**Comment:** Another commenter was concerned that other industries may seek similar exclusion for other recyclable materials, pressuring the Agency to establish additional RCRA exclusions. The commenter believed that removal of RCRA storage requirements would lead to site contamination.



problems, increased “sham recycling,” and reduction of public support for materials recovery and recycling, which would in turn hurt recycling facilities (COMM2)

**Response:** The Agency appreciates the commenter’s concerns. EPA believes that today’s rule will encourage legitimate and safe recycling of these materials, while ensuring protection from environmental damage to ground water and surface water. As stated in today’s final rule, secondary materials generated by the primary mineral processing industry are excluded from the definition of solid waste only if they meet the terms of the Agency’s conditional exclusion. Wastes generated by other industries will be evaluated during the broader revision of the definition of solid waste.

**Comment:** A fourth commenter believed that the proposed rule discriminates against mineral processing facilities because equivalent regulations are not in place for other industries (COMM38)

**Response:** The Agency disagrees. Other industries are and have been subject to the full extent of Subtitle C requirements since their inception, without benefit of the Mining Waste Exclusion or the conditional exclusion promulgated in today’s final rule. The Agency also disagrees that today’s final rule attempts to regulate “process” materials. Only secondary materials destined for disposal or storage prior to reclamation are addressed by the requirements of today’s final rule.

### **1.1.7 Encouragement of Environmental Protection/Recycling and Remining**

**Comment:** Three (3) commenters disagreed with the Agency’s view that the proposed rule will enhance environmental protection. One commenter stated that for the gold industry, the proposal would result in more disposal of gold-bearing secondary materials and increased transport to populated areas for treatment, thereby increasing environmental risk (COMM36, COMM57, COMM85).

**Response:** The Agency disagrees with the commenters that the conditions for exclusion from the definition of solid waste will result in increased disposal of potentially-hazardous secondary materials and increased risk to human health and the environment. For reasons set forth above, the Agency in fact believes that its final rule will enhance environmental protection, by promoting further resource recovery from primary mineral processing secondary materials through excluding mineral processing secondary materials from RCRA Subtitle C regulation and through simplifying and clarifying the conditions under which recovery will not be regulated under RCRA. The Agency believes that nearly all mineral processing facilities currently legitimately recycling secondary materials will be able to meet these requirements. Finally, EPA concludes that the primary gold industry should not be significantly affected by this rule because it traditionally stores its wastes off the ground. Moreover, the existing rules for precious metals reclamation, which exempts most of the practice from Subtitle C regulation (40 CFR Part 266.70), are unaffected by today’s rule.

**Comment:** Four (4) commenters opposed the exclusion for mineral processing wastes on environmental grounds, expressing concern that mining wastes would be exempt from RCRA regulations (COMM38, COMM41, COMM80, LCOMM6). The commenters believed RCRA Subtitle C regulation is warranted because these materials may be hazardous. Specifically, one commenter noted that materials held by facilities for recycling may leak into ground water, and therefore units where these materials are held should be classified as disposal sites (LCOMM6).

**Response:** The Agency agrees with the commenters that mineral processing secondary materials stored in land-based units may pose a threat to human health and the environment, and that this mode of land placement can be viewed as part of the waste disposal problem, as well as a discontinuous process for purposes of assessing whether materials are being “discarded.” The intent of today’s final rule is not to exempt hazardous wastes from regulation under RCRA. Its purpose is to promote the safe recovery of mineral processing secondary materials that are suitable for recycling, and ensure that such materials do

not become part of the waste disposal problem. By both promulgating treatment standards for secondary materials destined for disposal and prohibiting land storage of those destined for recycling (except in approved site-specific cases), EPA has taken steps to ensure that management of these materials does not cause environmental hazards. At the same time, the Agency has excluded from the definition of solid wastes those materials whose recovery does not raise land disposal concerns (by conditioning their exclusion on storage in non-land based units) and can therefore be viewed as not being part of the waste disposal problem.

**Comment:** While another commenter supported the proposed Subtitle C exclusion, the commenter opposed applying the exclusion to land-based units containing hazardous mineral processing residues destined for recycling because of potential environmental harm that might result from a release of these materials. The commenter suggested that EPA consider exclusion of only those recyclable hazardous mineral processing residues that exceed a certain annual generation level, as well as require management standards for these large volume wastes. (COMM2)

**Response:** The Agency agrees with the commenter that storage of secondary materials in land-based units can (and has) posed a substantial threat to human health and the environment. The Agency believes that the rule promulgated today adequately addresses these concerns. Information received by the Agency, along with further analysis of existing data, and collection of new data since January 25, 1996, indicates that mineral processing secondary materials are generated in smaller volumes than previously believed, so that there is no volumetric necessity for use of land-based units. In corroboration, this new information indicates that a significant number of mineral processing secondary materials are not stored in land-based units. Therefore, the Agency has developed and promulgated a conditional exclusion from the definition of solid waste. Storage in units may not be land-based, i.e., such materials must be stored in tanks, containers, or buildings that meet certain minimum integrity criteria, or for solids, may be stored on an approved pad. Thus, if a hazardous secondary material is legitimately recycled within another beneficiation or mineral processing operation within the industry, it is not a solid waste provided the storage that precedes the recycling does not entail land placement.

**Comment:** Eight commenters specifically disagreed with the Agency's belief that the proposed exclusion for mineral processing secondary materials will encourage recycling and recovery efforts (COMM36, COMM38, COMM43, COMM57, COMM45, COMM58, COMM67, COMM85.) The commenters believed the Agency's proposal will increase regulations for managing recyclable materials, thus limiting the industry's ability to recycle these materials. According to these commenters, the Agency failed to distinguish solid waste from intermediates, co-products, and in-process materials used in normal processing activities, and as a consequence, the proposed exclusion will increase compliance costs for testing and unit modifications without a significant environmental benefit. The commenters argued that valuable recycling activities should not be subject to unnecessary RCRA regulations. One commenter added that the Agency has ignored industry recommendations for managing mineral processing secondary materials. (COMM58)

**Response:** The Agency disagrees with the commenters. Currently, the Agency does not have a regulatory definition of "intermediate," though it does draw regulatory distinctions between "co-product" and "by-product" (see 261.1(c)(3) for differences between "co-product" and "by-product"). The Agency has, however, established a clear definition of "immediate reuse" in today's final rule, defining it as means reintroduction of a material into the production process without prior storage. Members of industry often use the term "in-process" to describe a material's status. In the Agency's view, "in-process" has the same definition as Agency-defined "immediate reuse."

The Agency has defined in clear terms the materials and management practices that are subject to Subtitle C controls, and those that are not by virtue of either their intrinsic nature or their eligibility for

the conditional exclusion established in today's rule or other available exclusions from the definition of solid waste. The conditional exclusion imposes no testing requirements and at most facilities will not result in unit modifications. Environmental benefits will accrue from the elimination of land storage (except for on approved pads) of mineral processing secondary materials prior to reclamation.

**Comment:** Another commenter noted that in the gold industry, where secondary materials are recycled in non-land based units, recycling would be discouraged by the Agency's proposal (COMM57).

**Response.** EPA recognizes the commenter's concerns, and believes that they are fully addressed in the form of the conditional exclusion promulgated in today's final rule. Under the terms of this exclusion, primary mineral industry secondary materials that are stored in non-land based units (except for approved pads) are no longer regulated as solid wastes, hence, if anything, recycling of these materials should be stimulated. Moreover, the existing rules for precious metals reclamation, which exempts most of the practice from Subtitle C regulation (40 CFR Part 266.70), are unaffected by today's rule.

**Comment:** Another commenter reasoned that the proposal would discourage recycling because the proposed conditional exclusion would shift recycling efforts from mineral processing units to beneficiation units to avoid notification requirements, even in cases where recycling may be more effective in mineral processing units. The commenter added that to prevent this disincentive and encourage recycling, the Agency should limit its jurisdiction and the implementation of regulatory burdens for materials that have not been discarded (COMM43).

**Response.** The Agency disagrees with the commenter. Today's rule stipulates that mineral processing secondary materials are excluded from the definition of solid waste provided they are reclaimed in either mineral processing or beneficiation operations and provided no land-based storage precedes reclamation. The Agency wishes to stress that the exclusion allows reclamation in either mineral processing or beneficiation operations and that the conditions of the exclusion remain that same in both instances. Given that beneficiation operations are highly unlikely to obtain RCRA storage permits, EPA sees no reason why there would be a shift of mineral processing secondary materials to beneficiation operations except for those capable of complying with the conditions of the exclusion.

**Comment.** Two commenters believed that recycling is already occurring in the industry and that therefore, the proposed standards are not needed (COMM5, COMM46). One commenter added that increasing recycling is not a valid basis for exempting hazardous materials from RCRA (COMM5).

**Response:** The Agency notes that promoting recycling is a secondary benefit derived from its proposal and today's final rule. The Agency's primary concern is potential contamination resulting from the storage of secondary materials in land-based units prior to legitimate recycling. The Agency wants to ensure that such storage does not contribute to the waste disposal problem. As a consequence, the Agency has developed a rule that would condition exclusion from the definition of solid waste on the absence of land storage (except on approved pads). Based on additional information collected by the Agency since the January 25, 1996 proposal, it is apparent that storage of these materials in tanks, containers, and buildings is much more common than storage in land-based units and that there is no volumetric necessity for land-based storage. The Agency therefore believes its approach will achieve the desired protection of human health and the environment, while continuing to allow legitimate recycling.

### **1.1.8 Other General Comments**

**Comment:** Several commenters disagreed with other general elements of the proposed rule. One commenter disagreed with the Agency's opinion that the uniqueness of the secondary mineral processing industry justifies a modification of the concept of "ongoing process." The commenter suggested that EPA defer this issue to the rulemaking on the definition of solid waste (COMM5).

**Response:** In today's final rule, the Agency is only addressing secondary materials from primary mineral processing facilities. EPA believes that issues of secondary material management in the primary mineral processing industry are sufficiently clear to resolve them in the current rulemaking. Hence, the Agency is today clarifying its definition of "continuous process" in this context to ensure that these materials are returned to the process without storage.

**Comment:** Another commenter opposed the Agency's classification of mineral processing residues managed in land-based units as "secondary materials" instead of wastes. The commenter disagreed that EPA is compelled to propose a RCRA exclusion because its authority is limited where residues are immediately reused in an ongoing operation, as it believed the Agency implied in the proposed rule. The commenter explained that in cases where EPA has exceeded its jurisdiction over land-based units because of potential health threats, the Court of Appeals has supported the Agency's actions. (COMM41)

**Response:** The Agency agrees with the commenter that it has jurisdiction over mineral processing secondary materials stored on the land before recovery and also generally has discretion to determine when secondary materials being recovered can be classified as "discarded." However, EPA also recognizes the role that recycling of these secondary materials plays in the mineral processing industry. The Agency's approach seeks to encourage legitimate recycling and ensure adequate protection of human health and the environment. As a consequence, the Agency developed standards that condition exclusion from the definition of solid waste on the absence of land-based storage (except on approved pads). The Agency believes these provisions will allow legitimate recycling without regulation while at the same time ensuring protection of human health and the environment.

**Comment:** One commenter disagreed with EPA's reasoning for the proposed exclusion, i.e., a lack of alternatives to land-based units or technical obstacles for managing many large-volume mineral processing wastes. The commenter stated that many of the waste streams covered in the rulemaking are produced in amounts less than the examples provided by EPA. Specifically, the commenter cites that "106 of the 147 waste streams are generated in average quantities of 45,000 MT/year or less, the quantity threshold EPA previously used to identify mineral processing wastes amenable to management in Subtitle C." The commenter recommended that the Agency establish an annual generation threshold below which the proposed exclusion does not apply. The Agency should also determine a quantity threshold for determining which mineral processing wastes can be temporarily stored in tanks or containment buildings, following the basis for the Bevil exclusion as whether the materials can be effectively managed for a temporary period in the structures. (COMM41)

**Response:** The Agency agrees with many of the commenter's statements, particularly that there is no volumetric necessity for land-based storage units and, as a consequence, has decided to condition exclusion from the definition of solid waste on management of secondary materials in tanks, containers, or buildings (or on approved pads) prior to the material being returned to the process. The Agency believes these requirements will sufficiently protect human health and the environment, and sees no reason to impose any other limitations, such as generation thresholds or limits on the amounts of material stored.

**Comment:** One commenter opposed EPA's proposed rule because the Agency fails to provide environmental justification for regulating secondary mineral processing materials in non-land-based units. (COMM57)

**Response:** The Agency disagrees with the commenter. In materials submitted in support of its January 25, 1996 proposal, the Agency included numerous documents describing damages associated with these activities and materials. Since 1996, the Agency has collected additional data documenting the actual and potential threats that mineral processing secondary materials stored in land-based units can pose to human health and the environment. These materials were placed in the docket for the second

supplemental proposal, and include the following *Damage Cases and Environmental Releases*, EPA, 1997 (No S0038), *Mining and Mineral Processing Sites on the NPL*, EPA 1997 (S0043), and *CERCLA Imminent Hazard-Mining and Mineral Processing Facilities*, EPA 1997 (S0045) These materials provide empirical basis for concluding that land-based storage of corrosive and toxic mineral processing secondary materials can be considered to be part of the waste disposal problem, and therefore a form of discard of those materials Moreover, given that RCRA is a preventative statute, proving actual environmental damage from land disposal of hazardous wastes is not a prerequisite to regulation

**Comment:** One commenter believed no significant environmental impacts exist as a result of industry recycling activities (COMM85)

**Response:** See response immediately above

**Comment:** One commenter stated that the rule was ambiguous and entails expensive RCRA requirements including ground water monitoring to determine whether the exclusion applies (COMM38)

**Response:** Unlike the January proposal, today's rule does not establish ground water monitoring requirements for non-RCRA tanks, containers, or buildings (or for that matter, approved pads) storing mineral processing secondary materials destined for reclamation The rule does not allow land storage of mineral processing wastes that are characteristically hazardous in the absence of a Subtitle C permit Once the Agency determined that there was no volumetric necessity for land-based units, the alternatives proposed in 1996 no longer appeared justifiable

**Comment:** One commenter stated that the lack of acceptance of the federal interpretation of the definition of solid waste regulations in some states make it difficult to evaluate the issues in the proposed rule (COMM22)

**Response:** EPA believes that the issues are straightforward, particularly given the way in which the Agency has simplified the conditional exclusion in today's final rule In any event, RCRA requirements are often modified (made more stringent) within state-level programs, and EPA has no reason to believe that this practice hinders the ability of interested parties to comment meaningfully on regulatory proposals at the federal level

**Comment:** One commenter requested that the Agency clarify the definition of "primary mineral processing" in the proposed rule The Agency should clearly distinguish the scope of the proposed exclusion, whether adopting the 1989 Bevill Amendment definition or including additional processes, to avoid inconsistent interpretations (COMM35)

**Response:** It is the Agency's position that the definition of primary mineral processing has been clearly stated at 54 *FR* at 36592 (September 1, 1989) Today's rule does not alter the definitions promulgated in the 1989 rule

**Comment:** Two commenters believed that other regulations adequately address the problems EPA is attempting to regulate in this rulemaking, making further rules unnecessary (COMM58, COMM57) One of these commenters also believed that state regulations (such as Nevada's) provide sufficient mechanisms for dealing with possible environmental risks associated with precious metal processing activities, including requirements for monitoring, containment, ground water quality, corrective action, and other standards Therefore, EPA's need to regulate these non-land-based operations is limited (COMM57) Another commenter argued that releases from units are subject to state and federal regulations, such as the Clean Water Act and state groundwater protection programs, making additional RCRA Subtitle C regulation unnecessary (COMM58)

**Response:** The Agency disagrees While some State requirements may be adequate to address

these hazards, the Agency believes that a minimum national standard is necessary to adequately protect human health and the environment. Surface impoundments, in particular, are inherently prone to leaking and can realistically be viewed as a type of disposal unit (see AMC II, 907 F.2d at 1186-87). The Agency is, however, allowing for site-specific determinations that pads storing solid mineral processing secondary materials meet the conditions for storage of today's exclusion from the definition of solid waste. EPA believes that the conditional exclusion being promulgated today both establishes this standard for waste disposal practices and provides additional incentives for legitimate recycling of mineral processing secondary materials.

### 1.1.9 Offsite Transfer of Recyclable Materials

**Comment:** One commenter supported the Agency's view that secondary materials transferred for recovery or recycling within the industry are not solid wastes (COMM40).

**Response:** Today's rule allows for the transfer of mineral processing secondary materials from one company to another as long as all of the conditions to the exclusion from the definition of solid waste are met. The simple transfer of wastes from one facility to another does not constitute legitimate recycling.

**Comment:** Five (5) commenters opposed EPA's proposal to permit primary mineral processing facilities to accept recyclable materials from offsite facilities within the industry (COMM5, COMM31, COMM54, LCOMM3, LCOMM5). According to one commenter, inclusion of the entire industry sector would deviate from the AMC I court's holding regarding "on-going process," and undermine the intent of RCRA. The commenter also believed that the proposal would lead to confusion and potential abuse of the RCRA system, such as mischaracterization of materials processed by secondary industry as processed in the primary industry (COMM5).

**Response:** The Agency agrees with the commenter that the conditional exclusion is not compelled by statutory language. In other words, intra-industry which are conditionally excluded under today's final rule are potentially within the Agency's jurisdiction under Subtitle C (see the discussion of the Agency's jurisdictional continuum in the preamble to today's final rule). However, the Agency retains discretion to classify these secondary materials as non-wastes, based upon environmentally sound intra-industry reclamation practices. Today's rule allows for the transfer of mineral processing secondary materials from one company to another within the industry sector (and to beneficiation operations) as long as all of the conditions to the exclusion from the definition of solid waste are met. If these conditions are met, then legitimate recycling will occur and materials will be stored in an environmentally sound manner. In establishing this rule, the Agency has noted that as a legal matter, the processing of wastes generated by a separate industry is a different situation than the "continuous, on-going" processing of secondary materials within the same industry, lacking the element of continuity of production inherent in the continual multi-step processing of virgin ores into a variety of end products (see *API v. EPA*, 906 F.2d at 741-42).

**Comment:** Another commenter believed that EPA should not allow the primary minerals processing industry to accept secondary materials generated in industries other than the mining and primary mineral processing industry unless a similar exclusion is established for secondary smelters that receive materials from off-site sources within the secondary metals industry. The commenter also contended that the proposal for "extra-industrial" materials, which excludes certain secondary materials used in primary mineral processing activities from RCRA Subtitle C regulation would give primary metal producers an unfair advantage over secondary lead production facilities which are fully subject to RCRA regulation. To remedy this inequity, EPA should either narrow its exclusion or promulgate equivalent exclusions for the secondary metals industry (COMM54).

**Response:** In this final rule, the Agency is only addressing secondary materials from primary mineral processing facilities. Addressing other metal-bearing wastes is beyond the scope of this rulemaking. The Agency also notes that the issue the commenter raises was litigated and that the court held that spent lead acid batteries recycled in secondary metal recovery practices are properly classified as solid and hazardous waste (see the decision in *United States v. Ilco, Inc.*, 996 F.2d, 1126 (11th Cir. 1993)).

### **1.1.10 Sector-Specific Comments**

**Comment:** One commenter from the gold-mining sector indicated that special circumstances associated with recycling in that sector as a result of the high commodity value of gold make regulation of these activities unnecessary. First, gold producers take care to minimize loss of minerals during reprocessing, and second, the industry does not place or process secondary materials in land-based units. The commenter cited exclusions from current Subtitle C and Boiler and Industrial Furnace regulations derived from the careful handling of gold-bearing materials during processing and recycling as justification for excluding non-land based precious metal recycling activities from regulation (COMM57).

**Response:** The Agency disagrees with the commenter that regulation of recycling activities in the gold sector is unnecessary. However, EPA also recognizes the role that recycling of these secondary materials plays in the mineral processing industry. The Agency's approach seeks to encourage legitimate recycling and ensuring adequate protection of human health and the environment. Moreover, the existing rules for precious metals reclamation, which exempts most of the practice from Subtitle C regulation (40 CFR Part 266.70), are unaffected by today's rule.

## **1.2 Solid Waste Issues**

### **1.2.1 Revision of the Definition of Solid Waste**

**Comment:** Two commenters suggested that EPA should further revise the definition of solid waste (COMM32, COMM58). One commenter specified that the Agency develop a more generic definition of solid waste that would provide a broader exclusion for other secondary materials recycled in the manufacturing process. The commenter also stated that this effort should be accompanied by a clear definition of "manufacturing process" to assist in determining which recycling activities fall under RCRA jurisdiction. The commenter believed that these changes would remove many of the current exclusions, simplifying RCRA regulations and ending disincentives to recycling (COMM32).

**Response:** The Agency believes that this request is beyond the scope of this rulemaking. It is more appropriately dealt with under the Agency's comprehensive efforts to amend the definition of solid waste. In addition, after devoting a great deal of attention to the issue, the Agency finds it is not clear that any single definition of "manufacturing process" is possible, particularly if the concept is to extend beyond the confines of a single facility. In this rule, for example, the Agency has defined "manufacturing process" quite broadly to encompass the entire mineral processing industry sector, which includes a diverse range of industries recovering a broad spectrum of different metals. Whether such a broad definition is appropriate within the contexts of other industries is uncertain without further examination.

**Comment:** One commenter expressed dissatisfaction with EPA's response to its efforts to aid the Agency in modifying a definition of solid waste, particularly through its participation in the Roundtable on Recycling and the Definition of Solid Waste and meetings with Agency representatives.

(COMM58)

**Response:** EPA appreciates the commenter's efforts with respect to participation in the Roundtable on Recycling and the Definition of Solid Waste Task Force. The Agency notes, however, that the Solid Waste Definition Task Force did not complete its work. The recommendations of the Task Force are therefore no more than that and certainly are not binding in any way. They also do not represent a statement of Agency policy, or even of Agency opinion. The commenter is also referred to a separate memo to the administrative record on this point.

**Comment:** One commenter recommended developing a modified version of the proposals through cooperation among EPA, the NMA, and its member companies to establish an appropriate definition of solid waste for the unique characteristics of the mineral processing industry that will avoid additional regulatory burdens. The commenter also recommended that revisions of the current definition of solid waste be postponed while the EPA and industry take this action. (COMM 58)

**Response:** The Agency recognizes the role that recycling of secondary materials plays in the mineral processing industry. In today's rule, the Agency seeks to encourage legitimate recycling and ensure adequate protection of human health and the environment. The rule contains several significant provisions (e.g., the conditional exclusion, elimination of the distinction among sludges, by-products, and spent materials for the mineral processing industry in which it lacked an environmental basis) that reduce regulatory burdens. In response to the commenter's statements regarding delaying further action until the redefinition of solid waste has been completed, the Agency is promulgating these standards now because EPA has postponed any near-term action on changing the definition of solid waste and there is in this case a particular need to know whether the LDR prohibitions apply to land-based storage units holding hazardous secondary materials generated within this industry sector.

### 1.2.2 Issues of Process and Disposal

**Comment:** Four (4) commenters addressed issues associated with the classification of process and disposal units. Several commenters stated that EPA contradicts the decision of the AMC I court in the proposed rule by classifying any material that is placed in a land-based unit as "discarded." They argued that placing secondary materials in land-based units is common throughout the industry, and that many economically valuable secondary materials necessary to produce final products and co-products are placed in land-based units prior to future use, without any intent of discard. (COMM36, COMM38, COMM39, COMM67)

**Response:** The Agency does not agree with the commenters that its proposal contradicts previous decisions regarding the Agency's jurisdiction over process materials. The Agency considers that in *American Mining Congress v. EPA (AMC I)*, the court found in some respects previous rules exceeded the statutory grant of authority because, at least with respect to the mineral processing industries, the rules asserted authority over secondary materials that were not discarded. Subsequent judicial opinions, however, have sharply limited the 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)). The Agency believes its final rule is consistent with the findings of *AMC II American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990). Further, the Agency does not agree that land-based storage continues to be a widespread industry practice. Information received by the Agency, along with further analysis of existing data, and collection of new data since January 25, 1996, indicate that mineral processing secondary materials are generated in smaller volumes than previously believed (see the technical background document *Characterization of Mineral*



*Processing Wastes and Materials* in today's final rulemaking docket) This new information also indicates the vast volumetric bulk of secondary mineral processing materials are not stored in land-based units As a consequence of this and of evidence of threats to human health and the environment from land-based storage, the Agency has conditioned the exclusion from the definition of solid waste on storage in units that are not land-based (except for approved pads) Thus, if a hazardous secondary material is legitimately recycled within another mineral processing operation, it is not a solid waste provided that the storage that precedes the recycling does not entail land placement The Agency would make an exception for solids stored on pads, based upon site-specific determinations by EPA or a State

The Agency further disagrees with the comment that land-based storage units preceding recovery cannot be considered to be a type of discarding The operations the Agency would control are not continuous industrial processes, because the storage breaks any continuous processing chain A continuous process involves continuous processing of an initial raw material in various mining circuits to extract various metals without intervening storage The use of land-based units, which are inherently prone to release of the hazardous constituents, can be regarded as a type of discard and an example of the type of waste disposal problem to be controlled under RCRA (see AMC II, 907 F 2d at 1186) The Agency has differentiated site-specific approved piles of solid mineral processing wastes stored on pads from other types of land-based units in today's conditional exclusion in an effort to provide flexibility in determining which units are or are not part of the waste disposal problem The Agency has made no such provision in today's final rule for surface impoundments, however, because of those units' inherent propensity to leak (see AMC II, 907 F 2d at 1186) Finally, the Agency notes that under the broad definition of "primary mineral processing industry sector" adopted in this rule, many mineral processing secondary materials can move from one facility's operations to another e g , lead filter cake generated at a copper smelter being sent to a lead smelter Such operations, in and of themselves (i e , even without consideration of discard in land-based storage units) can be viewed as discard by the initial generator (see *API v EPA*, 906 F 2d at 741-42) The Agency has exercised its discretion to interpret the term "discarded" to exclude such materials, the exclusion being limited to recovery operations which will not be part of the waste disposal problem because land-based storage units will not be utilized However, the point here is that the Agency is doing so as a discretionary act, not because such an interpretation is mandated The Agency therefore disagrees with the comment that EPA must view any secondary material generated and recovered within the primary mineral processing industry sector as not being a solid waste because it is not "discarded "

**Comment:** One commenter further specified that the criteria to meet the exclusion from the solid waste definition should not be management of materials in "process units" as the rules states, but that facilities should be required to manage secondary materials in a "manner comparable to the way feedstock, raw material, or chemical products for which the secondary materials are substituted are managed " (which, according to the commenter, may include placement in a land-based unit prior to further processing or beneficiation) The commenter also believed that EPA's distinction between process units and land-based units is arbitrary, and requests that the Agency specify that the term "process units" in the proposed rule refers to those units used to store or manage secondary materials prior to processing, not actual product processing or beneficiation units The commenter stated that because many "process units" involve extraction and beneficiation activities that would otherwise be excluded under the Bevill Amendment, EPA should clarify that such units are not subject to RCRA requirements (COMM38)

**Response:** Today's rule clarifies the distinction between process units and storage units The Agency believes, and the courts have agreed (*American Mining Congress v EPA*, 907 F 2d 1179, 1186 (D C Cir 1990)) that materials stored in land-based units can be viewed "as part of the waste disposal problem," and thus can be considered to be "discarded " To address this issue, today's rule specifically defines when discard is occurring Storage of mineral processing secondary materials, destined for

recycling is allowed as long as it occurs in non-RCRA tanks, containers, or buildings, or on approved pads (for solids only). The Agency believes the impact of its approach on the use of secondary materials can be expected to be small because most storage of this industry's secondary materials is already taking place in tanks, containers, and buildings.

The Agency disagrees with the commenter's suggestion that secondary materials stored in the same manner as virgin feedstock should not be considered discarded, and hence not solid wastes. First, such a principle could not be implemented on a national basis, since an individual facility's particular storage practices would set the standard for each facility. Second, such a principle would create an incentive to store raw materials in a less secure manner (i.e. in piles and impoundments, rather than in tanks and other more secure units) in order to store hazardous secondary materials in an equally insecure manner. Given that the Agency has authority to define land-based storage of hazardous secondary materials as a type of discard (see the response above and the preamble to today's final rule), and because of the potential adverse consequences, the Agency declines to follow the commenter's suggestion.

**Comment:** One commenter stated that categorizing land-based units as either process or waste disposal units is overly complicated and would provide operators of these units with an escape from existing RCRA regulations, posing potential threats to the environment. Waste piles and surface impoundments would need only meet minimal standards to be termed process units, while tanks, containment buildings, and containers would automatically be exempt from hazardous waste regulation (COMM37).

**Response:** This comment refers to the earlier proposal which would have allowed land-based units to be considered "process units" if they met certain types of conditions designed to prevent large-scale releases of hazardous constituents. The Agency proposed this course under the impression that use of land-based storage was compelled because of the large volumes of mineral processing secondary materials involved or, in some cases, other properties of the materials (see 61 FR 2338) requires secondary materials to be managed in tanks, containers, or buildings (or approved pads) in order to be exempt from the definition of solid waste. The Agency agrees with the commenters' concerns about the risks posed by land-based storage units. Furthermore, information received by the Agency, along with further analysis of existing data and collection of new data since January 25, 1996, indicate that mineral processing secondary materials are generated in smaller volumes than previously believed. Furthermore, this new information indicates a significant number of secondary mineral processing materials are not stored in land-based units. As a consequence, the Agency has promulgated a new option that requires secondary materials to be managed in tanks, containers, or buildings (or on site-specific approved pads) in order to be exempt from the definition of solid waste. Thus, if a hazardous secondary material is legitimately recycled within another mineral beneficiation or processing operation, it is not a solid waste provided the storage that precedes the recycling does not entail land placement.

**Comment:** One commenter opposed the regulation (as a waste) of a production unit from which there has been a release. The commenter emphasized that a release from a production unit that accepts secondary material does not change its status from a production unit to a waste management unit subject to RCRA regulation. Many of the materials managed in such units are actually in-process materials unless they are actually discarded. Until this point, therefore, releases of these materials should be treated as releases of in-process materials. (COMM67)

**Response:** The comment refers to an aspect of the proposed rule wherein land-based units are designated conditionally as "process units" (even though they are engaged in storing, not processing) but could lose that status if the rate of release was too great. The Agency is not going forward with that proposed option in today's final rule. Based upon extensive public comment and analysis, the agency has determined that the absence of storage determines what materials constitute "in-process" materials.

Accordingly, as stated in the preamble to today's final rule, "in-process" materials are limited to those materials that are transferred from the point of generation to a processing operation without intervening storage. The Agency views these as the "in-process" materials discussed in AMC I which cannot be considered to be "discarded." As shown in the technical background documents prepared in support of the January 1996 and May 1997 proposals (e.g., *Damage Cases and Environmental Releases*, EPA, 1997 (No. S0038), *Mining and Mineral Processing Sites on the NPL*, EPA 1997 (S0043), and *CERCLA Imminent Hazard-Mining and Mineral Processing Facilities*, EPA 1997 (S0045)), storage of mineral processing secondary materials in land-based units can lead to environmental contamination and damages. Hence, this practice clearly can be part of the "waste disposal problem."

**Comment:** Two (2) commenters opposed provisions in the proposed rule which would allow secondary materials to be regulated as solid wastes, potentially imposing Subtitle C regulations on legitimate production facilities. These commenters believe that the rule would expand the scope of materials considered solid wastes to materials used in the production process, thus requiring the units in which these materials are managed to meet RCRA requirements. (COMM36, COMM67)

**Response:** The Agency disagrees with the commenters. The Agency considers that in *American Mining Congress v. EPA (AMC I)*, the court found in some respects the rules exceeded the statutory grant of authority because, at least with respect to the mineral processing industries, the rules asserted authority over secondary materials that were not discarded. Subsequent judicial opinions, however, have sharply limited the 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)). Because the Agency's approach imposes additional requirements only on materials not returned immediately to the process, and which are part of the waste disposal problem because they are stored in disposal units (see RCRA section 3004(k)), the Agency believes its final rule is consistent with the holdings and rationale of *AMC II* (*American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990)).

**Comment:** Two (2) commenters stated their belief that the distinction between processing activities and waste generation proposed by the Agency is a means of expanding the scope of solid wastes that may be regulated by RCRA. (COMM46, COMM58)

**Response:** The Agency disagrees with the commenter that its distinction between process units and land-based units is purely a means of expanding the scope of RCRA. The Agency believes, and the courts have agreed (*American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990)), that materials stored in land-based units can be viewed "as part of the waste disposal problem," and thus can be considered to be "discarded." Indeed, EPA believes that it has an affirmative obligation to identify and control land management of secondary materials that are part of the waste disposal problem. Mineral processing hazardous secondary materials stored in land-based units are very clearly within this category.

### 1.2.3 Element of Discard

**Comment:** Two commenters stated their opposition to EPA's view that an "element of discard" exists in some secondary material management practices. The commenters argued that some cross-sector transfers are legitimate recovery operations that conserve resources. (COMM57, COMM67)

**Response:** In its May 12, 1997 proposal the Agency described its position with respect to the element of discard as it relates to storage in land-based units. The Agency believes that land-based

storage practices can result in (and, in fact, have resulted in) the types of environmental damage that RCRA was designed to prevent. Further, such materials can be viewed as "part of the disposal problem" because of the nexus with land disposal, and hence "discarded." The Agency continues to hold this position, and today has promulgated controls over land management of mineral processing hazardous secondary materials. To promote additional "properly conducted" resource recovery (a permissible objective, see RCRA section 1003 (a)(6)), the rule also incorporates a conditional exclusion from RCRA jurisdiction for those secondary materials that are managed in a way that is not part of the waste disposal problem.

#### **1.2.4 Issues of "Main" and "Ancillary" Operations**

**Comment:** Three commenters disagreed with EPA's distinction in the proposed rule between main and ancillary processes (COMM38, COMM46, COMM58). These commenters believed it is an artificial means of expanding the category of secondary materials regulated under Subtitle C, as well as contradicting Congressional and Agency goals of promoting recycling. Two of the commenters added that even with some materials stored on land for a brief period, reprocessing is an inherent, legitimate, and essential part of the industry's processing operations. The commenters believed that the Agency is wrong in classifying some secondary materials as "less essential" in the production process, and should eliminate such a distinction that would threaten the economic stability of the industry (COMM46, COMM58). One commenter referred to the Agency's Site Visit Report and the Definition of Solid Waste Report as accurate interpretations of the issue, contrary to the position presented in the proposed rule (COMM46).

**Response:** The Agency has reassessed its information related to wastes generated by main and ancillary operations. EPA now agrees with the commenters that there does not appear to be support for a sweeping generalization that secondary material reprocessing is always a type of ancillary, adjunct activity (although the statement could apply in certain situations, e.g. cryolite recovery by primary aluminum plants from spent potliners. See 50 FR at 641). Accordingly, today's rule is not based on an undeviating principle that reclamation of hazardous secondary materials is invariably an ancillary type of activity and does not incorporate proposed language related to ancillary operations generating less valuable material or utilizing less valuable material. The discussion in the preamble to today's rule of the continuum of recovery practices within the industry sector and of degrees of discardedness associated with points along the continuum, better reflects possible means of differentiating among secondary material recovery activities within the mineral processing industry. As noted earlier, EPA's conclusions noted in the Definition of Solid Waste Task Force Report or in site visit reports are not binding regulatory determinations and represent staff opinions, not any type of Agency opinion. See separate memo to the administrative record on the Definition of Solid Waste Task Force Report as well.

#### **1.2.5 Land-Based Unit Issues**

**Comment:** Two (2) commenters questioned the Agency's position regarding the use of land-based units. These commenters disagreed with the Agency's view that secondary materials are stored in land-based units because these materials have less value in the industry. They also disagreed with EPA's assertion that these units contribute to significant contamination. The commenters argued that many secondary materials are a valuable resource, sometimes containing higher concentrations of metals than the virgin ore. The commenter also argued that the use of land-based units may not be a function of the material's value, but a result of other factors such as large volume or certain characteristics of the material (COMM46, COMM58).

**Response:** Information collected by the Agency since its January 25, 1996 proposal indicates

that mineral processing secondary materials stored in land-based units pose actual and potential threats to human health and the environment. Specifically, EPA has found cases where land storage of hazardous mineral processing wastes 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). While the Agency agrees that reprocessing of secondary materials is an essential part of the mineral processing industry's operations, the Agency has concerns about risks posed by these materials when stored in land-based units. In addition, EPA has shown that land storage of mineral processing secondary materials currently is not a prevalent management practice. Agency investigation since the earlier proposal on January 25, 1996 into the nature of mineral processing waste and material streams indicates there is no volumetric or other property-based necessity to store these streams in land-based units (see the technical background document *Characterization of Mineral Processing Wastes and Materials* included in today's final rulemaking docket).

As a consequence, the Agency has promulgated a prohibition on land storage of these materials. At the same time, however, the Agency has incorporated a conditional exclusion to promote greater resource recovery provided the materials are managed in a manner preventing them from becoming part of the waste disposal problem, thereby addressing the commenters' concerns in this regard.

**Comment:** One commenter stated that EPA should establish a definition of a "land-based unit." The commenter believes that the Agency intends to classify all "processing units" built on grade as land-based units, regardless of the type of unit (e.g., tank, impoundment, pile) (COMM52).

**Response:** The Agency does not believe that developing a definition of a land-based unit is necessary. RCRA section 3004(k), the provision setting out the scope of the land disposal prohibitions, already defines "land disposal" to include essentially all units where hazardous waste is placed on the land. Tanks, containers, and containment buildings are therefore not land disposal units. The rules also include definitions of piles and impoundments. With the promulgation of the land storage prohibition and accompanying definitions of tanks, containers, and buildings (as well as approved pads) contained in today's final rule, this issue is moot.

**Comment:** Although tank systems are used extensively, the quantity of materials involved make land-based impoundments necessary for maintaining control of the production process, including water balance, and process liquids. These impoundments are so essential to the production process that production would cease without them. The impoundment system is designed with integrity to contain the materials it manages and a groundwater monitoring system, operated since 1980, has shown no adverse impact to area groundwater quality (COMM65).

**Response:** The Agency disagrees. Information collected by the Agency since its January 25, 1996 proposal indicates that mineral processing secondary materials stored in land-based units pose actual and potential threats to human health and the environment. Specifically, EPA has found cases in which land storage of hazardous secondary mineral processing materials awaiting recycling increases the potential for groundwater contamination, contaminated runoff, windblown dust, and soil contamination and increases the cost of cleanup (See Damage Cases and Environmental Releases, EPA, 1997). While the Agency agrees that reprocessing of secondary materials can be an essential part of the mineral processing industry's operations, the Agency has concerns about risks posed by these materials when stored in land-based units. The Agency also has found that tank storage of liquids is quite common and that the use of impoundments is not necessary and believes that there is no evidence that any mineral processing hazardous secondary material is compelled to be stored on the land. Consequently, EPA has promulgated a restriction on land placement of secondary materials and has established a conditional exclusion from the definition of solid waste that requires storage in units that are not land-based (except

for approved pads) At the same time, however, EPA has incorporated a conditional exclusion to promote greater resource recovery provided the hazardous secondary materials are managed in a manner preventing them from becoming part of the waste disposal problem, thereby addressing the commenter's concerns in this regard Thus, if a hazardous secondary material is legitimately recycled within another mineral processing or beneficiation operation, it is not a solid waste provided the storage that precedes the recycling does not entail land placement

### **1.2.6 Definition of "Secondary Materials"**

**Comment:** Four (4) commenters stated that the proposed rule lacks a clear definition of "secondary materials" (COMM36, COMM38, COMM40, COMM58) The commenters believe that the term may be interpreted as applying to a large range of materials, including non-waste materials that are not intended for discard However, because the AMC I court concluded that EPA's RCRA authority may not extend to this broad category of materials, the commenters argued that the Agency should narrow the definition of "secondary materials" to apply only to those wastes over which it has jurisdiction This would not include co-products, intermediates, or in-process materials that are beyond Subtitle C jurisdiction, but only materials discarded and not reused in processing As written in the proposal, the Agency's definition of "secondary materials" would result in confusion for the industry as to which secondary material would be affected by the rule.

**Response** The Agency has established a clear definition of "mineral processing secondary materials" These are spent materials, sludges, and by-products, terms defined in 40 CFR 261.1 As explained earlier, the Agency does not agree completely with the commenters' assessment of what is "discarded", although there are many points of agreement hazardous secondary materials generated and reclaimed within the industry would not be solid wastes if they meet the conditions of today's exclusion, process units, even if land-based, would not be waste management units, and materials moving from one circuit to another without intervening storage could not be defined as solid wastes The Agency disagrees that all of these results are compelled by statutory language and AMC I However, the Agency has permissible discretion to define the ambiguous term "discarded" to reach these conclusions, as discussed in the preamble The Agency would also like to point out, however, that as discussed in the preamble to today's rule and in other responses to comment, the Agency believes that use of land-based storage units for hazardous secondary materials awaiting intra-industry recovery can be a type of discard and has used this principle as the main condition for today's regulatory conditional exclusion

### **1.2.7 Other Solid Waste Issues**

**Comment:** Two (2) commenters suggested that EPA define the "point of generation" using the "battery limits approach where the point of generation is defined as the wastewater discharge point(s) for the process area (commonly termed 'battery limits')" The commenters believed this issue is significant in that this determines whether a material is hazardous or a waste, and when LDR standards must be applied (COMM70, COMM84) One commenter also argued that this definition could exclude some waste streams from Subtitle C regulation This change would directly affect this proposed rule and the HWIR rule. The commenter recommended that this definition be issued before these rules are finalized. (COMM84)

**Response:** The Agency defined the point of generation for mineral processing wastes in the final rule published on September 1, 1989 (54 FR 36592)

**Comment:** The commenter requested that the Agency maintain the present exclusion for metal bearing by-products from the definition of solid waste, but move the provision from Section 261.2 to Section 261.4 (exclusions) The commenter believed that the broad categorization of metal-bearing

secondary materials with other-by-products fails to distinguish the beneficial “commodity-like characteristics” of these materials, such as high recycling rate and low environmental risk. The proposed section should therefore read as follows

261.4 Exclusions (a) \* \* \* (17) Metal-bearing by-products from secondary materials processes that are being recycled (COMM34)

**Response:** Following analysis of this comment and the available data, EPA has decided that the recommended exclusion is overly broad for this rulemaking, and has instead crafted an exclusion from the definition of solid waste that is limited in scope to secondary materials generated within the primary minerals industry. The preamble to today’s final rule and other responses to comment, indicate why allowing today’s conditional exclusion to apply to listed wastes and to wastes generated from outside the mineral processing industry, present additional conceptual, policy and legal issues and are not being considered in this rulemaking.

**Comment:** One commenter requested that EPA clarify that co-products and intermediates generated as a part of ongoing production processes, as well as beneficiated ores and minerals are not solid waste and are not subject to any aspect of the proposed “conditional exclusion” requirements or Subtitle C regulations. (COMM46)

**Response:** Raw ores stored at beneficiation facilities are not solid wastes. Ore concentrate stored at beneficiation facilities is an intermediate or final product and also is not a solid waste. Ore concentrate spilled during transport is a solid (and potentially, a hazardous) waste if not retrieved for processing (see, e.g., 40 CFR 261.33). Today’s rule does not affect the regulatory status of co-products, but instead applies to the secondary materials designated in 40 CFR 261.2: spent materials, sludges and by-products.

**Comment:** One commenter requested that the Agency clarify that recirculated process water that is not discarded, but is “destined for immediate beneficial reuse in a continuous process,” is not a solid waste subject to RCRA. (COMM42)

**Response:** The Agency agrees with the commenter to the extent that “reuse in a continuous process” of the process waste waters is immediate. If hazardous wastewater is stored prior to reuse, storage must occur in a tank or container for the process water to be eligible for the newly promulgated exclusion from the definition of solid waste. However, today’s rulemaking does not affect current Agency regulations regarding reuse of a waste stream under 261.2(e).

## 1.2.8 Sector Specific Comments

**Comment:** Some commenters raised sector specific issues related to solid waste. One commenter from the fertilizer industry emphasized that the Agency’s recognition of the unique function of land-based units in the mineral processing production process due to the large volumes of materials should be applied to phosphoric acid production facilities. (COMM45)

**Response:** The Agency has examined in depth the material management issues endemic to the phosphoric acid production industry, and has maintained the special waste status of two high volume mineral processing wastes generated by this industry (phosphogypsum and process wastewater). EPA does not agree that land storage of other materials is necessary. Non-exempt hazardous wastes must be managed in accordance with Subtitle C standards, though the conditional exclusion promulgated in today’s rule is available for materials reclaimed to the production process in the absence of land storage (except for storage on approved pads).

**Comment:** One commenter disagreed that the use of LAKD in baghouse dust is subject to Section 266.20(b) requirements “because incorporation of block mix into lightweight concrete masonry

units is not a use constituting disposal ” The comment argued that the Agency should modify the Section 261.4 exclusion to provide that mineral processing secondary materials are not solid wastes, even if subject to the derived from rule, provided they do not possess hazardous characteristics and are legitimately used in concrete or asphalt products (COMM35)

**Response:** The Agency believes that the commenter’s request is beyond the scope of today’s rulemaking and is more appropriately addressed in the CKD rulemaking. For this reason, the Agency is not acting on issues relating to the regulatory status of lightweight aggregate kiln dust and such dust accordingly retains Bevill exempt status at this time.

**Comment:** The commenter requests similar clarification that the proposed new section 261.4(a)(15) exclusion for mineral processing secondary materials would be applicable to lightweight aggregate APC dusts/sludges, whether or not generated by facilities using hazardous wastes as fuel (COMM39)

**Response:** As stated in the preamble to today’s final rule, EPA will resolve the Bevill status of lightweight aggregate kiln APC dust/sludge (as well as that of cement kiln dust) in future regulatory action. For the present, this material will retain its Bevill status.

### 1.3 Jurisdiction

**Comment:** One commenter agreed that the Agency possesses the authority to implement conditional exclusions from RCRA for secondary mineral processing materials to ensure that these materials do not become “part of the waste disposal problem ” (COMM40)

**Response:** Comment noted

**Comment:** Eight (8) commenters stated that the proposed regulations exceed EPA’s jurisdiction under RCRA (COMM36, COMM38, COMM40, COMM46, COMM57, COMM58, COMM67, COMM85). The commenters provided a variety of reasons for this argument. Four commenters argued that in-process and intermediate materials are outside of EPA’s jurisdiction (COMM36, COMM57, COMM58, COMM67). One added that these materials are beyond the Agency’s authority regardless of whether they are placed on land (COMM58). Two commenters also reasoned that EPA does not have authority over secondary materials simply by virtue of their being stored on the ground prior to processing (COMM36, COMM67).

**Response:** The Agency disagrees with the commenters’ statements and believes that it has jurisdiction to regulate these materials. In *American Mining Congress v. EPA (AMC I)*, the court did find that in some respects rules exceeded the statutory grant of authority because, at least with respect to the mineral processing industries, the rules asserted authority over secondary materials that were not discarded. Subsequent judicial opinions (*American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990)) have sharply limited the 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 ’ ” The Agency has determined not to impose additional requirements on materials immediately reintroduced to the process. The Agency believes it is well within its jurisdiction to impose requirements on materials stored on land, a practice which the Agency has determined includes “an element of discard ”

The Agency further disagrees with the comment that land-based storage units used for storing secondary materials prior to their recovery cannot be considered a type of discard. As discussed in the preamble to today’s rule, by definition, the Agency is not asserting authority over the processing of



hazardous secondary materials. This is because the rule only affects storage of mineral processing secondary materials prior to their legitimate reclamation

By the same token, the operations the Agency would control are not continuous industrial processes, because the storage breaks any continuous processing chain. A continuous process involves continuous processing of an initial raw material in various mining circuits to extract various metals without intervening storage. The use of land-based units, which are inherently prone to release of the hazardous constituents, can be regarded as a type of discard and an example of the type of waste disposal problem to be controlled under RCRA (see AMC II, 907 F 2d at 1186). The Agency has differentiated site-specific approved piles of solid mineral processing wastes stored on pads from other types of land-based units in today's conditional exclusion in an effort to provide flexibility in determining which units are or are not part of the waste disposal problem. The Agency has made no such provision in today's final rule for surface impoundments, however, because of those units' inherent propensity to leak (see AMC II, 907 F 2d at 1186). Finally, the Agency notes that under the broad definition of "primary mineral processing industry sector" adopted in this rule, many mineral processing secondary materials can move from one facility's operations to another e.g., lead filter cake generated at a copper smelter being sent to a lead smelter. Such operations, in and of themselves (i.e., even without consideration of discard in land-based storage units) can be viewed as discard by the initial generator (see *API v EPA*, 906 F 2d at 741-42).

**Comment:** A third argument presented by the commenters suggested that EPA's RCRA authority cannot be based on the threat of a release from a land-based unit (COMM36, COMM67)

**Response:** The Agency contends that as a result of the ruling in AMC II (*American Mining Congress v EPA*, 907 F 2d 1179, 1186 (D.C. Cir. 1990)), it has ample jurisdiction to regulate these materials to ensure that they do not become part of the disposal problem. In its May 12, 1997 proposal the Agency also describes its position with respect to the element of discard as it relates to storage in land-based units. The Agency believes that land-based storage of mineral processing hazardous secondary materials can result in (and has resulted in) the types of environmental damage that RCRA was designed to prevent. Further, such materials can be viewed as "part of the disposal problem", and hence "discarded." The Agency reiterates its concern that these materials, when stored in land-based units, can result in releases or potential releases to the environment and pose a risk to human health. The Agency has ample evidence that such releases occur. In materials submitted in support of its January 25, 1996 proposal, the Agency included numerous documents describing damages associated with these activities and materials. Since 1996, the Agency has collected additional data documenting the actual and potential threats that mineral processing secondary materials stored in land-based units can pose to human health and the environment (See Damage Cases and Environmental Releases, EPA, 1997).

**Comment:** Three commenters stated that EPA has no jurisdiction over "process units" as the Agency has suggested in the rule, thus these units cannot be subject to RCRA (COMM38, COMM58, COMM67)

**Response:** The Agency has withdrawn the proposed "process unit" approach and now uses that term in the lay sense in the final rule. The rule does not apply to mineral processing and beneficiation units which actually recover mineral values from intra-industry hazardous secondary materials. However, land based storage units holding such materials can be waste management units. The Agency disagrees with the commenter's assertion that EPA does not have jurisdiction over these land-based storage units. The Agency believes, and the courts have agreed (*American Mining Congress v EPA*, 907 F 2d 1179, 1186 (D.C. Cir. 1990)) that materials stored in land-based units can be viewed "as part of the hazardous waste disposal problem," and thus can be considered to be "discarded." To address this issue, the Agency developed an option that would specifically define when discard is occurring, and is today finalizing this definition. Moreover, EPA's data suggest that land-based "processing" is a rare

practice, being limited to heap leaching and dump leaching in the primary copper and gold industries, respectively. Because leaching is a beneficiation operation, such units are unaffected by today's rule, and, as true processing units, would not be affected in any case, unless the units were also used to dispose of hazardous waste. Storage of secondary materials on the land (except for approved pads) is otherwise considered a disposal activity.

**Comment:** One commenter held that land placement *and* recovery of a material determines that it is not discarded and not a solid waste, thus the Agency would have no RCRA jurisdiction over these materials. However, the commenter stated that if land placement were accompanied by "significant discard," justification for RCRA authority would exist. Land placement alone does not imply discard, as it is part of the normal production process (as recognized by the EPA Solid Waste Task Force) (COMM40). Another commenter specified that if discard or disposal does not occur, the material is not a solid waste, not subject to Subtitle C, and beyond EPA authority if reprocessed, reused, or recycled (COMM58).

**Response:** See response immediately above. The Agency finds that land storage (except for on approved pads) constitutes a type of discard because of the evident nexus with disposal, borne out by actual as well as potential damage.

### 1.3.1 AMC Court Cases

**Comment:** Six (6) commenters cited specific holdings of the court cases discussed by EPA in the proposed rule, which they believe limit EPA's jurisdiction in the proposed regulations (COMM36, COMM38, COMM40, COMM43, COMM57, COMM58). These commenters argued that the proposed regulations go beyond EPA's authority as established in AMC I. Specifically, the commenters presented the following arguments, based on the AMC I decision, that the Agency had exceeded its RCRA authority: (1) The holding limits the Agency's RCRA authority to materials that are "discarded" -- meaning "disposed of, abandoned, or thrown away" (AMC I, 824 F.2d at 1193). This reading of the opinion was expressly rejected by the D.C. Circuit court in *API v. EPA* (906 F.2d at 741-42) and *AMC II* (907 F.2d at 1186-87). These cases further hold that "discarded" is an ambiguous term, and so within the Agency's Chevron II discretion to interpret in accord with overall statutory goals and principles; (2) spent materials that are recycled or reused in an ongoing manufacturing or industrial process are destined for beneficial use and not subject to Subtitle C, thus the commenters conclude that secondary materials used in production are also not solid wastes subject to RCRA regulations, the Agency is not asserting authority over continuous processing of secondary materials or in-process materials. However, once secondary materials are removed from a process for intervening land-based storage, no continuous processing is occurring; (3) EPA did not have jurisdiction over the materials managed in process units that were destined for beneficial reuse or recycling, as noted earlier, the Agency is not asserting authority over actual process units, even if they are land-based. Storage units, however, are not process units because they are not the locus where the material recovery (i.e., creation of product metal, or metal suitable for refining) occurs; (4) controls on processing operations, including "conditional exclusions," are beyond EPA's Congressional or statutory authority, and (5) the Agency does not have the authority to interfere with industry's normal, ongoing production processes. Again, the Agency is specifically disclaiming authority over actual production units. The condition relates to storage, not to processing (this response assumes that a processing unit, if land-based, is also not being used to dispose of hazardous waste, e.g., non-recovered sludge left in a process impoundment, assuming that a process impoundment exists). One commenter concludes that EPA contradicts the court's decision by assuming that any material placed in a land-based unit is "part of the waste disposal problem" and is therefore discarded, the commenter argues that placement in this manner for future processing or reuse is not discard (COMM36).

**Response:** The Agency disagrees with the commenter's statement and believes that it has jurisdiction to regulate the storage of these materials prior to recycling and that the courts have upheld this jurisdiction. In *American Mining Congress v. EPA (AMC I)*, the court did find in some respects previous rules exceeded the statutory grant of authority because, at least with respect to the mineral processing industries, the rules asserted authority over secondary materials that were not discarded. Subsequent judicial opinions, however, have sharply limited the 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'." Accordingly, the Agency is well within its authority to establish (through an examination of data) which materials and practices contribute to this problem, and to promulgate requirements and conditions that address it.

**Comment:** Two commenters disputed EPA's claim that subsequent court decisions limit the basic holding of *AMC I*. The commenters assert that the later courts upheld the *AMC I* finding that materials destined for beneficial reuse or recycling by the industry are not discarded and therefore are not solid wastes. The *AMC I* decision continues to limit EPA's jurisdiction over in-process materials and secondary materials which are part of normal processing operations. (COMM58, COMM70)

**Response:** See previous response.

**Comment:** Three commenters also argued that holdings of the *AMC II* court on the issue of disposal limits EPA's jurisdiction to promulgate proposed regulations. In *AMC II*, "discarded" materials under EPA's jurisdiction were defined as materials that "have become part of the waste disposal problem" and which "are not part of ongoing industrial processes." (*AMC II* F.2d at 1186). EPA's authority over certain materials, such as in-process materials, is therefore limited. The commenters believed that most of the materials EPA proposes to regulate in the proposed rule are destined for immediate reuse and are not part of the waste disposal problem. (COMM36, COMM43, COMM58)

**Response:** In today's final rule, EPA has made clear that immediately reused materials are outside the scope of RCRA controls, but that land storage of mineral processing secondary materials is considered a "part of the waste disposal problem." To the extent that these materials are managed in a way that suggests that they are indeed "immediately reused," they are excluded from RCRA controls, in accordance with the commenter's suggestion.

The Agency believes the principle established in the *AMC II* court opinion applies to all impoundments because an impoundment's inherent propensity to leak is not related to whether or not it holds wastewater, but stands regardless of the type of liquid contained within it. Consequently, the reach of the opinion encompasses all such units as being permissibly classified as part of the waste disposal problem and hence units holding discarded materials.

**Comment:** One commenter argued that EPA's use of *AMC II* to justify its proposed rule is unjustified because this case involved a listed waste, not in-process secondary materials that exhibited hazardous characteristics, and a waste that was placed in a waste management unit, not a process unit. (COMM58)

**Response:** EPA believes that the general principle involved ("the waste disposal problem") is more important to the issue of jurisdiction than the specific circumstances litigated in *AMC II*. The Agency believes the principle established in the *AMC II* court opinion applies to all impoundments because an impoundment's inherent propensity to leak is not related to whether or not it holds wastewater, but stands regardless of the type of liquid contained within it. Consequently, the reach of the opinion encompasses all such units as being permissibly classified as part of the waste disposal problem and hence units holding discarded materials.

### 1.3.2 Other Jurisdictional Issues

**Comment:** One commenter asserted that the Agency misinterpreted the court's ruling in AMC v. EPA when it concluded that the case provides the Agency with broad discretion to apply the term "discard" (COMM58)

**Response:** As stated above, the Agency disagrees "Discarded" is an ambiguous term which EPA has substantial interpretive discretion to interpret so long as "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" are not classified as solid wastes (AMC II, 907 F 2d at 1186). As explained above, EPA has established the conditional exclusion in the final rule in accord with these principles

**Comment:** Two commenters disagreed with the Agency's use of several court cases to support its proposed rule. They argue that the environmental damage cases involving discard from land-based units are not appropriate and do not give EPA "unlimited authority" to determine what contributes to the waste disposal problem. The commenters further argue that the Agency failed to provide evidence that such units are "ultimate repositories of unused material" (COMM58, COMM40). One commenter adds that this distinction should be made on a site-specific basis (COMM40). Furthermore, the commenters believe that industry already takes steps to protect the environment.

**Response:** While EPA recognizes that the operators of many mineral production facilities take steps to protect the environment, the Agency disagrees with the other points advanced by the commenters. EPA does not assert unlimited authority over material management, but believes, as discussed at length above, that the courts have directed the Agency to reduce the magnitude of the "waste disposal problem." Moreover, EPA has provided ample evidence in the public record of damages associated with the "storage" of mineral industry secondary materials.

**Comment:** One commenter stated that the Agency's references to API v. EPA and AMC II are "irrelevant to the AMC I decision because the circumstances of the cases were very different." Specifically, API and AMC II involved identified wastes, while AMC I involved in-process secondary materials (COMM58).

**Response:** EPA believes that the distinction drawn by the commenter is incorrect. AMC II involved sludges which were destined for recovery in the very process which generated them. The court nonetheless held that the process was not the type of continuous industrial process discussed in AMC I and further held that the sludges were a discarded material. In both cases, this was the result because the sludges were stored in a land-based unit, a surface impoundment (907 F 2d at 1186-1187). The Agency believes that the conditional exclusion in the final rule, which is directed against such discard, is supported by the case law. Such practices are part of the waste disposal problem and therefore a type of discarding.

**Comment:** The commenter also disagreed with the Agency's reference to the Ilco case as limiting the holding of the AMC I court. The commenter believes this case does not apply to the proposed rule because the materials at issue in this case were not in-process materials recycled or reused by the primary mineral processing industry, rather, materials actually were discarded.

**Response:** Because EPA is using such a broad definition of primary mineral processing industry sector in this rule, the principles of United States v. Ilco, Inc., 996 F 2d, 1126 (11th Cir. 1993), American Petroleum Inst. v. EPA, 906 F 2d, 726 (D.C. Cir. 1990), and Owen Electric Steel Co. v. Browner, 37 F 3d (4th Cir. 1994) have some applicability. The Agency agrees, however, that Ilco and the other cases involving transfer of secondary material from one industry to another does not speak to situations involving points further in on the recovery continuum, such as recovery of copper from a secondary material generated by another or the same copper smelter.

**Comment:** The commenter also believed that the Owen Electric Case cited in the proposed rule did not alter the AMC I decision. The slag at issue in this case was sold, not recycled or reused (COMM58)

**Response:** Because EPA is using such a broad definition of primary mineral processing industry sector in this rule, the principles of *United States v. Ilco, Inc.*, 996 F.2d (5th Cir. 1993), *American Petroleum Inst. v. EPA*, 906 F.2d (D.C. Cir. 1990), and *Owen Electric Steel Co. v. Browner*, 37 F.3d (4th Cir. 1994) have some applicability. The Agency agrees, however, that *Ilco* and the other cases involving transfer of secondary material from one industry to another does not speak to situations involving points further in on the recovery continuum, such as recovery of copper from a secondary material generated by another or the same copper smelter.

**Comment:** One commenter stated that classifying all recycled materials in production processes as “secondary materials,” then applying a “conditional exclusion” from the definition of solid waste ignores the fact that these materials are not “discarded” in the first place. (COMM38)

**Response:** EPA has ample jurisdiction to regulate these materials to ensure that they do not become part of the disposal problem (see AMC II (*American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990))). In its May 12, 1997 proposal and again in today’s final rule the Agency describes its position with respect to the element of discard as it relates to storage of hazardous secondary materials in land-based units. The Agency believes that land-based storage practices, in general, can result in the types of environmental damage that RCRA was designed to prevent. Further, such materials can be viewed as “part of the disposal problem”, and hence “discarded” when stored in land-based units. In support of the proposed rules being finalized today, EPA has collected and presented numerous cases of environmental releases and subsequent damages, from the “storage” of hazardous mineral processing secondary materials before reclamation.

**Comment:** One commenter presented an alternative to clarify the jurisdictional question. The commenter suggested modifying the rule to ensure that valuable secondary materials are kept outside RCRA regulations by establishing a clear list of such materials, based on the manner in which they are recycled. This option would promote the use of secondary materials in the production process, the commenter claims. (COMM36)

**Response.** The Agency appreciates the commenter’s suggestion, but believes that development of such a list would not be practicable, because every process has individual characteristics that make it different than others. Further, the Agency believes that creation of such a list might not adequately ensure protection of human health and the environment because materials might be excluded from the list that ultimately could cause damage. This is because the potential for damage comes from the land-based units, not from the specific material stored in the units. That is, these units, because they are disposal units, have an inherent potential to release their contents via air, surface and groundwater exposure pathways. The Agency has thus determined that a more feasible and protective approach would focus on how such materials are stored. Therefore, the Agency has decided to focus on the type of unit in which these materials are stored. Under the Agency’s final approach, secondary material generated by and recovered within the primary mineral processing industry sector is excluded from the definition of solid waste if it is managed in tanks, containers, or buildings, or in the case of solids stored in piles on site-specific approved pads, if a site-specific waiver is obtained from a state or EPA regional regulatory agency.

### 1.3.3 Sector-Specific Issues

**Comment:** One commenter stated that the uranium industry is already subject to regulations by EPA and the NRC, including Subtitle C. All beneficiation processes are currently managed under federal

regulations, making additional regulations redundant and unnecessary (COMM66)

**Response:** The Agency contends that certain wastes generated by in situ uranium mining may be subject to both NRC and EPA (RCRA) jurisdiction. This rulemaking, however, is not directly concerned with this issue.

## **1.4 General Principles for Redefining Solid Waste Within the Mineral Processing Sector**

### **1.4.1 Spent Materials, By-products, and Sludges**

**Comment:** Two (2) commenters expressed support for the Agency's proposal to eliminate the regulatory distinctions among mineral processing spent materials, by-products, and sludges, stating that such distinctions are artificial and unnecessary, and discourage recycling efforts. The commenters, however, raised other issues regarding this distinction. One commenter questioned why characteristic by-products and sludges are excluded from the definition of solid waste while characteristic spent materials destined for recycling are not excluded. The commenters argued that the Agency's intent to eliminate this distinction is not actually implemented in the proposed regulatory language; the commenters believe that the Agency should not include this language until the exclusion is revised to ensure that it will not create more barriers to recycling than the current requirements (COMM40, COMM80).

**Response.** Today's final rule does not make any distinctions among by-products, sludges, and spent materials generated by primary mineral processing operations. The rule first eliminates the regulatory distinctions among these three categories, then creates a conditional exclusion from the definition of solid waste to encourage the "properly conducted recycling" (RCRA section 1003(a)(6)) of mineral processing hazardous secondary materials---spent materials, byproducts, and sludges. The Agency is quite confident that use of the conditional exclusion should stimulate, not retard, recycling of these metal-bearing streams.

**Comment:** One commenter opposed the proposed elimination of the distinctions, believing that the regulatory distinction among spent materials, by-products, and sludges is appropriate as currently written. Distinguishing by-products and sludges from spent materials in the mineral processing industry is necessary because of their different values and rates of generation. By-products and sludges are regularly generated and contain large concentrations of recoverable metals, making them an "integral part of the production process," according to the commenter. Spent materials, on the other hand, are not regularly generated, making them more easily managed as wastes. The commenter added that the industry has learned how to follow the current regulatory distinctions in mineral processing secondary materials. If the rule were promulgated as proposed, mining companies would still be subject to the regulatory distinctions for other wastes that are not uniquely associated with mining. As a result, they would then be required to follow two different regulatory schemes, actually increasing regulatory complexity (COMM85).

**Response:** The Agency disagrees with the commenter's description of the differences between spent materials, sludges, and by-products. The Agency prefers that its distinctions are to be drawn among secondary materials; the distinctions should have an environmental basis, i.e., some are more likely to be part of the waste disposal problem than others. Here the potential to be part of the waste disposal problem arises from use of disposal units, i.e., land-based storage units, not from the type of hazardous

secondary material stored in such units. Thus, the Agency is not retaining the distinctions among these three types of secondary materials. As a consequence, the Agency's May, 1997 proposal and today's final rule exempt secondary materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered and are stored in tanks, containers, or buildings (or on approved pads), irrespective of their form or value. This should greatly simplify compliance. Rather than debating the sometimes difficult distinctions as to whether a material is a spent material, byproduct or sludge, the matter will be an evident one of whether the materials are being placed in piles or impoundments. Non-uniquely associated wastes must be managed in the same way as other industrial wastes, regardless of whether EPA eliminates or continues the distinction between uniquely associated spent materials and by-products/sludges. Accordingly, EPA believes that on balance, today's rule makes regulatory compliance simpler, not more complicated.

## **1.4.2 Determination by Type of Unit**

**Comment:** Three (3) commenters expressed support for EPA's approach to redefining solid waste through focusing on the type of unit (process or disposal) used to manage a secondary material rather than the type of materials being recovered (COMM47, COMM54, COMM70). One of these commenters believes that the unit is more important in protecting the environment than the contaminants present in the recovered waste stream (COMM47). Another commenter specifically stated its approval for the Agency's focus on land-based units that are of greatest concern, by "addressing the potential element of 'discard' in the activities and materials at issue", as well as for the "generally applicable conditions the Agency has proposed for these units" (COMM54).

**Response:** Comment noted.

**Comment:** One commenter suggested that the criteria for distinguishing surface impoundments that are "process units" from those that are "disposal units" should be revised. The criteria set forth in the proposed rule, requiring process units to meet certain unit design standards or a ground water protection standard that focuses on whether the impoundment has significantly affected the adjacent ground water, would incorrectly classify impoundments that are part of the industrial process as "disposal units." The commenter believed that these criteria should be changed to avoid this problem, including clarifying that the three tests for categorizing surface impoundments are alternatives, not three required tests. In addition, the commenter proposed changes in the appropriate criteria for meeting the third alternative of site-specific determinations (COMM70).

**Response:** EPA has effectively eliminated the distinction implied by the commenter. In today's final rule, EPA requires that mineral processing secondary materials be stored in tanks, containers, or buildings (or on approved pads). The Agency, in effect, is prohibiting surface impoundment management prior to reclamation unless Subtitle C standards are satisfied. Surface impoundments may be used, but only for waste management activities, some of which require RCRA permits.

**Comment:** One commenter opposed the Agency's focus on the "unit," suggesting instead that the exclusion should be based on whether the material is legitimately reused in the production process (COMM67).

**Response:** The Agency believes that focus on the unit storing materials is appropriate, given the Agency's primary concern that secondary materials are being stored on land, and therefore may become part of the waste disposal problem. Today's rule also focuses on legitimate recycling by making legitimacy a condition of the exclusion from the definition of solid waste, a requirement also when any special status based on "recycling" is at issue (see *US v. Marine Shale Processors*, 81 F.3d at 1365).

**Comment:** One commenter further suggested that the final Phase IV Supplemental rule provide a simple notification process for transferring the regulatory status of surface impoundments (TSD units).

that formerly were subject to RCRA permit requirements but which meet "process unit" criteria and therefore qualify for RCRA exclusion. Changing this designation could be achieved through providing an appropriate written notice to EPA, including a modified Part A permit application, formal RCRA closure or modification of an existing RCRA Part B permit should be avoided. The commenter added that, "if the transfer to 'process units' removes all remaining units from the Part B permit, thereby eliminating the need for the RCRA permit, then the notice could also serve as a formal notification to EPA of the TSD's intent to withdraw the RCRA Part B permit. The facility would then follow the 30 day public notice provisions without the approval of EPA necessary to complete the withdrawal. If the transfer to "process units" removes only some of the remaining units from the Part B permit, requiring the facility to maintain the permit, the permit should not have to be modified. Instead, it would be assumed that all sections or references in the Part B permit or application to the process unit(s) have been deleted. The facility would formally delete these references during the next scheduled permit renewal" (COMM70)

**Response:** Today's final rule is not intended to exempt currently permitted facilities from RCRA Subtitle C requirements, nor will it result in conditional exclusions for surface impoundment management of secondary materials under any circumstances.

**Comment:** One commenter noted that EPA is inconsistent in proposing to apply this rule to all metal-bearing "secondary materials," whether or not they are managed in a land-based unit, while also stating that the focus for determinations will be on the "unit." The commenter believed that using the type of unit as a determination contradicts the AMC I decision, which establishes that the decision should be based on whether the material is destined for "beneficial reuse or recycling in a continuous process by the generating industry" (AMC I at 1186) (COMM58).

**Response:** The Agency disagrees with the commenter's statement. Today's final rule appropriately focuses on all secondary materials that are stored on the land. Under its provisions, intra-industry primary mineral processing hazardous secondary materials that are legitimately reclaimed within the mineral processing or beneficiation industry sectors and are stored in tanks, containers, or buildings (or on site-specific approved pads) are excluded from RCRA controls. This exclusion is fully consistent with the court's directives in AMC I and subsequent court cases, and also provides new incentives for properly conducted resource recovery.

**Comment:** One commenter believed the proposed rule is biased against "low value" materials, which may in fact be suitable feedstocks for beneficiation or processing units. The commenter presented the possibility that if the concentration of metal in the secondary material is too low to be exempt from the solid waste definition, a company could be forced to discard the material, thus facing additional transportation and disposal costs. Instead, the commenter requested that industry be allowed to recover this metal (particularly copper) (COMM67).

**Response:** The Agency agrees that the legitimacy tests outlined in the January 25, 1996 proposal are not workable, and has instead decided to rely upon the existing qualitative legitimacy test in today's final rule.

**Comment:** One commenter objected to the Agency's limitation of "on-going" production processes only to initial material, and the related view that the mineral processing industry functions only "to extract mineral values from an initial raw material." The commenter added that the industry attempts to extract as much metal from its feedstock as technologically and economically feasible (COMM67).

**Response:** The Agency acknowledges that mineral processors often attempt to recover metals or other values from in-process or waste materials. Today's rule would not adversely affect the recycling of any mineral processing waste, as long as this activity complied with all of the conditions of the exclusion.



**Comment:** One commenter disagreed with the Agency's statement that "it is addressing a borderline classification situation" of "quasi in-process materials utilization." The commenter contended that no "borderline" situation exists in reprocessing materials for metal recovery, all production processes are necessary to overall production and have the same goal of achieving maximum metal recovery from feedstock (COMM67)

**Response:** The Agency disagrees with the commenter. Rational metals recovery occurs to the point at which marginal benefit equals marginal cost. Due to frequent fluctuations in the price of most metal commodities, recovery of metals from the same secondary material may be economically sound one month and unsound the next. As the Agency has shown, this may lead to constituent releases to the environment from materials that may have been placed on the ground for months or years prior to being reinserted into the production process. Today's conditional exclusion requires that mineral processing secondary materials stored prior to legitimate recycling satisfy the conditions of no speculative accumulation. EPA's final rule addresses this situation by requiring storage of mineral processing secondary materials in tanks, containers, or buildings (or on approved pads), and has provided a significant incentive to the operator by excluding materials stored and recycled in this way from the definition of solid waste.

**Comment:** One commenter disagreed with the Agency's use of the potential for subsequent releases as a criterion for determining if a material is solid waste, stating that the classification of materials which have been released from a unit as solid waste cannot be applied to materials in the unit which have never been released. Instead, the commenter suggested, the Agency should focus on whether the secondary materials are legitimate feedstocks or reagents, and whether they are legitimately used for production. The materials meeting these criteria would not be solid wastes. In the event of a release, EPA could consider implementing RCRA regulation if the release is determined to be hazardous (COMM67)

**Response:** The Agency believes that its concerns over releases from the storage of mineral processing wastes is well justified. Information collected by the Agency since its January 25, 1996 proposal indicates that mineral processing secondary materials stored in land-based units pose actual and potential threats to human health and the environment. Specifically, EPA has found cases where land storage 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). Further, the Agency believes, and the courts have agreed (*American Mining Congress v. EPA*, 907 F.2d 1179, 1186 (D.C. Cir. 1990)) that materials stored in land-based units are part of the hazardous waste disposal problem, and thus can be considered to be discarded.

## 2. Proposed Regulatory Scheme

### 2.1 General Issues

**Comment:** One commenter agreed that the proposed rule represents a reasonable approach to the RCRA classification of solid waste, which acknowledges that materials should not be classified as a solid waste if they contain valuable reusable and/or recyclable materials, such as precious metal, their constituents can be containerized during storage and shipment prior to recovery, and they are destined for materials recovery (COMM9)

**Response:** Comment noted

**Comment:** The commenter added that it has concluded that the proposed Phase IV LDR rules do not apply to their uranium in-situ mining business for the following reasons

“1 Except for water producing during the restoration phase, which is required under state UIC regulations, all liquids produced during *in situ* mining is "byproduct material" as specified under Section 113 (2) of the Atomic Energy Act, and therefore, are not subject to RCRA regulations

2 Minewater drainage produced during restoration is clearly not Mineral Processing waste These wastes may be disposed of under the provisions of 40 CFR 440.30”(COMM9)

**Response:** The Agency generally agrees with the commenter's assertion that the Phase IV LDR rules do not apply to their uranium in-situ mining business as long as the operations conducted at that site are limited to extraction and beneficiation activities. Some *in situ* uranium operations related to the processing of yellow cake may be subject to RCRA jurisdiction.

**Comment:** Another commenter indicated that EDF's comments on the existence of other pathways for the escape of hazardous components from waste units should be addressed. The commenter asserted that contamination from process units can spread via numerous pathways. Rules for prevention of surface run-off and airborne dispersal of pollutants should be developed (COMM6)

**Response:** The Agency agrees that releases of contaminants from units storing mineral processing secondary materials prior to reinsertion into a mineral processing or beneficiation process may occur via pathways other than groundwater (e.g., air and surface water). This is borne out by the background documents which present damage incidents involving mismanagement of wastes (including secondary materials) in this industry sector. The Agency also believes that today's rule, which limits storage of secondary materials to tanks, containers, and buildings (and approved pads in limited cases), will substantially reduce the likelihood of contaminant release via any pathway, including surface water run-off and airborne dispersal. Acceptable storage under today's rule may occur only in engineered units made of non-earthen materials that provide structural support. An acceptable tank or container must be free standing and not be a surface impoundment, and must be manufactured of a material suitable for storage of its contents. An acceptable building must be a man-made structure with a foundation constructed of non-earthen materials, walls (which may be removable), and a roof suitable for diverting rainwater away from the foundation. Storage of some solids on pads may be allowed in limited cases. The Agency believes, however, that sufficient protection against releases via other pathways will be provided in today's rule. Under today's final rule, facilities wishing to store solids on pads must obtain a

site-specific determination from the applicable EPA Regional Administrator or State Director that its placement of solids on a pad will not serve as a mode of discard. Acceptable pads must be designed of non-earthen material compatible with the chemical nature of the material being stored, be capable of withstanding physical stresses associated with placement and removal, have run-on/run-off controls, be operated in a manner that controls fugitive dust, and have integrity assurance through inspection and maintenance programs. Site-specific determinations must take into account the potential for releases into the environment via all pathways.

**Comment:** Two commenters requested that EPA should clarify that wastes listed in 261.4(b)(7) are still covered by the Bevill Exclusion (COMM70, COMM81).

**Response:** The Agency has listed the wastes that are still covered by the Bevill Exclusion in the Second Supplemental Proposal, (May 12, 1997, 62 FR 26071).

**Comment:** A fifth commenter argued that the conditions that EPA has proposed to apply to secondary materials are convoluted, and serve to increase the complexity of the regulatory scheme and make the regulatory definition extremely difficult to interpret or understand (COMM58).

**Response:** The Agency agrees that its January 1996 proposal included provisions too complex to be feasibly implemented at this time (e.g., quantitative legitimacy tests). As a consequence, in May 1997, the Agency proposed a simpler alternative that it believed would adequately protect human health and the environment by preventing releases from units storing mineral processing secondary materials prior to recycling. This proposal conditioned exclusion from the definition of solid waste for these materials on non-land-based storage (except storage on approved pads in limited cases). Based on comments received on its May 1997 proposal, which indicated that volumes of secondary materials are sufficiently small that land storage is not necessary (i.e., that other modes of storage that are not land-based are feasible), the Agency is today finalizing requirements that mandate storage of mineral processing secondary materials that are not returned immediately to the process in tanks, containers, or buildings (or in limited cases for solids where a site-specific determination has been received, on pads) prior to recycling. The Agency believes that conditioning exclusion from the definition of solid waste on non-land storage will significantly reduce the complexity of compliance with the rule, while at the same time ensuring adequate protection of human health and the environment.

### **2.1.1 Comments on Expanding the Scope of the Proposed Regulatory Scheme**

**Comment:** One commenter argued that EPA should expand the scope of the proposed exclusion to include the entire metals recycling industry, not simply the mineral processing industry, and should eliminate formalistic, artificial regulatory distinctions among different forms of recycling activities. Due to the lack of relevant distinction between listed and characteristic waste, EPA should also make listed wastes eligible for the proposed exclusion (COMM82).

**Response:** The commenter's request to include the entire metals recycling industry is beyond the scope of this rulemaking. The Agency is amending the solid waste definition specifically for the mineral processing industry at this time in order to most accurately set out the scope of the land disposal prohibition and treatment standard for mineral processing wastes. Since non-mineral processing materials are not subject to these LDR standards, the Agency sees no need to consider the issue at this time. The Agency also is declining to expand the scope of the exclusion to include materials specifically

listed as hazardous. The Agency disagrees with the commenter that there is no meaningful distinction between characteristic and listed hazardous wastes. As it stated in the preamble to its January 1996 proposal, the process of listing a secondary material as a hazardous waste includes an evaluation of the manner in which the material is managed and the potential for the material to cause harm to human health and the environment. When a secondary material is found typically to be managed through recycling, the Agency evaluates whether such processing constitutes continuous on-going manufacturing or waste management and does so for the listed wastes from the mineral processing sector.

Therefore, when the Agency lists a secondary material as hazardous waste, the Agency has made an affirmative determination that the material is a solid waste, even when it is recycled. Furthermore, the Agency has evaluated each listed waste against the criteria set out at 50 FR 641 and 53 FR 526 and determined that all of the listed wastes should continue at this time to be classified as solid and hazardous wastes when recycled.

**Comment:** Another commenter suggested that due to the uncertainty created by the broad scope of secondary materials covered by the conditional exclusion, EPA should modify the proposed rule to be consistent with the mandate in AMC I to “specifically exclude co-products and in process and intermediate materials from the definition of solid waste.” (COMM36)

**Response:** In today’s rule, the Agency is promulgating conditions for exempting mineral processing secondary materials from the definition of solid waste that clarify any uncertainty concerning those materials that the Agency considers to be “in-process” and are consistent with court rulings in AMC I as modified by subsequent rulings in AMC II regarding the Agency’s jurisdiction over these materials. Under today’s rule, exclusion of mineral processing secondary materials is conditioned upon storage of the secondary materials (sludges, byproducts and spent materials) in units that are not land based (i.e., in tanks, containers, and buildings (or on approved pads in limited cases)). Materials returned immediately to the process (i.e., no storage is involved) are not regulated. In-process materials, materials which have never left the process, such as reverts (spills of molten metal which are collected and returned to the process) thus are not solid wastes. In AMC II, the court ruled that the only absolute bar to 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)). Because the Agency’s approach imposes additional requirements only on materials not returned immediately to the process and limits land storage, which necessarily involves materials which have left the process, in order to prevent stored secondary materials from becoming part of the “waste disposal problem,” the Agency believes that its final rule is consistent with the findings of AMC II.

### **Expanding the Scope of the Proposed Rulemaking to Include Process Water**

Four commenters specifically recommended that the regulatory scheme should be expanded to include process waters generated from mineral processing operations as legitimate recycling activities (COMM36, COMM40, COMM42, COMM70).

**Comment:** One commenter noted that “process water from mineral processing operations is often returned to the production process for equipment cooling purposes or for use as makeup water in actual processes,” and that in many cases, especially in the Western United States, recycling and reuse of process water is necessary to effectively conduct processing operations. As a rationale for exempting

process water, the commenter stated that process water is frequently stored in land-based units. Based on the proposed rule, if the water exhibits a hazardous characteristic, then the land-based unit in which the process water was contained could potentially be regarded as a waste management unit under RCRA. The commenter believed that this would effectively reduce secondary material recovery in the mineral processing industry. (COMM36)

**Response:** As stated in its January 1996 and May 1997 proposals (61 FR 2338 and 62 FR 26041), the Agency believes that both acidic solutions and process water can be legitimately recovered for the value of the acid or water. Under today's rule, mineral processing secondary materials that are returned to the process immediately may be recycled with no further restrictions. The exclusion from the definition of solid waste for these secondary materials, including process water, if stored prior to recycling is conditioned upon management in non-land-based units (i.e., tanks, containers, or buildings or on approved pads in limited cases) meeting minimum technical standards. The Agency notes that spent wastewater can create significant potential for harm if mismanaged, i.e., be part of the waste disposal problem. This is borne out not only by the many damage incidents involving releases of spent process waters from impoundments, but also by the risk modeling documented in the RIA for today's rule.

All units storing secondary mineral processing materials, including process water also would be required to meet generally applicable qualitative conditions related to legitimate recycling and could not be accumulated for more than one year. Process water may not, therefore, be stored in land-based units (e.g., surface impoundments) prior to recycling without becoming subject to RCRA regulation. The Agency believes that its approach will not, as suggested by the commenter, reduce secondary material recovery, because the Agency has learned, based on further research and on comments received on this approach, that mineral processing secondary materials are generated in volumes that make non-land storage feasible. Today's approach will therefore ensure that secondary materials are managed safely, that legitimate recycling can occur, and that mineral processing secondary materials do not become part of the "waste disposal problem."

**Comment:** Another commenter asserted that as a result of the findings of AMC I and AMC II, "recirculated process waters are outside the universe of regulated solid waste." The commenter contended that recirculated process water is destined for immediate reuse in an ongoing production process, and is not wastewater being treated prior to discharge. The commenter acknowledged the fact that some process water streams may serve to remove and manage waste materials from the process, but, likening these process waters to conveyor belts, while the materials that are entrained by the process waters are solid wastes, the process waters are not because they serve to transport the material throughout the recycle system. The process waters are recycled in such a manner that they are not speculatively accumulated, because they serve as an alternative feedstock for virgin (fresh) water. Additionally, in many cases, process water serves a much more integral role in the manufacturing process than simply as a medium for transporting waste from the production. The commenter presented the following examples in support of its argument:

- Condensing of elemental phosphorous from the furnace off-gas stream,
- Water seals on pressure relief devices,
- Conveying and storage operations, and
- Phosphorous dock loading and unloading water. (COMM42)

**Response** The Agency agrees with the commenter that immediately recirculated process waters are outside the universe of regulated solid waste. If the water is not removed from the process for storage, it remains in process. A secondary material, including recirculated process water, that is immediately put back into production is thus outside of RCRA jurisdiction. However, if it is removed from the process for storage, the reuse is no longer immediate, and, if storage is in an impoundment, the element of discard to the use of a land-based unit, is palpable. The many damage incidents involving impoundments in this industry sector make clear that storage can be, and has been, part of the waste disposal problem. The Agency has determined that phosphorus condenser water is, however, a mineral processing waste.

**Comment:** A third commenter also recommended that process water used in the mineral processing industry should be classified as a recyclable secondary material. In addition to the rationale provided by the above commenters, this commenter stated that two factors need to be taken into account:

- Whether water from another source (such as a well) would have to be used if recycling were disallowed, and
- Whether classifying the water as a recyclable secondary material conserves a valuable natural resource.

The commenter indicated that process water serves a "legitimate function" in its and others' manufacturing processes, and that the process water stored in surface impoundments does not contribute to the waste disposal problem. The commenter's process water surface impoundments are specifically designed to prevent releases, and are not the final resting place (with the exception of one impoundment) for the process water. (COMM70)

**Response** See response to COMM36 above. Given the Agency's approach as finalized today, that Agency believes that additional considerations proposed by the commenter are unnecessary.

### **2.1.2 Comments on the Conditional Exclusion Approach**

Two commenters suggested that the conditional exclusion approach is unlawful (COMM46, COMM58).

**Comment:** One commenter argued that under a "conditional exclusion," mineral processing secondary materials and units managing mineral processing secondary materials will have to meet stringent conditions or be regulated under RCRA Subtitle C. The commenter opposed EPA's conditional exclusion approach because it is based on an incorrect understanding of current recycling practices, and would inhibit or prevent full recovery of metals from the nation's limited mineral resources. Maximizing recovery of all metals is a critical function of the commenter's production processes. The commenter recommended that to the extent that EPA proceeds with changes to the definition of solid waste, EPA should maintain the current definition of solid waste until an alternative regulatory system can be developed that 1) truly encourages recycling, 2) recognizes that recovery of metal and acid values are critical (and not-tangential) elements of mineral industry production processes, 3) avoids imposition of additional and unnecessary regulatory obstacles to normal and environmentally sound metal production systems, and 4) is founded on a fair evaluation of actual risk, if any, posed by the current handling and recycling of mineral processing materials as they are managed in the real world.

The commenter felt that EPA's decision to adopt a conditional exemption based on the factual background outlined in 61 FR 2340 is incorrect, due to the fact that the factual background incorrectly characterizes the mining and mineral processing industry (COMM46)

**Response** Under today's rule, exclusion of mineral processing secondary materials is conditioned upon storage of the materials in units that are not land based (i.e., in tanks, containers, and buildings (or on approved pads in limited cases)) Materials returned immediately to the process are not regulated The Agency proposed this approach in May 1997 after additional research into mineral processing practices revealed that mineral processing secondary materials were generated in volumes that made them amenable to management in non-land-based units and that, in fact, the industry was moving away from use of land storage The Agency's prohibition on land placement is justified by the potential and actual threats posed by mineral processing secondary materials when stored on the ground These threats are amply documented in the Agency's document, "Damages Cases and Environmental Releases" (EPA, 1997) and other background documents supporting today's rulemaking, a number of which summarize additional damage incidents Comments received on the May 1997 proposal confirmed the Agency's thinking and provided data suggesting that even in the limited cases where the Agency believed high volume generation of mineral processing secondary materials might still be occurring, generation rates were lower than previously thought The option that the Agency is finalizing today is simpler in terms of compliance than the options proposed in January 1996, will not impede recycling in the primary mineral processing industry, and will allow industry to maximize mineral recovery while at the same time adequately protecting human health and the environment In addition, under today's rule, legitimate recycling includes the recycling of metal, water and acid values as requested by the commenter Consequently, the Agency believes that the rule being promulgated today meets all of the commenter's criteria for an alternative system to those options proposed in January 1996

**Comment.** Another commenter also believed that the conditional exclusion approach is unlawful, based on findings that are untrue, and will discourage recycling The commenter noted that the conditional exclusion is unnecessarily cumbersome, complex, and driven to address sham recycling The commenter also believed that the proposal has neglected the federal and state regulatory systems that already address the issue of sham recycling Additionally, the commenter argued that as a result of the conditional exclusion, many primary mineral processing facilities may find it necessary to reduce costs by shipping materials off-site for land disposal (COMM58)

**Response** See response to COMM46 above

**Comment:** Two commenters believed that the conditional exclusion approach should be expanded to accommodate other materials and industries (COMM58, COMM82)

**Response** A request to include other materials and industries is beyond the scope of this rulemaking, and the Agency specifically did not propose such an expansion The Agency is, however, amending the solid waste definition specifically for the mineral processing industry at this time in order to most accurately set out the scope of the land disposal prohibition and treatment standards for mineral processing wastes Since non-mineral processing materials would not be subject to these LDR standards, the Agency sees no need to consider the issue at this time

**Comment:** One commenter believed that the conditional exclusion approach does not simplify the existing regulatory definition of solid waste, nor provide the relief to the primary mineral processing industry mandated by AMCI The commenter agreed that the present regulatory system is overly

complex and discourages legitimate recycling and recovery efforts by the primary mineral processing industry. Both commenters asserted that appropriate revisions should be made to the existing regulatory scheme, rather than promulgating the new approach outlined in the proposed rule. The commenter indicated that the existing regulatory scheme could be easily revised to accommodate their concerns and meet the AMCI mandate (COMM58).

**Response:** See response to COMM46 above. Further, the Agency believes that the provisions of today's rule are consistent with court rulings in AMC I as explained by subsequent rulings in AMC II and other cases regarding the Agency's jurisdiction over these materials. Under today's rule, exclusion of mineral processing secondary materials is conditioned upon storage of the materials in units that are not land based (i.e., in tanks, containers, and buildings (or on approved pads in limited cases)). Materials returned immediately to the process are not regulated. In AMC II, the court ruled that the only absolute bar to 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)). Because the Agency's approach imposes additional requirements only on materials not returned immediately to the process and limits land storage in order to prevent stored secondary materials from becoming part of the "waste disposal problem," the Agency believes that its final rule is consistent with the holding of AMC II. The principal restriction placed on secondary materials is that they not be stored on land (except for storage on approved pads in limited cases).

**Comment:** One commenter noted that under EPA's existing regulations, secondary materials are regulated differently depending upon whether they are characterized as by-products, sludges, or spent materials. Since EPA is proposing to eliminate the distinctions, the commenter felt that several issues must be addressed:

First, the Agency should clarify that the current 40 CFR 261.2(c) exemption from the definition of solid waste for characteristic by-products and sludges that are either generated and reclaimed by outside industries or sent to and reclaimed within the mineral processing industry would remain in effect. Although EPA states in the preamble that the current exemption would continue to be applicable, the language of proposed sections 261.2(c) and 261.4(a)(15) is unclear on this point. The commenter added that failure to clarify this point will result in substantial reductions in resource recovery across many metals industries. The commenter believed that the result of the current proposed rule without clarification on this point will be predictable and negative economic and environmental consequences.

Second, the Agency should clarify that the current 40 CFR 261.2(c) exemption would continue to be applicable to characteristic by-products, sludges, and spent materials generated by mineral processors located in the United States and sent to mineral processing facilities outside of the United States. Pursuant to the proposed language of section 261.4(a)(15), secondary materials would only be conditionally excluded if certain enumerated conditions are met. EPA should not attempt to assert jurisdiction over foreign entities by requiring that they comply with EPA's proposed management standards. EPA should also make it clear that the proposed exemption would be applicable provided that the generator complies with the relevant conditions of the proposed conditional exclusion for as long as the material remains within the United States.

Third, the conditional exclusion should be expanded to include characteristic spent materials that are reclaimed regardless of where they are generated or reclaimed. In direct contrast to its



decision to eliminate distinctions, the commenter noted that EPA proposes not to extend the conditional exclusion to characteristic sludges, by-products, and spent material generated by outside industries and recycled within the mineral processing industry. This limitation is inconsistent with EPA's conclusions that "distinctions among secondary materials are not especially meaningful" and the "critical factor that may involve discarding does not relate to the type of metal-bearing materials being recovered but to the type of unit involved in the recycling activity."

The commenter added that EPA did not make an attempt to explain why the conditional exclusion does not apply to facilities generating or recycling mineral processing spent materials outside of the primary mineral processing industry. The commenter contended that if reasonable management practices are observed, transfers of secondary materials from outside industries to the mineral processing industry would pose no more of an environmental risk than intra-sector transfers. The commenter also noted that the proposed "legitimacy tests" for sham recycling would be well suited for, and would still apply, if the conditional exclusion was expanded to include spent materials generated outside of the mineral processing industry (COMM35).

**Response:** Today's rule eliminates the regulatory distinction among by-products, sludges and spent materials for mineral processing intra-industry recovery. After reviewing the generation, handling, and recycling of these materials, EPA determined that distinctions among them did not relate to risks that the materials might pose. By eliminating the regulatory distinctions today among characteristic by-products, sludges and spent materials in the primary mineral processing industry, the Agency hopes to create a simpler regulatory scheme that will encourage recycling. The Agency notes that this change applies only to the primary mineral processing industry, the current 40 CFR 261.2(c) exemption for characteristic by-products and sludges generated and reclaimed by *outside industries* or sent from outside industries to, and reclaimed by, the mineral processing industry would remain in effect. Mineral processing secondary materials generated by mineral processing in the United States but shipped to a facility outside the U.S. would need to be stored in compliance with the terms of today's conditional exclusion prior to transport, since domestic federal law certainly applies to domestic activities. Finally, the Agency has decided not to extend the exclusion promulgated today to metal-bearing materials outside the primary mineral processing industry because it has not had the opportunity to fully evaluate if wastes generated outside of the primary mineral processing industry should be eligible for an exclusion from the definition of solid waste. Among other things, there is no jurisdictional question that these materials can be solid and hazardous wastes. *API v. EPA*, 906 F.2d at 740-41. Thus, the policy issues of whether an exemption or exclusion is warranted may be different than those from today's rulemaking. Finally, the Agency notes that other metal-bearing wastes can still be recycled, and that the Agency's existing regulations regarding the use of effective substitutes (40 CFR 261.2(e)(11)) allow for such recycling.

### **2.1.3 Specific Changes to the Existing Regulatory Language as Raised by Commenters**

**Comment:** One commenter recommended that EPA should adopt several definitions used in conjunction with the proposed rulemaking. The commenter noted that in previous rulemakings, as well as various court cases, undefined terms have led to major disagreements between EPA and the regulated community usually resulting in continued litigation. Accordingly, the commenter recommended that the following definitions be added to 40 CFR 260.10:

A product is any material that is not a discarded material. Products include raw materials, feedstocks, intermediates, end-use industrial materials, ingredients, consumer goods, and any other material that is not a discarded material.

An intermediate is any material resulting from a manufacturing process whose design intends further processing of the material by the original manufacturer or a toll processor to produce a product or another intermediate.

A discarded material is a material that is disposed of, abandoned, or thrown away.

A toll processor is a person who performs a manufacturing process for another person who owns the work in progress.

A secondary material is any material which itself has been discarded material and is now being recycled to make a product. Secondary materials recycled to make a product are presumed not to be discarded materials, unless one of the following conditions applies:

- (1) The secondary material is used or stored on or in the ground, or used to make a product that is used on or in the ground, unless that is the material's or product's normal use or storage.
- (2) The secondary material is burned for energy recovery, used to produce a fuel, or contained in fuels. This provision will not apply where:
  - (a) That is the secondary material's normal use,
  - (b) The primary purpose of the activity is materials recovery and there is only incidental energy recovery, or incidental fuels production,
  - (c) The secondary material is used in manufacturing process whose primary purpose is to produce commercial fuels from crude oil and intermediate petroleum streams, or
  - (d) The secondary material is a "clean fuel,"
- (3) The secondary material is speculatively accumulated,
- (4) The secondary material or activity has been deemed inherently waste-like, or
- (5) The process is not secondary materials recycling.

Secondary Materials Recycling is 1) the use of a secondary material to make another material, or 2) reclamation of a secondary material to either a) recover another material, or b) to regenerate the original material, and 3) all associated ancillary operations, provided the following criteria are satisfied:

- 1) The person recycling the secondary material must have the appropriate equipment and technical expertise to produce the intended products or intermediates,

- ii) The secondary material must meet commercial, manufacturing, or product specifications,
- iii) The secondary material must be handled in a manner designed to minimize losses,
- iv) Contracts and/or records must be established related to the receipt of the material, the use of materials in the process, and the use or sale of products, intermediates, or feedstocks produced, and
- v) The process must produce at least one product, intermediate, or feedstock meeting commercial specifications

The commenter requested that EPA should correct the proposed regulatory language at 40 CFR 261.4 (b)(7) to ensure the exemption of processing wastes (COMM70)

**Response.** The Agency sees no reason to include the definitions recommended by the commenter. The commenter would have it that a material must be literally be thrown away at one time to be a secondary material, and hence, potentially, a solid waste. EPA believes this is an unnecessarily restrictive condition. It is not compelled by law. See *API*, 906 F.2d at 740-41, *AMC II*, 907 F.2d at 1186-87 (‘discarded’ is an ambiguous term, and does not refer just to materials which have been thrown away).<sup>1</sup> Given the numbers of damage incidents posed by land-based storage in this industry of materials that would not be secondary materials under the commenter’s scheme, EPA does not regard it as sound policy either. The Agency believes that the provisions of today’s rule adequately address the issues of terminology, specifically the provisions which condition exclusion from the definition of solid waste on the manner in which materials are stored, not the materials themselves. Thus, if a material is immediately recycled into the process, it is excluded from the definition of hazardous waste. Similarly, materials stored in tanks, containers, and buildings meeting minimum standards or solids stored on pads receiving a site-specific determinations also are excluded.

**Comment.** The commenter also requested that the following changes dealing with the classification of process water be made to the regulatory language:

#### 261.4 Exclusions

(a)

(15) Secondary materials (other than hazardous wastes listed in Subpart D of this Part) generated within the primary mineral processing industry from which mineral values are recovered that are reused by a primary mineral processing industry production process, provided that

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<sup>1</sup>Incidentally, the Agency notes further that the secondary materials at issue in *AMC II* were to be, and historically had been, recycled at a rate of 100 % at the plant which generated them (50 FR at 40292, 40296). Petitioners’ briefs to the D.C. Circuit court likewise stressed this fact (see citations in the preamble of today’s rule). The case therefore does not involve speculative accumulation.

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- (I) The material contains recoverable amounts of minerals that are recovered by a primary mineral industry production process, or consists of a water that serves a legitimate function in such a process
- (ii) The materials cannot be accumulated speculatively (as defined in 261.1(c)(8)),
- (iii) 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 (COMM70)

**Response:** The Agency disagrees with the commenter's recommended changes, but notes that the rule language has been significantly rewritten for other reasons and that EPA is not adopting quantified tests of legitimacy.

### **2.1.4 Generally Applicable Conditions**

**Comment:** One commenter questioned whether or not EPA has jurisdiction over recycling within the mineral processing industry when there is no land-placement of materials. The commenter raised this point in response to proposed conditions "that would apply whether or not the mineral-bearing residue is managed in a land-based unit" (COMM40).

**Response:** The minimal conditions for the exclusion for non land-based storage are all narrowly designed to prevent storage serving as a means of disposal. Thus, in essence tanks, containers and buildings have to be able to retain their contents without indiscriminate releases, i.e., if a tank/container/building functions essentially as a sieve, its contents are discarded materials. These conditions relate to the 'part of the waste disposal problem' prong of the jurisdictional test, and so are within the Agency's authority.

## **2.2 Conditions Relating to Legitimate Recycling**

### **2.2.1 General Issues**

Four commenters (COMM41, COMM43, COMM47, COMM80) commented on general issues regarding conditions relating to legitimate recycling.

**Comment:** One commenter asserted that the proposed rulemaking provides a unique opportunity for EPA to apply legitimacy criteria to a set of activities in a manner that provides for administrative certainty and enforcement currently lacking in the RCRA program. The commenter believes that neither the regulated community or the environment is served by vague eligibility criteria, and EPA should adopt quantitative legitimacy eligibility criteria whenever possible (COMM41).

**Response:** Based on comments received on its January 1996 proposal, the Agency determined that the proposed quantitative legitimacy tests as proposed generally were infeasible and counterproductive. Such tests would have required significant testing of materials (along with resultant costs). Furthermore, due to uncertainty in evaluating test results, companies might decide not to recycle any materials to protect the Bevill status of the resultant wastes. Specifically, the Agency determined that application of the ore cut-off grade test could restrict the gold industry's ability to recover gold.

values from secondary materials that contain gold at levels below those found in ore, even though such recovery could be cost effective. Further, application of a normal operating range test could be difficult to implement since operating parameters at large mineral processing facilities change frequently related to differences in feed. The Agency also determined that the proposed efficiency test might be unworkable because facilities may be recovering a specific metal at one recovery rate while they are recovering other metals at different rates. As a consequence, the Agency proposed, and is finalizing today, a new option that conditions exclusion from the definition of solid waste upon management of mineral processing secondary materials in non-land-based units (i.e. tanks, containers, or buildings). Storage of solids on pads also will be permitted in limited cases where the facility operator receives a site-specific determination from the EPA Regional Administrator or State Director that the pad is not serving as a means of discard. All units storing materials prior to recycling will be required to meet generally applicable qualitative conditions related to legitimate recycling, and materials also could not be accumulated for more than one year. Based on comment received on its two proposals and on additional research concerning volumes of secondary materials generated and trends in industry management of secondary materials, the Agency believes that today's rule takes into account industry practice, provides specificity that will facilitate compliance, ensures that secondary materials are managed safely, that legitimate recycling can occur, and that mineral processing secondary materials do not become part of the "waste disposal problem."

**Comment:** Another commenter welcomed the Agency's attempt in the proposed rulemaking to establish a framework for the criteria that should be used in any recycling assessment. The commenter argued that an assessment of the legitimacy of recycling is "a matter of both law and policy." (COMM80)

**Response:** The Agency appreciates the commenter's support, but notes that based on comments received on its January 1996 proposal, the Agency determined that the proposed quantitative legitimacy tests generally were infeasible. As a consequence, the Agency proposed, and is finalizing today, an option that conditions exclusion from the definition of solid waste upon management of mineral processing secondary materials in non-land-based units (i.e. tanks, containers, or buildings (or on approved pads in limited cases)). Units storing mineral processing secondary materials will be required to meet the qualitative conditions for legitimate recycling.

**Comment:** A third commenter asserted that legitimacy tests must be crafted to allow legitimate recycling to proceed unhindered. The commenter believed that any precautions against sham recycling should be designed to allow and encourage legitimate recycling. (COMM47)

**Response:** The Agency has decided to continue to use its existing qualitative criteria to determine legitimate recycling. These criteria have been in use for many years and are well-understood by industry. Their use should therefore not hinder recycling.

**Comment:** A fourth commenter suggested that EPA should look at the history of the mineral processing industry before finalizing the proposed rule. The commenter stated that the purpose of mining, milling, and processing facilities is to extract as much metal as possible. A "maximum recovery ethic" has been established in the industry for a long time, and serves the purpose that EPA is trying to achieve in this rulemaking. EPA should take care when evaluating reuse and recycling at mineral processing facilities, or the end result could be hindering the "maximum recovery ethic" that exists in the industry today. (COMM43)

**Response:** The Agency reiterates that its goal in today's rulemaking is to protect human health and the environment, while at the same time regulating storage of mineral processing secondary materials in a manner that encourages within-industry materials recovery and does not interfere with metal recovery operations within this industry sector. The Agency believes that today's rule is in keeping with its goal of balancing environmental protection while at the same time preventing "sham" recycling and ensuring that secondary mineral processing materials do not become part of the "waste disposal problem." Thus, notwithstanding that the mineral processing industry does indeed seek to recover the metal values remaining in secondary materials, the final rule seeks to have this done in a way that does not become part of the waste disposal problem (See response to COMM41)

## **2.2.2 Specific Changes to Regulatory Language as Raised by Commenters**

Two commenters requested several changes be made to the current regulatory language (COMM49, COMM65). The requested changes and a summary of their rationale for the changes follow.

**Comment:** One commenter requested the following change to

Include recovery of other chemicals or properties in §261.4(a)(15)(I)

§261.4 Exclusions

(a) \* \* \*

(15) \*\*\*

(I) The material contains recoverable amounts of minerals or other chemicals or properties required by the production process

The commenter generally supported EPA's proposal modifying 40 CFR 261.4 to include a solid waste exemption specifically for the mineral processing industry. However, the commenter argued that the exemption as proposed does not consider that certain secondary materials have value other than recoverable mineral content. This omission, because of the extremely important role caustic plays in the Bayer process, would prevent recycling of certain secondary materials in bauxite refining. In the Bayer process, liquid streams containing some mineral value are brought back into the process primarily because of their caustic value. The exclusion, as proposed, could result in the commenter's facility having to neutralize a high pH liquid stream thus diminishing or eliminating its caustic value. This would result in an economic loss of caustic, a necessary resource, with no environmental gain. Therefore, 40 CFR §261.4(a)(15)(I) should recognize that mineral processing secondary materials, in addition to or instead of mineral value, often have processing value in terms of other components or properties (COMM65).

The commenter suggested that the Agency editorially modify §261.4(a)(15)(iv) so that §261.4(a)(15)(iv) has parallel construction to the sentence in 40 CFR §261.4(a)(15). The commenter suggests the following language:

§261.4 Exclusions

(a) \* \* \*

(15) \* \* \*

(iv) The material must be stored or otherwise managed in process units (COMM65)

**Response:** The Agency sees no reason to include the changes to the regulatory language recommended by the commenter. The Agency believes that the provisions of the rule being promulgated today adequately address any language issues related to exclusion from the definition of solid waste and make these suggested changes unnecessary. The Agency further notes that provisions of today's rule explicitly allow recycling of acids, cyanide, water, and "other values" in addition to mineral values (see §261(a)(15)).

**Comment:** Eliminate §261.4(a)(15)(iv)(B) as a disqualifier for process units.

The commenter was concerned that §261.4(a)(15)(iv)(B) will prevent some land-based units from definition as "process unit" that otherwise would meet all necessary conditions for being more closely connected to production than waste management. Disallowing units from being defined as process units because they are subject to Clean Water Act regulation is counter-productive to the overall intent of this proposal. Being subject to regulation under the Clean Water Act is not definitive proof that a unit is a waste management facility and not part of a production process. Production areas and equipment will often produce a wastewater that is subject to Clean Water Act regulation. The other conditions that are proposed within §261.4(a)(15) and revised as recommended by these comments establish a sufficient test to determine whether a unit is acting more as a waste management facility than as part of the process. The commenter believes that §261.4(a)(15)(iv)(B) sets up an unnecessary hurdle to the intent of the overall proposal and should be deleted from the rule. (COMM65)

**Response:** Wastewater treatment impoundments are by their very nature waste management units. Wastewater managed in impoundments is therefore not eligible for the conditional exclusion from the definition of solid waste that is being promulgated today at §261.4(a)(15). Since no impoundments are, however, the issue is largely academic at this time.

**Comment:** Another commenter requested the following language be added to Section §261.4(a)

(17) Wastestreams that exhibit a characteristic of hazardous waste (other than hazardous wastes listed in Subpart D of this part) generated within the primary mineral processing industry which are rendered nonhazardous in a totally enclosed treatment unit, an elementary neutralization unit or wastewater treatment unit, as defined in §260.10

The commenter believed that the new paragraph (17) suggested above meets the intent of RCRA and of the proposed rule by promoting legitimate recycling activity, through the use of elementary neutralization or similar treatment units. Further, it would encourage industry to render hazardous wastes nonhazardous on-site in a beneficial manner that uses no landfill capacity and has no negative impact on the environment. If EPA does not agree to include this language, however, the commenter alternatively requested that EPA revise the parenthetical proposed at §268.32(e) to clarify that it would not apply to the type of activity described here, as follows (*including underlying hazardous constituents in characteristic wastes that have been diluted for the sole purpose of removing the characteristic*). The commenter requested that at a minimum, clarification be made on this point. (COMM49)

**Response:** The Agency notes that totally enclosed treatment units and elementary neutralization units already are exempt from permitting requirements (see 40 CFR §264.1(g)(5) and (6), and that wastes that are decharacterized in such units are no longer hazardous wastes. However, the Agency also disagrees with the commenter's alternative suggestion to modify 40 CFR §268.32(e), as such a change would constitute a fundamental shift in Agency policy, which currently prohibits dilution as a treatment option for complying with land disposal prohibition treatment standards. However, if wastewaters which are decharacterized are discharged pursuant to CWA requirements, LDR requirements probably would not apply. See RCRA section 3004 (g) (7).

### **2.2.3 Support for the Agency's Views on Conditions Relating to Legitimate Recycling**

Three commenters expressed general support for the Agency's views on conditions relating to legitimate recycling (COMM3, COMM6, COMM43).

**Comment:** One commenter supported EPA's proposal to allow recycling in beneficiation units, and the regulatory language as currently proposed. The commenter added that including one of the alternative tests as a regulatory "safe harbor" would preserve flexibility and allow case-by-case determinations, as well as creating certainty where it might be necessary to promote recycling that might not otherwise occur. The commenter noted, however, that EPA must remember the unique aspects of the mining and mineral processing industry when finalizing the rule. Processing residues recycled in processing or beneficiation units come from a process and are returned to it, and the metals that they contain are indigenous to the material being processed or beneficiated. (COMM43)

**Response:** Mineral processing secondary materials may be placed into beneficiation units provided that 1) legitimate recycling is occurring, and 2) the beneficiation unit is processing at least fifty percent virgin feedstock.

**Comment:** Another commenter indicated that it agrees with the requirements that are intended to ensure that

- 1 Recycling is actually occurring,
- 2 The material serves a legitimate function in the process,
- 3 No waste disposal is involved,
- 4 The material is not being stored speculatively,
- 5 One-time notification, and
- 6 Storage and treatment are being done only in process units as opposed to land-based facilities which would still be allowed under certain conditions. (COMM3)

**Response:** Today's rule incorporates provisions that are consistent with the commenter's criteria 1 through 5. Today's rule does not allow land-based storage of mineral processing secondary materials except in limited cases on approved pads.



**Comment:** A third commenter indicated that it supports EPA's proposal to quantify the criteria for determining whether recycling of mineral processing secondary materials is legitimate. The commenter agreed that the conditions should not pose an undue burden on persons recycling secondary mineral processing materials. The commenter added that "defining an ore cutoff grade and the normal operating range of the mineral processing industry are standards that are already in place." As a result, these tests would not likely impose any burden as well. The commenter also encouraged EPA to consider establishing more quantified criteria for defining legitimate recycling for the regulated community as a whole. (COMM6)

**Response:** The Agency appreciates the commenter's support for its proposed quantitative legitimacy tests, but based on comments received, the Agency has determined that the quantitative legitimacy tests, as previously proposed, are generally infeasible. Instead, the Agency developed and is finalizing today a rule that would condition exclusion from the definition of solid waste on storage of mineral processing secondary materials in non-land-based units (i.e., tanks, containers, or buildings (or in limited cases, on approved pads)). Mineral processing secondary materials immediately returned to the process would not be regulated. All units storing mineral processing secondary materials would be required to legitimately recycle the materials, and the materials could not be accumulated for more than one year prior to being reinserted into the process. The Agency believes that this new approach will ensure that secondary materials are managed safely, that legitimate recycling can occur, and that mineral processing secondary materials do not become part of the "waste disposal problem."

**Comment:** Another commenter expressed support for EPA's proposal to require that materials being recycled include recoverable amounts of minerals. (COMM22)

**Response:** Today's rule requires that mineral processing secondary materials must have recoverable amounts of minerals, acids, cyanide, water, or other values to be eligible for the conditional exclusion from the definition of solid waste.

## **2.2.4 Opposition to the Agency's Views on Conditions Relating to Legitimate Recycling**

### **General Opposition**

Eight commenters expressed general opposition to the Agency's views on the conditions relating to legitimate recycling. (COMM23, COMM36, COMM42, COMM57, COMM58, COMM67, COMM80)

**Comment:** One commenter argued that the proposal fails to recognize that many mineral processing secondary materials that do not have recoverable amounts of minerals are reused for other beneficial purposes. For example, secondary materials are often used to control charge composition, or for their flux value. (COMM36)

**Response:** The Agency must ensure that legitimate recycling of mineral processing secondary materials takes place as opposed to disposal wherever recycling is claimed to be taking place. The Agency is therefore requiring that recoverable amounts of minerals, acids, cyanide, water, or other values must be present in order for a mineral processing secondary material to be eligible for the conditional exclusion from the definition of solid waste that is being promulgated today. Today's rule does not preclude companies from using wastes under the effective substitutes provisions of 40 CFR §261.2

**Comment:** Four commenters indicated on a general basis that adoption of quantitative criteria would be objectionable to the mineral processing industry (COMM36, COMM42, COMM67, COMM80) One commenter mentioned that the reuse of leach circuit reagents (acidic solutions such as acid plant blowdown, refinery bleed, and scrubber blowdown) could be affected by the proposed criteria, even though there is no discussion in the proposed rule as to whether they might be or not. The commenter also noted that its secondary material recycling operations would be significantly affected if the current proposed quantitative criteria were to take effect (COMM67). Another commenter stated that through an endeavor with the Commonwealth of Massachusetts, a consultant determined that there were too many variables to construct a truly objective test for legitimate recycling (COMM80). A third commenter indicated that EPA's quantitative test will incorrectly apply to secondary materials not intended for discard, which is outside of EPA's RCRA jurisdiction (COMM36). Finally, a fourth commenter argued that the criteria do not lend themselves to broadly applicable standards, and should be evaluated on a site-specific basis. If the proposed quantitative standards are promulgated, both regulatory effort and regulatory uncertainty will be increased (COMM42).

**Response:** See above response to COMM36. Today's rule does not adopt quantitative criteria for determining the legitimacy of recycling because the Agency found that the tests as proposed might discourage, rather than encourage, recycling. The Agency also was concerned about the potential costs of materials testing that would have been required under the proposed quantitative tests. Specifically, the Agency determined that application of the ore cut-off grade test could restrict the gold industry's ability to recover gold values from secondary materials that contain gold at levels below those found in ore, even though such recovery could be cost effective. Further, application of a normal operating range test could be difficult to implement since operating parameters at large mineral processing facilities change frequently related to differences in feed. The Agency also determined that the proposed efficiency test might be unworkable because facilities may be recovering a specific metal at one recovery rate while they are recovering other metals at different rates.

**Comment:** One commenter believed that the need for a quantitative legitimacy test is minimal, due to the fact that it applies only to materials being recycled within the mineral processing sector. The commenter stated that its main concern is that hazardous constituents are not released into the environment, and setting quantitative limits according to the commenter is not a factor in environmental protection. As long as some level of mineral recovery occurs, the concentration of recoverable minerals and acids should be of minimal environmental concern (COMM23).

**Response:** See above response to COMM36 above.

**Comment:** Another commenter pointed out that current law already provides authority for regulation of legitimate recycling activities, at least in the gold sector of the mineral processing industry. The commenter contended that the current RCRA Subtitle C regulations "provide that unlisted byproducts and sludges "reclaimed" for their metal values are not solid wastes and therefore not subject to regulation (40 CFR 261.2(c)(3)). The commenter also cited 40 CFR 266.70 and 40 CFR 261.2(e)(11) as proof of a regulatory framework for regulation of legitimate recycling. The commenter asserted that if the current proposal is adopted, it will hinder, not encourage, the recycling of gold sector mineral processing secondary materials. Similarly, the commenter suggested that the imposition of a "significantly affected" test could burden the recovery of metals-rich secondary materials -- even where the secondary materials have a recoverable metals content orders of magnitude greater than virgin ore, and have never been placed or processed in a land based unit. The commenter stated that "EPA should

make it clear that no requirements -- including the notification requirement and the toxics ratio and significantly affected tests -- apply to such recycling activities ” (COMM57)

**Response** The Agency disagrees with the commenter that current recycling standards are adequate to prevent mineral processing secondary materials from becoming part of the “waste disposal problem” if these materials are stored on land for significant periods of time. At the same time, the Agency did not want to establish requirements that would unreasonably hinder recycling. Based on comments received, the Agency has determined that the quantitative legitimacy tests, as proposed, generally are infeasible. As a consequence, today the Agency is promulgating a rule that would condition exclusion from the definition of solid waste on management of secondary materials in non-land based units (except in limited cases on approved pads). The Agency has determined that storage in tanks, containers, and buildings is becoming more prevalent, and that these materials are generated in volumes lower than previously thought. The Agency therefore believes its new approach will not pose a significant burden to industry. Today’s rule does establish a notification requirement. The Agency believes that the public and the regulatory agencies must be informed of a facility’s use of the conditional exclusion in order to assess the facility’s compliance with it. Also, see above response to COMM36 and see Section 4.0 below for a complete discussion of the Agency’s position on the “significantly affected” test.

### **Comments Addressing the Legal Basis of the Proposed Legitimacy Test**

Three commenters consider the legitimate recycling criteria to be unreasonable and unlawful (COMM5, COMM46, COMM58). Two of the commenters provided specific rationale.

**Comment.** One commenter argued that the proposed tests for determining the legitimacy of recycling secondary materials are unnecessary and unwarranted, and should not be adopted. The commenter added that the proposal is arbitrary and capricious, because it is inconsistent with EPA’s prior solid waste determination for other industries. The commenter cited three cases as its rationale for this statement:

- Coke by-products,
- Splash condenser dross residue, and
- Recovered oil in the petroleum industry

The commenter stated that when these three secondary materials are managed in tanks or containers prior to being recycled, they are not solid wastes. However, these three secondary materials are not subject to any quantitative sham recycling test or notification requirements. As a result of these precedents, the commenter feels that EPA’s proposal to apply a quantitative test for legitimate recycling in the mineral processing industry cannot be sustained. Additionally, since secondary materials generated in the mineral processing industry are not “discarded,” they are beyond EPA’s RCRA regulatory jurisdiction. (COMM46)

**Response:** Based on comments received, the Agency determined that the quantitative legitimacy tests, as previously proposed, are generally infeasible. As a consequence, the Agency developed today’s rule, which would condition exclusion of mineral processing secondary materials from the definition of solid waste on storage of those materials in non-land based units (i.e., tanks, containers, or buildings (or in limited cases, on approved pads)) meeting minimum technical standards. Materials recycled under the conditional exclusion also would be required to meet generally applicable qualitative conditions related to legitimate recycling. Today’s rule also would prohibit accumulation of

secondary materials for more than one year. Because the commenter already manages secondary materials in tanks and containers, today's rule should have minimal impact on his operations. For detailed discussion of the Agency's jurisdiction over mineral processing secondary materials, please see Section 10, above.

**Comment.** Another commenter argued that EPA should abandon the proposed "sham recycling" criteria for mineral processing materials because they are arbitrary, unreasonable and unduly burdensome. The commenter noted that in August 1991, EPA proposed a set of criteria very similar to those in the current proposed rule.

- The hazardous waste had to have properties and specifications that were similar to those of the replaced "raw" material,
- The hazardous constituents in the waste had to "legitimately" contribute to the production process,
- The concentration of hazardous constituents in the recycled products had to be at levels that were comparable to the levels found in similar products made with "virgin" materials, and
- The sale of the product had to generate a substantial portion of the firm's total revenues.

The commenter added that OMB rejected these criteria for the following reasons:

- The approach would inevitably evaluate recycling activity inconsistently, and stifle recycling innovation,
- The nature and sources of the revenues derived from an activity were irrelevant in determining the legitimacy of an activity within an economic system,
- Throughout this rule, the EPA Administrator and Regional administrators retain substantial discretion in weighing these several "legitimacy" criteria (that is, the hazardous waste concentration of a product, the financial structure, etc.) in determining whether an activity constitutes recycling. Decisions on individual applications may be governed more by the specific circumstances and relationships with individual recyclers, than by any concern with protecting human health and the environment.

The commenter added that OMB concluded that the entire proposed rule was "unwieldy, artificial, and counterproductive", and returned it to EPA for reconsideration. As a result of this, the 1991 criteria were never promulgated. The commenter suggested that like the 1991 criteria, the proposed 'sham recycling' criteria would provide EPA with undue and arbitrary discretion in determining which facilities were engaged in 'legitimate' recovery operations, and would stifle beneficial recycling practices. (COMM5)

**Response.** Based on comments received, the Agency determined that the quantitative legitimacy tests, as previously proposed, are generally infeasible. As a consequence, the Agency developed, and is finalizing today, a rule that would condition exclusion for mineral processing secondary materials from the definition of solid waste upon management of those materials in non-land based units (i.e. tanks, containers, or buildings (or in limited cases, on approved pads). These units also

are required to meet generally applicable qualitative conditions related to legitimate recycling, and facility operators must provide a one-time notification to EPA or the authorized State describing the materials being recycled and the processes used to recycle them. Today's rule also would prohibit accumulation of secondary materials for more than one year. The Agency believes that the requirements that it is promulgating today are significantly less burdensome than those cited by the commenter, and that the provisions will ensure that secondary materials are managed safely, while allowing legitimate recycling to continue. Further, the Agency does not believe its approach today is arbitrary. The Agency is adopting the use of existing qualitative criteria to determine whether legitimate recycling is occurring. These existing criteria have been in use by the Agency for many years.

### **Comments Regarding the Existence of Sham Recycling Within the Mineral Processing Industry**

**Comment:** Six commenters asserted that sham recycling does not necessarily exist, and therefore, quantitative legitimacy criteria are not necessary or applicable to the mineral processing industry. The commenters argued that due to the nature of the industry where metals are extracted to the maximum extent possible, only legitimate recycling can exist. They contended that it would not make sense for someone to operate under the guise of recycling and expend the costs associated with further treatment and processing of a material with no recoverable constituent (therefore no economic value) simply to avoid regulation associated with disposal. (COMM37, COMM40, COMM46, COMM58, COMM67, COMM70)

**Response:** The Agency does not agree with commenters that "sham" recycling does not exist. Further, the Agency is concerned with the potential threat posed by mineral processing secondary materials when they are managed in a waste-like manner prior to legitimate reinsertion into the process. For example, if a mineral processing secondary material with uneconomic amounts of recoverable metal and high concentrations of unrecoverable toxic metals were 'recovered' in a beneficiation unit, there could be sham recycling occurring, particularly because of the incentive to shield the hazardous waste from true disposal costs by disposing of the residue in such a way as to have it be classified as Bevill exempt. This type of operation would be viewed as mixing a subtitle C hazardous waste with Bevill-exempt wastes, the result being that Bevill units could lose their exempt status.

**Comment:** The commenter noted that metal and mineral products are produced to meet stringent world-wide industry specifications. These specifications dictate that metal and mineral commodities be of a certain purity or "grade," thereby eliminating any concern that the product will contain excess levels of unwanted constituents. Mineral processing companies have a powerful economic incentive to design and operate their facilities in a manner that ensures that undesirable or unwanted constituents do not affect their product or their production operations. One way in which this is done is to monitor and control stringently the quality of feed materials, including recycled secondaries, that enter the production process. The commenter argued that because market incentives already exist to ensure that any recycling of secondary materials is "legitimate" in the mineral processing industry, RCRA regulatory controls are not needed. The application of such controls would create yet another layer of unnecessary regulatory, bureaucratic control that would interfere with mineral processing industry production. (COMM46)

**Response:** See responses to COMM37, COMM40, COMM46, COMM58, COMM67, and COMM70 above. The Agency acknowledges that companies must produce their metal products to meet

market standards. This does not eliminate the possibility of sham recycling in all cases. However, it is one reason EPA is not adopting quantified legitimacy tests in this rule.

### **Alternative Criteria for Determining Legitimate Recycling as Proposed by Commenters**

Eight commenters suggested or discussed alternative criteria for determining legitimate recycling as a forum for opposition to the Agency's proposed quantitative criteria (COMM35, COMM36, COMM42, COMM49, COMM53, COMM58, COMM80, COMM82).

**Comment:** One commenter stated that it believed that the only viable option for determining legitimate recycling is case-by-case consideration of recycling operations. The commenter, through the use of previous EPA guidance on legitimate recycling, has come up with the following list of six indicia of legitimate recycling activities:

- 1) Materials are handled in a manner consistent with their use as a valuable feedstock. This is comparable to, though not entirely the same as, the criterion in the proposal "No speculative accumulation."
- 2) Materials are not received indiscriminately, nor are they used in amounts in excess of the amount necessary to make a product. Rather feed materials are selected and used based on their ability to produce high quality products. This is comparable to the criterion "Concentrations of Recoverable Mineral and Acid" in the proposal. However, the commenter feels that none of the quantitative tests suggested to implement this criterion (e.g., ore cutoff grade, normal operating standard, efficiency standard, economic test) can provide the necessary flexibility.
- 3) The products of the process are legitimate, valuable products that have demonstrated markets.
- 4) The products of the process meet established specifications and contain no "toxics along for the ride." This is comparable to the criterion "Constraints on Nonrecoverable Hazardous Constituents" in the proposal.
- 5) The economic justification for the process is not solely the revenue received from charging generators for managing their wastes. This criterion is not a bright-line economic test, but rather further helps distinguish treatment activities - which derive all revenue or economic benefit from tolling or disposal fees - from recycling and manufacturing activities which derive at least some benefit from sale or recovery of products or raw materials.
- 6) The process is environmentally sound.

The commenter noted that the last criteria, the process is environmentally sound, is especially important. The commenter believed that there is a broad consensus that only environmentally-sound recycling of secondary materials should receive regulatory preferences. The commenter noted that none of the criteria are, by themselves, determinative for legitimate recycling or manufacturing activities. The commenter urged the Agency to use this and other rulemaking, guidance, and policy documents as a method for disseminating the appropriate criteria for legitimate recycling. (COMM80)

**Response:** Based on comments received, the Agency has determined that the quantitative legitimacy tests as proposed generally are infeasible. The Agency does believe that case-by-case determinations are feasible, however, using existing qualitative legitimacy criteria, most of which are identical to those suggested by the commenter. The specific criteria that the Agency uses are discussed in 50 FR 638, 53 FR 522, and 56 FR 7145 and 7185. The Fifth Circuit upheld use of these criteria in the Marine Shale litigation.

**Comment:** Two commenters recommended similar proposals with the objective of developing a legitimate recycling test which would be simple and self-implementing (COMM35, 53). To demonstrate legitimacy, the commenters propose that a facility would be required to maintain proof that it meets the following requirements:

- The facility must produce a material suitable for return to commerce or for use by the recycler, either as an ultimate product or as a feed material for an industrial process,
- The material to be recycled must meet specifications, established by the recycler, relating to the recycling process or to one or more of the products of the recycling process,
- The recyclable material must be handled in a manner to minimize loss of that material,
- The recycler must maintain adequate records relating to the receipt and processing of the recyclable material and for sale or use of the recycled product or feedstock, and
- The product manufactured from the recyclable material must meet specifications established for its use as a process feedstock or in commerce as a product. (COMM35)

The commenter felt that incorporating its proposal into the final rule would ensure that wastes that are simply being treated or disposed of under the guise of recycling will not qualify for the exclusion. (COMM53). A third commenter stated that it endorsed the above proposal. (COMM82)

**Response:** See response to COMM80 above. These are essentially the legitimacy criteria that EPA has said are relevant in determining if an activity is sham recycling.

**Comment:** Another commenter noted that much of EPA's proposal to determine legitimate recycling was directed at ensuring that mineral processing facilities do not engage in commercial hazardous waste management. The commenter felt that this objective would be more clearly attained if it were addressed directly. Therefore, the commenter presented the following proposal:

EPA should consider reproposing this portion of the rule and develop criteria based upon the following: (1) the "legitimate mineral production test" (i.e., does the plant feedstock include more than fifty percent ore, beneficiated ore, processed ore or materials streams generated by such beneficiation or processing?), (2) the "traditional product test" (does the facility or processing involve activities or operations which antedate RCRA (i.e., November 19, 1980), and therefore can demonstrate a utility independent of RCRA avoidance?), or (3) the "indigenous material test" (i.e., do the hazardous constituents of concern originate from material "indigenous" to the mineral processing (i.e., ore, beneficiated ore or traditional process ingredients [e.g., fluxes, reductants, or catalysts])

The commenter indicated that the above definitions could be developed in the same way that the definition of "beneficiation" was developed -- by enumerating the universe of excluded operations and/or materials produced (COMM42)

**Response:** Today's rule retains the Agency's current qualitative approach to determining if legitimate recycling is occurring. The Agency believes that the use of these criteria will assure that illegal disposal will not occur. The commenter's recommended approach is appreciated, but in light of the Agency's final decision regarding this rule, not necessary.

**Comment:** A commenter argued that due to the fact that EPA's proposal has no basis in fact or law, EPA should adopt recommendations presented by the commenter in a previous proposal to EPA. Specifically, EPA should contemplate an alternative approach in which the materials would be required to contain a metal content that is comparable to or above the normal range of virgin ores or feedstocks, contain levels of minerals or metals recoverable by the technology being employed, or contain materials necessary to be an effective substitute for commercial products. This alternative would simply encourage facilities to recover or recycle, in a cost-effective and environmentally sound manner, concentrations of minerals comparable to what they would have otherwise obtained through mining and processing (COMM58)

**Response:** The Agency disagrees with the commenter's assertion that EPA's proposal has no basis in fact or law. The Agency has ample legal jurisdiction to impose conditions on mineral processing secondary materials (see Section 10 above). The Agency is not adopting any quantitative criteria for legitimacy, therefore the commenter's concerns are no longer valid. See also response to COMM80 above.

**Comment:** Another commenter recommended that EPA consider the comparison of metal concentrations in secondary materials to the metal concentrations in slag residues as an alternative determinant of legitimate recycling. For example, lead blast furnace slags contain 1 to 2 percent lead. Therefore, metals recovery could be considered to be occurring if the lead concentration in the secondary materials being recycled exceeds 2 percent. The purpose of this comparison is to ensure that the metals concentration in the secondary materials exceeds that of the material coming out of the blast furnace (COMM36)

**Response:** See response to COMM80 above. The Agency is not adopting any quantitative criteria for legitimate recycling.

**Comment:** A sixth commenter presented a proposal that it believed would suitably define legitimate recycling for low-level acid waste streams. The commenter routes weak acid wastewater from its sulfate process manufacturing area to an elementary neutralization unit (ENU). The weak acid wastestream is transported by totally-enclosed above ground pipe to the ENU, where the pH of the wastewater is increased so that the material does not exhibit any RCRA characteristic. The resultant wastewater is discharged to water pursuant to the terms of a NPDES permit. The inert noncharacteristic solids that precipitate out of the neutralization process are then sold as product (principally for use in the manufacture of gypsum wallboard). Because the demand for this material far exceeds the supply, the material is not speculatively accumulated. In short, this recycling method has satisfied all of EPA's enumerated conditions to prevent sham recycling. The commenter asserted that the management of its weak acid waste stream is exempt from RCRA regulation, but the wastestream itself is still classified as a solid and hazardous waste. The commenter argued that EPA should establish an exemption from the



definition of solid waste for this type of management. The commenter noted that although weak acid wastestreams are essentially devoid of recoverable minerals, the manner in which they are recycled meets the goals of RCRA. (COMM49)

**Response:** As noted by the commenter, totally enclosed treatment units and elementary neutralization units already are exempt from RCRA regulation as permitted waste units (see 40 CFR 264.1(g)(5) and (6)). The Agency therefore sees no reason to extend today's exclusion from the definition of solid waste to this type of management.

## **2.3 Concentrations of Recoverable Mineral and Acid -- Alternative Tests**

### **2.3.1 General Comments**

Five commenters made general comments regarding the proposed alternative tests. (COMM22, COMM36, COMM47, COMM52, COMM58)

**Comment:** One commenter stated that in order to maximize the flexibility of the regulatory scheme and encourage recycling, that a facility meeting a normal range of ore grade test, an alternative economic test, or receiving a site-specific variance should be considered to have met the proposed "concentrations of recoverable minerals and acids" condition. (COMM58)

**Response:** Based on comments received, the Agency has determined that quantitative legitimacy tests, as previously proposed, are generally infeasible.

**Comment.** Another commenter suggested that for off-site recyclers of secondary materials, facility management standards would be an appropriate test for determining legitimate recycling. The commenter stated that general facility standards should include requirements for site security, general inspections, personnel training, contingency plan and appropriate response equipment, financial assurance and liability insurance, and recordkeeping and reporting requirements. (COMM47)

**Response.** See response to COMM58 above. Furthermore, the requirements proposed by the commenter are not "quantitative" in nature. The Agency believes that the qualitative standards proposed in today's rule are sufficient. In addition, the Agency notes that its requirements for recycling secondary materials apply only to primary mineral processing facilities and would not apply to off-site recyclers unless they are primary mineral processing facilities processing materials from within their industry sector.

**Comment:** A commenter argued that the imposition of legitimacy tests demonstrates a misunderstanding of the mining and mineral processing industry and underestimates the inconvenience to the industry posed by the proposal. The commenter contended that there would be unwarranted costs also associated with the legitimacy tests, and believes that EPA does not have the authority to impose such requirements on non-regulated processes. (COMM36)

**Response:** Based on comments received, the Agency has determined that the quantitative legitimacy tests, as previously proposed, are generally infeasible. Although the Agency has therefore decided in today's rule not to adopt any quantitative test for legitimacy, the Agency believes it has the authority to impose quantitative tests to ensure that sham recycling does not occur. Rather, the Agency