

47 FR 54598-01
RULES and REGULATIONS
ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 440
[WH-FRL 2232-1]

Ore Mining and Dressing Point Source Category Effluent
Limitations Guidelines and New Source Performance Standards

Friday, December 3, 1982

***54598** AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation limits the discharge of pollutants into navigable waters of the United States from existing and new sources in the ore mining and dressing industry. The Clean Water Act and a Consent Decree require EPA to issue this regulation.

The purpose of this regulation is to establish "best available technology" limitations (BAT) and "new source performance standards" (NSPS) for direct dischargers. Pretreatment standards for both existing and new sources are not being issued since no known indirect dischargers exist nor are any known to be planned. Effluent limitations for "best conventional technology" (BCT) are reserved pending application of the new BCT cost methodology.

DATES: In accordance with 40 CFR 100.01 (45 FR 26048), this regulation will be considered issued for purposes of judicial review at 1:00 P.M. Eastern time on December 17, 1982. It will become effective January 17, 1983 publication date, except [§ 440.104\(b\)\(2\)\(ii\)](#) which contains information collection requirements which are under review at OMB. Under Section 509(b)(1) of the Clean Water Act, any petition for judicial review of this regulation must be filed in the United States Court of Appeals within 90 days after the regulation is considered issued for purposes of judicial review. Under Section 509(b)(2) of the Clean Water Act, the regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce its requirements.

ADDRESS. Technical information may be obtained from Mr. B. Matthew Jarrett, at the address listed below, or by calling (202) 382-7164. The economic information may be obtained from Mr. John Kukulka, Office of Analysis and Evaluation (WH-586), Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460, or by calling (202) 382-5388.

On December 24, 1982, copies of the development document and the NSPS economic analysis will be available for public review in EPA's Public Information Reference Unit, Room 2404 (Rear) (EPA Library), 401 M Street SW., Washington, D.C. On February 7, 1983, the complete Record, including the Agency's responses to comments on the proposed regulation will be available for review at the Public Information Reference Unit. The EPA information regulation (40 CFR Part 2) allows the Agency to charge a reasonable fee for copying. Copies of the development document and the economic analysis may also be obtained from the National Technical Information Service, Springfield, Virginia 22161 (703) 487-6000. A notice will be published in the Federal Register announcing the availability of these documents from NTIS. (This should occur within 60 days of today's date.)

SUPPLEMENTARY INFORMATION:

Organization of this Notice

I. Legal Authority

II. Scope of This Rulemaking

A. Overview

B. Prior EPA Regulations

C. Description of This Regulation

III. Summary of Legal Background

A. The Clean Water Act

1. Best Practicable Control Technology Currently Available (BPT)

2. Best Available Technology Economically Achievable (BAT)

3. Best Conventional Pollutant Control Technology (BCT)

4. New Source Performance Standards (NSPS)

5. Pretreatment Standards for Existing Sources (PSES) and Pretreatment Standards for New Sources (PSNS)

IV. Methodology and Data Gathering Efforts

V. Summary of Promulgated Regulation and Changes From Proposal

A. Subcategorization

B. Applicability

C. Best Practicable Technology Limitations

D. Best Available Technology Limitations

E. Best Conventional Technology Limitations

F. New Source Performance Standards

1. Froth Flotation Mills

2. Uranium Mills

3. Storm Exemption

G. General Provisions and Definitions

VI. Costs and Economic Impact

VII. Nonwater Quality Environmental Impacts

VIII. Pollutants and Subcategories Not Regulated

A. Exclusion of Pollutants

B. Exclusion of Subcategories

IX. Best Management Practices

X. Upset and Bypass Provisions

XI. Variances and Modifications

XII. Relationship to NPDES Permits

XIII. Public Participation

XIV. Small Business Administration (SBA) Financial Assistance

XV. List of Subjects in 40 CFR 440

XVI. Availability of Technical Assistance

XVII. OMB Review

Appendices

A. Abbreviations, Acronyms, and Units Used in This Notice

B. Toxic Organic Compounds Not Detected During Sampling

C. Toxic Organic Compounds Detected at at Least One Facility But Always 10 ug/l or Less

D. Toxics Detected at Levels Too Small To Be Effectively Reduced by Technologies Known to the Administrator

E. Toxic Organic Compounds Detected From a Small Number of Sources and Uniquely Related to These Sources

F. Pollutants Effectively Controlled by the Technology Upon Which Other Effluent Limitations and Guidelines Are Based

G. Pollutants Excluded by Subcategory and Subpart

H. Subcategories Excluded From Development of BAT or NSPS

I. Legal Authority

The regulations described in this notice are promulgated under authority of Sections 301, 304, 306, 307, 308, and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, [33 USC 1251](#) et seq., as amended by the Clean Water Act of 1977, P.L. 95-217) (the “Act”). These regulations are also promulgated in response to the Settlement Agreement in [Natural Resources Defense Council, Inc., v. Train](#), 8 ERC 2120 (D.D.C. 1976), modified, [12 ERC 1833 \(D.D.C. 1979\)](#).

II. Scope of This Rulemaking

A. Overview. This regulation applies to facilities engaged in mining and processing of metal ores. The industry includes facilities which mine or process the ores of 23 separate metals and is segregated by the U.S. Bureau of the Census Standard Industrial Classification (SIC) into nine major codes: SIC 1011, Iron Ore; SIC 1021, Copper Ores; SIC 1031, Lead and Zinc Ores; SIC 1041, Gold Ores; SIC 1044, Silver Ores; SIC 1051, Aluminum Ore; SIC 1061, Ferroalloy Ores including Tungsten, Nickel, and Molybdenum; SIC 1092 Mercury Ores; SIC 1094 Uranium, Radium, and Vanadium Ores; and SIC 1099 Metal Ores, Not Elsewhere Classified including Titanium and Antimony.

Over 500 active mining and over 150 milling operations are located in the United States and most are in remote areas.

The industry includes facilities that mine ores to produce metallic products and all ore dressing and beneficiating operations at mills operated either in conjunction with a mine operation or at a separate location. A detailed overview of the ore mining industry can be found in the proposed regulation ([47 FR 25682](#)).

***54599** B. Prior EPA Regulations. On November 6, 1975, EPA published interim final regulations establishing BPT requirements for existing sources in the ore mining and dressing industry (see 40 FR 51722). These regulations became effective upon publication. However, concurrent with their publication, EPA solicited public comments with a view to possible revisions. On the same date, EPA published proposed BAT, NSPS, and pretreatment standards for this industry (see 40 FR 51738). Comments were also solicited on these proposals.

On May 24, 1976, as a result of the public comments received, EPA suspended certain portions of the interim final BPT regulations and solicited additional comments (see 41 FR 21191). EPA promulgated revised, final BPT regulations for the ore mining and dressing industry on July 11, 1978, (see 43 FR 29711, 40 CFR Part 440). On February 8, 1979, EPA published a clarification of the BPT regulations as they apply to storm runoff (see 44 FR 7953). On March 1, 1979, the Agency amended the final BPT regulations by deleting the requirements for cyanide applicable to froth flotation mills in the base and precious metals subcategory (see 44 FR 11546).

On December 10, 1979, the United States Court of Appeals for the Tenth Circuit upheld the BPT regulations, rejecting challenges brought by five industrial petitioners. [Kennecott Copper Corp. v. EPA, 612 F. 2d 1232 \(10th Cir. 1979\)](#).

The Agency withdrew the proposed BAT, NSPS, and pretreatment standards on March 19, 1981 (see [46 FR 17567](#)). On June 14, 1982 the Agency proposed the BAT, BCT, and NSPS limitations and standards which are the subject of this rulemaking.

C. Description of This Regulation. As a result of the Clean Water Act of 1977, the emphasis of EPA's program has shifted from "classical" pollutants to the control of a list of toxic substances. Therefore, in this rulemaking, EPA efforts are primarily directed toward ensuring the achievement of limitations based upon the best available technology economically achievable (BAT) by July 1, 1984.

The BPT effluent limitations are included as part of this regulation for the convenience of the reader. Since there are no substantive changes in the BPT effluent limitations as sustained by the 10th Circuit, the BPT effluent limitations are not subject to further judicial review.

BAT limitations are established for seven subcategories in the ore mining and dressing point source category. The BAT effluent limitations are being promulgated as they were proposed on June 14, 1982 ([47 FR 25682](#)). The technology basis for BAT is discussed in the proposed regulation and is discussed in greater detail in the development document supporting the proposed regulation and in the development document supporting this final regulation.

BCT effluent limitations are not being promulgated in this rulemaking. As discussed further in Section V, Changes from Proposal, BCT for this point source category is instead being included as part of the proposed regulation on the new BCT cost methodology. ([47 FR 49176](#), October 29, 1982).

NSPS are established for seven subcategories. A NSPS for froth flotation mills extracting copper, lead, zinc, gold, silver, or molybdenum was proposed as zero discharge, but the standard is being amended to allow for a bleed in the mill circuit. Also, the upset and bypass storm provision for new sources requiring zero discharge is being changed and made identical to the provision for existing sources. All other standards of performance and general provisions are established essentially as proposed. This is discussed further in Section V, Changes from Proposal.

Finally, this regulation does not establish pretreatment standards because, as discussed in the proposed regulation, the Agency knows of no existing facilities which discharge to publicly owned treatment works and does not expect that any new sources will do so.

III. Summary of Legal Background

A. The Clean Water Act. The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program to “restore and maintain the chemical, physical and biological integrity of the Nation's waters” (Section 101(a)). To implement the Act, EPA was required to issue effluent limitations guidelines, pretreatment standards and new source performance standards for industrial dischargers.

The Act included a timeable for issuing these standards. However, EPA was unable to meet many of the deadlines and, as a result, in 1976, it was sued by several environmental groups. In settling this lawsuit, EPA and the plaintiffs executed a court-approved “Settlement Agreement.” This Agreement required EPA to develop a program and adhere to a schedule in promulgating effluent limitations guidelines and pretreatment standards for 65 “priority” pollutants and classes of pollutants, for 21 major industries. [See [Natural Resources Defense Council, Inc. v. Train](#), 8 ERC 2120 (D.D.C. 1976), modified, 12 ERC 1833 (D.D.C. 1979)].

Many of the basic elements of this Settlement Agreement were incorporated into the Clean Air Water Act of 1977 (“the Act”). Like the Settlement Agreement, the Act stressed control of the 65 classes of toxic pollutants. In addition, to strengthen the toxic control program, Section 304(e) of the Act authorizes the Administrator to prescribe “best management practices” (BMP) to prevent the release of toxic and hazardous pollutants from plant site runoff, spillage or leaks, sludge or waste disposal and drainage from raw material storage associated with, or ancillary to, the manufacturing of treatment process.

Under the Act, the EPA program is to set a number of different kinds of effluent limitations. These are discussed in detail in the proposed regulation and development document. The following is a brief summary:

1. *Best Practicable Control Technology Currently Available (BPT)*. BPT limitations generally are based on the average of the best existing performance at plants of various sizes, ages and unit processes within the industry or subcategory. In establishing BPT limitations, we consider the total control of applying the technology in relation to the effluent reduction derived, the age of equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes and the nonwater-quality environmental impacts (including energy requirements). We balance the total cost of applying the technology against the effluent reduction.

2. *Best Available Technology Economically Achievable (BAT)*. BAT limitations, in general, represent the best existing performance in the industrial subcategory or category. The Act establishes BAT as the principal national means of controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. In arriving at BAT, the Agency considers the age of the equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes, the cost of achieving such effluent reduction and nonwater-quality environmental impacts. The Administrator retains considerable discretion in assigning the weight to be accorded these factors.

3. *Best Conventional Pollutant Control Technology (BCT)*. The 1977 Amendments added [Section 301\(b\)\(2\)\(E\)](#) to the Act establishing “best *54600 conventional pollutant control technology” (BCT) for discharges of conventional pollutants from existing industrial point sources. Conventional pollutants are those defined in Section 304(a)(4) [biological oxygen demanding

pollutants (e.g., BOD5) total suspended solids (TSS), fecal coliform and pH] and any additional pollutants defined by the Administrator as “conventional,” i.e., oil and grease. (See 44 FR 44551: July 30, 1979.)

BCT is not an additional limitation but replaces BAT for the control of conventional pollutants. In addition to other factors specified in section 304(b)(4)(B), the Act requires that BCT limitations be assessed in light of a two part “cost-reasonableness” test. *American Paper Institute v. EPA*, 660 F. 2d 954 (4th Cir. 1981). The first test compares the cost for private industry to reduce its conventional pollutants with the cost of publicly owned treatment works (POTWs) for similar levels of reduction in their discharge of these pollutants. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find that limitations are “reasonable” under both tests before establishing them as BCT. In no case may BCT be less stringent than BPT.

EPA published its methodology for carrying out the BCT analysis on August 29, 1979 (44 FR 50732). In the case mentioned above, the Court of Appeals ordered EPA to correct data errors underlying EPA's calculation of the first test, and to apply the second cost test. (EPA had argued that a second cost test was not required.)

EPA recently proposed a new methodology on October 29, 1982 and simultaneously proposed BCT limitations for ore mining and dressing. (47 FR 49176).

4. *New Source Performance Standards (NSPS)*. NSPS are based on the best available demonstrated technology. New plants have the opportunity to install the best and most efficient production processes and wastewater treatment technologies.

5. *Pretreatment Standards for Existing Sources (PSES)*, and *Pretreatment Standards for New Sources (PSNS)*. Pretreatment standards (PSES and PSNS) are designed to control the discharge of pollutants into publicly owned treatment works. Pretreatment standards were not proposed for the ore mining and dressing category since no known indirect dischargers exist nor are any known to be planned. Ore mines are located in rural areas, generally far from a POTW. EPA expects that the cost of pumping mine and mill wastewater to a POTW would be prohibitive in most cases, and on-site treatment is more cost effective in virtually every instance.

IV. Methodology and Data Gathering Efforts.

The methodology and data gathering efforts used in developing the proposed regulation were discussed in the preamble to the proposal, 47 FR 25682 (June 14, 1982). In summary, before publishing the proposed regulation the Agency conducted a data collection, analytical screening, and analytical verification program for the ore mining and dressing industry. This program stressed the acquisition of data on the presence and treatability of the 65 toxic pollutants and classes of toxic pollutants discussed previously. The 65 toxic pollutants and classes of pollutants potentially include thousands of specific pollutants. EPA selected 129 specific toxic pollutants for study in this rulemaking and other industry rulemakings. (Analytical methods are discussed in *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants* (U.S. E.P.A., April 1977)). Based on the results of that program, EPA identified several distinct treatment technologies, including both end-of-pipe and in-plant technologies, that are or can be used to treat ore mining and dressing industry wastewaters.

For each of these technologies, the Agency (i) compiled and analyzed historical and newly-generated data on effluent quality, (ii) identified its reliabilities and constraints, (iii) considered the nonwater quality impacts (including impacts on air quality, solid waste generation and energy requirements), and (iv) estimated the costs and economic impacts of applying it as a treatment and control system. Costs and economic impacts of the technology options considered are discussed in detail in two separate documents, *The Economic Impact Analysis of Promulgated New Source Performance Standards for the Ore Mining and Dressing Industry* and *The Economic Impact Analysis of Promulgated BAT Effluent Limitations and Standards for the Ore Mining and Dressing Industry*. A more complete description of the Agency's study methodology, data gathering efforts and analytical procedures supporting the regulation can be found in the *Final Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Ore Mining and Dressing Point Source Category* (U.S. EPA, November 1982).

V. Summary of Promulgated Regulation and Changes From Proposal

The final regulation does not change the proposed BAT regulations but does change the standards for new sources. The changes are the result of the Agency's consideration of public comments provided in response to the proposal and further evaluation of the information upon which the proposal was based.

A. Subcategorization. The proposed subcategorization scheme was similar to the subcategorization scheme found in the 1978 BPT regulations. That scheme subcategorizes the industry primarily on the basis of ore type. Each subcategory is further subdivided on the basis of whether the discharge is from a mine or a mill and, in some cases, according to the type of beneficiation process employed. In these final regulations the Agency is retaining the proposed subcategorization scheme with a few modifications resulting from comments received on the proposed regulation.

The 1978 BPT regulations contained a Ferroalloy Ores subcategory that addressed discharges from facilities mining or milling chromium, cobalt, columbium, tantalum, manganese, molybdenum, nickel, tungsten, and vanadium (recovered alone, rather than as a by-product of uranium mining or milling). The BPT regulations also contained a Base and Precious Metal Ores subcategory that addressed the discharges from facilities mining or milling copper, lead, zinc, gold, or silver. Prior to proposing the BAT and NSPS regulations, EPA found that the wastewater discharges from molybdenum mines and mills were more like the discharges from facilities in the Base and Precious Metals Ores subcategory than the discharges from the Ferroalloy subcategory. Consequently the proposed BAT and NSPS regulations placed molybdenum mines and mills into the Base and Precious metals subcategory, which was renamed the Copper, Lead, Zinc, Gold, Silver, Platinum and Molybdenum Ores subcategory. The proposal also eliminated the Ferroalloy subcategory and replaced it with the Nickel Ores subcategory, the Tungsten Ores subcategory, and the Vanadium Ores subcategory (recovered alone, not as a by-product of uranium mining and milling). For clarification, however, the proposal retained the old subcategorization scheme for the BPT limitations.

From the comments received, it is apparent that retention of the old BPT subcategorization scheme for the BPT ***54601** limitations has only confused, rather than clarified matters. The commenters suggested that, to eliminate this confusion, the Agency should use an identical subcategorization scheme for all the limitations and standards. Accordingly, in this final regulation, the Agency is eliminating a separate subcategorization scheme for the BPT limitations, and is, instead, using the same scheme for all the BPT, BAT, and NSPS limitations. This change is solely for the purpose of clarification and will not alter in any way the actual numerical limitations which apply to facilities covered by the BPT regulations.

One additional modification to the subcategorization scheme is being made. The Agency is taking platinum ore out of the new Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores subcategory and establishing a new subcategory for these mines and mills. The Agency received comments that a new platinum mine and mill is being considered that will be substantially different than the existing mines and mills upon which the Agency based best demonstrated technology. The Agency is, therefore, establishing a new subcategory addressing platinum ore mines and mills and is reserving the new source performance standard.

B. Applicability. As discussed in the proposal, the Ore Mining and Dressing effluent guidelines limitations and standards are applicable to facilities discharging wastewater from ore mining and milling operations. They do not, however, provide a complete basis for calculating the limitations of operations known as "complex facilities," which combine wastestreams from processes such as refining and smelting with ore mining and milling wastestreams and then treat this combined stream before discharge. Each facility will be given effluent limitations that are derived from the BAT mine and mill guidelines and the smelter and refining guidelines and other applicable guidelines.

The Agency received voluminous comments from developers of a molybdenum mine and mill in southeastern Alaska. The developers argued that the mill differs substantially from the existing molybdenum mills upon which the Agency based the proposed NSPS. Specifically, they argue that precipitation is greater than at other facilities and that the terrain is unusually steep, necessitating the construction of a dam much larger than tailings impoundments at existing facilities. They further argue that since the mine and mill are located in the environmentally sensitive Misty Fjords National Monument, construction of a

massive tailings impoundment may result in greater long term environmental degradation than at existing facilities. In a related vein, they point out that the mine and mill are being developed in accordance with the dictates of the Alaska National Interest Lands Conservation Act (ANILCA), which requires an intensive study of the overall environmental impact of the mine and mill before construction begins. Finally, they note that the mine and mill are in an earthquake area, and that construction of a large tailings dam raises concerns for safety of the population below the dam.

The Agency disagrees with the commenter's assertions that the proposed molybdenum mine and mill differ significantly in topography and climate from existing mines and mills. Nevertheless, given the possibility that compliance with the zero discharge NSPS would result in substantial non-water quality environmental impacts, and given the fact these impacts are being subjected to an intense environmental scrutiny, the Agency believes it would be premature to subject the mine and mill to regulation at this time, before the environmental review process is fully completed.

Also, as the Agency stated in the preamble to the BPT regulations and in the proposed regulation for BAT and NSPS, under no circumstances will an owner or operator be required to violate applicable safety standards to meet the requirements of BPT, BAT, or NSPS. As discussed in these regulations, the Agency is confident that the national applicable effluent limitations guidelines and standards of performance do not pose a concern for the overall safety related to the water impoundments that may be required by the regulations. However, it would be premature to regulate this mine and mill before the potential for earthquake and avalanches in a deep mountain terrain has been completely evaluated by Federal and State agencies and others responsible for conducting a thorough study of the impacts of this proposed new mine and mill. Accordingly, the Agency is excluding this mine and mill from the regulations applicable to molybdenum mines and mills, thereby postponing consideration of the appropriate limitations for this facility until the permit proceedings.

The BPT limitations established a subpart for gold placer mines, but reserved effluent limitations because the Agency did not have sufficient technical or economic data. The proposal similarly reserved effluent limitations and standards for the gold placer mine subpart because the data generated prior to proposal were not sufficiently comprehensive.

EPA still has no data upon which to base an economic assessment of gold placer mines and does not have sufficient technical data to promulgate or propose limitations for gold placer mines. The Agency is, therefore, continuing to reserve the subpart for gold placer mines in the promulgated regulation.

C. Best Practicable Technology Limitations. The BPT limitations for the ore mining industry were promulgated in 1978, were completely upheld in the Courts, and are repeated in this regulation solely for clarity. EPA received a few comments which recommended that the Agency relax the current BPT regulations. These comments are discussed in the response to public comments document.

D. Best Available Technology Limitations. EPA proposed BAT limitations equal to the BPT regulations currently applicable to this industry.

The rationale for setting BAT effluent limitations equivalent to BPT effluent limitations is discussed in the proposal ([47 FR 25682](#)), the development document supporting the proposed rule, and the development document supporting this final rule. In summary, the Agency established BAT equal to BPT either because BPT already specified zero discharge of process wastewater, or because application of candidate BAT did not reduce the level of the toxic or nonconventional pollutants, or because BPT removed a very high percentage of the relevant pollutants. Almost all the commenters agreed with EPA's decision to propose BAT equal to BPT. Accordingly, the Agency is finalizing the BAT limitations as proposed. The comments addressing the BAT limitation are discussed in the response to public comments document.

E. Best Conventional Technology Limitations. The Agency proposed BCT limitations equal to the BPT limitations for conventional pollutants. This was done even though the Agency had not established a new cost effectiveness test for conventional pollutant removal as directed by the Fourth Circuit Court of Appeals decision in *American Paper Institute v. EPA*,

F. 2d (4th Cir. 1981). In the proposal the Agency reasoned that since BPT is the minimum level of control required by law, no possible reassessment of BCT pursuant to the Court's remand could result in BCT limitations for conventional pollutants less stringent than the BPT limitations.

***54602** A number of commenters took issue with the Agency's decision to propose BCT limitations in the absence of a new BCT methodology. The Agency agrees with these criticisms and has accordingly decided to withdraw the BCT limitations proposed on June 14, 1982. Instead, BCT Limitations for the ore mining and dressing point source category are being included as part of the proposed regulation on the new BCT methodology. This proposed regulation was published in the Federal Register on October 29, 1982. ([47 FR 49176](#)). Comments on the proposed BCT limitations must be submitted during the comment period for the BCT rulemaking.

F. New Source Performance Standards. EPA proposed new source performance standards (NSPS) equal to the BAT limitations for all elements of the ore mining and dressing industry with the exception of froth flotation mills in the copper, lead, zinc, gold, silver, platinum and molybdenum subcategory and the uranium mill subcategory. The Agency proposed NSPS requiring zero discharge for these latter two segments as discussed below.

1. Froth Flotation Mills. The proposed zero discharge requirement for new froth flotation mills was based on the fact that 46 out of 90 existing facilities for which we have data achieve zero discharge through total recycle and evaporation of process wastewater.

Industry commenters raised a number of objections to this proposal. First, they argued that most of the mills achieving zero discharge are in net evaporation areas with flat topography and that it was inappropriate to extrapolate from the treatment performance of mills in these areas to mills located in rainy or mountainous areas. They contended that in rainy or mountainous areas, the costs of constructing the tailings impoundment necessary to achieve zero discharge and the costs of transporting recycle water back to the mill could be prohibitive. They implied that this problem was greatly exacerbated by the proposed storm exemption for new sources, which granted relief to a facility only upon the occurrence of a ten year, twenty-four hour storm.

Second, they argued that EPA improperly assumed that new sources, unlike existing sources, would not experience extensive retrofit costs. They pointed out that the Agency's proposed definition of new source embraces both virgin or "greenfield" facilities and facilities constructed in conjunction with existing sources. These latter facilities, they stated, will incur substantial retrofit costs to achieve zero discharge.

Finally, they asserted that the Agency neglected to take into account the buildup of reagents and other contaminants in the recycle water of a total recycle system. They claimed that these contaminants would interfere with the froth flotation process and cause severe loss of product, necessitating either the addition of fresh make up water or the treatment of the recycle water. They added that treating the recycle water may not always prove to be an effective solution because of the buildup of contaminants from the treatment of the recycle water. They pointed out the Agency had not calculated the costs of treating the recycle water or building the bigger impoundment to hold and recycle the wastewater.

The Agency disagrees with the commenters' first criticism that EPA failed to adequately take into account topographical and climatic constraints in proposing a zero discharge requirement for new sources. Mills currently achieving zero discharge are located in areas ranging from flat to extremely steep and mountainous. Zero discharge is thus demonstrated for a wide spectrum of topographical constraints. Similarly, although the majority of mills achieving zero discharge are located in dry areas, 15 are located in relatively wet areas. Zero discharge is thus demonstrated for wet areas as well as dry areas. Moreover, the standards promulgated for new source froth flotation mills allow a discharge of wastewater equivalent to the net precipitation (precipitation less evaporation) subject to the discharge limitations for mine drainage, e.g. 440.104(2)(i). By permitting the discharge of excess rainwater and runoff, this provision substantially minimizes the effect of climate on a facility's ability to meet zero discharge.

An assumption of the commenters' arguments is that the zero discharge requirement imposes significantly greater costs than the BPT requirement under the same set of topographical, climatic and land availability constraints. Many commenters implied that constructing a tailings pond necessary to achieve zero discharge in mountainous or rainy areas would be much more expensive than constructing a similarly situated pond to meet BPT requirements. Although there might have been some merit to this argument under the Agency's proposed storm exemption for new sources, this is no longer the case. Now that the Agency has amended the proposed storm provision to make it identical to the provision for existing sources, the pond required to meet BPT requirements will be approximately the same size as the pond required to meet zero discharge. (See Development Document for further discussion).

One commenter, whose existing tailings pond is located several miles from the mill and several thousand feet below it, argued that, if this mill were a new source, the costs of recycling water to the mill to achieve zero discharge would prove much more expensive than meeting the BPT requirements. The Agency, however, considers such situations to be extremely rare. If a new source had to operate under similar constraints, the Agency would entertain a petition to modify the new source standard or create a new subcategory for this type of facility.

With respect to industry commenters' second criticism, EPA agrees with their claim that there would be retrofit costs associated with meeting zero discharge where a new source is constructed at the site of an existing source. It is not clear, however, whether this problem is anything but theoretical. EPA specifically asked industry to provide it with examples of construction at the site of an existing source which might constitute a new source under EPA's proposed criteria for "new source" (45 FR 59343, September 9, 1980). After evaluating these examples, EPA has concluded that only one of the examples provided by industry would constitute a "new source" under the proposed criteria—and this example involved construction at a "green field" site. (These examples are specifically discussed in the Response to Comments document). Nevertheless, EPA has redone its economic analysis to embrace situations where construction at the site of an existing source would clearly create a new source (i.e. total replacement of a mill). EPA has concluded that in such situations, the costs of achieving zero discharge will not cause an adverse economic impact.

EPA agrees with the commenters' third contention that we did not adequately consider the buildup of contaminants in the recycle water. Commenters have come forward with data demonstrating that the buildup of reagents and other contaminants can in fact interfere with the extractive process, causing severe loss of product. They have also demonstrated that treatment of the recycle water may not always be an economically viable option for dealing with this interference problem. Unfortunately, this interference is a complex phenomenon, which appears to be related to the characteristics of the ore at particular sites, making it impossible to carve out a subcategory of facilities afflicted with this problem. Accordingly, to ***54603** accommodate the problem, the final NSPS contains a special "bleed" provision which will allow facilities to discharge wastewater (subject to the NSPS mine drainage standards) if they can demonstrate to the permitting authority that total recycle would cause a major interference in the extractive metallurgical process and that appropriate treatment of recycle water is not adequate to remedy this interference. This provision will allow such facilities to substitute some fresh water for recycle water as industry stated and their data indicated was necessary, thereby avoiding the losses associated with buildup of contaminants in the recycle water. Specification of the exact amounts of water discharged and the appropriate treatment of recycle water will, of course, be left to the permitting authority. The Agency has, however, evaluated the costs and economic impact of at least two forms of treatment of recycle water. The first is pH adjustment (lime addition) and settling. Assuming a 24-hour retention time and a 10 percent safety factor, the Agency has concluded that the costs of such treatment of recycle water would not be significant enough to deter investment for a new mill with a tailings pond used for primary settling. The Agency has further determined that additional treatment consisting of a mixed media filter would not constitute a barrier to entry for such mills. The development document and economic document supporting this regulation discuss in more detail the Agency's considerations in creating the bleed provision and what treatment was considered as appropriate treatment of recycle water.

2. Uranium Mills. The Agency proposed zero discharge for new uranium mills based on data demonstrating that 18 of 19 existing mills do not discharge wastewater. The single existing mill which discharges, recycles over 80 percent of the requirement for

its intake water. Zero discharge for new uranium mills is based on recycle, evaporation, and a combination of recycle and evaporation.

Industry commented that our data represented mills in arid areas and that we did not consider new mills that may locate in areas of high rainfall. They also requested that flexibility should be allowed to accommodate changes in the extractive processes currently used to recover uranium. Finally they commented that we should allow an effluent discharge because such a discharge is considered a valuable commodity in water short areas.

The ability of uranium mills to achieve zero discharge is well demonstrated and is recognized by Federal and State regulating authorities dealing with the uranium industry. It is true that existing uranium mills are located in arid areas. However, we know of no plans for construction of new mills in non-arid areas, although some firms have conducted exploration in such areas. Should any new mills locate in areas of high net precipitation, they can take advantage of the net precipitation provision and the storm exemption. If, despite these provisions, a uranium mill locates in an area where it is impossible to achieve zero discharge the facility can petition the Agency to change NSPS or create a separate subcategory for that type of facility.

The Agency does not believe that it needs to provide any additional flexibility to accommodate changes in the extractive processes used to recover uranium. Industry commenters failed to provide EPA with any information concerning new or different extractive processes. Furthermore, the current regulations only apply to certain identified extractive processes and thus would not apply to processes unrelated to processes used today.

Nor does the Agency believe that the zero discharge requirement will adversely affect water conservation. Even if there were a slight increase in water consumption attributable to compliance with zero discharge, that increase would not be significant when compared to the benefits derived from the use of recycle and evaporation systems. Accordingly, the zero discharge requirement for new uranium mills is promulgated as proposed.

3. Storm Exemption. The Agency proposed a storm exemption for new sources subject to zero discharge which would allow a discharge of excess wastewater upon the occurrence of a 10-year 24-hour precipitation event. Industry stated that the provision of the exemption imposed an impossible design requirement on them and should be changed to the requirement for existing sources.

After reviewing the industry comments, and data developed by the Agency, EPA has concluded that the industry comments are valid. Conditioning the storm exemption on the actual occurrence of a 10-year, 24-hour storm is inappropriate because overflows can occur from facilities designed, maintained, and operated to handle a 10-year, 24-hour precipitation event as a result of recurring storms or excessive snowmelt even though no individual event were equivalent to a 10-year, 24-hour precipitation event. The proposal would have required facilities to engage in the extremely difficult task of anticipating all such combinations of precipitation events. Accordingly, we have modified the storm exemption for new sources subject to zero discharge so that it is identical to the exemption for existing sources.

The Agency received requests for further explanation of the considerations to be taken into account in the design and construction of a facility which may be granted relief under the storm exemption. As a result of these requests we have made some clarifying changes in the language of the exemption. The first change is designed to clarify the nature of the operator's responsibilities during an upset or bypass overflow event. The storm exemption is designed to provide a limited exception to the requirements applicable to mines and mills under normal operating conditions. It grants relief from excess discharges which occur during and immediately after any precipitation or snowmelt—the intensity of the event is not specified. The storm exemption was not intended to grant the operator the option of ceasing or reducing efforts to contain or treat the runoff resulting from a rainfall or snowmelt, i.e., the operator does not have the option of turning off the lime feed to a facility at the start of or during a precipitation event, regardless of the design and construction of the facility. The operator must, instead, take all reasonable steps during and after the precipitation event to treat or contain the wastewater discharge and to limit the amount of overflow or excess discharge.

The second change is intended to clarify the nature of the design requirement for sources subject to a zero discharge limitation and to emphasize the fundamental differences between that requirement and the requirement for sources not subject to zero discharge. The storm exemption applicable to sources which are allowed to discharge requires the facility to be able to contain the maximum volume of wastewater which would be generated by the facility during a 24-hour period plus the volume of water which would result from a 10-year, 24-hour rainfall or treat the flows associated with these volumes. The rationale behind the containment requirement is that a facility with such capacity, even if full at the beginning of the storm, would be able to treat the storm runoff and normal plant discharge by providing at least a 24-hour retention time for settling *54604 of the wastewaters before the water is discharged.

The design concept for the storm exemption applicable to sources subject to zero discharge requirements must, however, be different, because such sources are not permitted to discharge. Such sources must, therefore, be able to contain the amount of water equal to the volume of water in the pond under normal operating conditions (which includes water which is recycled or will be evaporated) plus the volume generated from a 10-year, 24-hour rainfall. In other words, the source must provide a freeboard over and above normal pond levels which can accommodate the water generated by a 10-year, 24-hour rainfall. Simply being able to hold the normal volume of wastewater from the mill process without discharge plus the 10-year, 24-hour rainfall will not suffice, unless the normal process wastewater is a fair measure of the volume of water in the pond under normal operating conditions.

The third change is designed to clarify the relationship between the storm exemption and the general upset and bypass provisions set in the consolidated permit regulations [See, 40 CFR 122.60]. The relationship between them should be set out more clearly. In the preamble to the proposal, we said that the storm exemption supersedes the general upset and bypass provisions with respect to precipitation events; that is, an operator wishing to obtain an excursion from the BAT or NSPS requirements during precipitation events must comply with the prerequisites of the storm exemption. We did not, however, state whether an operator also had to comply with any of the upset and bypass provisions contained in the consolidated permit regulations as well. To clarify this, the storm exemption is being changed to specifically require compliance with the notice provisions of the general upset and bypass provisions, in accordance with the Agency's original intent. In addition, we have added a sentence to clarify that the storm exemption, like the general upset and bypass provision, simply provides an affirmative defense to an enforcement action. Consequently, the burden of proving compliance with the conditions of the storm provision rests with the operator, just as in the case of the general upset and bypass exemptions.

Additional explanation of the storm exemption is offered in the development document supporting this rulemaking.

G. General Provisions and Definitions. As the result of the comments received on the proposed BAT and NSPS, the Agency is adding a definition for "in situ leach methods" applicable to the Uranium, Radium and Vanadium Ores subcategory. This definition makes it clear that the no discharge standard of performance for in situ leach methods is applicable to the process wastewater used in and resulting from the actual in situ operation itself. In situ mine and mill process wastewater does not include discharges from wells from within or surrounding in situ mines used to restore aquifers after all actual mining activity (extraction of the ore, or pregnant liquor from the in situ process) has been completed. Such discharge would be from an inactive mine area and effluent limitations guidelines and standards of performance would not be directly applicable. Effluent limitations and standards are directly applicable to "active mining areas." During the actual working of the mine, if the discharge originates from an area outside of the in situ process area but directly associated with the "active mine area" such discharges are considered "mine drainage" and are subject to the effluent limitations or standards of performance for mine drainage from uranium mines. Mine drainage from areas outside of the areas used for the in situ process area include: drainage from development areas of a deep mines, and surface mine and runoff from mine and mill areas that are not directly involved in in situ leaching. Additional explanation is offered in the development document supporting this rulemaking.

The Agency received comments requesting that the Agency further explain the general provision having to do with waste streams which are combined for treatment from various subparts and segments of Part 440. We stated in the original provision that the

quantity and quality of each pollutant or pollutant property in the combined discharge shall not exceed the quality and quantity of each pollutant or pollutant property that would have been discharged had each waste stream been treated separately. Further, the flow from the combined discharge shall not exceed the volume that would have been discharged had each wastestream been treated separately. An example that industry wished clarified is whether mine drainage commingled with the discharge from a new froth flotation mill is subject to the zero discharge requirements for new froth flotation mills. Such combined waste streams may be discharged subject to the limitations on mine drainage but the volume of the discharge cannot exceed the volume of mine drainage that would have been discharged had the mine drainage and the mill discharge been treated separately. It is immaterial whether the mine drainage is introduced to the treatment system simultaneously with the discharge from the mill, e.g. two separate pipes leading to the tailings pond, or whether the mine drainage is introduced as part of the feed water and intake to the mill itself. Further explanation and guidance is provided in the development document supporting this final regulation.

One commenter suggested that EPA provide a special allowance, similar to the net precipitation provision, for underground water which seeps into the tailings impoundment, this commenter asserted that such seepage constituted a large portion of the water collecting in its impoundment. The Agency knows of only this one example of underground seepage at existing facilities subject to zero discharge and believes that the fundamentally different factors variance provision provides an avenue of relief for existing sources. To accommodate new sources, however, the Agency is adding a provision which will allow the permit writer to grant an additional discharge allowance in the case of significant groundwater infiltration, subject to the limitations on mine drainage.

There were requests from industry that a separate definition for "new source" applicable to ore mines and mills be included in the final regulation. The Agency feels that there is no reason to do so. As part of the consolidated permit regulations, Paragraph 122.66(b), the Agency promulgated criteria for determining what is a new source. On September 9, 1980, these criteria were withdrawn and new criteria were proposed. When finalized, these criteria will apply to the mining industry.

VI. Costs and Economic Impact

[Executive Order 12291](#) requires EPA and other agencies to provide regulatory impact analyses for rules that result in an annual cost to the economy of \$100 million dollars or more, cause major price increases to the consumer and cause significant adverse effects on competition, employment, investment, productivity and the balance of trade. In addition, the Clean Water Act specifies that best available technology limitations must be economically achievable. The Regulatory Flexibility Act requires EPA to consider the effects of this rule on small entities, and if they are significant and affect a substantial number of small entities, to prepare a Regulatory Flexibility Analysis. The Agency has concluded that this is not a major rule and will not have a significant impact on a substantial number of small entities and, therefore, ***54605** a Regulatory Impact Analyses and a Regulatory Flexibility Analysis are not required.

The BAT limitations promulgated today do not reflect any treatment requirements beyond the treatment required for existing direct dischargers under the BPT rule promulgated July 11, 1978 (43 FR 29711). Additionally, EPA is not establishing pretreatment standards because no known indirect dischargers exist nor are any known to be in the planning stage. Accordingly, EPA expects no incremental costs or impacts for existing plants from this rulemaking. The costs for New Source standards are not expected to be a deterrent to investment and are not expected to change the rate of entry into the industry or slow the industry growth rate.

In developing this rule, the Agency considered various technology options and analyzed their economic impacts. This economic analysis is presented in two documents. One is the Economic Impact Analysis of Promulgated New Source Performance Standards for the Ore Mining and Dressing Industry which addresses new sources. The second document is The Economic Impact Analysis of Promulgated BAT Effluent Limitations Guidelines for the Ore Mining and Dressing Industry which addresses existing sources and is presently subject to a confidentiality requirement discussed previously. For each of the options considered during rulemaking, these analyses detail the investment and annual costs for the industry as a whole and for typical plants; assesses the impact of effluent control in terms of price and production changes, plant closures and employment effects; and assesses the potential impacts on the small plants in this industry.

VII. Nonwater Quality Environmental Impacts

The elimination or reduction of one form of pollution may aggravate other environmental problems. Therefore, sections 304(b) and 306 of the Act require EPA to consider the nonwater quality environmental impacts (including energy requirements) of certain regulations.

In compliance with these provisions, EPA has considered the effect of these regulations on air pollution, solid waste generation, land requirements, water consumption and energy requirements.

Because this regulation does not impose any additional pollution control requirements on existing sources, implementation will not result in any substantial increase in air pollution, energy use, solid waste generation, land requirements or water consumption.

The Agency similarly, determined that the pollution control requirements for new sources, where they differ from existing sources requirements, will not result in adverse non-water quality impacts which would require alteration of the requirements.

In those subparts for which NSPS is more stringent than BAT, the increase in solid waste generated should not be greater than one percent.

In addition, section 7 of the Solid Waste Disposal Act Amendments of 1980 has exempted under Subtitle C of RCRA solid waste from the extraction, beneficiation, and processing of ores and minerals. This exemption will remain in effect until at least six months after the Administrator submits a study on the adverse environmental effects of solid waste from mining. The study is required to be submitted by October 21, 1983 (see [42 U.S.C. 6982](#)).

Imposition of NSPS is not expected to create any significant adverse impacts on land requirements beyond those associated with BAT effluent limitations.

Achievement of NSPS will not result in a significant net increase in energy requirements. The main use of energy is for pumping, mixing, and control instrumentation. Wherever feasible, gravity flow is used in treatment facilities for mine drainage and mill process wastewater. Recycle at new froth flotation mills and new uranium mills will require electric power for pumps, but the Agency concludes that the impact of the energy consumed from compliance with the standards is justified by the benefits derived from the standards.

There should be no net water loss attributable to compliance with zero discharge of process wastewater from froth flotation mills and uranium mills. Moreover, even if there were a slight loss, it would not be significant when compared to the benefits derived from the use of recycle and evaporation systems.

VIII. Pollutants and Subcategories Not Regulated

Paragraph 8 of the modified Settlement Agreement, approved by the District Court for the District of Columbia on March 9, 1979 ([12 ERC 1833](#)), contains provisions authorizing the exclusion from regulation, in certain circumstances, of toxic pollutants and industry categories and subcategories.

A. Exclusion of Pollutants. As discussed in greater detail in the proposal June 14, 1982 and in the development document supporting the rule, paragraph 8 [a][iii] of the Revised Settlement agreement allows the Administrator to exclude from regulation toxic pollutants not detectable by Section 304(h) analytical methods or other state-of-the-art methods. This provision includes pollutants below EPA's nominal detection limit. In addition, Paragraph 8[a] [iii] allows the exclusion of pollutants that were detected in amounts too small to be effectively reduced by technologies known to the Administrator. Pollutants excluded under these provisions are listed in Appendices B, C and D. One hundred and thirteen toxic organics, cyanide and six toxic metals are excluded from regulation under these provisions.

Paragraph 8[a][iii] also allows the Administrator to exclude from regulation pollutants detected in the effluent of only a small number of sources within the category and uniquely related to those sources. The toxic organic pollutant, 2,4-dimethylphenol, was detected in the effluent at only one facility and 2,4-dimethylphenol is excluded under this provision.

Paragraph 8[a][iii] also allows the Administrator to exclude from regulation pollutants that are effectively controlled by the technology upon which other effluent limitations and guidelines are based. Effluent limitations for TSS will effectively control the toxic pollutant asbestos (chrysotile). Arsenic and nickel found in discharges from ore mining and dressing are adequately controlled by the incidental removal associated with the control and removal of other metals found in the discharges from this industry, e.g., copper, lead, mercury, and zinc.

In addition to the toxic pollutants excluded for all subcategories, EPA is excluding certain toxic pollutants from particular subcategories and subparts because they were either not detected or detected in amounts too small to be effectively reduced by technologies known to the Administrator. See Appendix G for pollutants excluded by subcategory and subpart.

B. Exclusion of Subcategories. Paragraph 8(a)(iv) of the revised settlement Agreement allows the Administrator to exclude a category or subcategory from regulation if the amount and toxicity of each pollutant in the discharge does not justify developing national requirements in accordance with the schedule contained in the agreement. EPA is excluding the mill subpart in the Uranium, Radium and Vanadium subcategory from development of BAT regulations *54606 because there is only one existing discharger and development of national regulations are not warranted for this single plant. EPA is excluding the Nickel subcategory, the Vanadium subcategory (mined alone and not as a byproduct) and, the Antimony subcategory from development of BAT and NSPS because there is only one known discharger in each of these subcategories and no new sources are expected. EPA is excluding the Platinum subcategory from development of NSPS because the one identified new source must use an entirely different treatment system than what was identified as best demonstrated technology and EPA lacks data on the system. EPA is differing regulations of the gold placer mine subpart of the Copper, Lead, Zinc, Gold, Silver, and Molybdenum subcategory until it completes data gathering efforts for this subpart.

Paragraph 8(b) of the Settlement Agreement allows the Administrator to exclude from regulation pretreatment standards for all point sources within a point source category. Pretreatment standards for both existing and new sources in this point source category are not justified because no indirect dischargers exist nor are any known to be planned.

IX. Best Management Practices

Section 304(e) of the Clean Water Act gives the Administrator authority to prescribe “best management practices” (BMPs). BMPs are not addressed in this regulation.

X. Upset and Bypass Provisions

A recurring issue is whether industry guidelines should include provisions authorizing noncompliance with effluent limitations during periods of “upset” or “bypass.” An upset, sometimes called an “excursion,” is an unintentional noncompliance occurring for reasons beyond the reasonable control of the permittee. It has been argued that an upset provision in EPA's effluent limitations is necessary because such upsets will inevitably occur even in properly operated control equipment. Because technology-based limitations require only what technology can achieve, it is claimed that liability for such situations is improper. When confronted with this issue, courts have disagreed on whether an explicit upset or excursion exemption is necessary, or whether upset or excursion incidents may be handled through EPA's exercise of enforcement discretion. [Compare Marathon Oil Co. v. EPA](#), 564 F. 2d 1253 (9th Cir. 1977) with [Weyerhaeuser v. Costle](#), 590 F. 2d 1011 (D.C. Cir. 1978) and [Corn Refiners Assn., et al. v. Costle](#), 594 F. 2d 1223 (8th Cir. 1979). [See also [American Petroleum Institute v. EPA](#), 540 F. 2d 1023 (10th Cir. 1976); [CPC International, Inc. v. Train](#), 540 F. 2d 1320 (8th Cir. 1976); [FMC Corp. v. Train](#), 539 F. 2d 973 (4th Cir. 1976).]

An upset is an unintentional episode during which effluent limits are exceeded; a bypass, however, is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. We have, in the past, included bypass provisions in NPDES permits.

We determined that both upset and bypass provisions should be included in NPDES permits and have promulgated Consolidated Permit Regulations that include upset and bypass provisions. [See 40 CFR 122.60, 45 FR 33290 (May 19, 1980).] The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology-based effluent limitations. The bypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property damage.

The Agency has received several inquiries on the relationship between the general upset and bypass provisions set forth in the consolidated permit regulations and the storm exemption contained in the regulations for ore mining and dressing. This relationship is discussed in Section V of this preamble.

XI. Variances and Modifications

Upon the issuance of this regulation, the effluent limitations for the appropriate subcategory must be applied in all Federal and State NPDES permits thereafter issued to direct dischargers in the ore mining and dressing industry. For the BPT effluent limitations promulgated on July 11, 1978, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. [See [E.I. du Pont de Nemours & Co. v. Train](#), 430 U.S. 112 (1977); *Weyerhaeuser Co. v. Costle*, supra.] This variance recognizes factors concerning a particular discharger that are fundamentally different from the factors considered in this rulemaking. Although this variance clause was set forth in EPA's 1973-1976 industry regulations, it is now included in the NPDES regulations and will not be included in the ore mining and dressing industry BAT regulation. (See the NPDES regulations at 40 CFR Part 125, Subpart D.)

The BAT limitations in this regulation are also subject to EPA's "fundamentally different factors" variance. BAT limitations for nonconventional pollutants are subject to modifications under Sections 301(c) and 301(g) of the Act. These statutory modifications do not apply to toxic or conventional pollutants. To apply for these modifications a discharger must be in compliance with BPT. Because this rule will make BAT equal to BPT, EPA does not expect any applications for [Section 301\(c\)](#) or [301\(g\)](#) modifications. [See 43 FR 40895 (September 13, 1978).] NSPS are not subject to EPA's "fundamentally different factors" variance or any statutory or regulatory modifications. (See *E. I. du Pont de Nemours and Co v. Train*, supra.)

XII. Relationship to NPDES Permits

The BAT limitations and NSPS in this regulation will be applied to individual ore mines and mills through NPDES permits issued by EPA or approved state agencies, under Section 402 of the Act. As discussed in the preceding section of this preamble, these limitations must be applied in all Federal and State NPDES permits except to the extent that variances and modifications are expressly authorized. Other aspects of the interaction between these limitations and NPDES permits are discussed below.

One issue that warrants consideration is the effect of this regulation on the powers of NPDES permit-issuing authorities. The promulgation of this regulation does not restrict the power of any permitting authority to act in any manner consistent with law or these or any other EPA regulations, guidelines or policy. For example, even if this regulation does not control a particular pollutant, the permit-issuer may still limit such pollutant on a case-by-case basis when limitations are necessary to carry out the purposes of the Act. Where manufacturing practices or treatment circumstances warrant additional controls, such limitations may be technology-based in conformance with the legislative history of the Act. However, such limitations are subject to administrative and judicial review as part of the permit issuance process. In addition, to the extent that State water quality standards or other provisions of State or Federal law require limitation of pollutants not covered by this regulation (or require more stringent limitations on covered pollutants), such limitations must be applied by the permit-issuing authority.

A second topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which were considered in developing this regulation. We emphasize that although the Clean Water Act is a strict liability statute, the

initiation of enforcement proceedings by EPA is discretionary. We have exercised *54607 and intend to exercise that discretion in a manner that recognizes and promotes good-faith compliance efforts.

XIII. Public Participation

The Agency solicited public comment on the proposed rules published in the Federal Register on June 14, 1982, (47 FR 25682). In addition, the Agency accepted public comment on the development document and economic analysis supporting the proposed rules. The Agency received over fifty comment submittals.

Individual public comments received on the proposed regulation, and our responses, are presented in a report, "Responses to Public Comments, Proposed Ore Mining and Dressing Industry Effluent Guidelines and Standards," November 1982, which is part of the public record for this regulation.

Most of the major comments and the Agency's response are discussed in Section V of this preamble, Summary of Promulgated Regulation and Changes from Proposal.

XIV. Small Business Administration (SBA) Financial Assistance

The Agency is continuing to encourage small manufacturers to use Small Business Administration (SBA) financing as needed for pollution control equipment. Three basic programs are in effect: the Guaranteed Pollution Control Program, the Section 503 Program, and the Regular Guarantee Program. All the SBA loan programs are only open to businesses with net assets less than \$6 million, with an average annual after-tax income of less than \$2 million and with fewer than 250 employees.

The guaranteed pollution control program authorizes the SBA to guarantee the payments on qualified contracts entered into by eligible small businesses to acquire needed pollution control facilities when the financing is provided through pollution control bonds, bank loans and debentures. Financing with SBA's guarantee of payment makes available long-term financing comparable with market rates. The program applies to projects that cost from \$150,000 to \$200,000.

The Section 503 Program, as amended in July 1980, allows for long-term loans to small and medium-sized businesses. These loans are made by SBA-approved local development companies, which for the first time are authorized to issue Government-backed debentures that are bought by the Federal Financing Bank, an arm of the U.S. Treasury.

Through SBA's Regular Guarantee Program, loans are made available by commercial banks and are guaranteed by the SBA. This program has interest rates equivalent to market rates.

For additional information on the Regular Guarantee and Section 503 Programs contact your district or local SBA Office. The SBA coordinator at EPA headquarters is Ms. Frances Desselle who may be reached at (202) 382-5373.

For further information and specifics on the Guaranteed Pollution Control Program contact: U.S. Small Business Administration, Office of Pollution Control Financing, 4040 North Fairfax Drive, Rosslyn, Virginia 22203, (703) 235-2902.

XV. List of Subjects in 40 CFR Part 440

Metals, Mines, Water pollution control, Waste treatment and disposal.

XVI. Availability of Technical Assistance

The justification for the proposed regulation is detailed in four major documents available from EPA. Analytical methods are discussed in Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants. EPA's technical conclusions are detailed in the Development Document for Final Effluent Limitations Guidelines and New Source Performance

Standards for the Ore Mining and Dressing Point Source Category. The economic analysis for new sources is detailed in Economic Analysis of New Source Performance Standards for the Ore Mining and Dressing Industry. The economic analysis for existing sources is detailed in the Economic Impact Analysis of Promulgated BAT Effluent Limitations Guidelines for the Ore Mining and Dressing Point Source Category. The data contained in the analysis is covered by a third party agreement between the Agency and industry members who supplied the data. These data are confidential and can not be released until cleared by a confidentiality review panel. The Agency anticipates the BAT economic analysis will be made available to the general public shortly after this rule is promulgated.

A summary of the public comments received on the proposal and EPA's responses is presented in "Summary of Comments and Responses on the June 1982 Proposed Regulations for the Ore Mining and Dressing Industry," which is part of the public record for this regulation.

XVII. OMB Review

The regulation was submitted to the Office of Management and Budget for review as required by [Executive Order 12291](#).

In accordance with the Paperwork Reduction Act of 1980 (P.L. 96-511), the reporting or recordkeeping provisions that are included in this regulation will be submitted for approval to the Office of Management and Budget (OMB). They are not effective until OMB approval has been obtained and the public notified to that effect through a technical amendment to this regulation.

Dated: November 5, 1982.

Anne M. Gorsuch,

Administrator.

APPENDIX A

Abbreviations, Acronyms and Units Used in This Notice

Act—The Clean Water Act.

Agency—The U.S. Environmental Protection Agency.

BADT—Best available demonstrated technology under sections 304(c) and 306.

BAT—The best available technology economically achievable, under section 304(b)(2)(B) of the Act.

BCT—The best conventional pollutant control technology, under section 304(b)(4) of the Act.

BMP's—Best management practices under section 304(e) of the act.

BPT—The best practicable control technology currently available, under section 304(b)(1) of the Act.

CWA—The Federal Water Pollution Control Act Amendments of 1972 ([33 U.S.C. 1251](#) et seq.) as amended by the Clean Water Act of 1977 (P.L. 95-217).

FWPCA—Federal Water Pollution Control Act.

MSHA—The Department of Labor, Mine Safety and Health Administration.

NPDES Permit—A National Pollutant Discharge Elimination System permit issued under section 402 of the Act.

NSPS—New source performance standards under section 306 of the Act.

POTW—Publicly owned treatment works.

RCRA—Resource Conservation and Recovery Act (PL 94-580) of 1976, Amendments to Solid Waste Disposal Act.

UNITS

gpd—gallons per day.

mgd—million gallons per day.

mg/

mg/l—milligram(s) per liter.

#Tlmg/l—milligram(s) per liter.

APPENDIX B

Toxic Organic Compounds Not Detected During Sampling

1. Acenaphthene.

*54608 2. Acrolein.

3. Acrylonitrile.

4. Benzidene.

5. Carbon Tetrachloride.

6. 1,2,4-Trichlorobenzene.

7. Hexachlorobenzene.

8. 1,2-Dichloroethane.

9. Hexachloroethane.

10. 1,1-Dichloroethane.

11. 1,1,2-Trichloroethane.

12. 1,1,2,2-Tetrachloroethane.

13. Chloroethane.
14. Bis(Chloromethyl) Ether.
15. Bis(2-Chloroethyl) Ether.
16. 2-Chloroethyl Vinyl Ether.
17. 2-Chloronaphthalene.
18. 2,4,6-Trichlorophenol.
19. Parachlorometa Cresol.
20. 2-Chlorophenol.
21. 1,2-Dichlorobenzene.
22. 1,3-Dichlorobenzene.
23. 1,4-Dichlorobenzene.
24. 3,3-Dichlorobenzidene.
25. 1,1-Dichloroethylene.
26. 2,4-Dichloro-phenol.
27. 1,2-Dichloropropane.
28. 1,3-Dichloropropylene.
29. 2,4-Dinitrotoluene.
30. 2,6-Dinitrotoluene.
31. 1,2-Diphenylhydrazine.
32. Fluoranthene.
33. 4-Chlorophenyl Phenyl Ether.
34. 4-Bromophenyl Phenyl Ether.
35. Bis(2-Chloroisopropyl) Ether.
36. Bis(2-Chloroethoxy) Methane.
37. Methyl Chloride.

38. Methyl Bromide.
39. Bromoform.
40. Dichlorodifluoromethane.
41. Chlorodibromomethane.
42. Hexachlorobutadiene.
43. Hexachlorocyclopentadiene.
44. Isophorone.
45. Naphthalene.
46. Nitrobenzene.
47. 2-Nitrophenol.
48. 4-Nitrophenol.
49. 2,4-Dinitrophenol.
50. 4,6-Dinitro-O-Cresol.
51. N-Nitrosodimethylamine.
52. N-Nitrosodiphenylamine.
53. N-Nitrosodi-N-Propylamine.
54. Benzo(A)Anthracene.
55. Benzo(A)Pyrene.
56. 3,4-Benzofluoranthene.
57. Benzo(K)Fluoranthene.
58. Chrysene.
59. Acenaphthylene.
60. Anthracene.
61. Benzo(G,H,I)Perylene.

- 62. Phenathrene.
- 63. Dibenzo(A,H)Anthracene.
- 64. Indeno(1,2,3-C,D)Pyrene.
- 65. Pyrene.
- 66. Trichloroethylene.
- 67. Vinyl chloride.
- 68. Chlordane.
- 69. 4,4-DDT.
- 70. 4,4-DDE.
- 71. 4,4-DDD.
- 72. Endosulfan-Alpha.
- 73. Endosulfan-Beta.
- 74. Endosulfan Sulfate.
- 75. Endrin Aldehyde.
- 76. Heptachlor Epoxide.
- 77. gBHC(Lindane)-Gamma.
- 78. PCB-1242 (AROCHLOR 1242).
- 79. PCB-1254 (AROCHLOR 1254).
- 80. PCB-1221 (AROCHLOR 1221).
- 81. PCB-1232 (AROCHLOR 1232).
- 82. PCB-1248 (AROCHLOR 1248).
- 83. PCB-1260 (AROCHLOR 1260).
- 84. PCB-1016 (AROCHLOR 1016).
- 85. Toxaphene.
- 86. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin.

APPENDIX C

Toxic Organic Compounds Detected at Least One Facility but Always 10 mg/l or Less

1. Chlorobenzene.
2. Dichlorobromoethane.
3. Fluorene.
4. Aldrin.
5. Dieldrin.
6. Endrin.
7. Heptachlor.
8. 1,1,1-Trichloroethane.
9. Chloroform.
10. Ethylbenzene.
11. Trichlorofluoromethane.
12. Diethyl Phthalate.
13. Tetrachloroethylene.
14. Toluene.
15. aBHC-Alpha.
16. bBHC-Beta.
17. DBHC-Delta.

APPENDIX D

Toxics Detected at Levels Too Small To Be Effectively Reduced by Technologies Known to the Administrator

1. Antimony.
2. Beryllium.
3. Silver.
4. Thallium.

5. Selenium.
6. Chromium.
7. Cyanide.
8. Benzene.
9. 1,2-Trans-Dichloroethylene.
10. Phenol.
11. Bis(2-Ethylhexyl) Phthalate.
12. Butyl Benzyl Phthalate.
13. Di-N-Butyl Phthalate.
14. Di-n-Octyl Phthalate.
15. Dimethyl Phthalate.
16. Methylene Chloride.
17. Pentachlorophenol.

APPENDIX E

Toxic Organic Compounds Detected From a Small Number of Sources and Uniquely Related to These Sources
2,4-dimethylphenol.

APPENDIX F

Pollutants Effectively Controlled by the Technology Upon Which Other Effluent Limitations and Guidelines Are Based

1. Asbestos.
2. Arsenic.
3. Nickel.

APPENDIX G

Pollutants Excluded by Subcategory and Subpart

Uranium Ore Subcategory—Mine Drainage

Cadmium (not detected).

Copper (present in amounts too small to treat).

Lead (present in amounts too small to treat).

Mercury (present in amounts too small to treat).

Tungsten Ore Subcategory—Mine Drainage

Lead (not detected).

Mercury (present in amounts too small to treat).

Tungsten Ore Subcategory—Mill Process Water

Mercury (not detected).

Mercury Ore Subcategory) Mine Drainage.

Cadmium (not detected).

Copper (not detected).

Lead (not detected).

Zinc (not detected).

Titanium Ore Subcategory—Mine Drainage

Cadmium (not detected).

Copper (present in amounts too small to treat).

Lead (present in amounts too small to treat).

Mercury (not detected).

Zinc (present in amounts too small to treat).

Titanium Ore Subcategory—Mine Drainage

Cadmium (not detected).

Copper (present in amounts too small to treat).

Lead (present in amounts too small to treat).

Mercury (not detected).

Titanium Ore Subcategory—Mill with Dredges

Cadmium (present in amounts too small to treat).

Copper (present in amounts too small to treat).

Lead (present in amounts too small to treat).

Zinc (present in amounts too small to treat).

***54609** Mercury (present in amounts too small to treat).

APPENDIX H

Subcategories Excluded From Development of BAT or NSPS

Nickel Ore Subcategory.

Vanadium Ore Subcategory (Mined alone and not as a byproduct).

Antimony Ore Subcategory.

Platinum Ore Subcategory.

Uranium, Radium, and Vanadium Ores Subcategory.

Mills using the acid and alkaline leach process for the extraction of uranium.

For the purpose of clarity, the BPT effluent limitations guidelines are being published as part of today's regulation. However, the BPT limitations remain unaffected by today's regulation and are not subject to review. For the reasons discussed above, EPA is revising 40 CFR Part 440 to read as follows:

PART 440—ORE MINING AND DRESSING POINT SOURCE CATEGORY

Subpart A—Iron Ore Subcategory

Sec.440.10 Applicability: description of the iron ore subcategory.440.11 [Reserved]440.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.14 New Source Performance Standards (NSPS).440.15 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart B—Aluminum Ore Subcategory

440.20 Applicability: description of the aluminum ore subcategory.440.21 [Reserved]440.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.24 New Source Performance Standards (NSPS).440.25 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart C—Uranium, Radium, and Vanadium Ores Subcategory

440.30 Applicability: description of the uranium, radium and vanadium ores subcategory.440.31 [Reserved]440.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology

currently available (BPT).440.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.34 New Source Performance Standards (NSPS).440.35 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart D—Mercury Ore Subcategory

440.40 Applicability: description of the mercury ore subcategory.440.41 [Reserved]440.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.44 New Source Performance Standards (NSPS).440.45 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart E—Titanium Ore Subcategory

440.50 Applicability: description of the titanium ore subcategory.440.51 [Reserved]440.52 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.54 New Source Performance Standards (NSPS).440.55 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart F—Tungsten Ore Subcategory

440.60 Applicability: description of the tungsten ore subcategory.440.61 [Reserved]440.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.64 New Source Performance Standards (NSPS).440.65 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart G—Nickel Ore Subcategory

440.70 Applicability: description of the nickel ore subcategory.440.71 [Reserved]440.72 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.73 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.74 New Source Performance Standards (NSPS). [Reserved]440.75 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart H—Vanadium Ore Subcategory (Mined Alone and Not as a Byproduct)

440.80 Applicability: description of the vanadium ore subcategory.440.81 [Reserved]440.82 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]440.84 New Source Performance Standards (NSPS) [Reserved]440.85 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart I—Antimony Ore Subcategory

440.90 Applicability: description of the antimony ore subcategory.440.91 [Reserved]440.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). [Reserved]440.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]440.94 New Source Performance Standards (NSPS).

[Reserved]440.95 Effluent limitations representing the degree of effluent reduction attainable by *54610 the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart J—Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory

440.100 Applicability: description of the copper, lead, zinc, gold, silver, and molybdenum ores subcategory.440.101 [Reserved]440.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).440.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.104 New Source Performance Standards (NSPS).440.105 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart K—Platinum Ores Subcategory

440.110 Applicability: description of the platinum ore subcategory.440.111 [Reserved]440.112 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). [Reserved]440.113 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).440.114 New Source Performance Standards (NSPS) [Reserved]440.115 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart L—General Provisions and Definitions

440.120 Applicability.440.121 General Provisions.440.122 General Definitions.

Authority: Sections 301, 304 (b) and (c), 306, and 501 of the Clean Water Act [The Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977 (the Act)] as amended 33 U.S.C. 1311, 1314 (b) and (c), 1316, and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217.

Subpart A—Iron Ore Subcategory

40 CFR § 440.10

§ 440.10 Applicability: description of the iron ore subcategory.

The provisions of this Subpart A are applicable to discharges from (a) mines operated to obtain iron ore, regardless of the type of ore or its mode of occurrence; (b) mills beneficiating iron ores by physical (magnetic and nonmagnetic) and/or chemical separation and (c) mills beneficiating iron ores by magnetic and physical separation in the Mesabi Range.

40 CFR § 440.11

§ 440.11 [Reserved]

40 CFR § 440.12

§ 440.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable after application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines operated to obtain iron ore shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS 30 20
 Fe (dissolved) 2.0 1.0
 pH [FN1] [FN1]

1 Within the range 6.0 to 9.0.

(b) Except as provided in paragraph (c) of this section, the concentration of pollutants discharged from mills that employ physical (magnetic and nonmagnetic) and/or chemical methods to beneficiate iron ore shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
 30 consecutive days

TSS 30 20
 Fe (dissolved) 2.0 1.0
 pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mills that employ magnetic and physical methods to *54611 beneficiate iron ore in the Mesabi Range. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

[40 CFR § 440.131](#)

§ 440.131 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines operated to obtain iron ore shall not exceed:

Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter
 Fe (dissolved) 2.0 1.0

(b) Except as provided in paragraph (c) of this section the concentration of pollutants discharged from mills that employ physical (magnetic and nonmagnetic) and/or chemical methods to beneficiate iron ore shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter
 Fe (dissolved) 2.0 1.0

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mills that employ magnetic and physical methods to beneficiate iron ore in the Mesabi Range. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

[40 CFR § 440.14](#)

§ 440.14 New Source Performance Standards (NSPS).

Except as provided in Subpart L of this Part, any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by applying the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines operated to obtain iron ore shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for
 30 consecutive days

Milligrams per liter
 Fe (dissolved) 2.0 1.0
 pH ([FN1]) ([FN1])
 TSS 30.0 20.0

1 Within the range of 6.0, to 9.0.

(b) Except as provided in paragraph (c) of this section, the concentration of pollutants discharged from mills that employ physical (magnetic and nonmagnetic) and/or chemical methods to beneficiate iron ore shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for
 30 consecutive days

Milligrams per liter
 Fe (dissolved) 2.0 1.0
 pH ([FN1]) ([FN1])
 TSS 30.0 20.0

 1 Within the range of 6.0 to 9.0.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mills that employ magnetic and physical methods to beneficiate iron ore in the Mesabi Range. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

40 CFR § 440.15

§ 440.15 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart B—Aluminum Ore Subcategory

40 CFR § 440.20

§ 440.20 Applicability: Description of the aluminum ore subcategory.

The provisions of this Subpart B are applicable to discharges from facilities engaged in the mining of bauxite as an aluminum ore.

40 CFR § 440.21

§ 440.21 [Reserved]

40 CFR § 440.22

§ 440.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and 40 CFR 125.30-125.32, any existing source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). The concentration of pollutants discharged in mine drainage from mines producing bauxite ores shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter	
TSS	30 20
Fe	1.0 .5
Al	2.0 1.0
pH	([FN1]) ([FN1])

 1 Within the range of 6.0 to 9.0.

40 CFR § 440.23

§ 440.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). The concentration of pollutants discharged in mine drainage from mines producing bauxite ores shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Fe (total) 1.0 0.5

Al 2.0 1.0

[40 CFR § 440.24](#)

§ 440.24 New Source Performance Standards (NSPS).

Except as provided in Subpart L of this Part, any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT). The concentration of pollutants discharged in mine drainage from mines producing bauxite ores shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

Fe (total) 1.0 0.5

Al 2.0 1.0

pH ([FN1]) ([FN1])

TSS 30.0 20.0

1 Within the range of 6.0 to 9.0.

[40 CFR § 440.25](#)

***54612 § 440.25 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

Subpart C—Uranium, Radium and Vanadium Ores Subcategory

[40 CFR § 440.30](#)

§ 440.30 Applicability: description of the uranium, radium and vanadium ores subcategory.

The provisions of this Subpart C are applicable to discharges from (a) mines either open-pit or underground, from which uranium, radium and vanadium ores are produced; and (b) mills using the acid leach, alkaline leach, or combined acid and alkaline leach process for the extraction of uranium, radium and vanadium. Only vanadium byproduct production from uranium ores is covered under this subpart.

[40 CFR § 440.31](#)

§ 440.31 [Reserved]

[40 CFR § 440.32](#)

§ 440.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable after application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, from which uranium, radium and vanadium ores are produced excluding mines using in-situ leach methods shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values
for 30 consecutive days

Milligrams per liter

TSS	30	20
COD	200	100
Zn	1.0	0.5
Ra226 [FN1] (dissolved)	10	3
Ra226 [FN1] (total)	30	10
U	4	2
pH	([FN2])	([FN2])

1 Values in picocuries per liter (pCi/l).

2 Within the range 6.0 to 9.0.

(b) The concentrations of pollutants discharged from mills using the acid leach, alkaline leach or combined acid and alkaline leach process for the extraction of uranium, radium and vanadium including mill-mine facilities and mines using in-situ leach methods shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values
day for 30 consecutive days

Milligrams per liter

TSS	30	20
COD		500
As	1.0	.5
Zn	1.00	.5
Ra226 [FN1] (dissolved)	10	3
Ra226 [FN1] (total)	30	10
NH [FN3]		100
pH	[FN2]	([FN2])

1 Values in picocuries per liter (pCi/l).

2 Within the range 6.0 to 9.0.

[40 CFR § 440.33](#)

§ 440.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR §§ 125.30-125.32](#), any existing point source subject to this subpart must achieve the following limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, that produce uranium ore, including mines using in-situ leach methods, shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values
for 30 consecutive days

Milligrams per liter

COD	200	100
Zn	1.00	.5
Ra226 [FN1] (dissolved)	10.0	3.0
Ra226 [FN1] (total)	30.0	10.0
U	4.0	2.0

1 Values in picocuries per liter (pCi/l).

(b) [Reserved]

[40 CFR § 440.34](#)

§ 440.34 New Source Performance Standards (NSPS).

Except as provided in Subpart L of this Part any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, that produce uranium ore, excluding mines using in situ leach methods, shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values
for 30 consecutive days

Milligrams per liter

COD	200	100
Zn	1.0	0.5
Ra [FN1] 226 (dissolved)	10.0	3.0
Ra [FN1] 226 (total)	30.0	10.0
U	4.0	2.0
pH	([FN2])	([FN2])
TSS	30.0	20.0

1 Values in picocuries per liter (pCi/l).

2 Within the range 6.0 to 9.0.

(b)(1) Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills using the acid leach, alkaline leach or combined acid and alkaline leach process for the extraction of uranium or from mines and mills using in situ leach methods. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has ***54613** addressed them in the preamble published on December 3, 1982.

(b)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

40 CFR § 440.35

§ 440.35 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart D—Mercury Ore Subcategory

40 CFR § 440.40

§ 440.40 Applicability: description of the mercury ore subcategory.

The provisions of Subpart D are applicable to discharges from (a) mines, either open-pit or underground, that produce mercury ores; and (b) mills beneficiating mercury ores by gravity separation methods or by froth-flotation methods.

40 CFR § 440.41

§ 440.41 [Reserved]

40 CFR § 440.42

§ 440.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable after application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, operated for the production of mercury ores shall not exceed the following limitations:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

TSS	30	20
Hg .....	.002	.001
Ni .....	.2	.1
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(b)(1) Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills beneficiating mercury ores by gravity separation methods or by froth flotation methods. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(b)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual

precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a)(1) of this section.

[40 CFR § 440.43](#)

§ 440.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) The concentration of pollutants discharged in mine drainage from mines, either open pit or underground, that produce mercury ores shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Hg 0.002 0.001

(b)(1) Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills beneficiating mercury ores by gravity separation methods or by froth-flotation methods. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(b)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

[40 CFR § 440.44](#)

§ 440.44 New Source Performance Standards (NSPS).

Except as provided in Subpart L of this Part any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines, either open pit or underground, that produce mercury ores shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Hg 0.002 0.001
pH ([FN1]) ([FN1])
TSS 30.0 20.0

 1 Within the range of 6.0 to 9.0.

(b)(1) Except as provided in paragraph (6) of this section, there shall be no discharge of process wastewater to navigable waters from mills beneficiating mercury ores by gravity separation methods or by froth-flotation methods. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(b)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

40 CFR § 440.45

***54614 §440.45 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]**

Subpart E—Titanium Ore Subcategory

40 CFR § 440.50

§ 440.50 Applicability: description of the titanium ore subcategory.

The provisions of this Subpart E are applicable to discharges from (a) mines obtaining titanium ores from lode deposits; (b) mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods; and (c) mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, zircon, and other heavy metals, and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods).

40 CFR § 440.51

§ 440.51 [Reserved]

40 CFR § 440.52

§440.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable after application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines obtaining titanium ores from lode deposits shall not exceed:

 Effluent Effluent limitations
 characteristic

 Maximum for any 1 day Average of daily values for 30
 consecutive days

 Milligrams per liter

TSS 30 20
 Fe 2.0 1.0
 pH ([FN1]) ([FN1])

 1 Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged from mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS 30 20
Zn 1.0 .5
Ni2 .1
pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0.

(c) The concentration of pollutants discharged in mine drainage from mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, zircon, or other heavy metals, and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods) shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

TSS 30 20
Fe 2 1
pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0.

[40 CFR § 440.53](#)

[§ 440.53](#) Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR §§ 125.30-125.32](#), any existing point source subject to this subpart must achieve the following limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines obtaining titanium ores from lode deposits shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Fe 2.0 1.0

*54615 (b) The concentration of pollutants discharged from mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Zn 1.0 0.5

(c) The concentration of pollutants discharged in mine drainage from mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, or zircon and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods) shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Fe 2.0 1.0

40 CFR § 440.54

§ 440.54 New source performance standards (NSPS).

Except as provided in Subpart L of this Part any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the applications of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines obtaining titanium ores from lode deposits shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Fe 2.0 1.0
pH ([FN1]) ([FN1])
TSS 30.0 20.0

1 Within the range of 6.0 to 9.1.

(b) The concentration of pollutants discharged from mills beneficiating titanium ores by electrostatic methods, magnetic and physical methods, or flotation methods shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Zn 1.0 0.5
pH ([FN1]) ([FN1])
TSS 30.0 20.0

1 Within the range of 6.0 to 9.1.

(c) The concentration of pollutants discharged in mine drainage from mines engaged in the dredge mining of placer deposits of sands containing rutile, ilmenite, leucoxene, monazite, zircon and the milling techniques employed in conjunction with the dredge mining activity (milling techniques employed include the use of wet gravity methods in conjunction with electrostatic or magnetic methods) shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Fe 2.0 1.0
pH ([FN1]) ([FN1])
TSS 30.0 20.0

1 Within the range of 6.0 to 9.1.

[40 CFR § 440.55](#)

§ 440.55 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart F—Tungsten Ore Subcategory

[40 CFR § 440.60](#)

§ 440.60 Applicability: description of the tungsten ore subcategory.

The provisions of this Subpart F are applicable to discharges from (a) mines that produce tungsten ore and (b) mills that process tungsten ore by either the gravity separation or froth-flotation methods.

[40 CFR § 440.61](#)

§ 440.61 [Reserved]

[40 CFR § 440.62](#)

§ 440.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines producing 5000 metric tons (5512 short tons) or more of tungsten bearing ores per year shall not exceed:

 Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
 30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.3	.15
Zn	1.0	.5
Pb .....	.6	.3
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged in mine drainage from mines producing less than 5000 metric tons (5512 short tons) or discharged from mills processing less than 5000 metric tons (5512 short tons) of tungsten ores per year by methods other than ore leaching shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter

TSS	50	30
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(c) The concentration of pollutants discharged from mills processing 5000 metric tons (5512 short tons) or more of tungsten ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation, and magnetic and electrostatic separation shall not exceed:

 Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
 30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(d) The concentration of pollutants discharged from mills processing 5000 metric tons (5512 short tons) or more of tungsten ores per year by froth flotation methods shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	.....	30	20
Cd	.....	.10	.05
Cu	.....	.30	.15
Zn	.....	1.0	.5
As	.....	1.0	.5
pH	.....	( [FN1])	([FN1])

1 Within the range 6.0 to 9.0.

[40 CFR § 440.63](#)

§ 440.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from tungsten mines shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Cd	.....	0.10	0.05
Cu	.....	0.30	0.15
Zn	.....	1.0	0.5

(b) The concentration of pollutants discharged from mills shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Cd	.....	0.10	0.05
Cu	.....	0.3	0.15
Zn	.....	1.0	0.5

[40 CFR § 440.64](#)

***54616 § 440.64 New source performance standards (NSPS).**

Except as provided in Subpart L of this Part any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from tungsten mines shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

Cd	0.10	0.05
Cu	0.30	0.15
Zn	1.0	0.5
pH	([FN1])	([FN1])
TSS	30.0	20.0

1 Within the range of 6.0 to 9.0.

(b) The concentration of pollutants discharged from mills shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

Cd	0.10	0.05
Cu	0.3	0.15
Zn	1.0	0.5
pH	([FN1])	([FN1])
TSS	30.0	20.0

1 Within the range of 6.0 to 9.0.

[40 CFR § 440.65](#)

§ 440.65 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart G—Nickel Ore Subcategory

[40 CFR § 440.70](#)

§ 440.70 Applicability: description of the nickel ore subcategory.

The provisions of this Subpart G are applicable to discharges from (a) mines that produce nickel ore and (b) mills that process nickel ore.

[40 CFR § 440.71](#)

§ 440.71 [Reserved]

[40 CFR § 440.72](#)

§ 440.72 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and [40 CFR §§ 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines producing 5000 metric tons (5512 short tons) or more of nickel bearing ores per year shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.3	.15
Zn	1.0	.5
Pb .....	.6	.3
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged in mine drainage from mines producing less than 5,000 metric tons (5,512 short tons) or discharged from mills processing less than 5,000 metric tons (5,512 short tons) of nickel ores per year by methods other than ore leaching shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

TSS	50	30
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(c) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of nickel ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation and magnetic and electrostatic separation shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.30	.15
Zn	1.0	.5
As	1.0	.5

pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0

(d) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of nickel ore per year by froth flotation methods shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

§440.73

[40 CFR § 440.74](#)

§ 440.74 New source performance standards (NSPS). [Reserved]

§440.75

Subpart H—Vanadium Ore Subcategory (Mined Alone and Not as a Byproduct)

[40 CFR § 440.80](#)

§ 440.80 Applicability: description of the vanadium ore subcategory.

The provisions of this Subpart H are applicable to discharges from (a) mines that produce vanadium ore (recovered alone and not as a by-product of uranium mining and mills) and (b) mills that process vanadium ore (recovered alone, not as a byproduct of uranium mining and mills).

[40 CFR § 440.81](#)

*54617 § 440.81 [Reserved]

[40 CFR § 440.82](#)

§ 440.82 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines producing 5,000 metric tons (5,512 short tons) or more of vanadium bearing ores per year shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

 Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.3	.15
Zn	1.0	.5
Pb .....	.6	.3
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged in mine drainage from mines producing less than 5,000 metric tons (5,512 short tons) or discharged from mills processing less than 5,000 metric tons (5,512 short tons) of vanadium ore per year by methods other than ore leaching shall not exceed:

 Effluent Effluent limitations
 characteristic

 Maximum for any 1 day Average of daily values for 30
 consecutive days

 Milligrams per liter

TSS	50	30
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(c) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of vanadium ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation, and magnetic and electrostatic separation shall not exceed:

 Effluent characteristic Effluent limitations

 Maximum for any 1 day Average of daily values for
 30 consecutive days

 Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(d) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of vanadium ores per year by froth flotation methods shall not exceed:

 Effluent characteristic Effluent limitations

 Maximum for any 1 day Average of daily values for
 30 consecutive days

 Milligrams per liter

TSS	30	20
Cd	.10	.05
Cu	.30	.15
Zn	1.0	.5
As	1.0	.5
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

40 CFR § 440.83

§ 440.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]

40 CFR § 440.84

§ 440.84 New source performance standards (NSPS). [Reserved]

40 CFR § 440.85

§ 440.85 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart I—Antimony Ore Subcategory

40 CFR § 440.90

§ 440.90 Applicability: description of the antimony ore subcategory.

The provisions of this Subpart I are applicable to discharges from (a) mines that produce antimony ore and (b) mills that process antimony ore.

40 CFR § 440.91

§ 440.91 [Reserved]

40 CFR § 440.92

§ 440.92 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). [Reserved]

40 CFR § 440.93

§ 440.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]

40 CFR § 440.94

§ 440.94 New source performance standards (NSPS). [Reserved]

40 CFR § 440.95

§ 440.95 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart J—Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory

40 CFR § 440.100

§ 440.100 Applicability: description of the copper, lead, zinc, gold, silver, and molybdenum ores subcategory.

(a) The provisions of this Subpart J are applicable to discharges from (1) mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores, or any combination of these ores from open-pit or underground operations other than placer deposits; (2) mills that use the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores, or any combination of these ores; (3) mines and mills that use dump, heap, in-situ leach or vat-leach processes to extract copper from ores or ore waste materials; (4) mills that use the cyanidation process to extract

gold or silver; and (5) mines or mines and mills that use gravity separation methods (including placer or dredge mining or concentrating operations, and hydraulic mining operations) to extract gold ores or silver ores.

(b) The provisions of this subpart shall not apply to discharges from the Quartz Hill Molybdenum Project in the Tongass National Forest, Alaska.

[40 CFR § 440.101](#)

§ 440.101 [Reserved]

[40 CFR § 440.102](#)

§ 440.102 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the *54618 degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

(a) The concentration of pollutants discharged in mine drainage from mines operated to obtain copper bearing ores, lead bearing ores, zinc bearing ores, gold bearing ores, or silver bearing ores, or any combination of these ores open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cu .....	.30	.15
Zn	1.5	.75
Pb .....	.6	.3
Hg .....	.002	.001
pH	([FN1])	([FN1])

1 Within the range 6.0 to 9.0.

(b) The concentration of pollutants discharged from mills which employ the froth flotation process alone or in conjunction with other processes, for the beneficiation of copper ores, lead ores, zinc ores, gold ores, or silver ores, or any combination of these ores shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cu .....	.30	.15
Zn	1.0	.5
Pb .....	.6	.3
Hg .....	.002	.001
Cd .....	.10	.05
pH	([FN1])	([FN1])

¹ Within the range 6.0 to 9.0.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable water from mines and mills which employ dump, heap, in situ leach or vat leach processes for the extraction of copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills which extract gold or silver by use of the cyanidation process. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(d)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(e) The concentration of pollutants discharged in mine drainage from mines or discharged from mine and mill complexes beneficiating gold ores or silver ores by gravity separation methods including mining of placer deposits, dredge mining and hydraulic mining operations will be proposed and promulgated at a later date.

(f) The concentration of pollutants discharged in mine drainage from mines producing 5,000 metric tons (5,512 short tons) or more of molybdenum bearing ores per year shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

TSS	30	20
Cd .....	.10	.05
Cu .....	.3	.15
Zn	1.0	.5
Pb .....	.6	.3
As	1.0	.5
pH	([FN1])	([FN1])

¹ Within the range of 6.0 to 9.0

(g) The concentration of pollutants discharged in mine drainage from mines producing less than 5,000 metric tons (5,512 short tons) or discharged from mills processing less than 5,000 metric tons (5,512 short tons) of molybdenum ores per year by methods other than ore leaching shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30 consecutive days

Milligrams per liter

TSS 50 30
pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0.

(h) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of molybdenum ores per year by purely physical methods including ore crushing, washing, jigging, heavy media separation shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily value for 30 consecutive days

Milligrams per liter

TSS 30 20
Cd10 .05
Cu30 .15
Zn 1.0 .5
As 1.0 .5
pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0

(i) The concentration of pollutants discharged from mills processing 5,000 metric tons (5,512 short tons) or more of molybdenum ores per year by froth flotation methods shall not exceed:

Effluent Effluent limitations
characteristics

Maximum for any 1 day Average of daily values for 30 consecutive days

Milligrams per liter

TSS 30 20
Cd10 .05
Cu30 .15
Zn 1.0 .5
As 1.0 .5
pH ([FN1]) ([FN1])

1 Within the range 6.0 to 9.0.

[40 CFR § 440.103](#)

***54619 § 440.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Cu	0.30	0.15
Zn	1.5	0.75
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

(b) The concentration of pollutants discharged from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores shall not exceed:

Effluent Effluent limitations
characteristic

Maximum for any 1 day Average of daily values for 30
consecutive days

Milligrams per liter

Cu	0.30	0.15
Zn	1.0	0.5
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mine areas and mills processes and areas that use dump, heap, in situ leach or vat-leach processes to extract copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the cyanidation process to extract gold or silver. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(d)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(e) The concentration of pollutants discharged in mine drainage or discharged from mines and mills beneficiating gold or silver ores by gravity separation methods including mining of placer deposits, dredge mining and hydraulic mining operations will be proposed and promulgated at a later date.

40 CFR § 440.104

§ 440.104 New source performance standards (NSPS).

Except as provided in Subpart L of this Part any new source subject to this subsection must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):

(a) The concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

Effluent characteristic Effluent limitations

Maximum for any 1 day Average of daily values for
30 consecutive days

Milligrams per liter

Cu	0.30	0.15
Zn	1.5	0.75
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05
pH	([FN1])	([FN1])
TSS	30.0	20.0

1 Within the range 6.0 to 9.0.

(b)(1) Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(b)(2)(i) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(b)(2)(ii) In the event there is a build up of contaminants in the recycle water which significantly interferes with the ore recovery process and this interference can not be eliminated through appropriate treatment of the recycle water, the permitting authority may allow a discharge of process wastewater in an amount necessary to correct the interference problem after installation of appropriate treatment. This discharge shall be subject to the limitations of paragraph (a) of this section. The facility shall have the burden of demonstrating to the permitting authority that the *54620 discharge is necessary to eliminate interference in the ore recovery process and that the interference could not be eliminated through appropriate treatment of the recycle water.

(c)(1) Except as provided in paragraph (c) of this section, there shall be no discharge of process wastewater to navigable waters from mine areas and mills processes and areas that use dump, heap, in-situ leach or vat-leach processes to extract copper from ores or ore waste materials. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(c)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(d)(1) Except as provided in paragraph (d) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the cyanidation process to extract gold or silver. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982.

(d)(2) In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceeds the annual evaporation, a volume of water equal to the difference between annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility and annual evaporation may be discharged subject to the limitations set forth in paragraph (a) of this section.

(e) The concentration of pollutants discharged in mine drainage or discharged from mines and mills beneficiating gold or silver ores by gravity separation methods including mining of placer deposits, dredge mining and hydraulic mining operations will be proposed and promulgated at a later date.

[40 CFR § 440.105](#)

§ 440.105 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

Subpart K—Platinum Ores Subcategory

[40 CFR § 440.110](#)

§ 440.110 Applicability: Description of the platinum ore subcategory.

The provisions of this Subpart K are applicable to discharges from (a) mines that produce platinum ore and (b) mills that process platinum ore.

[40 CFR § 440.110](#)

§ 440.110 [Reserved]

[40 CFR § 440.112](#)

§ 440.112 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). [Reserved]

[40 CFR § 440.113](#)

§ 440.113 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in Subpart L of this Part and [40 CFR 125.30-125.32](#), any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) The concentration of pollutants discharged in mine drainage from mines that produce platinum bearing ores from open-pit or underground operations other than placer deposits shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter

Cu	0.30	0.15
Zn	1.5	0.75
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

(b) The concentration of pollutants discharged from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of platinum ores shall not exceed:

 Effluent Effluent limitations
 characteristic

Maximum for any 1 day Average of daily values for 30
 consecutive days

Milligrams per liter

Cu	0.30	0.15
Zn	1.0	0.5
Pb	0.6	0.3
Hg	0.002	0.001
Cd	0.10	0.05

[40 CFR § 440.114](#)

§ 440.114 New source performance standards (NSPS). [Reserved]

[40 CFR § 440.115](#)

§ 440.115 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BTC). [Reserved]

Subpart L—General Provisions and Definitions

[40 CFR § 440.130](#)

§ 440.130 Applicability

Abbreviations and methods of analysis set forth in 40 CFR 401 shall apply to Part 440 except as provided in these general provisions and definitions. The general provisions and definitions in this subpart apply to all subparts of Part 440 unless otherwise noted.

[40 CFR § 440.131](#)

§ 440.131 General provisions.

(a) Combined Waste Streams: In the event that waste streams from various subparts or segments of subparts in Part 440 are combined for treatment and discharge, the quantity and concentration of each pollutant or pollutant property in the combined discharge that is subject to effluent limitations shall not exceed the quantity and concentration of each pollutant or pollutant

property that could have been discharged had each waste stream been treated separately. In addition, the discharge flow from the combined discharge shall not exceed the volume that could have been discharged had each waste stream been treated separately.

(b) Storm Exemption for Facilities Permitted to Discharge: If, as a result of precipitation or snowmelt, a source with an allowable discharge under 40 CFR 440 has an overflow or excess discharge of effluent which does not meet the limitations of 40 CFR 440, the source may qualify for an exemption from such limitations with respect to such discharge if the following conditions are met:

(b)(1) The facility is designed, constructed and maintained to contain the maximum volume of wastewater which would be generated by the facility during a 24-hour period without an increase in volume from precipitation *54621 and the maximum volume of wastewater resulting from a 10-year, 24-hour precipitation event or treat the maximum flow associated with these volumes. In computing the maximum volume of wastewater which would result from a 10-year, 24-hour precipitation event, the facility must include the volume which would result from all areas contributing runoff to the individual treatment facility, i.e., all runoff that is not diverted from the active mining area and runoff which is not diverted from the mill area.

(b)(2) The facility takes all reasonable steps to maintain treatment of the wastewater and minimize the amount of overflow.

(b)(3) The facility complies with the notification requirements of § 122.60 (g) and (h). The storm exemption is designed to provide an affirmative defense to an enforcement action. Therefore, the operator has the burden of demonstrating to the appropriate authority that the above conditions have been met.

(c) Storm Exemption for Facilities Not Permitted to Discharge: If, as a result of precipitation (rainfall or snowmelt), a source which is not permitted to discharge under 40 CFR 440, has an overflow or discharge which violates the limitations of 40 CFR 440, the source may qualify for an exemption from such limitations with respect to such discharge if the following conditions are met:

(c)(1) The facility is designed, constructed, and maintained to contain the maximum volume of wastewater stored and contained by the facility during normal operating conditions without an increase in volume from precipitation and the maximum volume of wastewater resulting from a 10-year, 24-hour precipitation event. In computing the maximum volume of wastewater which would result from a 10-year, 24-hour precipitation event, the facility must include the volume which would result from all areas contributing runoff to the individual treatment facility, i.e., all runoff that is not diverted from the area or process subject to zero discharge, and other runoff that is allowed to commingle with the influent to the treatment system.

(c)(2) The facility takes all reasonable steps to minimize the overflow or excess discharge.

(c)(3) The facility complies with the notification requirements of § 122.60(g) and (h). The storm exemption is designed to provide an affirmative defense to an enforcement action. Therefore, the operator has the burden of demonstrating to the appropriate authority that the above conditions have been met.

(d) pH Adjustment: (1) Where the application of neutralization and sedimentation technology to comply with relevant metal limitations results in an inability to comply with the pH range of 6 to 9, the permit issuer may allow the pH level in the final effluent to slightly exceed 9.0 so that the copper, lead, zinc, mercury, and cadmium limitations will be achieved.

(d)(2) In the case of a discharge into natural receiving waters for which the pH, if unaltered by human activities, is or would be less than 6.0 and approved water quality standards authorize such lower pH, the pH limitations for the discharge may be adjusted downward to the pH water quality criterion for the receiving waters provided the other effluent limitations for the discharge are met. In no case shall a pH limitation below 5.0 be permitted.

(e) Groundwater infiltration provision: In the event a new source subject to a no discharge requirement can demonstrate that groundwater infiltration contributes a substantial amount of water to the tailing impoundment or wastewater holding facility, the permitting authority may allow the discharge of a volume of water equivalent to the amount of groundwater infiltration. This discharge shall be subject to the limitations for mine drainage applicable to the new source subcategory.

[40 CFR § 440.132](#)

§440.132 General definitions.

- (a) “Active mining area” is a place where work or other activity related to the extraction, removal, or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.
- (b) “Annual precipitation” and “annual evaporation” are the mean annual precipitation and mean annual lake evaporation, respectively, as established by the U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Services, or equivalent regional rainfall and evaporation data.
- (c) “Appropriate treatment of the recycle water” in Subpart J, [§ 440.104](#) includes, but is not limited to pH adjustment, settling and pH adjustment, settling, and mixed media filtration.
- (d) “Groundwater infiltration” in [§ 440.131](#) means that water which enters the treatment facility as a result of the interception of natural springs, aquifers, or run-off which percolates into the ground and seeps into the treatment facility's tailings pond or wastewater holding facility and that cannot be diverted by ditching or grouting the tailings pond or wastewater holding facility.
- (e) “In-situ leach methods” means the processes involving the purposeful introduction of suitable leaching solutions into a uranium ore body to dissolve the valuable minerals in place and the purposeful leaching of uranium ore in a static or semistatic condition either by gravity through an open pile, or by flooding a confined ore pile. It does not include the natural dissolution of uranium by ground waters, the incidental leaching of uranium by mine drainage, nor the rehabilitation of aquifers and the monitoring of these aquifers.
- (f) “Mill” is a preparation facility within which the metal ore is cleaned, concentrated, or otherwise processed before it is shipped to the customer, refiner, smelter, or manufacturer. A mill includes all ancillary operations and structures necessary to clean, concentrate, or otherwise process metal ore, such as ore and gangue storage areas and loading facilities.
- (g) “Mine” is an active mining area, including all land and property placed under, or above the surface of such land, used in or resulting from the work of extracting metal ore or minerals from their natural deposits by any means or method, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning, or concentration of metal ores.
- (h) “Mine drainage” means any water drained, pumped, or siphoned from a mine.
- (i) “Ten (10)-year, 24-hour precipitation event” is the maximum 24-hour precipitation event with a probable recurrence interval of once in 10 years as established by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, or equivalent regional or rainfall probability information.
- (j) “U” (Uranium) is measured by the procedure discussed in [40 CFR 141.25\(b\)\(2\)](#), or an equivalent method.

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