ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 437

[FRL–6215–5]

RIN 2040–AB78

Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment Point Source Category

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule and notice of availability of new information.

SUMMARY: This proposal represents the Agency's second look at Clean Water Act national effluent limitations guidelines and pretreatment standards—first proposed in January 1995—for wastewater discharges from centralized waste treatment facilities. The proposed regulation would establish technology-based effluent limitations and pretreatment standards for wastewater discharges associated with the operation of new and existing centralized waste treatment facilities which accept hazardous or non-hazardous industrial wastes, wastewater, and/or used material from off-site for treatment and/or materials recovery.

Compliance with this regulation is expected to reduce the discharge of pollutants by at least 14.3 million pounds per year of conventional pollutants and 4.1 million pounds per year of toxic and non-conventional pollutants and cost an estimated $27.8 million ($1997) on an annual basis. EPA has estimated that the annual benefits of the proposal would range from $5.3 million to $15.9 million ($1997).

DATES: EPA must receive comments on the proposal by midnight of March 15, 1999. EPA will present an assessment of its 1998 characterization sampling of non-hazardous oil treatment and recovery facilities, and conduct a public hearing on pretreatment standards on February 18, 1999 from 9:30 AM to 12:30 PM.

ADDRESSES: Submit written comments to, Ms. Jan Matuszko, Office of Water, Engineering and Analysis Division (4303), U.S. EPA, 401 M St. SW, Washington, DC 20460. Please submit any references cited in your comments. EPA requests an original and three copies of your comments and enclosures (including references). Commenters who want EPA to acknowledge receipt of their comments should enclose a self-addressed, stamped envelope. No facsimiles (faxes) will be accepted. For additional information on how to submit electronic comments see ''**SUPPLEMENTARY INFORMATION**, How to Submit Comments.''

EPA will present an assessment of its 1998 characterization sampling of non-hazardous oil treatment and recovery facilities, and conduct a public hearing on pretreatment standards in EPA's Auditorium, Waterside Mall, 401 M St. SW, Washington, DC. Persons wishing to present formal comments at the public hearing should contact Mr. Timothy Connor before the hearing and should have a written copy for submittal.

The public record for this proposed rulemaking has been established under docket number W–98–21 and is located in the Water Docket East Tower Basement, 401 M St. SW, Washington, DC 20460. The record is available for inspection from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding legal holidays. For access to the docket materials, call (202) 260–3027 to schedule an appointment. You may have to pay a reasonable fee for copying.

FOR FURTHER INFORMATION CONTACT: For technical information concerning today's proposed rule, contact Ms. Jan Matuszko at (202) 260–9126 or Mr. Timothy Connor at (202) 260–3164. For economic information contact Dr. William Wheeler at (202) 260–7905.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action include:

Category	Examples of regulated entities
Industry	• Discharges from stand-alone waste treatment and recovery facilities receiving materials from off-site. These facilities may treat and/or recover or recycle hazardous or non-hazardous waste, hazardous or non-hazardous wastewater, and/or used material from off-site. • Certain discharges from waste treatment systems at facilities primarily engaged in other industrial operations. Thus, industrial facilities which process their own, on-site generated, process wastewater with hazardous or non-hazardous wastes, wastewaters, and/or used material received from off-site, in certain circumstances, may be subject to this proposal with respect to a portion of their discharge.

The preceding table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria proposed in Section 437.01 and detailed further in Section IV of the proposed rule. If you still have questions regarding the applicability of this action to a particular entity (after consulting Section IV), consult one of the persons listed for technical information in the preceding **FOR FURTHER INFORMATION CONTACT** section.

How To Submit Comments

Comments may also be sent via e-mail to matuszko.jan@epamail.epa.gov. Electronic comments must be identified by the docket number W–98–21 and must be submitted as an ASCII or WordPerfect 6.1 file avoiding the use of special characters and any form of encryption. Electronic comments on this notice may be filed online at many Federal Depository Libraries. No confidential business information (CBI) should be sent via e-mail.

Protection of Confidential Business Information

EPA notes that many documents in the record supporting the proposed rule have been claimed as CBI and, therefore, are not included in the record that is available to the public in the Water Docket. To support the rulemaking, EPA is presenting certain information in aggregated form or, alternatively, is masking facility identities in order to preserve confidentiality claims. Further, the Agency has withheld from disclosure some data not claimed as CBI because release of this information could indirectly reveal information claimed to be confidential.

Some facility-specific data, claimed as CBI, are available to the company that submitted the information. To ensure

that all CBI is protected in accordance with EPA regulations, any requests for company-specific data should be submitted to EPA on company letterhead and signed by a responsible official authorized to receive such data. The request must list the specific data requested and include the following statement, ''I certify that EPA is authorized to transfer confidential business information submitted by my company, and that I am authorized to receive it.''

Overview

The preamble describes the definitions, acronyms, and abbreviations used in this notice; the background documents that support these proposed regulations; the legal authority of these rules; a summary of the proposal; background information; and the technical and economic methodologies used by the Agency to develop these regulations. This preamble also solicits comment and data on specific areas of interest.

Table of Contents

I. Legal Authority

These regulations are proposed under the authority of Sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, 33 U.S.C.1311, 1314, 1316, 1317, 1318, 1342, and 1361.

II. Legislative Background

A. Clean Water Act

Congress adopted the Clean Water Act (CWA) to ''restore and maintain the chemical, physical, and biological integrity of the Nation's waters'' (Section 101(a), 33 U.S.C. 1251(a)). To achieve this goal, the CWA prohibits the discharge of pollutants into navigable waters except in compliance with the statute. The Clean Water Act confronts the problem of water pollution on a number of different fronts. Its primary reliance, however, is on establishing restrictions on the types and amounts of pollutants discharged from various industrial, commercial, and public sources of wastewater.

Congress recognized that regulating only those sources that discharge effluent directly into the nation's waters would not be sufficient to achieve the CWA's goals. Consequently, the CWA requires EPA to promulgate nationally applicable pretreatment standards which restrict pollutant discharges for those who discharge wastewater indirectly through sewers flowing to publicly-owned treatment works (POTWs) (Section 307(b) and (c), 33

U.S.C. 1317(b) & (c)). National pretreatment standards are established for those pollutants in wastewater from indirect dischargers which may pass through or interfere with POTW operations. Generally, pretreatment standards are designed to ensure that wastewaters from direct and indirect industrial dischargers are subject to similar levels of treatment. In addition, POTWs are required to implement local treatment limits applicable to their industrial indirect dischargers to satisfy any local requirements (40 CFR 403.5).

Direct dischargers must comply with effluent limitations in National Pollutant Discharge Elimination System (''NPDES'') permits; indirect dischargers must comply with pretreatment standards. These limitations and standards are established by regulation for categories of industrial dischargers and are based on the degree of control that can be achieved using various levels of pollution control technology.

1. Best Practicable Control Technology Currently Available (BPT)—Section 304(b)(1) of the CWA

In the guidelines, EPA defines BPT effluent limits for conventional, priority,[1] and non-conventional pollutants. In specifying BPT, EPA looks at a number of factors. EPA first considers the cost of achieving effluent reductions in relation to the effluent reduction benefits. The Agency also considers the age of the equipment and facilities, the processes employed and any required process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the Agency deems appropriate (CWA 304(b)(1)(B)). Traditionally, EPA establishes BPT effluent limitations based on the average of the best performances of facilities within the industry of various ages, sizes, processes, or other common characteristics. Where, however, existing performance is uniformly inadequate, EPA may require higher levels of control than currently in place in an industrial category if the Agency determines that the technology can be practically applied.

2. Best Conventional Pollutant Control Technology (BCT)—Section 304(b)(4) of the CWA

The 1977 amendments to the CWA required EPA to identify effluent reduction levels for conventional pollutants associated with BCT technology for discharges from existing industrial point sources. In addition to other factors specified in Section 304(b)(4)(B), the CWA requires that EPA establish BCT limitations after consideration of a two part ''cost-reasonableness'' test. EPA explained its methodology for the development of BCT limitations in July 1986 (51 FR 24974).

Section 304(a)(4) designates the following as conventional pollutants: biochemical oxygen demand (BOD_5), total suspended solids (TSS), fecal coliform, pH, and any additional pollutants defined by the Administrator as conventional. The Administrator designated oil and grease as an additional conventional pollutant on July 30, 1979 (44 FR 44501).

3. Best Available Technology Economically Achievable (BAT)—Section 304(b)(2) of the CWA

In general, BAT effluent limitations guidelines represent the best economically achievable performance of plants in the industrial subcategory or category. The CWA establishes BAT as a principal national means of controlling the direct discharge of toxic and nonconventional pollutants. The factors considered in assessing BAT include the cost of achieving BAT effluent reductions, the age of equipment and facilities involved, the process employed, potential process changes, and non-water quality environmental impacts, including energy requirements and such other factors as the Administrator deems appropriate. The Agency retains considerable discretion in assigning the weight to be accorded these factors. An additional statutory factor considered in setting BAT is economic achievability. Generally, EPA determines economic achievability on the basis of total costs to the industry and the effect of compliance with BAT limitations on overall industry and subcategory financial conditions. As with BPT, where existing performance is uniformly inadequate, BAT may require a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category. BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice.

4. New Source Performance Standards (NSPS)—Section 306 of the CWA

NSPS reflect effluent reductions that are achievable based on the best available demonstrated control technology. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS should represent the most stringent controls attainable through the application of the best available control technology for all pollutants (that is, conventional, nonconventional, and priority pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements.

5. Pretreatment Standards for Existing Sources (PSES)—Section 307(b) of the CWA

PSES are designed to prevent the discharge of pollutants that pass-through, interfere-with, or are otherwise incompatible with the operation of publicly-owned treatment works (POTW). The CWA authorizes EPA to establish pretreatment standards for pollutants that pass-through POTWs or interfere with treatment processes or sludge disposal methods at POTWs. Pretreatment standards are technology-based and analogous to BAT effluent limitations guidelines.

The General Pretreatment Regulations, which set forth the framework for the implementation of categorical pretreatment standards, are found at 40 CFR Part 403. These regulations contain a definition of pass-through that addresses localized rather than national instances of pass-through and establishes pretreatment standards that apply to all non-domestic dischargers. See 52 FR 1586, January 14, 1987.

6. Pretreatment Standards for New Sources (PSNS)—Section 307(b) of the CWA

Like PSES, PSNS are designed to prevent the discharges of pollutants that pass-through, interfere-with, or are otherwise incompatible with the operation of POTWs. PSNS are to be issued at the same time as NSPS. New indirect dischargers have the opportunity to incorporate into their plants the best available demonstrated technologies. The Agency considers the same factors in promulgating PSNS as it considers in promulgating NSPS.

[1] In the initial stages of EPA CWA regulation, EPA efforts emphasized the achievement of BPT limitations for control of the ''classical'' pollutants (for example, TSS, pH, BOD_5). However, nothing on the face of the statute explicitly restricted BPT limitations to such pollutants. Following passage of the Clean Water Act of 1977 with its requirement for point sources to achieve best available technology limitations to control discharges of toxic pollutants, EPA shifted its focus to address the listed priority pollutants under the guidelines program. BPT guidelines continue to include limitations to address all pollutants.

B. Section 304(m) Consent Decree

Section 304(m) of the CWA, added by the Water Quality Act of 1987, requires EPA to establish schedules for (1) reviewing and revising existing effluent limitations guidelines and standards (''effluent guidelines'') and (2) promulgating new effluent guidelines. On January 2, 1990, EPA published an Effluent Guidelines Plan (55 FR 80) that established schedules for developing new and revised effluent guidelines for several industry categories. One of the industries for which the Agency established a schedule was the centralized waste treatment industry.

The Natural Resources Defense Council (NRDC) and Public Citizen, Inc. filed suit against the Agency, alleging violation of Section 304(m) and other statutory authorities requiring promulgation of effluent guidelines (*NRDC et al.* v. *Browner,* Civ. No. 89–2980 (D.D.C.)). Under the terms of a consent decree dated January 31, 1992, which settled the litigation, EPA agreed, among other things, to propose effluent guidelines for the ''Centralized Waste Treatment Industry Category by April 31, 1994 and take final action on these effluent guidelines by January 31, 1996. On February 4, 1997, the court approved modifications to the Decree which revised the deadline to August 1999 for final action. EPA provided notice of these modifications on February 26, 1997 at 62 FR 8726.

C. The Land Disposal Restrictions Program

1. Introduction to RCRA Land Disposal Restrictions (LDR)

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, largely prohibit the land disposal of untreated hazardous wastes. Once a hazardous waste is prohibited from land disposal, the statute provides only two options for legal land disposal: meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that has been found to satisfy the statutory no-migration-test. A no-migration-unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous (RCRA Sections 3004 (d), (e), (g)(5)).

Under section 3004, the treatment standards that EPA develops may be expressed as either constituent concentration levels or as specific methods of treatment. The criteria for these standards is that they must substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized (RCRA Section 3004(m)(1)). For purposes of the restrictions, the RCRA program defines land disposal to include any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. Land disposal restrictions are published in 40 CFR Part 268.

EPA has used hazardous waste treatability data as the basis for land disposal restrictions standards. First, EPA has identified Best Demonstrated Available Treatment Technology (BDAT) for each listed hazardous waste. BDAT is that treatment technology that EPA finds to be the most effective for a waste which is also readily available to generators and treaters. In some cases, EPA has designated, for a particular waste stream, a treatment technology which has been shown to successfully treat a similar, but more difficult to treat, waste stream. This ensured that the land disposal restrictions standards for a listed waste stream were achievable since they always reflected the actual treatability of the waste itself or of a more refractory waste.

As part of the Land Disposal Restrictions (LDR), Universal Treatment Standards (UTS) were promulgated as part of the RCRA phase two final rule (July 27,1994). The UTS are a series of concentrations for wastewaters and non-wastewaters that provide a single treatment standard for each constituent. Previously, the LDR regulated constituents according to the identity of the original waste; thus, several numerical treatment standards might exist for each constituent. The UTS simplified the standards by having only one treatment standard for each constituent in any waste residue.

The LDR treatment standards established under RCRA may differ from the Clean Water Act effluent guidelines proposed here today both in their format and in the numerical values set for each constituent. The differences result from the use of different legal criteria for developing the limits and resulting differences in the technical and economic criteria and data sets used for establishing the respective limits.

The difference in format between the LDR and effluent guidelines is that LDR establishes a single daily limit for each pollutant parameter whereas the effluent guidelines generally establish monthly and daily limits. Additionally, the effluent guidelines provide for several types of discharge, including new vs. existing sources, and indirect vs. direct discharge.

The differences in numerical limits established under the Clean Water Act may differ, not only from LDR and UTS, but also from point-source category to point-source category (for example, Electroplating, 40 CFR Part 413; and Metal Finishing, 40 CFR Part 433). The effluent guidelines limitations and standards are industry-specific, subcategory-specific, and technology-based. The numerical limits are typically based on different data sets that reflect the performance of specific wastewater management and treatment practices. Differences in the limits reflect consideration of the CWA statutory factors that the Administrator is required to evaluate in developing technically and economically achievable limitations and standards. A consequence of these differing approaches is that similar waste streams can be regulated at different levels.

2. Overlap Between LDR Standards and the Centralized Waste Treatment Industry Effluent Guidelines

EPA's survey for this guideline identified no facilities discharging wastewater effluent to land disposal units. There is, consequently, no overlap between the proposed regulations for the CWT Industry and the Universal Treatment Standards.

III. Centralized Waste Treatment Industry Effluent Guideline Rulemaking History

A. January 27, 1995 Proposal

On January 27, 1995 (60 FR 5464), EPA proposed regulations to reduce discharges to navigable waters of toxic, conventional, and non-conventional pollutants in treated wastewater from facilities defined in the proposal as ''centralized waste treatment facilities.'' As proposed, these effluent limitations guidelines and pretreatment standards would have applied to ''any facility that treats any hazardous or non-hazardous industrial waste received from off-site by tanker truck, trailer/roll-off bins, drums, barge or other forms of shipment.'' Facilities which received waste from off-site solely via pipeline were excluded from the proposed rule. Facilities proposed for regulation included both stand-alone waste treatment and recovery facilities that treat waste received from off-site as well as those facilities that treat on-site generated process wastewater with wastes received from off-site.

The Agency proposed limitations and standards for an estimated 85 facilities

in three subcategories. The subcategories for the centralized waste treatment (CWT) industry were metal-bearing waste treatment and recovery, oily waste treatment and recovery, and organic waste treatment and recovery. EPA based the BPT effluent limitations proposed in 1995 on the technologies listed in Table III.A–1 below. EPA based BCT, BAT, NSPS, PSES, and PSNS on the same technologies as BPT.

TABLE III.A–1. TECHNOLOGY BASIS FOR 1995 BPT EFFLUENT LIMITATIONS

Proposed subpart	Name of subcategory	Technology basis
A	Metal-Bearing Waste Treatment and Recovery	Selective Metals Precipitation, Pressure Filtration, Secondary Precipitation, Solid-Liquid Separation, and Tertiary Precipitation. For Metal-Bearing Waste Which Includes Concentrated Cyanide Streams: Pretreatment by Alkaline Chlorination at Elevated Operating Conditions.
B	Oily Waste Treatment and Recovery	Emulsion Breaking/Gravity Separation and Ultrafiltration; or Ultrafiltration, Carbon Adsorption, and Reverse Osmosis.
C	Organic Waste Treatment and Recovery	Equalization, Air Stripping, Biological Treatment, and Multimedia Filtration.

B. September 16, 1996 Notice of Data Availability

Based on comments received on the 1995 proposal and new information, EPA reexamined its conclusions about the Oily Waste Treatment and Recovery subcategory, or ''oils subcategory''. (The 1995 proposal had defined facilities in this subcategory as ''facilities that treat, and/or recover oil from oily waste received from off-site.'') Subsequently, in September, 1996 EPA noticed the availability of the new data on this subcategory (61 FR 48800). EPA explained that it had underestimated the size of the oils subcategory, and that the data used to develop the original proposal may have mischaracterized this portion of the CWT industry. EPA had based its original estimates on the size of this segment of the industry on information obtained from the 1991 Waste Treatment Industry Questionnaire. The basis year for the questionnaire was 1989. However, many of the new oils facilities discussed in this notice began operation after 1989. EPA concluded that many of these facilities may have started up or modified their existing operations in response to requirements in EPA regulations, specifically, the provisions of 40 CFR part 279, promulgated on September 10, 1992 (Standards for the Management of Used Oil). These regulations govern the handling of used oils under the Solid Waste Disposal Act and CERCLA. EPA's 1996 notice discussed the additional facilities, provided a revised description of the subcategory, and described how the 1995 proposal limitations and standards, if promulgated, would have affected such facilities. The notice, among other items, also solicited comments on the use of dissolved air flotation in this subcategory.

IV. Scope/Applicability of the Proposed Regulation

Over half of the comments received on the original proposal related to the applicability of the rule. For more background on the CWT industry, see Section V. EPA has reviewed these comments and is proposing a revised scope for this rule. Many of these issues are discussed in more detail below. EPA solicits comments on each of these issues as well as any other applicability issues which are not specifically addressed in today's notice.

A. General Overview

EPA is still proposing limitations and standards for three subcategories of CWT facilities. However, it would change the scope of the facilities and wastewater discharges that would be subject to regulation from that proposed earlier. The universe of facilities which would be potentially subject to this guideline generally include the following. First, except where noted otherwise, EPA is proposing to establish limitations and pretreatment standards for stand-alone waste treatment and recovery facilities receiving materials from off-site—classic ''centralized waste treaters.'' These facilities may treat and/or recover or recycle hazardous or non-hazardous waste, hazardous or non-hazardous wastewater, and/or used material from off-site. Second, discharges from waste treatment systems at facilities primarily engaged in other industrial operations may also fall within the scope of today's proposal in certain circumstances. Thus, industrial facilities which process their own, on-site generated, process wastewater with hazardous or non-hazardous wastes, wastewaters, and/or used material received from off-site may be subject to this proposal with respect to a portion of their discharge.

The wastewater flows which EPA is proposing to subject to the requirements of this rule would include some or all off-site waste receipts and on-site wastewater generated as a result of CWT operations. The kinds of on-site wastewater generated at these facilities would include, for example, solubilization wastewater, emulsion breaking/gravity separation wastewater, used oil processing wastewater, treatment equipment washes, transport washes (tanker truck, drum, and roll-off boxes), laboratory-derived wastewater, air pollution control wastewater, industrial waste combustor wastewater from on-site industrial waste combustors, landfill wastewater from on-site landfills, and contaminated stormwater. A detailed discussion of CWT wastewaters is provided in Section VIII. In summary, all wastewater discharges to a receiving stream or the introduction of wastewater to a publicly owned treatment works from a facility which falls under the definition of centralized waste treatment facility would be subject to the provisions of this rule unless specifically excluded as discussed in the following sections.

B. Facilities Subject to 40 CFR (Parts 400 Through 471)

At the time of the original proposal, EPA defined a centralized waste treatment facility as any facility which received waste from off-site for treatment or recovery on a commercial or non-commercial basis. Non-commercial facilities were defined as facilities that accept off-site wastes from facilities under the same ownership. EPA received many comments concerning the applicability of the CWT rule to facilities that perform waste treatment and/or recovery of off-site generated wastes, but whose primary business is something other than waste treatment or recovery. These facilities

are generally manufacturers who primarily treat wastes generated as a result of their on-site manufacturing operations, and whose wastewater discharges are already subject to existing effluent guidelines and standards. Many of these facilities also accept off-site generated wastes for treatment. In some instances, these off-site wastes received at these industrial facilities are generated by a facility under the same corporate ownership—intracompany transfer—and treated on a non-commercial basis. In other instances, the off-site waste streams originate from a company under a different ownership, an intercompany transfer.

In general, commenters urged that the scope of the guideline should be limited to facilities whose sole purpose is the treatment of off-site wastes and wastewater. Reasons provided by commenters for not including facilities that treat off-site wastes along with their own on-site wastes within the scope of the guideline include:

- The wastes transferred from different locations within a company (and different companies) for treatment with on-site wastes are usually generated from the same categorical process as the on-site generated wastes. Since most of these facilities are already covered by an existing effluent guideline, coverage of these waste streams is redundant. Monitoring, record keeping, etc. would be duplicative.
- This proposed rule could prevent effective waste management practices at many manufacturing facilities. Currently, many companies operate a single, central treatment plant and transport waste from ''satellite'' facilities to the central treatment facility. This allows for effective treatment while controlling costs. Additionally, many facilities transfer a specific waste stream to other company-owned treatment systems (intracompany) that are designed for the most efficient treatment of that type of waste stream.
- Many of these types of facilities only accept waste streams which are comparable and compatible with the on-site generated process waste streams.
- These facilities are not primarily in the business of waste treatment. Only a small percentage of wastes treated are from off-site.
- EPA has not performed the technical analyses that are necessary to support application of the CWT rule to manufacturing facilities regulated by existing effluent guidelines and pretreatment standards.

EPA reexamined the database of facilities which forms the basis of the CWT rule. EPA's database contains information on 17 manufacturing facilities which commingle waste generated by on-site manufacturing activities for treatment with waste generated off-site and one manufacturing facility which does not commingle waste generated by on-site manufacturing activities for treatment with waste generated off-site. Nine of these facilities treat waste on a non-commercial basis only while nine treat waste on a commercial basis. Of the eighteen facilities, eight facilities only accept and treat off-site wastes which are from the same categorical process as the on-site generated waste streams. Ten of the facilities, however, are clearly accepting off-site wastes which are not subject to the same categorical standards as the on-site generated wastewater. The percentage of off-site wastewaters being commingled for treatment with on-site wastewater varies from 0.06% to 80%, with the total volumes varying between 87,000 gallons per year to 381 million gallons per year.

The guidelines, as proposed in 1995, would have included all of these facilities within the scope of this rule. EPA included these facilities in the 1995 proposed CWT rule to ensure that all wastes receive adequate treatment—even those shipped between facilities already subject to existing effluent guidelines and standards. After reconsidering this issue for the current proposal, however, EPA agrees that, for off-site wastes which are generated by the same categorical process as on-site generated wastes, intracompany and intercompany transfers are a viable and often preferable method to treat waste streams efficiently at a reduced cost. EPA does not want to discourage these management practices. EPA is still concerned, however, that, in circumstances where the off-site generated wastes are not from the same categorical group as the on-site generated wastes, the effluent limitations and categorical standards currently in place for one industry may not ensure adequate treatment for wastes generated in another industry. It is not duplicative, in such circumstances, to include within the scope of the CWT guideline, wastewater that results from the treatment of off-site wastes not subject to the guidelines and standards applicable to the treatment of wastewater generated on-site. EPA has included these facilities in all of its economic analyses.

Therefore, based on the Agency's evaluation of the comments submitted on its earlier proposal and consideration of additional information, EPA is today proposing to include within the scope of the CWT rule wastewater received from off-site from facilities in other industries that also generate on-site wastewater unless one of the following conditions is met:

- For facilities subject to national effluent limitations guidelines for existing sources, standards of performance for new sources, or pretreatment standards for new and existing sources (''categorical standards''), the wastes received from off-site for treatment would be subject to the same categorical standards as the on-site generated wastes; or
- For facilities not subject to existing categorical standards, the waste received from off-site is from the same industry (other than the waste treatment industry) and is of a similar nature to the waste generated on-site (based on the best professional judgment of the permit writer).

For purposes of developing its effluent limitations and pretreatment standards, EPA has included manufacturing facilities which accept off-site waste for treatment in all of its analyses unless the above mentioned conditions were met.

EPA contemplates that this approach would be implemented in the following manner. A facility that is currently subject to either national effluent limitations or pretreatment standards receives wastewater from off-site for treatment. The wastewater is commingled for treatment with wastewater generated on-site. If the off-site wastewater is subject to the same limitations or standards as the onsite wastewater (or would be if treated where generated), the CWT limitations would not apply to the discharge associated with the off-site wastewater flows. In that case, another guideline or standard applies. If, however, the off-site wastewater is not subject to the same national limitations or standards (or if none exist), that portion of the discharge associated with the off-site flow would be subject to CWT requirements. (Of course, the portion of the wastewater generated on-site remains subject to applicable limitations and standards for the facility. If the off-site and on-site wastewaters were commingled prior to discharge, the permit writer would use the ''combined wastestream formula'' or ''building block approach'' to determine limitations for the commingled wastestream). Alternatively, EPA is considering an option under which the permit writers could allow manufacturing facilities that treat off-site wastes to meet all otherwise-

applicable categorical limitations and standards for the industries from which the waste was generated. This approach would also determine limitations or standards for any commingled on-site and off-site wastewater using the ''combined waste stream formula'' or ''building block approach''. Under the approach, however, the permit writer would apply the categorical limitations from the industries generating the wastewater, rather than the CWT limitations proposed today to the off-site portion of the commingled wastestream. The use of the combined wastestream formula and building block approaches for CWT wastes is discussed further in Section XIV.F. EPA envisions the second alternative would be preferable for facilities which only receive continuous flows of process wastewaters with relatively consistent pollutant profiles from no more than five customers. The decision to base limitations in this manner would be at the permit writer's discretion only. EPA solicits comment on this alternative as well as the application of the CWT rule to manufacturing facilities in general.

In addition, there are manufacturing facilities that may not currently be subject to any effluent limitations guidelines or pretreatment standards. Some of these may accept off-site wastewater that is commingled for treatment with on-site process wastewater. With respect to such facilities, EPA contemplates that an approach similar to that proposed above for categorical industries receiving off-site wastewater for treatment. Thus, the proposal would be implemented as follows. Under EPA regulations, the permit writer would develop best professional judgement BPJ limits (or standards) for the on-site generated wastewater flows. The portion of the discharge resulting from the treatment of off-site flows would be subject either to CWT limitations and standards or to the same BPJ requirements as on-site flows. CWT limitations would apply if the off-site wastes treated at the facility were different from those generated on-site. Alternatively, applying either a building block or combined waste stream formula approach, on-site wastewater would be subject to appropriate BPJ limits or standards for the on-site processes generating the wastewater and the off-site wastewater would be subject to appropriate limits for the off-site industry generating the wastewater. The Agency solicits comment on how it should treat such facilities.

C. Pipeline Transfers (Fixed Delivery Systems)

As previously noted, the scope of EPA's 1995 proposal did not extend to facilities which received off-site wastes for treatment solely via an open or enclosed conduit (for example, pipeline, channels, ditches, trenches, etc.). At that time, EPA had concluded that facilities which receive all their wastes through a pipeline or trench (fixed delivery systems) from the original source of waste generation are receiving continuous flows of process wastewater with relatively consistent pollutant profiles. As such, EPA concluded that these wastes differ fundamentally from those received at CWT facilities it had studied as part of this rulemaking.

The Agency received many comments on the proposal to limit the applicability of the proposed limits to wastewaters received other than by pipelines or fixed delivery systems. Many commented that this approach is arbitrary and that the mode of transportation should not be the determining factor as to whether or not a facility is included in the scope of the rule. Commenters asserted that the character of the waste remains unchanged regardless of whether it is trucked or piped to another facility for treatment. Many also questioned EPA's conclusion that piped waste is more consistent in strength and treatability than typical CWT wastewaters studied for this proposal.

EPA has reevaluated the database for this rule. EPA received questionnaire responses from four CWT facilities which receive their waste streams solely via pipeline. EPA also examined the database that was developed for the organic chemicals, plastics, and synthetic fibers (OCPSF) effluent guidelines and pretreatment standards to gather additional data on OCPSF facilities which also have CWT operations. Based on the OCPSF database, 16 additional facilities are treating wastewater received solely via pipeline from off-site for treatment. A review of the CWT and OCPSF databases supplemented by telephone calls to selected facilities reveals that one facility no longer accepts wastes from off-site, one facility is now operating as a POTW, and 11 facilities only accept off-site wastes that were generated by a facility within the same category as on-site generated waste. (The latter facilities, under the criteria explained above, would no longer be within the scope of the proposed rule because they are already subject to existing effluent guidelines and standards.) Therefore, EPA identified 7 facilities which receive off-site wastes solely via pipeline which may be subject to this rulemaking.

Of these seven facilities, one is a dedicated treatment facility which is not located at a manufacturing site. The other six pipeline facilities are located at manufacturing facilities which are already covered by an existing effluent guideline or standard. All of the facilities are direct dischargers and all receive waste receipts from no more than five customers (many receive waste receipts from three or fewer customers).

Since the 1995 proposal, EPA conducted site visits at two of these pipeline facilities. Information collected during these site visits confirmed EPA's original conclusion that wastes received by pipeline are more consistent in strength and treatability than ''typical'' CWT wastewaters. These wastewaters are traditional wastewaters from the applicable industrial category that generally remain constant from day to day in terms of the concentration and type of pollutant parameters. Unlike traditional CWT facilities, their customers and wastewater sources do not change and are limited by the physical and monetary constraints associated with pipelines.

EPA has also reviewed the discharge permits for each of these pipeline facilities. EPA found that, in all cases, permit writers had carefully applied the ''building block approach'' in establishing the facility's discharge limitations. Therefore, in all cases, the treating facility was required to treat each of the piped wastewaters to comply with otherwise applicable effluent guidelines and standards.

Consequently, based on the information it has obtained to date, EPA continues to believe that (except as discussed below) wastes that are piped to waste treatment facilities should be excluded from the scope of the CWT rule and covered by otherwise applicable effluent guidelines and standards. The Agency has concluded that effluent limitations and pretreatment standards for CWT facilities should not apply to pipeline treatment facilities. EPA believes that it is more appropriate for permit writers to develop limitations for treatment facilities that receive wastewater by pipeline on an individual basis by applying the ''combined waste stream formula'' or ''building block'' approach. The one exception to this approach is for facilities which receive waste via conduit (that is, pipeline, trenches, ditches, etc.) from facilities that are acting merely as waste collection or consolidation centers that are not the original source of the waste. These wastewaters would be subject to the

CWT rule. EPA has not identified any pipeline facility that is receiving waste from waste consolidators, but has received public comment that these facilities exist.

EPA notes that 40 CFR 122.44(m) of the Agency's NPDES permitting regulations require that an NPDES permit for a private treatment works must include conditions expressly applicable to any user, as a limited co-permittee, necessary to ensure compliance with applicable NPDES requirements. In the case of a pipeline treatment system, this may require that the permit writer include conditions in a permit issued to the pipeline treatment system and its users, as co-permittee, if necessary for the pipeline facility to comply with the applicable limitations. Alternatively, EPA may need to issue permits both to the private treatment works and to the users or require the user to file a permit application.

D. Product Stewardship

Many members of the manufacturing community have adopted ''product stewardship'' programs as an additional service for their customers to promote recycling and reuse of products and to reduce the potential for adverse environmental impacts from chemical products. Many commenters on the proposal have defined ''product stewardship'' in this way: ''taking back spent, used, or unused products, shipping and storage containers with product residues, off-specification products and waste materials from use of products.'' Generally, whenever possible, these manufacturing plants recover and reuse materials in chemical processes at their facility. Manufacturing companies that cannot reuse the spent, used, or unused materials returned to them treat these materials in their wastewater treatment plant. In industry's view, such materials are inherently compatible with the treatment system.

EPA received no specific information on these product stewardship activities in the responses to the 308 Waste Treatment Industry Questionnaire. EPA obtained information on this program from comment responses to the 1995 CWT proposal and in discussions with industry since the 1995 proposal. As part of their comment to the 1995 proposal, the Chemical Manufacturer's Association provided results of a survey of their members on product stewardship activities. Based on these survey results, the vast majority of materials received under the product stewardship programs are materials received for product rework. A small amount is classified as residual recycling and an even smaller amount is classified as drum take backs. Of the materials received, the vast majority is reused in the manufacturing process. With few exceptions, all of the materials (which are not reused in the manufacturing process) that are treated in the on-site wastewater treatment systems appear to be from the same categorical group as the on-site manufactured materials.

EPA has decided to apply the same approach to wastewater generated from materials that are taken back for recycle or reuse as to wastewater received from off-site by a manufacturing facility. EPA applauds the efforts of manufacturing facilities to reduce pollution and the environmental impacts of their products and does not want to discourage these practices. In most of the instances stated in the product stewardship definition, manufacturing facilities are essentially taking back product which has not been utilized or has not been chemically altered. In these cases, where the treatment of these wastes would be subject to same guidelines or pretreatment standards as the other wastewater generated at the facility, under the approach discussed above, they would not be subject to CWT requirements (Section IV.B).

EPA remains concerned, however, that there are circumstances in which used materials or waste products may not be compatible with the otherwise existing treatment system. Therefore, EPA is not proposing to remove all product stewardship activities from the scope of this rulemaking. Those activities that involve used products or waste materials that are not subject to effluent guidelines or standards from the same category as the other on-site generated wastes are subject to today's proposal. Based on the information provided by manufacturing facilities, EPA believes that very few product stewardship activities would be subject to this rule. EPA's approach will not curtail product stewardship activities, in general, but will ensure that all wastes are treated effectively. EPA requests comment on this approach.

E. Solids, Soils, and Sludges

EPA did not distinguish in its information gathering efforts between those waste treatment and recovery facilities treating aqueous waste and those treating non-aqueous wastes or a combination of both. Thus, EPA's 308 Waste Treatment Industry Questionnaire and related CWT Detailed Monitoring Questionnaire (DMQ) asked for information on CWT operations without regard to the type of waste treated. EPA's sampling program also included facilities which accepted both aqueous and solid wastes for treatment. In fact, the facility which formed the technology basis for the metals subcategory limitations selected at the time of the original proposal treats both liquid and solid wastes. As such, a facility that accepts wastes from off-site for treatment and/or recovery that generates a wastewater is subject to the CWT rule regardless of whether the wastes are aqueous or non-aqueous. Therefore, wastewater generated in the treatment of solids received from off-site, of course, would be subject to the CWT rule.

As a further point of clarification, the main concern in the treatment or recycling of off-site ''solid wastes'' is that pollutants contained in the solid waste may be transferred to a process or contact water resulting in a wastewater that may require treatment. Examples of such wastewaters include the following:

- entrained water directly removed through dewatering operations (for example, sludge dewatering);
- contact water added to wash or leach contaminants from the waste material;
- stormwater that comes in direct contact with waste material; and
- solvent contaminated wastewater removed from scrap metal recycling.

The treatment or recovery of solids that remain in solid form when contacted with water and which do not leach any chemicals into the water are not subject to this rule. Examples of excluded solids recovery operations are the recycling of aluminum cans, glass and plastic bottles.

F. Sanitary Wastes

The CWT proposal would regulate facilities which treat, or recover materials from, off-site industrial wastes and wastewaters. Sanitary wastes such as chemical toilet wastes and septage are not covered by the provisions of the proposed CWT rule. EPA would expect that permit writers would develop BPJ limitations or local limits to establish site-specific permit requirements for any commercial sanitary waste treatment facility.

Similarly, sanitary wastes received from off-site and treated at an industrial facility or a CWT facility are not covered by provisions of the CWT rule. If these wastes are mixed with industrial wastes, EPA would expect that, as is the case now with ancillary sanitary waste flows mixed for treatment at categorical facilities, the permit writer would establish BPJ, site-specific permit requirements.

G. Transporters and/or Transportation Equipment Cleaners

Facilities that treat wastewater that results from cleaning tanker trucks, rail tank cars, or barges may or may not be subject to the provisions of this rule. Thus, for example, the rule does not apply to discharges from wastewater treatment at facilities engaged exclusively in cleaning the interiors of transportation equipment. These facilities may be subject to the requirements to be established for the Transportation Equipment Cleaning (TEC) Point Source Category (these requirements were proposed at 63 FR 34685 June 25,1998). As proposed, the TEC regulation only applies to facilities that solely accept tanks which have been previously emptied or that contain a small amount of product, called a ''heel'', typically accounting for less than one percent of the volume of the tank. A facility which accepts a tank truck, rail tank car, or barge not considered to be empty for cleaning or treatment is not subject to the Transportation Equipment Cleaning (TEC) Point Source Category, and may be subject to the provisions established for this rule.

There are some facilities which are engaged in traditional CWT activities and also engaged in traditional TEC activities. If the wastewaters from the two operations are commingled, under the approach adopted for the TEC proposal, the commingled TEC wastewater flow would be subject to CWT limits when promulgated. Therefore, a facility performing transportation equipment cleaning as well as other CWT services that commingles these wastes is a CWT facility. All of the wastewater discharges are subject to provisions of this rule. If, however, a facility is performing both operations and the waste streams are not commingled (that is, transportation equipment cleaning wastewater is treated in one system and CWT wastes are treated in a second, separate system), both the TEC rule and CWT rule apply to the respective wastewaters.

As a further point of clarification, the CWT proposal would subject transportation equipment cleaning wastes received from off-site to its provisions. Transportation equipment cleaning wastes received from off-site that are treated at CWT facilities along with other off-site wastes are subject to provisions of this rule.

H. Publicly Owned Treatment Works (POTWs)

At the time of the original proposal, EPA solicited comment on how to treat POTWs which receive wastes for treatment by any means of transportation other than sewers or pipelines. EPA was aware that many POTWs were receiving waste via tanker trucks, but did not have a good understanding of how widespread the practice was or what types of wastes were being transferred in this manner. Based on comments, EPA now believes that hauling of non-hazardous industrial and commercial wastes is a widespread practice, particularly among the larger POTWs. A special discharge survey conducted by the Association of Metropolitan Sewerage Agencies (AMSA) indicates that 42.5 percent of POTW respondents accept hauled industrial wastes. Commenters to the original CWT proposal also noted that many small POTWs located in rural areas regularly accept trucked wastes. While the acceptance of waste at POTWs via truck appears to be common practice, commenters also cautioned that EPA should be concerned that the hauled waste is being accepted with little or no documentation regarding the source, little or no monitoring of the shipments when they arrive, and no pretreatment before mixing with the normal POTW influent.

The large volume of wastes generally trucked to POTWs includes septage and chemical toilet wastes. These were not evaluated for this regulation and are not subject to the proposed limits. In addition, POTWs also receive trucked industrial and commercial wastes. Examples of these include tank cleaning water, bilge water, restaurant grease trap wastes, groundwater remediation water, contaminated stormwater run-off, interceptor wastewaters, and non-hazardous leachate.

The proposed CWT pretreatment regulations would not establish any requirements that apply directly to local POTWs that receive off-site wastes. In the case of categorical wastes (subject to pretreatment standards in 40 CFR parts 400 through 471), the generator of the wastes must comply with any applicable standards before introducing the waste to the POTW regardless of whether the wastewater is discharged directly to the sewer or otherwise hauled to the POTW. Similarly, for non-categorical wastes, the generator would need to meet any applicable local limits regardless of the mode of transportation to the POTW. As such, therefore, the CWT rule as proposed today does not apply to POTWs. EPA, does, however, want to remind POTWs that they should document and monitor hauled waste streams to ensure that necessary pretreatment steps have been performed. EPA pretreatment regulations at 40 CFR 403.8(f)(1)(ii) require that POTW pretreatment programs must require compliance with applicable pretreatment standards.

If, however, a POTW chooses to establish a pretreatment business as an addition to their operation, they may, in given circumstances, be subject to provisions of this rule. EPA is aware of a POTW which plans to open a wastewater treatment system to operate in conjunction with their POTW operations. This CWT facility at a POTW will accept categorical wastewaters, treat them, and then discharge them to the POTW. As such, the CWT operation may be subject to provisions of this rule. It is not a POTW itself (even if the facility is located at the same site). In this case, the facility is operating as a CWT facility and all discharges are subject to provisions of this rule. EPA would caution POTWs and industrial users that it will carefully examine such operations to ensure they are legitimate CWT facilities and not simply waste consolidation centers seeking to avoid meeting categorical pretreatment standards. EPA further notes that if wastes are piped to such facilities, under the approach proposed today, such flows would still be subject to applicable categorical standards and not CWT limits.

I. Silver Recovery Operations From Used Photographic and X-Ray Materials

Many commenters to the 1995 CWT proposal expressed concern over the inclusion in the metals subcategory of CWT operations that recover metals from used photographic materials and solutions and x-ray materials and solutions. Commenters were particularly concerned that they would be unable to meet the limitations established for silver in the metals subcategory. In general, commenters stated that the scope of the proposed rule should not include these operations. Reasons provided include:

- The metals subcategory limitations proposed for the CWT rule are not based on technologies typically used in silver recovery operations. Silver recovery facilities typically use electrolytic plating followed by metallic replacement with iron.
- The facility used to calculate the BAT silver limitation is engaged in a variety of recovery operations. This BAT treatment system does not reflect performance of facilities which solely treat silver-bearing wastes.

- Existing effluent guidelines should be sufficient. Many facility discharge permits are based on Part 421, effluent guidelines for non-ferrous metals manufacturing, Subpart L secondary silver subcategory. In addition, an effluent guideline also exists for the industry which is the primary source of the recovered materials—Part 459 photographic point source subcategory.
- The Silver Coalition and the Association of Metropolitan Sewerage Agencies (AMSA) have prepared and issued recommendations on technology, equipment, and management practices for controlling discharges from facilities that process photographic materials.
- It is not economical or efficient for these waste streams to be recovered on-site due to their small volume. If this rule were enacted, many of the CWT facilities processing used photographic materials would discontinue this operation, and silver recovery operations would decrease greatly.

Based on information provided by the industry, EPA estimates that there are 360,000 photographic and image processing facilities which generate silver bearing wastes. Many of these facilities generate very small volumes of silver bearing waste which would not be economical or efficient to recover on site. Thus, there exists a large potential for facilities to consolidate and treat silver bearing photographic waste from various sources.

EPA believes that the off-site shipment of silver bearing photographic waste streams for the purpose of consolidation and recovery is beneficial, and does not wish to discourage this practice. EPA encourages the segregation of waste streams as this leads to more efficient recovery. EPA is aware that some of these consolidated waste streams are treated at typical CWT facilities and some are treated at facilities which treat photographic waste streams only. While EPA has promulgated effluent guidelines for non-ferrous metals manufacturing and the photographic point source categories (40 CFR part 421, Subpart L and 40 CFR part 459, respectively), the majority of these centralized silver recovery facilities are not currently subject to any effluent guideline.

EPA agrees with proposal commenters that the BAT system selected at the time of the original proposal does not reflect performance of facilities which solely treat silver-bearing wastes. The precipitation processes to recover silver used as the basis for its metal limits (including silver) is different from that most widely used to recover silver at facilities that treat only silver bearing wastes—electrolytic plating followed by metallic replacement. Although the facility which formed the technology basis for the 1995 proposed BAT limitations was engaged in recovering silver from photographic waste streams, EPA does not have information in its database on facilities which only perform CWT of photographic waste streams.

Consequently, EPA is today proposing not to include electrolytic plating/metallic replacement silver recovery operations of used photographic and x-ray materials within the scope of this rule. Based on the fundamental difference in technology used to recover silver at facilities devoted exclusively to treatment of photographic and x-ray wastes, the Agency has decided to defer proposing regulations for these facilities. Facilities which only perform CWT silver recovery operations (electrolytic plating followed by metallic replacement) would not fall within the scope of today's proposal. Permit writers would use Best Professional Judgement or local limits to establish site-specific permit requirements. However, off-site wastes which are treated/recovered at these facilities through any other process and/or waste generated at these facilities as a result of any other centralized treatment/recovery process are subject to provisions of this rule.

J. High Temperature Metals Recovery

During the development of the 1995 proposal, EPA did not include facilities which perform high temperature metals recovery (HTMR) within the scope of this rule. EPA is aware of three facilities in the U.S. which utilize the HTMR process. High temperature metals recovery facilities generally take solid forms of various metal containing materials and produce a remelt alloy which is then sold as feed materials in the production of metals. These facilities utilize heat-based pyrometallurgical technologies, not the water-based precipitation/filtration technologies used throughout the CWT industry. Based on questionnaire responses and industry comments, the HTMR process does not generate wastewater.

For these reasons, the high temperature metals recovery operations have been excluded from provisions of the CWT rule. Facilities which only perform high temperature metals recovery are not subject to this rule. However, off-site wastes which are treated/recovered at these facilities through any other process and/or wastes generated at these facilities as a result of any other CWT treatment/ recovery process are subject to the provisions of this rule.

As noted, EPA's data show that HTMR operations generate no process wastewater. Accordingly, EPA is also considering whether this rule, when promulgated, should include a subcategory for HTMR operations with a zero discharge requirement. EPA is requesting comment on such an approach, and specifically seeks any data on facilities that may produce a process wastewater in their HTMR operations.

K. Landfill Wastewaters

EPA proposed effluent guidelines and pretreatment standards for Landfills, 40 CFR Part 445, on February 6, 1998 (63 FR 6426–6463). There, EPA explained how it proposed to treat categorical facilities that mix and treat categorical wastewater with wastewater from on-site landfills. EPA proposed to subject the mixed wastewater to the applicable categorical limits and not the proposed landfill limits. In the CWT industry, there are some facilities which are engaged both in CWT activities and in operating an on-site landfill(s). EPA is proposing to treat the mixture of CWT wastewater and landfill wastewater in the same way considered for the proposed landfill guideline. Therefore, a facility performing landfill activities as well as other CWT services that commingles the wastewaters would be a CWT facility, and all of the wastewater discharges would be subject to the provisions of this rule when promulgated. If a facility is performing both operations and the waste streams are not commingled (that is, landfill wastewaters are treated in one treatment system and CWT wastewaters are treated in a second, separate, treatment system), the provisions of the Landfill rule and CWT rule would apply to their respective wastewaters.

Additionally, under the approach proposed for the Landfills rulemaking, CWT facilities which are dedicated to landfill wastewaters only, whether they are located at a landfill site or not, would be subject to the effluent guidelines limitations and pretreatment standards for Landfills when promulgated. These dedicated landfill CWT facilities would not be subject to provisions of the CWT rulemaking. EPA is not aware of any other facilities that are dedicated to the treatment of off-site wastes from a single category for which EPA has proposed or promulgated effluent limitations that do not also perform on-site operations that generate these same categorical wastewaters. EPA requests comments on any such facilities.

As a further point of clarification, landfill wastewaters are not specifically excluded from provisions of this rule. Landfill wastewaters that are treated at CWT facilities along with other off-site waste streams are subject to provisions of this rule. Furthermore, a landfill that treats its own landfill wastewater and off-site landfill wastewater would be subject to the proposed Landfill limits when promulgated in the circumstances described in IV.B above.

L. Industrial Waste Combustors

EPA proposed effluent guidelines and pretreatment standards for Industrial Waste Combustors, 40 CFR Part 444 on February 6, 1998 (63 FR 6392–6423). There, EPA explained how it proposed to treat categorical facilities that mix and treat categorical wastewater with wastewater from on-site industrial waste combustors. EPA proposed to subject the mixed wastewater to the applicable categorical limits and not the proposed industrial waste combustor limits. In the CWT industry, there are some facilities which are engaged both in CWT activities and in operating an on-site industrial waste combustor(s). EPA is proposing to treat the mixture of CWT wastewater and industrial waste combustor wastewater in the same way considered for the proposed Industrial Waste Combustor guideline. Therefore, a facility performing industrial waste combustion activities as well as other CWT services that commingles the wastewaters would be a CWT facility, and all of the wastewater discharges would be subject to the provisions of this rule when promulgated. If a facility is performing both operations and the waste streams are not commingled (that is, industrial waste combustion wastewaters are treated in one treatment system and CWT wastewaters are treated in a second, separate, treatment system), the provisions of the Industrial Waste Combustor rule and CWT rule would apply to their respective wastewaters

As a further point of clarification, industrial waste combustor wastewaters are not specifically excluded from provisions of this rule. Industrial waste combustor wastewaters that are treated at CWT facilities along with other off-site waste streams are subject to provisions of this rule. Furthermore, an industrial waste combustor that treats off-site industrial waste combustor wastewater would be subject to the proposed Industrial Waste Combustor limits when promulgated in the circumstances described in IV.B above.

M. Solvent Recycling/Fuel Blending

The solvent recycling industry was studied by the EPA in the 1980s. EPA published the ''Preliminary Data Summary for the Solvent Recycling Industry'' (EPA 440/1–89/102) in September 1989 which describes this industry and the processes utilized. This document defines solvent recovery as ''the recycling of spent solvents that are not the byproduct or waste product of a manufacturing process or cleaning operation located on the same site.'' Spent solvents are generally recycled in two main operations. Traditional solvent recovery involves pretreatment of the waste stream (in some cases) and separation of the solvent mixtures by specially constructed distillation columns. Wastewater discharges resulting from this process are subject to effluent limitations guidelines and standards for the organic chemicals industry (40 CFR part 414). As such, wastewaters resulting from traditional solvent recovery operations as defined above are not subject to this effluent guideline.

Fuel blending is the second main operation which falls under the definition of solvent recovery. Fuel blending is the process of mixing wastes for the purpose of regenerating a fuel for reuse. At the time of the 1995 proposal, fuel blending operations were excluded from the CWT rule since EPA believed the fuel blending process was ''dry'' (that is, no wastewaters were produced). Based on comments to the original proposal and the Notice of Data Availability, EPA has concluded that this is valid and that true fuel blenders do not generate any process wastewaters and are, therefore, zero dischargers. EPA is concerned, however, that the term ''fuel blending'' may be loosely applied to any process where recovered hydrocarbons are combined as a fuel product. Such operations occur at nearly all used oil and fuel recovery facilities. Therefore, fuel blending operations as defined above would be excluded from the CWT rule providing that the operations do not generate a wastewater. In the event that wastewater is generated at a fuel blending facility, the facility is most likely performing some pretreatment operations (usually to remove water). These pretreatment wastewaters would be subject to this rule.

N. Re-refining

When EPA initially proposed guidelines and standards for CWT facilities, the regulations would have limited discharges from used oil reprocessors/reclaimers, but did not specifically include or exclude discharges from used oil re-refiners. During review of information received on the proposal and assessment of the information collected, the Agency, at one point, considered limiting the scope of this regulation to reprocessors/reclaimers only because it was not clear whether re-refiners actually generated wastewater. However, further data gathering efforts have revealed that re-refiners may generate wastewater and that the principal sources of re-refining wastewaters are essentially the same as for reprocessors/reclaimers. Consequently, the re-refining wastewater is included within the scope of this proposal.

The used oil reclamation and re-refining industry was studied by EPA in the 1980s. EPA published the ''Preliminary Data Summary for the Used Oil Reclamation and Re-Refining Industry'' (EPA 440/1–89/014) in September 1989 which describes this industry and the processes utilized. This document generally characterizes the industry in terms of the types of equipment used to process the used oil. Minor processors (reclaimers) generally separate water and solids from the used oil using simple settling technology, primarily in-line filtering, and gravity settling with or without heat addition. Major processors (reclaimers) generally use various combinations of more sophisticated technology including screen filtration, heated settling, centrifugation, and light fraction distillation primarily to remove water. Re-refiners generally use the most sophisticated systems which include, in addition to the previous technologies, a vacuum distillation step to separate the oil into different components.

Today's proposal applies to the process wastewater discharges from used oil re-refining operations. The principal sources of wastewater include oil-water gravity separation (often accompanied by chemical/thermal emulsion breaking) and dehydration unit operations (including light distillation and the first stage of vacuum distillation). EPA has, to date, identified two re-refining facilities. Data for these facilities have not yet been included in the economic analysis for the proposed rule, but will be included in the analysis for the final rule.

O. Used Oil Filter Recycling

EPA did not obtain information on used oil filter recycling through the Waste Treatment Industry Questionnaire. However, in response to the September 1996 Notice of Data Availability, EPA received comments from facilities which recycle used oil

filters. In addition, EPA also visited several used oil reprocessors that recycle used oil filters as part of their operations.

Used oil filter recycling processes range from simple crushing and draining of entrained oil to more involved processes where filters are shredded and the metal and filter material are separated. In all cases, the oil is recycled, the crushed filters and separated metal are sent to smelters, and the separated filter material is recovered as solid fuel. Also, in all cases observed, the operations generate no process wastewater. Therefore, based on this characterization, used oil filter recycling operations would not be subject to the provisions of the CWT rule as proposed today. EPA is also considering whether this rule, when promulgated, should include a subcategory for used oil filter recycling with a zero discharge requirement for such operation. EPA is requesting comment on such an approach, and the number of facilities engaged in this activity. EPA specifically seeks data on any such facilities that may produce a process wastewater in their operations.

P. Marine Generated Wastes

EPA received many comments on the original proposal relating to marine generated wastes. Since these wastes are often generated while a ship is at sea and subsequently off-loaded at port for treatment, the treatment site could arguably be classified as a CWT facility due to its acceptance of ''off'' site wastes. Commenters, however, claimed that marine wastes should not be subject to the CWT rule for the following reasons:

- Unlike most CWT waste streams, bilge and/or ballast water contains dilute concentrations of pollutants and is generally not toxic; and
- Much of the bilge water is generated while the ship is docked. If only the portion of bilge water contained in the ship upon docking is subject to regulation, it would be expensive and inefficient to monitor only that small portion for compliance with the CWT rule.

EPA reexamined its database concerning these wastes as well as additional data on the characteristics of these types of wastes provided through comments to the 1995 proposal and collected by EPA during development of the recently proposed Uniform National Discharge Standards (UNDS) (63 FR 45298). Based on data provided by industry as well as data collected during the development of UNDS, EPA has determined these waste streams may be similar in some cases to the toxic wastewaters proposed here for regulation. The data on bilge and ballast water characteristics show that bilge and ballast water can vary greatly in terms of the number of pollutants present and their concentration from one ship to another. In most instances, the pollutants and concentrations are similar to those found in wastes typical of those proposed for regulation in the oils subcategory. EPA found that while some shipyards and docking facilities have specialized treatment centers for bilge and/or ballast wastes, some of these wastes are being treated at off-site CWT facilities. EPA has concluded that marine-generated, ''off-site'' wastes should not be included in the scope of today's proposal except where this waste is not treated and discharged at the ship service facility receiving the waste.

For purposes of this rule, EPA is defining marine waste as waste generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal or open waters. Such wastes may include ballast water, bilge water, and other wastes generated as part of routine ship operations. EPA has determined that a wastewater off-loaded from a ship shall be considered as being generated on-site at the point where it is off-loaded provided that the waste is generated as part of the routine maintenance and operation of the ship on which it originated while at sea. The waste will not be considered an off-site generated waste (and thus subject to CWT requirements) as long as it is treated and discharged at the ship servicing facility where it is off-loaded. Therefore, these facilities would not be considered CWT facilities. If, however, marine generated wastes are off-loaded and subsequently sent to a CWT facility at a separate location, these facilities and their waste streams would be subject to provisions of this rule.

Q. Stabilization

In the original CWT proposal, waste solidification/stabilization operations were specifically not subject to the CWT rule. The reason stated for EPA's conclusion was that these operations are ''dry'' and do not generally produce a wastewater. EPA reexamined its database and concluded that this assessment remains valid. As such, stabilization/solidification processes are not subject to the CWT rule as proposed today. If, however, the stabilization/solidification facility produces a wastewater from treatment and/or recovery of off-site wastes through any other operation, those wastewaters would be subject to the CWT rule. EPA is also considering whether this rule, when promulgated, should include a subcategory for stabilization operations with a zero discharge requirement. EPA is requesting comment on such an approach, and specifically seeks any data on facilities that may produce a process wastewater in their stabilization operations.

R. Grease Trap/Interceptor Wastes

EPA received comments on coverage of grease, sand, and oil interceptor wastes by the CWT rule during the comment period for the original proposal and 1996 Notice of Data Availability. Some of these wastes are from non-industrial sources and some are from industrial sources. Some are treated at central locations designed to exclusively treat grease trap/interceptor wastes and some of these wastes are treated at traditional CWT facilities with traditional CWT wastes.

Throughout the development of this rule, EPA has maintained that this rule is designed to cover the treatment and/or recovery of off-site industrial wastes. As such, as proposed today, grease/trap interceptor wastes do not fall within the scope of the proposal. Grease trap/interceptor wastes are defined as animal or vegetable fats/oils from grease traps or interceptors generated by facilities engaged in food service activities. Such facilities include restaurants, cafeterias, and caterers. Excluded grease trap/interceptor wastes should not contain any hazardous chemicals or materials that would prevent the fats/oils from being recovered and recycled. Wastewater discharges from the centralized treatment of wastes produced from oil interceptors, which are designed to collect petroleum-based oils, sand, etc. from industrial type processes, would be subject to this rule.

S. Small Businesses

During consideration of this proposal, among other alternatives, EPA looked at whether it should limit the scope of this rule to facilities above a certain size or flow level because of potential impacts to small businesses. Given an assessment of potentially significant effects on small businesses, EPA convened in November 1997 a Small Business Advocacy Review (SBAR) Panel (also referred to as SBAR Panel, SBREFA panel, or panel) for this rule. After collecting advice and recommendations from Small Entity Representatives (SERs), the Panel discussed at length the possible impacts of the rule on small businesses and various regulatory alternatives that might mitigate these impacts. For a detailed summary of the panel's

findings and discussion, see ''Final Report of the SBREFA Small Business Advocacy Review Panel on EPA's Planned Proposed Rule for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry,'' January 23, 1998 (available in the public docket). Among the regulatory alternatives discussed by the panel were limiting the scope of the rule to various small business or small facilities, including limiting the scope to not include all indirect dischargers with flows under 3.5 million gallons per year (MGY), to not include all indirect dischargers treating non-hazardous water only with flows under either 3.5 or 7.5 MGY, and to not include all indirect dischargers owned by companies with less than $6 million in annual revenue, which is the Small Business Administration cut off for a small business in this industry. A detailed analysis of the effects of these possible scope limitations is included in the EA and summarized in Section XI.L. The panel focused on indirect discharging facilities because most small companies are indirect dischargers. Based on EPA's current analyses, limiting the scope of the rule to not include all indirect dischargers with flows under 3.5 MGY would address over half of the small businesses potentially covered by the rule, reduce compliance costs among indirect dischargers by about 22% while reducing estimated pollutant removals by about 11%, and minimize projected facility closures and job losses among all of the options considered. Alternatively, limiting the scope of the rule to not include all indirect discharging facilities owned by small businesses would eliminate virtually all small business impacts (only 2 direct discharging facilities owned by small businesses) and reduce pollutant removals by about 30%. This option would result in somewhat more facility closures and job losses than limiting the scope to not include all indirect dischargers with flows under 3.5 MGY, but the relief provided would be more directly targeted to small businesses.

Despite considerable effort, the SBREFA panel was not able to reach consensus on a specific recommendation for providing regulatory relief to small businesses that would not jeopardize the pollutant removals and corresponding environmental benefits anticipated to result from the rule. EPA's primary concern with limiting the scope of the rule is that the ''lost'' pollutant reductions associated with these scope limitations are not insignificant, that the analysis represents a snapshot of a rapidly changing industry, and that any segment might quickly expand as a result of scope limitations, leading to much greater discharges within a few years. The panel noted that one way of addressing this concern would be to put a mass-based limit on receipts as part of the eligibility requirements for the scope limitation. This could ensure that significant volumes of highly contaminated wastes would not be handled by the facilities not included in the scope of the rule. However, it would also constrain the flexibility of small businesses benefiting from these scope limitations, and might require them to give up a significant share of their existing business. Mass-based limits on receipts, if set at a low level, might require some small businesses to ''give up'' a significant share of their existing business. On the other hand, many small businesses might save money if they can limit their mass discharges and avoid the cost of wastewater treatment. EPA is also reluctant to provide any type of scope limitation based on low-flow or the size of the business because of its concern that many existing plants may not be providing effective treatment because they are commingling dissimilar waste streams prior to treatment. This concern is discussed further in Section V.B.

Because of these concerns and others discussed more fully in Section XI.L, EPA is not proposing to limit the scope of today's proposal based on either the size of a facility or the volume of wastewater flows. However, EPA requests comment on this issue. EPA also requests comment on ways in which it could structure limiting the scope of the rule to not include small businesses or low-flow facilities that would address the concerns discussed above.

T. Hazardous vs. Non-hazardous Wastes

Another option discussed by the SBREFA panel was to develop alternative regulatory requirements for oils subcategory facilities based on the types of waste receipts treated. This could mean limitations and standards for oils subcategory facilities that treat RCRA subtitle C hazardous wastes (either exclusively or in combinations with non-hazardous wastes) that are different from those that would apply to oils subcategory facilities that treat only non-hazardous wastes. Another alternative would be to develop different limitations and standards for oils facilities with and without RCRA subtitle C permits. This could also mean not regulating discharges from the treatment of non-hazardous waste receipts or ''non-RCRA permitted'' facilities. The Panel discussion of this option responded to an SER comment that non-hazardous flows contain relatively low pollutant loadings as compared to hazardous flows. The Panel was concerned that the same guidelines and standards may not be appropriate to flows with very different characteristics. Other SERs disagreed and argued that hazardous flows are already heavily regulated while non-hazardous flows are not (although neither are currently subject to categorical effluent guidelines or pretreatment standards). In their view, it is, thus, important that the proposed rule apply equally to both types of flows. These SERs further argued that establishing different requirements for, or not including facilities that treat only non-hazardous waste could create a competitive disadvantage for those facilities that treat both hazardous and non-hazardous waste.

EPA's database on oils subcategory facilities contains information that was collected at facilities which treat a mixture of hazardous and non-hazardous wastes and facilities which treat non-hazardous wastes only. The majority of the data collected prior to the SBREFA Panel was collected at facilities which have permits to accept hazardous waste and treat a portion of RCRA subtitle C hazardous waste with non-hazardous waste. Some data reflect facilities that do not have a RCRA permit to treat hazardous waste. Although these data suggest that flows from non-RCRA permitted facilities may have significantly lower pollutant loadings, they are inadequate to support the conclusion that EPA should differentiate between oily facilities on the basis of whether hazardous or non-hazardous wastes are treated at the facility. Consequently, EPA has not proposed different regulatory requirements for facilities based on distinctions between hazardous and non-hazardous waste or, alternatively, provided different limitations depending on whether the facility has a RCRA permit.

However, following the SBREFA panel, EPA collected raw wastewater samples at ten additional facilities that treat only non-hazardous materials in order to obtain additional information on the pollutant profiles of the wastes that are treated at these facilities. These samples have now been analyzed and the results are included in Appendix B to the technical development document. EPA has not yet had the opportunity to review the data in detail or to compare these results to the earlier data it collected. As a result, the Agency at this

time does not know whether the data would support a determination that oily waste facilities treating exclusively non-hazardous waste treat a significantly different waste stream from RCRA subtitle C facilities. Consequently, EPA at this time has not proposed different regulatory requirements for oily waste facilities based on whether they treat hazardous or non-hazardous waste or whether or not they have a RCRA subtitle C permit.

EPA plans to review this data in detail and will present its assessment before commencing the public hearing on pretreatment standards scheduled for February 18, 1999. The assessment will also be available in the public docket for this rule on that date. Any member of the public wishing to submit comment on EPA's assessment should submit comments on that information within 30 days of February 18, 1999. Note that EPA will accept comment on this material only through March 22, 1999 following the close of the 60 day comment period for the proposed rule.

V. Industry Profile

EPA is today proposing limitations and standards for three subcategories of CWT facilities: facilities treating either metal, oil, or organic wastes and wastewater. This subcategorization scheme is discussed in Section VII. The following provides a general description of the CWT industry that would be subject to this proposal if promulgated.

A. Description of the Industry

The adoption of the increased pollution control measures required by CWA and RCRA requirements had a number of ancillary effects, one of which has been the formation and development of a waste treatment industry. Several factors have contributed to the growth of this industry: (a) The manner in which manufacturing facilities have selected to comply with CWA and RCRA requirements; (b) the manner in which the applicability sections of promulgated CWA effluent guidelines were developed; and (c) the RCRA 1992 used oil management requirements.

A manufacturing facility's options for managing wastes include on-site treatment or sending them off-site. Because a large number of operations (both large and small) have chosen to send their wastes off-site, specialized facilities have developed whose sole commercial operation is the handling of wastewater treatment residuals and industrial process by-products.

The manner in which the applicability sections of many promulgated effluent guidelines were developed also encouraged the creation of these central treatment centers. Facilities which send their waste off-site to CWT facilities are generally considered ''zero or alternative dischargers'' in the effluent guidelines development program, and are not directly subject to the categorical standards. Additionally, RCRA regulations, such as the 1992 used oil management requirements (40 CFR part 279), significantly influenced the size and service provided by this industry.

Based upon responses to EPA's data gathering efforts (see discussion below), the Agency now estimates that there are approximately 205 CWT facilities in 38 States. The major concentration of CWT facilities is in EPA Regions 4, 5, and 6 due to the proximity of the industries generating the wastes undergoing treatment. At the time of the original proposal, EPA estimated there were 85 CWT facilities in the United States. EPA, however, greatly underestimated the size of the proposed oily waste and recovery subcategory. Through additional data gathering activities (see discussion below), EPA obtained information on additional oils facilities. Except for facilities that were included or excluded because of scope changes/clarifications, all of the facilities which have been added since the original proposal treat and/or recover oily waste and/or used oil. EPA is aware that facilities in the metals and organics subcategories have joined and or left the CWT market also. This is expected in a service industry. Even so, EPA believes its initial estimate of facilities in the other subcategories is reasonable and no adjustments, other than those resulting from the redefined scope of the industry, have been made. EPA notes that its current estimate may not include the entire universe of CWT facilities, and again solicits information on the number, name, and location of facilities within this industry.

CWT facilities do not fall into a single description and are as varied as the wastes they accept. Some treat wastes from a few generating facilities while others treat wastes from hundreds of generators. Some treat only certain types of waste while others accept many wastes. Some treat non-hazardous wastes exclusively while others treat hazardous and non-hazardous wastes. Some primarily treat concentrated wastes while others primarily treat more dilute wastes. For some, their primary business is the treatment of other company's wastes while, for others, CWT is ancillary to their main business.

CWT facilities treat hazardous and/or non-hazardous wastes. At the time of the original proposal, a few of the facilities in the industry database solely accepted wastes classified as non-hazardous under RCRA. The remaining facilities accepted either hazardous wastes only or a combination of hazardous and non-hazardous wastes. The vast majority of the newly identified oils facilities only accept non-hazardous materials. As such, EPA believes the market for CWT of non-hazardous materials has increased during the 1990s.

CWT facilities service a variety of customers. A CWT facility generally receives a variety of wastes daily from dozens of customers. Some customers routinely generate a particular waste stream, and are either unable to provide effective on-site treatment of that waste stream or find it cheaper to send the waste stream off-site for treatment. Some customers utilize CWT facilities because they generate particular waste streams only sporadically (for example tank removal, tank cleaning and remediation wastes) and are unable to economically provide effective on-site treatment of these wastes. Some, including many which are small businesses, utilize CWT facilities as their primary source of wastewater treatment.

Before a CWT facility accepts a waste for treatment, the waste generally undergoes rigorous screening for compatibility with other wastes being treated at the facility. Waste generators initially furnish the treatment facility with a sample of the waste stream to be treated. The sample is analyzed to characterize the level of pollutants in the sample, and, at some facilities, bench-scale treatability tests are performed to determine what treatment is necessary to treat the waste stream effectively. After all analyses and tests are performed, the treatment facility determines the cost for treating the waste stream. If the waste generator accepts the cost of treatment, shipments of the waste stream to the treatment facility will begin. Generally, for each truck load of waste received for treatment, the treatment facility collects a sample from the shipment and analyzes the sample to determine if it is similar to the initial sample tested. If the sample is similar, the shipment of waste will be treated. If the sample is not similar, but falls within an allowable range as determined by the treatment facility, the treatment facility will reevaluate the estimated cost of treatment for the shipment. Then, the waste generator decides if the waste will remain at the treatment facility for treatment. If the sample is not similar, and does not fall within an allowable

range, the treatment facility will decline the shipment for treatment.

Many treatment facilities and waste generators complete extensive amounts of paperwork during the waste acceptance process. Most of the paperwork is required by Federal, State, and local regulations. The amount of paperwork necessary for accepting a waste stream may be a significant component of the cost of operating CWT facilities.

B. Off-Site Treatment Incentives and Comparable Treatment

As noted before, the adoption of the increased pollution control measures required by the CWA and RCRA regulations were a significant factor in the formation and development of the CWT industry. Major contributors to the growth of this industry include the EPA CWA effluent limitations guidelines program as well as the manner in which manufacturing facilities have elected to comply with CWA and RCRA requirements.

The CWA requires the establishment of limitations and standards for categories of point sources that discharge into surface waters or introduce pollutants into publicly owned treatment works. At present, facilities that do not discharge wastewater (or introduce pollutants to POTWs) may not be subject to the requirements of 40 CFR Subchapter N Parts 400 to 471. Such facilities include manufacturing or service facilities that generate no process wastewater, facilities that recycle all contaminated waters, and facilities that use some kind of alternative disposal technology or practice (for example, deep well injection, incineration, evaporation, surface impoundment, land application, and transfer to a CWT facility).

Thus, for example, in implementing CWA and RCRA requirements in the electroplating industry, many facilities made process modifications to conserve and recycle process wastewater, to extend the lives of plating baths, and to minimize the generation of wastewater treatment sludges. As the volumes of wastewater were reduced, it became economically attractive to transfer electroplating metal-bearing wastewater to off-site CWT facilities for treatment or metals recovery rather than to invest in on-site treatment systems. In the case of the OCPSF industry, many facilities transferred selected process residuals and small volumes of process wastewater to off-site CWT facilities. When estimating the engineering costs for the OCPSF industry to comply with the OCPSF regulation, the Agency assumed, based on economies of scale, in the case of facilities with wastewater flows less than 500 gallons per day, that such plants would use off-site rather than on-site wastewater treatment.

In the development of existing effluent guidelines EPA considered incremental costs for facilities that would likely choose hauling wastes to CWT facilities as a less expensive alternative to compliance with the effluent guideline by installing and operating control and treatment technologies on-site. These estimates generally used an average cost of treatment provided by CWT facilities at that time. EPA excluded from these estimates facilities that were hauling wastes to CWT facilities in advance of effluent guidelines for their industry. The potential economic impact of the incremental controls being required through today's proposal on customers was evaluated and found to increase the price from less than half a percent to approximately 25 percent.

The Agency believes that any wastes transferred to an off-site CWT facility should be treated effectively, in a manner consistent with the technology-based provisions of the CWA, and that categorical standards are necessary to ensure that this occurs. In the absence of appropriate regulations to ensure at least comparable or adequate treatment, the CWT facility may inadvertently offer an economic incentive for increasing the pollutant load to the environment. One of the Agency's primary concerns is the potential for a discharger to reduce its wastewater pollutant concentrations through dilution rather than through appropriate treatment. While the Agency has already promulgated regulations at § 403.6(d) prohibiting dilution in lieu of treatment, it is concerned that some CWT facilities may be inadvertently engaging in dilution by combining in a single treatment system dissimilar waste streams for which different types of treatment would be more appropriate. Today's proposal is designed to ensure that wastes transferred to CWT facilities will be treated effectively.

This is illustrated by the information the Agency obtained during the data gathering activities for the 1995 proposal. EPA visited 27 CWT facilities in an effort to identify well-designed, well-operated candidate treatment systems for sampling. Two of the principal criteria for selecting plants for sampling were whether the plant applied waste management practices that increased the effectiveness of the treatment system and whether the treatment system was effective in removing pollutants. One of the primary reasons why some plants did not satisfy these criteria was co-dilution of one type of waste with another. For example, many facilities treated metal-bearing and oily wastes in the same treatment system and many facilities mixed non-CWT wastewater with CWT wastewater. Mixing metal-bearing with non-metal-bearing oily wastewater and mixing CWT with non-CWT wastewater provides a dilution effect which generally reduces the efficiency of the wastewater treatment system. Of the 27 plants visited, many were not sampled because of the problems of assessing CWT treatment efficiencies due to combining one type of wastewater with another.

Today's proposal would ensure, to the extent possible, that metal-bearing wastes are treated with metals control technology, that oily wastes are treated with oils control technology, and that organic wastes are treated with organics control technology.

In developing today's proposal, EPA identified a wide variation in the size of CWT facilities and the level of treatment provided by these facilities. Often, pollutant removals were significantly lower than would have been required had the wastewaters been treated at the site where generated. In particular, EPA's survey indicated that some facilities were employing only the most basic pollution control equipment and, as a result, achieved low pollutant removals relative to those which could be achieved through the use of other available pollutant control technologies. Further, as explained below, EPA found that most facilities had not installed appropriate technology and/or were not operating the installed technology effectively.

As discussed previously, during consideration of this proposal, EPA looked at whether it should limit the scope of national regulation to facilities above a certain size or flow level because of information before the Agency suggesting that, in the case of many smaller facilities, the costs of additional controls would represent a significant increase in their costs of operation. The Small Business Advocacy Review (SBAR) Panel, convened by EPA for this rulemaking, discussed this approach extensively. For the reasons explained above, however, EPA is not proposing to limit the scope of today's proposal based on either the size of a facility or the volume of wastewater flows. The effect of such an approach, given the structure of the industry and treatment levels currently observed at some facilities, could be to encourage the movement of wastewater to facilities that are not providing effective treatment. EPA is, however,

requesting comment on this approach, which is discussed in Section IV.S. In order to ensure adequate controls for wastewater discharges from CWT facilities that accept waste and wastewater that would otherwise be controlled by other guidelines, EPA is proposing that all members of the CWT industry comply with economically achievable, national CWT standards.

VI. Summary of EPA Activities and Data Gathering Efforts

A. Preliminary Data Summary for the Hazardous Waste Treatment Industry

EPA's initial effort to develop effluent limitations guidelines and pretreatment standards for the waste treatment industry began in 1986. The Agency initiated a study which looked at a range of facilities, including CWT facilities, landfills and industrial waste combustors, that received hazardous waste from off-site for treatment, recovery, or disposal. The purpose of the study was to develop information to characterize the hazardous waste treatment industry, its operations, and pollutant discharges to the nation's waters. EPA published the results of its examination of the industry in a report entitled the ''Preliminary Data Summary for the Hazardous Waste Treatment Industry'' in 1989 (EPA 440/1–89/100). In addition, EPA conducted two similar, but separate studies, of the solvent recycling industry and the used oil reclamation and re-refining industry during the same time period. In 1989, EPA also published the results of these studies in two reports entitled the ''Preliminary Data Summary for the Solvent Recycling Industry'' (EPA 440/1–89/102) and the ''Preliminary Data Summary for Used Oil Reclamation and Re-refining Industry'' (EPA 440/1–89/014).

After a thorough analysis of the data presented in the Preliminary Data Summary, EPA decided it should develop effluent guidelines regulations for the CWT industry. EPA also decided to develop effluent guidelines regulations for landfills and industrial waste combustors, proposing these on February 6, 1998 (63 FR 6426 and 63 FR 6392, respectively). In addition to CWT facilities, EPA also studied fuel blending operations and waste solidification/stabilization facilities. As detailed and defined in the applicability section, EPA has decided not to propose nationally applicable effluent limitations guidelines and standards for fuel blending and stabilization operations.

B. Survey Questionnaires (1991 Waste Treatment Industry Questionnaire and Detailed Monitoring Questionnaire)

There are three major sources of information and data used in developing today's effluent limitations guidelines and standards proposal. Two of these are industry responses to detailed technical and economic questionnaires and responses to subsequent follow up monitoring questionnaires distributed by EPA (the third is discussed in the subsequent section). In 1991, EPA sent the 1991 Waste Treatment Industry Questionnaire to 455 facilities that the Agency had identified as possible CWT facilities. Because there is no specific CWT Industry Standard Industrial Code (SIC) code, identification of facilities was difficult. EPA looked to directories of treatment facilities, other Agency information sources, and even telephone directories to identify the 455 facilities which received the questionnaires. EPA received responses from 413 facilities indicating that 89 treated or recovered material from off-site industrial waste in 1989. The remaining 324 facilities did not treat, or recover, materials from industrial waste from off-site. Four of the 89 facilities received waste via a pipeline (fixed delivery system) from the original source of wastewater generation.

The technical section of the questionnaire specifically requested information on: (1) the type and quantities of wastes accepted for treatment; (2) the industrial waste management practices used; (3) the quantity, treatment, and disposal of wastewater generated during industrial waste management; (4) available analytical monitoring data on wastewater treatment; (5) the degree of co-treatment (treatment of CWT wastewater with wastewater from other industrial operations at the facility); and (6) the extent of wastewater recycling and/or reuse at the facility. EPA obtained further information through follow-up telephone calls and written requests for clarification of questionnaire responses.

As a follow-up to the initial questionnaire, EPA requested detailed wastewater monitoring information from twenty in-scope facilities selected from the questionnaire mailing list. These facilities were selected based upon their responses. EPA reviewed each facility's monitoring summary provided in the questionnaire, discharge permit requirements, off-site waste receipts, and treatment technologies and practices. Based on responses, EPA determined that these twenty facilities could provide useful information on technology performance and pollutant removal.

EPA asked that the twenty selected facilities send effluent wastewater monitoring data in the form of individual data points rather than monthly aggregates, generally for the 1990 calendar year. When appropriate, EPA used this detailed monitoring data to calculate the variability factors and long-term averages used in determining the industry effluent limits (See section IX of today's notice). EPA also requested analytical data for intermediate waste treatment points from some facilities. In this manner, EPA hoped to obtain information about pollutant removal across individual treatment units in addition to the entire treatment train. Finally, EPA asked facilities to submit information on pollutant concentrations and waste receipt data for a six week period. EPA collected the waste receipt data to provide information about the types of wastes treated and the influent waste characteristics due to the absence of influent wastewater monitoring data.

C. Wastewater Sampling and Site Visits

Between 1989 and 1994, EPA visited 27 CWT facilities. The purpose of these visits was to collect various information about the operation of CWT facilities and, in most cases, to evaluate each facility as a potential week-long sampling candidate. The selection of these facilities was largely based on the types of off-site waste received at the facility and the types of wastewater treatment operations on-site. During the site visits, EPA collected information on the facility and its operations. This included information on the wastes accepted for treatment and the facility's waste acceptance criteria, the raw wastewater generated and its sources, the wastewater treatment on-site, and the location of potential sampling points. Following the original CWT proposal, EPA conducted site visits at eleven additional facilities. EPA selected these facilities based on information obtained through comment responses and contacts with the industry, AMSA, and EPA Regional staff.

Based on an analysis of information collected during the site visits, EPA selected 14 facilities to sample in order to characterize the performance of their treatment systems. EPA sampled ten of the facilities prior to the original proposal and four facilities after the 1995 proposal. EPA sampled twice at two of the facilities. During each sampling episode, EPA sampled facility influent and effluent streams. EPA also collected samples at intermediate points

throughout the entire waste/wastewater treatment system to assess the performance of individual treatment units. Generally, EPA conducted the sampling episodes over a five day period. EPA obtained 24-hour composite samples for continuous systems and grab samples for batch systems. Depending on the wastes/wastewaters treated at the site and the technology employed, EPA analyzed for up to 460 analytes.

Data collected from the influent samples contributed to characterization of the industry, development of the list of pollutants of concern, and development of raw wastewater characteristics. EPA used the data collected from the influent, intermediate, and effluent points to analyze the efficacy of treatment at the facilities, and to develop current discharge concentrations, loadings, and the treatment technology options for the CWT industry. EPA used data collected from the effluent points to calculate the long-term averages (LTAs) and limitations for each of the proposed regulatory options.

Additionally, in March and April 1998, EPA conducted site visits at eleven facilities which treat and/or recover non-hazardous oils wastes, oily wastewater, or used oil material from off-site. While the information collected at these facilities was similar to information collected during previous site visits, these facilities were selected based solely on waste receipts. That is, they were selected specifically to investigate the question of whether oily hazardous waste receipts are different from oily non-hazardous waste receipts and whether oily wastes at facilities without RCRA hazardous waste permits are significantly different from oily waste treated by facilities with RCRA permits. The facilities represent a diverse mix of facility size, treatment processes, and geographical locations. Also, unlike previous site visits, EPA collected samples of their waste receipts and effluent discharged at 10 of these facilities. These samples were one-time grabs and were analyzed for metals, classicals, and semi-volatile organic compounds. The analytical results are included in an appendix to the technical development document, but EPA has not incorporated the results into the analyses presented today. As discussed in Section IV.S, EPA plans to use this analytical data for further analyses and will present its assessment before commencement of the pretreatment public hearing on February 18, 1999.

1. Metal-bearing Waste Treatment and Recovery Sampling

Of the sampling episodes completed from 1989 to 1994, EPA conducted six at facilities classified in the metals subcategory. EPA re-sampled at two of these facilities in 1996 following the original proposal. Both of these facilities had altered their treatment systems somewhat from the treatment schemes in place at the time of the original sampling episodes. All of the facilities employed some form of chemical precipitation as part of their treatment of the metal-bearing waste streams. Only one of the facilities sampled discharged to a surface water. The rest are indirect dischargers. The Agency evaluated the following treatment technologies: primary precipitation, secondary precipitation, and tertiary precipitation, selective metals precipitation, gravity separation, multimedia filtration, clarification, liquid and sludge filtration, and treatment technologies for cyanide destruction.

2. Oily Waste Treatment and Recovery Sampling

Of the sampling episodes completed between 1989 and 1994, EPA conducted four at facilities which treat oily wastes. During 1995–1996, the Agency sampled an additional two oily waste facilities. All performed an initial gravity separation step with or without emulsion breaking to remove oil from wastewater. At this point, some facilities commingled the oily wastewaters with other non-oily wastewaters for additional treatment. At facilities which commingled their waste streams, data was collected after the emulsion breaking step and prior to commingling to characterize waste receipts and not for establishing limitations and standards. None of the sampled oils facilities were direct discharging facilities. EPA evaluated the following treatment technologies for this subcategory: gravity separation, emulsion breaking, ultrafiltration, dissolved air flotation, biological treatment, reverse osmosis, carbon adsorption, and air stripping. For the sampling episodes prior to 1995, EPA analyzed samples for oil and grease using Method 413.1 (total recoverable oil and grease) which uses freon. Since this method is being phased out, for the sampling episodes conducted during 1995 and 1996, EPA analyzed the samples for oil and grease as measured by the newly proposed Method 1664 for Hexane Extractable Materials (HEM) and Silica Gel Treated Hexane Extractable Materials (SGT–HEM). EPA believes that oil and grease measurements from Method 413.1 and HEM measurements from Method 1664 are comparable and has used the data interchangeably.

3. Organic Waste Treatment and Recovery Sampling

EPA had difficulty identifying facilities that could be used to characterize waste streams and assess treatment technology performance for the organics subcategory. A large portion of the facilities whose organic waste treatment operations EPA evaluated had other industrial operations on-site. For these facilities, CWT waste streams represented a minor component of the overall flow treated at the facility.

EPA did identify and sample three facilities treating a significant volume of off-site generated organic waste relative to non-CWT flows. EPA evaluated the following treatment technologies employed at these facilities: air stripping, biological treatment in a sequencing batch reactor, multi-media filtration, carbon adsorption and carbon dioxide extraction. None of the organic facilities sampled were direct discharging facilities. EPA has not used data from one of the facilities in calculating effluent levels achievable with its in-place technologies because the facility was experiencing operational difficulties with the treatment system at the time of sampling. In addition, after reviewing this facility's waste receipts during the sampling episode, EPA determined that the facility accepted both oil subcategory and organic subcategory waste streams and commingled them for treatment. EPA has also not used data from a second facility in calculating effluent levels achievable with its in-place technologies for the same reason.

D. Analytical Methods

Section 304(h) of the Clean Water Act directs EPA to promulgate guidelines establishing test procedures for the analysis of pollutants. These methods allow the analyst to determine the presence and concentration of pollutants in wastewater, and are used for compliance monitoring and for filing applications for the NPDES program under 40 CFR 122.21, 122.41, 122.44 and 123.25, and for the implementation of the pretreatment standards under 40 CFR 403.10 and 403.12. To date, EPA has promulgated methods for all conventional and toxic pollutants and for some nonconventional pollutants. EPA has identified five pollutants pursuant to section 304(a)(4) of the CWA defined as ''conventional pollutants'' (See 40 CFR 401.16). Table I–B at 40 CFR part 136 lists the

analytical methods approved for these pollutants. EPA has listed, pursuant to section 307(a) of the Act, 65 metals and organic pollutants and classes of pollutants as ''toxic pollutants'' at 40 CFR 401.15. From the list of 65 classes of toxic pollutants, EPA identified a list of 126 ''Priority Pollutants.'' This list of Priority Pollutants is shown, for example, at 40 CFR Part 423, Appendix A. The list includes non-pesticide organic pollutants, metal pollutants, cyanide, asbestos, and pesticide pollutants.

Currently approved methods for metals and cyanide are included in the table of approved inorganic test procedures at 40 CFR 136.3, Table I–B. Table I–C at 40 CFR 136.3 lists approved methods for measurement of non-pesticide organic pollutants, and Table I–D lists approved methods for the toxic pesticide pollutants and for other pesticide pollutants. Dischargers must use the test methods promulgated at 40 CFR 136.3 or incorporated by reference in the tables, when available, to monitor pollutant discharges from the CWT industry, unless specified otherwise in Part 437 or by the permitting authority.

Table I–C does not list 11 CWT semi-volatile organic pollutants and two CWT volatile organic pollutants (2-butanone and 2-propanone). However, the analyte list for EPA Method 1624 contains both volatile organic pollutants and the analyte list for EPA Method 1625 contains four of the semivolatile organic pollutants. EPA promulgated both of these methods for use in Clean Water Act measurement programs at 40 CFR part 136, Appendix A. As a part of this rulemaking, EPA is proposing to allow the use of EPA Method 1624 for the determination of the CWT volatile organic pollutants and modified versions of EPA Methods 625 and 1625 for the determination of all CWT semivolatile organic pollutants. The proposed modifications to EPA Methods 625 and 1625 have been included in the Docket for this rulemaking. The modified versions of Methods 625 and 1625 will allow the analysis of all CWT semivolatile organic pollutants by each method. If EPA adopts these proposed modifications, the following pollutants will be added to their respective analyte lists.

Additions to EPA Method 1625 and EPA Method 625

Pollutant	*CASRN*
acetophenone	98–86–2
aniline	62–53–3
benzoic acid	65–85–0
2,3-dichloroaniline	608–27–5
o-cresol	95–48–7
p-cresol	160–44–5
pyridine	110–86–1

Additions to EPA Method 625:

Pollutant	*CASRN*
alpha-terpineol	98–55–5
carbazole	86–74–8
n-decane	124–18–5
n-octadecane	593–45–3

These pollutants were found in CWT industry wastewaters in EPA's data gathering. The modifications to Methods 625 and 1625 consist of text, performance data, and preliminary quality control (QC) acceptance criteria for the additional analytes, if available. This information will allow a laboratory to practice the methods with the additional analytes as an integral part. The QC acceptance criteria for the additional analytes to be added to Method 1625 have been validated in single-laboratory studies. EPA plans further validation of these method modifications by use in subsequent data gathering for the final rule, and plans to promulgate these method modifications for monitoring at 40 CFR part 437 (see 40 CFR 401.13) or at 40 CFR part 136 in the final rule for this rulemaking.

On March 28, 1997, EPA proposed a means to streamline the method development and approval process (62 FR 14975) and on October 6, 1997, EPA published a notice of intent to implement a performance-based measurement system (PBMS) in all of its programs to the extent feasible (62 FR 52098). The Agency is currently determining the specific steps necessary to implement PBMS in all of its regulatory programs, and has approved a plan for implementation of PBMS in the water programs. Under PBMS, regulated entities will be able to modify methods without prior approval and will be able to use new methods without prior EPA approval, provided they notify the regulatory authority to which the data will be reported. EPA expects a final rule implementing PBMS in the water programs by the beginning of calendar year 1999. When the final rule takes effect, regulated entities in the CWT industry will be able to select methods for monitoring other than those approved at 40 CFR parts 136 and 437, provided that certain validation requirements are met. Many of the details were provided at proposal (62 FR 14975) and will be finalized in the final PBMS rule.

E. Public Comments to the 1995 Proposal and the 1996 Notice of Data Availability

In addition to data obtained through the Waste Treatment Industry Questionnaire, DMQ, site visits and sampling episodes, commenters on the 1995 proposal and the 1996 Notice of Data Availability also provided data to EPA. In fact, much of EPA's current description and estimates of the size of the oils subcategory is based on comments to the 1996 Notice of Data Availability.

As described earlier, following the 1995 proposal, EPA revised its estimate of the number of facilities in the oils subcategory and its description of the oils subcategory. Using new information provided by the industry during the 1995 proposal comment period in conjunction with questionnaire responses and sampling data used to develop the proposal, EPA has recharacterized this subcategory of the industry. This recharacterization reflected new data on the wastes treated by the subcategory, the technology in-place, and the pollutants discharged. As part of this recharacterization, EPA developed individual profiles for each of the newly identified oils facilities by modeling current wastewater treatment performance and treated-effluent discharge flow rates. In addition, assuming the same treatment technology options identified at proposal, EPA recalculated the projected costs of the proposed options under consideration, expected pollutant reductions associated with the options, and the projected economic impacts.

EPA presented its recharacterization of the oils subcategory in the September 1996 Notice of Data Availability (61 FR 48806). At that time, EPA estimated there were an additional 240 facilities in the oils subcategory and, as noted above, EPA developed a facility profile for each of these facilities. EPA presented that information in the 1996 Notice and requested that facilities comment on the validity of the modeled profiles. In order to facilitate that effort, copies of the Notice and the individual facility profile were mailed to each of the newly identified facilities. The facility information sheets summarized the estimates that EPA developed for operations at a facility. The facility information sheets provided EPA's estimates on the facility's following characteristics: treated effluent flow, RCRA permit status, quantity of oily waste being treated, quantity of oil recovered, characteristics of the final treated effluent, oily waste technologies in place, total cost of providing oily

waste treatment and recovery, total revenues from oily waste treatment and recovery, total revenues from sale of recovered oil, and total facility employment.

Of the 240 oils facilities for which NOA profiles were developed, EPA assessment showed that 20 facilities were closed. Of the remaining 220 facilities, EPA received comments and revised profiles from 100. Therefore, 120 facilities did not provide comments to the Notice or revised facility profiles. Of those facilities supplying information, 69 indicated their operations fall within the scope of the oils subcategory. EPA polled nine of the non-commenting facilities and determined that almost half of these are within the scope of the industry. Based on this information, EPA estimates that approximately half of the non-commenting facilities, or sixty, are within the scope of the oils subcategory. As to these sixty facilities that did not comment, EPA does not necessarily have facility-specific information for them.

EPA has again revised its characterization of the subcategory based on information provided prior to the 1995 proposal, during the proposal comment period, and during the Notice comment period. This includes company-specific information provided by commenters to correct oily waste facility profiles initially developed by EPA. EPA has used the revised facility profiles and the earlier information to perform the technical and economic analyses for the oils subcategory. The final results of the analyses are adjusted upward to provide estimates of the total population of oils facilities.

F. Database Sources

In developing the CWT effluent guidelines, EPA also evaluated the following data sources:

- Fate of Priority Pollutants in Publicly Owned Treatment Works (50 POTW Study) database.
- EPA's National Risk Management Research Laboratory (NRMRL) treatability database.

These data sources and their application to the development of the CWT effluent guidelines are discussed below.

EPA used the data included in the report entitled ''Fate of Priority Pollutants in Publicly Owned Treatment Works'' (EPA 440/1–82/303, September 1982), commonly referred to as the ''50-POTW Study'', in determining those pollutants that would pass through a POTW. This study presents data on the performance of 50 well-operated POTWs that employ secondary treatment to remove toxic pollutants. EPA has edited this database in order to minimize the possibility that low POTW removals might simply reflect low influent concentrations instead of being a true measure of treatment effectiveness. The criteria used in revising the data in the 50-POTW study were the following: (1) detected pollutants must have at least 3 pairs (influent/effluent) of data points to be included, (2) average pollutant influent levels less than 10 times the pollutant minimum analytical detection limit were eliminated, and (3) if none of the average pollutant influent concentrations exceeded 10 times the minimum analytical detection limit, then the average influent values less than 20 µg/l were eliminated. EPA then calculated each POTW percent removal for each pollutant based on its average influent and its average effluent values. The POTW percent removal used for each pollutant in the pass-through test is the median value of all the POTW percent removals for that pollutant. This is discussed in further detail in the technical development document.

EPA's National Risk Management Research Laboratory (NRMRL) developed a treatability database (formerly called the Risk Reduction Engineering Laboratory (RREL) database). This computerized database provides information, by pollutant, on removals obtained by various treatment technologies. The database provides the user with the specific data source, and the industry from which the wastewater was generated. EPA relied on the NRMRL database in its pass-through analysis to supplement the treatment information provided in the 50-POTW study when there was insufficient information on specific pollutants. For each of the pollutants of concern (POCs) not found in the 50-POTW database, EPA took data from portions of the NRMRL database. EPA edited this data so that only treatment technologies representative of typical POTW secondary treatment operations (activated sludge, activated sludge with filtration, aerated lagoons) were used. The files were further edited to include information pertaining to domestic or industrial wastewater,[2] unless other wastewater data were available. Pilot-scale and full-scale data were used, while bench-scale data were eliminated. Data from a peer-reviewed journal or government report were used and lesser quality references were edited out. From the remaining pollutant removal data, the average percent removal for each pollutant was calculated.

G. Summary of Public Participation

EPA has strived to encourage the participation of all interested parties throughout the development of the CWT guidelines and standards. EPA has met with various industry representatives. These include the Environmental Technology Council (formerly the Hazardous Waste Treatment Council), the National Solid Waste Management Association (NSWMA), the National Oil Recyclers Association (NORA), and the Chemical Manufacturers Association (CMA). EPA has also participated in industry meetings as well as meetings with individual companies that may be affected by these regulations. Additionally, EPA has met with environmental groups including members of the Natural Resources Defense Council. Finally, EPA has made a concerted effort to consult with EPA Regional staff, pretreatment coordinators, and state and local entities that will be responsible for implementing this regulation.

EPA sponsored two public meetings, one prior to the original proposal on March 8, 1994 and one prior to this recent proposal on July 27, 1997. The purpose of the public meetings was to share information about the content and status of the proposed regulations. The public meetings also gave interested parties an opportunity to provide information, data, and ideas on key issues. Following the 1995 proposal, EPA also held a workshop and public hearing to discuss topics of interest to stakeholders and to receive oral comments.

H. Small Business Advocacy Review Panel

The Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), imposes certain duties on agencies that propose rules that may have a significant economic impact on a substantial number of small entities. These include requirements to assess the impact on small entities and seek their views. For example, unless EPA certifies that the proposed rule will not have such an impact, the statute requires an initial regulatory flexibility analysis (RFA). Section XI.L summarizes that analysis. The statute also provides that, where EPA has prepared an initial RFA, EPA must convene a Small Business Advocacy

[2] The NRMRL database breaks wastewaters down into the following categories: clean water, domestic water, groundwater, hazardous leachate, industrial wastewater, municipal leachate, commercial storage and disposal facility liquids, RCRA listed wastewater, synthetic wastewater, superfund wastewater, spill water, tap water, and surface water.

Review Panel for the proposed rule to seek the advice and recommendations of small entities concerning the proposal. The review panel for today's proposal was composed of employees from EPA, the Office of Information and Regulatory Affairs within the Office of Management and Budget, and the Chief Counsel for Advocacy of the Small Business Administration (SBA) (5 U.S.C. § 609(b)).

During development of today's proposal, EPA undertook a preliminary assessment to determine the economic effect of the options being considered for proposal on small CWT companies. (The statute defines small entities, for purposes of RFA analyses, as small businesses, small not-for-profit organizations, and small governmental jurisdictions. EPA is not aware of any CWT facilities owned by not-for-profit organizations or small governmental jurisdictions). Based on this initial evaluation, EPA concluded that, if EPA adopted limitations and standards based on some of the options being considered for proposal, the impact on small CWT companies might be significant. This would be particularly true with respect to CWT facilities that treated oily waste. Virtually all the small businesses potentially affected by the proposal would be found in this subcategory. While the absolute number of small businesses engaged in CWT operations was not large—EPA currently estimates that 63 small businesses own discharging CWT facilities—the potential costs for 71 percent of these companies would exceed one percent of their revenue.

Given that several of the proposed options would have a significant economic effect on a high percentage of these small businesses, EPA decided to prepare the analysis that the statute requires for proposals imposing significant impacts on a substantial number of small entities. The assessment is discussed below in Section XI.L and in ''Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for the CWT Industry.'' The assessment addresses all of the elements that are required for an initial RFA under section 603(b) of the Regulatory Flexibility Act. In addition, pursuant to section 609(b), in May 1997, EPA decided to convene a panel for this proposed rule to collect the advice and recommendations of representatives of small CWT businesses that would be affected by the proposal.

EPA convened the panel on November 6, 1997. The panel members met among themselves and also with representatives of small CWT businesses. The panel then prepared a report that summarized its activities. The report is available in the docket for this proposal (''Final Report of the SBREFA Small Business Advocacy Review Panel on EPA's Planned Proposed Rule for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry—January 23, 1998''). The report includes recommended alternatives and findings concerning the following issues:

- the type and number of small entities that would be subject to the proposal;
- record keeping, reporting and other compliance requirements that the proposal would impose on small entities subject to the proposal, if promulgated;
- identification of relevant Federal rules that may overlap or conflict with the proposed rule; and
- description of significant regulatory alternatives to the proposed rule which accomplish the stated objectives of the CWA and minimize any significant economic impact on small entities.

The panel reviewed a number of alternatives for minimizing impact on small businesses that are CWT facilities. Among the options discussed were the following:

(a.) Relief from monitoring requirements. EPA's NPDES and pretreatment program regulations require monitoring by both direct and indirect dischargers to demonstrate compliance with discharge limitations and pretreatment standards. Local permitting authorities, under these regulations, retain considerable authority in determining the frequency of monitoring. Because a significant portion of the costs of complying with CWT limitations and standards is related to monitoring costs, the panel examined approaches to reduce these costs. The panel considered two options. The first is the use of an indicator parameter as a surrogate for regulated organic pollutants. Instead of being required to monitor for a series of organic pollutants, the discharger would only need to measure the one indicator parameter. The second option is for EPA to develop guidance for distribution to permitting authorities that would recommend a reduced monitoring regime for small businesses. This second option could also be combined with the first. The Agency has examined these options further as discussed below at IX.D.

(b.) Other regulatory relief for oily waste treaters. As previously noted, the bulk of small CWT businesses are indirectly discharging oily waste treatment companies. The panel focused its attention on relief measures for these companies, but could develop no consensus on recommended relief. Among the measures considered are the following:

- The panel considered whether small businesses (those with less than $6 million in annual revenue) should not be included in the scope of the proposal or, alternatively, whether a flow cut off should be used so as to limit the facilities within the scope of the rule. In Section IV.S, EPA provides its current analyses of the effects of not including small businesses and of flow cut-offs of 3.5 million gallons per year (MGY) and 7 MGY on costs, facility closures, and pollutant loading removals. Neither the panel members nor the small business representatives could agree on whether such scope limitations would be appropriate. A more detailed discussion and request for comment on this issue is included in Section XI.L.
- The panel also heard a recommendation that EPA should propose pretreatment standards for oily waste treaters based on a less costly treatment option (emulsion breaking and secondary gravity separation) than dissolved air flotation. This treatment option is discussed with the other technology options considered for the oils subcategory as the basis for today's proposal, in Section IX.B.1.b.ii.
- Another relief option discussed is development of a streamlined procedure for obtaining a variance from categorical pretreatment standards. The CWA authorizes EPA to grant a variance from categorical pretreatment standards for facilities that, under specific circumstances, establish that their facility is ''fundamentally different'' with respect to the factors considered in establishing the categorical standard. The panel urged EPA to consider developing a procedure for small businesses to submit group applications for obtaining such variances to the extent the CWA would authorize adoption of such an approach. EPA discusses this relief option in Section XIV.C, Variances and Modifications.

(c.) New source performance standards for metal-bearing waste treaters. Concern was also expressed during the panel review about the treatment technology being considered as the basis for EPA's new source performance standards and pretreatment standards for new sources for the metals subcategory. EPA's assessment of the cost of the technology then being considered showed that it was three times as expensive as the technology forming the basis for limitations and standards for existing sources and that the incremental pollutant removals of the more stringent technology were

small. In the view of some panel members, this might pose a potential entry barrier for small business. This concern is discussed further, along with a request for comment, in Section IX.B.4 and XI.H which deal with option selection for these standards.

Finally, the panel discussed several methodological issues related to EPA's characterization of baseline pollutant loadings and estimation of loadings removals associated with various treatment options. These issues are discussed in more detail in Sections VIII and XI.M and in Chapter 12 of the technical development document.

Section XV.B discusses the SBREFA panel in more detail and provides information on what EPA has done to address the panel's recommendations. EPA notes that the panel was another effective public outreach tool, and that the small entity representatives provided valuable insight to the possible effects of the proposal to the CWT industry—specifically, the small entities.

EPA's consideration of these relief options are discussed in the appropriate sections of this document.

I. Examination of the Effect of Total Dissolved Solids on Metals Precipitation

During the comment period for the 1995 proposal, EPA received comments which asserted that high levels of total dissolved solids (TDS) in CWT wastewaters may compromise a CWT facility's ability to meet the proposed metal subcategory limitations. The data indicated that for some metal-contaminated wastewaters, as TDS levels increased, the solubility of the metal in wastewater also increased. As such, the commenters claimed that metal-contaminated wastewaters with high TDS could not be treated to achieve the proposed limitations.

At the time of the original proposal, EPA had no data on TDS levels in CWT wastewaters. No facility provided TDS data in their response to the Waste Treatment Industry Questionnaire or the Detailed Monitoring Questionnaire. Additionally, during the sampling episodes prior to the 1995 proposal, EPA did not collect TDS data. As such, EPA lacked the data to estimate TDS levels in wastewaters at the CWT facility which formed the technology basis for the 1995 proposed metals subcategory limitations.

In order to address the comment, EPA (1) collected additional information on TDS levels in metals subcategory wastewaters; (2) conducted additional sampling; (3) consulted literature sources; and (4) conducted bench scale studies.

First, EPA needed to determine the range of TDS levels in CWT metals subcategory wastewaters. As such, EPA contacted the metals subcategory Waste Treatment Industry Questionnaire respondents to determine the level of TDS in their wastewaters. Most CWT facilities do not collect information on the level of TDS in their wastewaters. Those facilities that provided information indicated that TDS levels in CWT metals subcategory wastewaters range from 10,000 ppm to 100,000 ppm (1–10%).

Second, EPA resampled the facility which formed the technology basis for the 1995 proposed metals subcategory limitations and the facility that provides the basis for metals subcategory limitations in this proposal, in part, to determine TDS levels in their wastewaters. EPA found TDS levels of 17,000 to 81,000 mg/L.

Third, EPA consulted various literature sources to obtain information about the effect of TDS levels on chemical precipitation. EPA found no data or information which related directly to TDS effects on chemical precipitation.

Fourth, EPA conducted a laboratory study designed to determine the effect of TDS levels on chemical precipitation treatment performance. In this study, EPA conducted a series of bench-scale experiments on five metals: arsenic, chromium, copper, nickel and titanium. These metals were selected because (1) they are commonly found in CWT metals subcategory wastewaters; (2) their optimal precipitation is carried out in a range of pH levels; and/or (3) the data provided in the comments indicated that TDS may have a negative effect on the precipitation of these metals. The preliminary statistical analyses of the data from these studies show no consistent relationship among the five metals, pH levels, TDS concentrations, and chemical precipitation effectiveness using hydroxide or a combination of hydroxide and sulfide. The study and the statistical analyses are included in the record. Thus, the study could not either confirm or refute the concern with high TDS levels interfering with metals treatment. EPA solicits comments on this study and EPA's statistical analyses of the results.

EPA has not incorporated an adjustment for TDS levels into the development of limitations on metals discharges for the following reason. EPA's data show that effluent levels associated with an option proposed today for BPT, BAT, and PSES for the metals subcategory are achievable even at high TDS levels. The facility which forms the technology basis for Metals Option 4 (see Section IX.B.1.b.i) had high influent levels of TDS in their wastewaters during EPA's sampling episode. On an average basis, their TDS levels were the highest EPA observed in the industry. Consequently, EPA believes the proposed BPT, BAT, and PSES limitations and standards can be achieved by all metals subcategory facilities—even those with high levels of TDS. EPA solicits comment and any data commenters may have bearing on this issue.

VII. Subcategorization

A. Methodology and Factors Considered for Basis of Subcategorization

For its earlier proposal, EPA considered whether a single set of effluent limitations and standards should be established for this industry or whether different limitations and standards were appropriate for subcategories within the industry (see 60 FR 5464, 5474). In reaching its preliminary decision that it should subcategorize for purposes of developing limitations and standards, EPA discussed its consideration of various factors.

The CWA requires EPA, in developing effluent limitations guidelines and pretreatment standards that represent the best available technology economically achievable for a particular industry category, to consider a number of different factors. Among others, these include the age of the equipment and facilities in the category, manufacturing processes employed, types of treatment technology to reduce effluent discharges, and the cost of effluent reductions (Section 304(b)(2)(B) of the CWA, 33 U.S.C. § 1314(b)(2)(B)). The statute also authorizes EPA to take into account other factors that the Agency deems appropriate and requires that the limitations it promulgates are economically achievable, which generally involves consideration of both compliance costs and the overall financial condition of the industry.

One way in which the Agency has taken some of these factors into account is by breaking down categories of industries into separate classes of similar characteristics. This recognizes the major differences among companies within an industry that may reflect, for example, different manufacturing processes, economies of scale, or other factors. One result of subdividing an industry by subcategories is to safeguard against overzealous regulatory standards, increase the confidence that the regulations are practicable, and diminish the need to address variations

between facilities through a variance process (*Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1053 (D.C. Cir. 1978)).

The CWT industry, as previously explained, is not typical of many of the other industries regulated under the CWA because it does not produce a product. Therefore, EPA considered certain factors that specifically apply to CWT operations in its evaluation of how to establish appropriate limitations and standards and whether further subcategorization was warranted. Additionally, EPA did not consider certain other factors typically appropriate when subcategorizing manufacturing facilities as relevant when evaluating this industry. The factors EPA considered here in subcategorizing the CWT industry include:

- Facility age
- Facility size
- Facility location
- Non-water quality impacts
- Freatment technologies and costs
- RCRA classification
- Types of wastes received
- Nature of wastewater generated

EPA concluded that certain of these factors did not support further subcategorization of this industry. The Agency concluded that the age of a facility is not a basis for subcategorization as many older facilities have unilaterally improved or modified their treatment process over time. EPA is also not proposing to use facility size as a basis for subcategorization, although it is requesting comment in Section IV.S on whether facility size, as measured by flow, would be an appropriate basis for not including some facilities in the scope of the rule. EPA identified three parameters as relative measures of facility size: number of employees, amount of waste receipts accepted, and wastewater flow. EPA found that CWT facilities of varying sizes generate similar wastewaters and use similar treatment technologies, although the economic impacts of compliance costs may be greater for small facilities (as defined by parent company revenues). Furthermore, wastes can be treated to the same level regardless of the facility size. EPA is also not proposing to use facility location as a basis for subcategorization. Based on the data collected, no consistent differences in wastewater treatment technologies or performance exist between different geographical locations. EPA recognizes, however, that geographic location may have an effect on the market for CWT services, the cost charged for these services, and the value of recovered product which may affect the economic impacts of the rule. These issues are addressed in the Economic Assessment Document.

While non-water quality characteristics (solid waste and air emission effects) are of concern to EPA, these characteristics did not constitute a basis for subcategorization. Environmental impacts from solid waste disposal and from the transport of potentially hazardous wastewater are a result of individual facility practices, and EPA could not identify any common characteristics particular to a given segment of the industry. Treatment costs were not used as a basis for subcategorization because costs will vary, and are dependent on the following waste stream variables: flow rates, wastewater quality, and pollutant loadings. Finally, EPA is not proposing to use RCRA classification as a basis for subcategorization although EPA is requesting comment on whether this would be an appropriate basis for not including some facilities in the scope of the rule. (See further discussion in Sections IV.T and VIII.B.)

EPA identified only one factor with primary significance for subcategorizing the CWT industry—the type of waste received for treatment or recovery. This factor encompasses many of the other subcategorization factors. The type of treatment processes used, nature of wastewater generated, solids generated, and potential air emissions directly correlate to the type of wastes received for treatment or recovery. For today's proposal, EPA proposes to retain its earlier subcategorization approach.

B. Proposed Subcategories

Based on the type of wastes accepted for treatment or recovery, EPA has determined that there are three subcategories appropriate for the CWT industry.

- Subcategory A: Facilities which treat, recover, or treat and recover metal from metal-bearing waste, wastewater, or used material received from off-site,
- Subcategory B: Facilities which treat, recover, or treat and recover oil from oily waste, wastewater, or used material received from off-site, and
- Subcategory C: Facilities which treat, recover, or treat and recover organics from other organic waste, wastewater, or used material received from off-site.

C. General Description of Facilities in Each Subcategory

1. Metal-Bearing Waste Treatment and Recovery Operations

The facilities that would be subject to limits for this subcategory treat metal-bearing wastes received from off-site and/or recover metals from off-site metal-bearing wastes. Currently, EPA has identified 59 facilities in this subcategory. Fifty-two of these facilities are treatment facilities exclusively, while another six are recovery operations that recover metals from the wastes for sale in commerce or for return to industrial processes. One facility provides waste treatment services in addition to conducting a metals recovery operation. The vast majority of these facilities have RCRA permits to accept hazardous wastes. Among the types of wastes accepted for treatment are spent electroplating baths and sludges, spent anodizing solutions, metal finishing rinse water and sludges, chromate wastes, cyanide containing wastes, and waste acids and bases with or without metals.

The typical treatment process used for metal-bearing waste is chemical precipitation with lime or caustic followed by filtration. The sludge generated is then landfilled in a RCRA Subtitle C or D landfill depending upon its content. Most facilities that recover metals do not generate a sludge that requires disposal. Instead, the sludges are sold for their metal content. In addition to treating metal bearing waste streams, many facilities in this subcategory also treat cyanide waste streams, many of which are highly-concentrated and complex. Since the presence of cyanide may interfere with the chemical precipitation process, these facilities generally pretreat to remove cyanide and then commingle the pretreated cyanide wastewaters with the other metal containing wastewaters. EPA estimates that nineteen of the metals facilities also treat cyanide waste streams. (See discussion in 1995 proposal at 60 FR 5474.)

2. Used/Waste Oil Treatment and Recovery Operations

The facilities proposed for regulation in this subcategory are those that treat oily waste, wastewater, or used material received from off-site and/or recover oil from off-site oily materials. EPA estimates that, at present, there are 164 facilities in this subcategory. Among the types of waste accepted for treatment are lubricants, coolants, oil-water emulsions, used petroleum products, used oils, oil spill clean-up, bilge water, tank clean-out, off-spec fuels, interceptor wastes, and underground storage tank remediation waste. Many facilities in this subcategory only provide treatment for oily wastewaters while others pretreat the oily wastes for contaminants such as water and then blend the resulting oil residual to form a product—usually fuel. Most facilities perform both types of operations. EPA

estimates that 53 of these facilities only treat oily wastewaters and 36 facilities only recover oil for reuse. The remaining 75 facilities both treat oily waste and recover oil to reuse.

At the time of the original proposal, EPA believed that 85 percent of oils facilities were primarily accepting concentrated, difficult-to-treat, stable, oil-water emulsions containing more than 10 percent oil. However, during post-proposal data collection, EPA learned that many of the wastes treated for oil content at these facilities were fairly dilute and consisted of less than 10 percent oils. EPA now believes that, while some facilities are accepting the more concentrated wastes, that the majority of facilities in this subcategory are treating less concentrated wastes.

Further, at the time of the original proposal, only three of the facilities included in the database for this subcategory were identified as solely accepting wastes classified as non-hazardous under RCRA. The remaining facilities accepted either hazardous wastes alone or a combination of hazardous and non-hazardous wastes. In contrast, based on more recent information, EPA believes that the vast majority of facilities in this subcategory only accept wastes that would be classified by RCRA as non-hazardous.

The most widely used treatment technology in this subcategory is gravity separation and/or emulsion breaking. One-third of this industry only uses gravity separation and/or emulsion breaking to treat oily waste streams. Another third of the industry utilizes chemical precipitation, and most of the rest use Dissolved Air Flotation (DAF).

3. Organic Waste Treatment

The facilities proposed for regulation in this subcategory are those that treat organic waste received from off-site and/or recover organics from off-site wastes. EPA estimates that there are 25 facilities in this subcategory. The majority of these facilities have RCRA permits to accept hazardous wastes. Among the types of wastes accepted at these facilities are landfill leachate, groundwater clean-up from non-petroleum sources, solvent-bearing waste, off-specification organic products, still bottoms, used glycols, and wastewater from chemical product operations, paint washes, or adhesives and epoxies. As explained previously, wastewater discharges from solvent recovery operations are not included within the scope of this subcategory.

All of the organics facilities which discharge to a surface water use equalization and some form of biological treatment to handle the wastewater. The vast majority of organics facilities which discharge to a POTW primarily use equalization. One third of all the organics facilities also use activated carbon adsorption. Most of the facilities in the organics subcategory have other industrial operations as well, and the CWT wastes are mixed with these wastewaters prior to treatment. The relatively constant make-up of on-site wastewater can support the operation of conventional, continuous biological treatment processes which otherwise could be upset by the variability of the off-site waste receipts.

D. Mixed Waste Subcategory Consideration

EPA has received numerous comments from industry suggesting that the subcategorization scheme developed for this rule is impractical for CWT facilities which accept wastes in more than one subcategory. These commenters are primarily concerned about incoming waste receipts which may represent mixtures of wastes that would be classified in more than one subcategory. These commenters argue that, while CWT facilities can encourage their customers to segregate their wastes, they cannot require segregation of incoming waste receipts according to waste type. These commenters have suggested that, for ease of implementation, mixed waste subcategory limitations should be developed for all facilities treating wastes in more than one subcategory. These commenters are primarily concerned that permit writers may impose additional and substantial record keeping requirements in order to classify wastes in one of the three subcategories. Commenters have suggested that limitations for the mixed waste subcategory could combine pollutant limitations from all three subcategories, selecting the most stringent value where they overlap.

While facilities have suggested developing a mixed waste subcategory with limitations derived by combining pollutant limitations from all three subcategories (selecting the most stringent value where they overlap), EPA does not believe facilities have adequately considered the costs associated with such an option. In order to assure effective treatment of co-diluted waste streams, EPA would need to require more stringent limitations than currently being proposed for any current subcategory because of the co-dilution that occurs when wastes of different types are mixed together. Based on this assumption, EPA assumed that facilities design and operate their treatment systems to remove the mass of pollutants. EPA assumed that systems would not be operated to meet pollutant concentration limits because concentrations may be achieved merely through co-dilution (e.g., by mixing different waste types) rather than treatment. Consequently, in order to cost for mass pollutant removals, EPA compared the compliance cost for facilities in multiple subcategories with the mixed waste subcategory limitations as described above to compliance costs for facilities meeting the limitations for the three subcategories separately. Costs were greater for the mixed waste subcategory because EPA had to cost for larger flows, the need for more chemical addition in treatment, and other requirements. EPA chose nine representative facilities that treat wastes in more than one subcategory to conduct the comparison. EPA found that, in all cases, the costs of complying with the mixed waste subcategory limitations were two to three times higher than the costs associated with complying with each of the subcategory limitations separately. Since the market for these services is generally very competitive, and since many of these facilities are small businesses, EPA believes that few facilities would chose to meet those stringent limitations that would be necessary for the mixed waste subcategory.

The primary reason industry suggested the development of a mixed waste subcategory was their concern that their waste receipts may be classified in more than one subcategory. As detailed in Section XIV.E, EPA believes that the information currently available to CWT facilities is sufficient to classify wastes into one of the three subcategories. Using the procedure recommended in Section XIV.E for determining the subcategory, EPA has been able to assign each waste receipt identified by the industry during rule development to one of the three proposed subcategories. Therefore, EPA believes that the classification of any particular waste into a single subcategory will not be a problem. EPA requests comment on this issue, including examples of waste streams that commenters believe would be difficult to classify.

The second reason industry suggested the development of a mixed waste subcategory was to simplify implementation for mixed subcategory facilities. EPA agrees with commenters that developing appropriate limitations for mixed waste facilities presents many challenges, but the Agency is also concerned that mixed wastes receive adequate treatment. In many cases, facilities which accept wastes in

multiple subcategories do not have treatment in place to provide effective treatment of all waste receipts. While these facilities meet their permit limitations, compliance may be due to co-dilution of dissimilar wastes rather than treatment. As an example, a facility may have a treatment system comprised of equalization and biological treatment and accepts wastes from the organics subcategory and the metals subcategory (high concentrations of metal pollutants). Only the organic subcategory waste receipts would be treated effectively. The ''mixed waste subcategory'' limitations described above would not prevent ineffective treatment and could actually encourage it. Therefore, based on economic considerations as well as concerns that EPA has about ensuring compliance with effective treatment, rather than dilution, EPA is not today proposing a mixed waste subcategory. EPA solicits comments on ways to develop a ''mixed waste subcategory'' which ensures treatment rather than dilution.

VIII. Wastewater Characterization

This section describes the sources of wastewater at CWT facilities, characterization of these wastewaters, and discharge flows. All waste treatment processes covered by this regulation typically involve the use of water; however, specifics for any facility depend on the facility's waste receipts and treatment processes. For facilities that completed the Waste Treatment Industry Questionnaire, all information is based on 1989 operations. For all facilities included in scope after the original proposal, all data represent 1995 operations.

A. Wastewater Sources

Approximately 1.9 billion gallons of wastewater are generated annually at CWT facilities. It is difficult to determine the quantity of wastes attributable to different sources because facilities generally mix the wastewater prior to treatment. EPA has, as a general matter, however, identified the sources described below as contributing to wastewater discharges at CWT operations that would be subject to the proposed effluent limitations and standards.

1. Waste Receipts

Most off-site waste received by CWT facilities is aqueous. These aqueous off-site waste receipts comprise the largest portion of the wastewater treated at CWT facilities. Typical waste receipts for each subcategory are detailed in section VII.C.

2. Solubilization Water

A portion of the off-site waste receipts is in a solid form. Water may be added to the waste to render it treatable.

3. Used Oil Emulsion-Breaking Wastewater

The wastewater generated as a result of the emulsion breaking or gravity separation process(es) from the processing of used oil constitutes a major portion of the wastewater treated at oils facilities. EPA estimates that, at a typical oils facility, half of the wastewater treated is a result of oil/water separation processes.

4. Tanker Truck/Drum/Roll-Off Box Washes

Water is used to clean the equipment used for transporting wastes. The amount of wastewater generated was difficult to assess because the wash water is normally added to the wastes or used as solubilization water.

5. Equipment Washes

Water is used to clean waste treatment equipment during unit shut downs or in between batches of waste.

6. Air Pollution Control Scrubber Blow-Down

Water or acidic or basic solution is used in air emission control scrubbers to control fumes from treatment tanks, storage tanks, and other treatment equipment.

7. Laboratory-Derived Wastewater

Water is used in on-site laboratories which characterize incoming waste streams and monitor on-site treatment performance.

8. Wastewater from On-site Industrial Waste Combustors or On-site Landfills

Wastewater is generated at some CWT facilities as a result of on-site landfilling or incineration activities.

9. Contaminated Stormwater

This is stormwater which comes in direct contact with the waste or waste handling and treatment areas. If this contaminated CWT stormwater is introduced to the treatment system, its discharge is subject to the limitations proposed here today. The Agency is proposing not to regulate under the CWT guideline non-contact stormwater or contaminated stormwater not introduced to the treatment system. Such flows may, in certain circumstances, require permitting under EPA's existing permitting program at 40 CFR 122.26(b)(14) and 40 CFR 403.6. CWT facilities that introduce non-contaminated stormwater into their treatment system will need to identify this as a source of non-CWT wastewater in their treatment system in their permit applications. This is necessary in order that the permit writer may take account of these flows in developing permit limitations that reflect actual treatment.

B. Wastewater Characterization

As discussed in Section V.A, wastewater receipts treated at CWT facilities can have significantly different pollutants and pollutant loads depending on the customer and the process generating the waste receipt. In fact, at many CWT facilities, the pollutants and pollutant loads can vary daily and from batch to batch. As such, it is difficult to characterize typical CWT wastewaters. In fact, one of the distinguishing characteristics of CWT wastewaters (as compared to traditional categorical wastewaters) is that there is always the exception to the rule. As an example, EPA analyzed samples of wastewater receipts from a single facility that were obtained during three different, non-consecutive weeks. EPA found that the weekly waste receipts varied from the most concentrated (in terms of metal pollutants) to one of the least concentrated (in terms of metal pollutants).

EPA determined pollutants of concern for the CWT industry by assessing EPA sampling data only. Industry has provided very little quantitative data on the concentrations of pollutants entering their wastewater treatment systems. For the metals and organics subcategory, the data used to determine the pollutants of concern were collected at influent points to the wastewater treatment systems. For the oils subcategory, the data were collected following emulsion breaking and/or gravity separation. The pollutant concentrations at these points are lower than the original waste receipt concentrations as a result of the commingling of a variety of waste streams, and for the oils subcategory, as a result of pretreatment. In most cases, EPA could not collect samples from individual waste shipments because of physical constraints and excessive analytical costs.

EPA's influent sampling data were collected over a limited time span (generally two to five days). The samples represent a snapshot of the receipts accepted for treatment during the time the samples were collected. Since waste receipts can vary significantly from day to day, EPA cannot know if the data are representative of waste receipts during any other time period. If EPA had sampled at more facilities or over longer periods of time, EPA would expect to observe a wider range of flow, pollutants, and pollutant concentrations in CWT industry raw wastewater. This has complicated the selection of pollutants of concern and regulated pollutants, and the estimation of current performance and removals associated with this rulemaking. Historically, in developing effluent limitations guidelines and standards, unlike CWT waste receipts, influent waste streams are generally consistent in strength and nature.

To establish the pollutants of concern, EPA reviewed the analytical data from influent wastewater samples to determine the number of times a pollutant was detected at treatable levels. Treatable levels were set at ten times the minimum analytical detection limit to ensure that pollutants detected at only trace amounts would not be selected. For most organic pollutants, the minimum analytical detection limit is 10 ug/L. Therefore, for most organic parameters, EPA had defined treatable levels as 100 ug/L. For metal pollutants, the minimum analytical detection limits range from 0.2 ug/L to 1000 ug/L. The initial pollutant of concern listing for each subcategory was then derived by establishing which parameters were detected at treatable levels in at least 10 percent of the daily influent wastewater samples. Ten percent is a different criteria than was used to identify pollutants of concern in the 1995 proposal. EPA used different criteria for this proposal since it has a larger data set for this proposal than the 1995 proposal. EPA notes that, while it generally establishes criteria to establish pollutants of concern on an industry-by-industry basis, the criteria used in this proposal are similar to those used for proposal of other service industries. EPA additionally notes that the criteria to establish pollutants of concern used to date for the service industries have varied from the criteria used to establish pollutants of concern for some of the traditional categorical industries because service industries (particularly CWT) have much greater variability in the pollutants and pollutant concentrations seen in their wastewaters than some of the traditional categorical industries previously studied by EPA. Finally, if EPA had elected to establish pollutants of concern using a criteria higher than 10 percent, the estimated baseline loadings and pollutant removals would have been reduced, but EPA might have overlooked potential pollutants of concern because of the variability in the industry.

During the SBREFA panel, some industry representatives suggested that both the pollutants and the concentration of pollutants in non-hazardous CWT wastes were distinctly different from those in hazardous CWT wastes. EPA's database contains information that was collected at facilities which treat hazardous waste only, non-hazardous waste only, and a mixture of hazardous and non-hazardous wastes. The majority of the data was collected at facilities which are permitted to accept hazardous wastes. As stated earlier, although these data suggest that flows from non-RCRA permitted facilities may have significantly lower pollutant loadings, they are inadequate to support the conclusion that EPA should differentiate between oily facilities on the basis of whether hazardous or non-hazardous wastes are treated at the facility. However, as described in Section VI.C., EPA recently collected wastewater samples at an additional ten non-hazardous oily waste facilities. EPA has not included this data in these analyses, but has included this data in the Appendix of the technical development document. EPA will revisit its conclusions based on the analytical results of the recent sampling as well as any additional data provided during the comment period prior to promulgation. As such, EPA solicits comments and data on the pollutants and concentration of pollutants in non-hazardous CWT waste receipts and in hazardous CWT waste receipts. (See also Section IV.T).

1. Raw Wastewater at CWT Metals Subcategory Facilities

Wastewater treated at CWT facilities in the metals subcategory contains a range of conventional, toxic, and non-conventional pollutants. EPA identified 78 pollutants of concern for the metals subcategory, including three conventional pollutants, 43 metals, and 17 organic pollutants. As expected, wastewaters contained significant concentrations of common non-conventional metals such as aluminum, iron, and tin. Also, as expected, given the processes generating these wastewaters, waste receipts generally contained toxic heavy metals. Toxic metals found in the highest concentrations were cadmium, chromium, cobalt, copper, nickel, and zinc. While organic pollutants were present in the wastewater at a few sampled facilities in this subcategory, they were not typically found in the treated wastewater effluent in this subcategory. Many metals facilities have placed acceptance restrictions on the concentration of organic pollutants allowed in the off-site waste streams accepted for treatment.

2. Raw Wastewater at CWT Oils Subcategory Facilities

To characterize raw wastewater for the oils subcategory, EPA evaluated samples obtained following the initial gravity separation/emulsion breaking step. Wastewater treated at CWT facilities in the oils subcategory also contains a range of conventional, toxic, and non-conventional pollutants. EPA identified 120 pollutants of concern in the oils subcategory including three conventional pollutants, 32 metals, and 72 organics. Oil and grease levels in this subcategory varied greatly from one facility to the next and ranged from 26 mg/L to 61,000 mg/L after the first stage of treatment (emulsion breaking and/or gravity separation). Wastewaters contained significant concentrations of both non-conventional and toxic metals such as aluminum, boron, cobalt, iron, manganese, and zinc. A wide range of organic pollutants were also found in the untreated wastewaters from this subcategory. Organic pollutants found in the highest concentrations were straight chain hydrocarbons such as n-decane and n-tetradecane and aromatics such as naphthalene and bis(2-ethylhexyl)phthalate. EPA also detected

polyaromatic hydrocarbons, such as benzo(a)pyrene in the wastewaters of oils facilities. EPA reviewed the readily available literature pertaining to benzo(a)pyrene and its presence in waste receipts that may be accepted at facilities which treat non-hazardous oily wastes such as used motor oils, diesel fuels, fuel oils, lubricating oils, and gasolines. Based on this review, EPA has concluded that the presence of benzo(a)pyrene as a pollutant in its sampling data is not an anomaly. The result is consistent with what is observed in the available literature.

3. Raw Wastewater at CWT Organics Subcategory Facilities

Wastewater treated at CWT facilities in the organics subcategory contains a range of conventional, toxic and non-conventional pollutants. EPA identified 97 pollutants of concern for this subcategory including three conventional pollutants, 25 metals, and 60 organics. As expected, wastewaters contained significant concentrations of organic parameters, many of which are highly volatile. The metals present in the highest concentrations were common ones such as aluminum and iron.

As described in VI.C.3, the data available to the EPA for characterizing raw wastewaters for the organics subcategory are limited. In fact, the preceding discussion on the characterization of organic subcategory wastewaters is based on sampling data from a single organic subcategory facility. All other wastewater characterization data collected for the organics subcategory represented wastewater from multiple subcategories (e.g., mixed oils and organic subcategory wastewaters). EPA is especially eager for commenters on the proposal to provide data for organic subcategory wastewaters which are not mixed with other subcategory wastewaters to use in refining the Agency's characterization of this subcategory.

C. Wastewater Flow and Discharge

Based on the information collected during the development of this rule, approximately 1.9 billion gallons of in-scope wastewater are discharged annually from CWT operations. CWT facilities do not generate a ''process wastewater'' in the traditional sense of this term because there is no manufacturing or commercial ''process'' which is generating water.[3] Consequently, the regulated wastewater for this industry will include any wastes received for treatment (''waste receipt'') as well as water which comes into contact with the wastes or waste processing area. As mentioned previously, the primary sources of ''CWT wastewater'' discharges from these facilities include: waste receipts, used oil processing wastewater, solubilization wastewater, tanker truck/drums/roll-off box washes, equipment washes, air pollution control scrubber blow-down, laboratory-derived wastewater, on-site landfill and industrial waste combustor wastewaters, and contaminated stormwater.

CWT facilities have several options for the discharge of their wastewater. EPA estimates that there are 14 facilities discharging wastewater directly into a receiving stream or body of water, accounting for 0.5 billion gallons per year. In addition, there are 147 facilities discharging wastewater indirectly through a POTW, accounting for 1.4 billion gallons per year.

Also, there are a number of CWT facilities which do not dispose of wastewater directly to surface waters or indirectly to POTWs. The Agency estimates that there are 44 of these alternative discharge facilities. At these facilities, (1) wastewater is disposed of by alternate means such as on-site or off-site deep well injection or incineration (9 facilities); (2) wastewater is sent off-site for treatment, generally to another CWT (23 facilities); (3) wastewater is evaporated (5 facilities); and (4) zero discharge option is unknown (7 facilities).

Table VIII.C–1 provides estimates of wastewater flow and discharge at a subcategory level basis.

TABLE VIII.C–1.—WASTEWATER FLOW AND DISCHARGE BY SUBCATEGORY

Subcategory	Number of indirect discharging facilities	Total indirect flow (M gallons /year)	Number of direct discharging facilities	Total direct flow (M gallons /year)	Total flow (M gallons /year)
Metals Treatment and Recovery	41	449	9	496	944
Oils Treatment and Recovery	123	861	5	24	885
Organics Treatment	14	60	4	16	76

IX. Development of Effluent Limitations Guidelines and Standards

A. Description of Available Technologies

The treatment technologies presently employed by the industry represent the range of wastewater treatment systems observed at categorical industrial operations. All CWT facilities operate some wastewater treatment systems. The technologies used include physical-chemical treatment, biological treatment, and advanced wastewater treatment. Based on information obtained from the 1991 Waste Treatment Industry Questionnaire and site visits, EPA has concluded that a significant number of these treatment systems need to be upgraded to improve effectiveness and to remove additional pollutants.

Among the physical-chemical treatment technologies in use include:

- *Equalization Tanks.* Equalization dampens variation in hydraulic and pollutant loadings, thereby reducing shock loads and increasing treatment facility performance.
- *Neutralization.* Neutralization dampens pH variation prior to treatment or discharge.
- *Coagulation/Flocculation.* Coagulation/flocculation is used to assist clarification of biological treatment effluent.
- *Gravity Separation.* Gravity-assisted separation allows suspended matter, heavier than water, to become quiescent and settle; and suspended matter, lighter than water, to float.
- *Emulsion Breaking.* The addition of de-emulsifiers (heat, acid, metal coagulants, polymers, and clays) break down emulsions to produce a mixture of water and free oil and/or an oily floc.
- *Dissolved Air Flotation (DAF).* DAF separates solid or liquid particles from

[3] Process wastewater is defined in 40 CFR 122.2 as ''any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, by-product, intermediate product, finished product, or waste product.''

a liquid phase by introducing air bubbles into the liquid phase. The bubbles attach to the particles and rise to the top of the mixture.

- *Chemical Precipitation.* The addition of chemicals to wastewater to convert soluble metal salts to insoluble metal oxides which are then removed by sedimentation and/or filtration.
- *Chemical Oxidation/Reduction.* By chemical addition, the structure of pollutants are changed so as to disinfect, increase biodegradation and adsorption, or convert pollutants to terminal end products.
- *Air/Steam Stripping.* Air/Steam stripping involves the removal of pollutants from wastewater by the transfer of volatile compounds from the liquid phase to a gas stream.
- *Multimedia/Sand Filtration.* Multimedia/sand filtration involves a fixed (gravity or pressure) or moving bed of porous media that traps and removes suspended solids from water passing though the media.
- *Ultrafiltration.* Extremely fine grade filters are used to remove organic pollutants from wastewater according to the organic molecule size.
- *Reverse Osmosis.* Reverse osmosis relies on differences in dissolved solids concentrations and selective semipermeable membranes to primarily remove dissolved inorganic pollutants.
- *Fabric Filters.* Fabric filters screen suspended matter by means of a cloth or paper barrier.
- *Plate and Frame Pressure Filtration.* Fabric filters under pressure are used to separate solids from liquid streams.
- *Carbon Adsorption.* In this process, wastewater is passed over a medium of activated carbon which adsorbs certain pollutants.
- *Ion Exchange.* The use of certain resins in contact with wastewater removes contaminants of similar charge.

Biological treatment technologies in use include:

- *Aerobic Systems.* Aerobic systems utilize an acclimated community of aerobic microorganisms to degrade, coagulate, and remove organic and other contaminants. They are typically ponds, lagoons or tanks without recycle of biomass.
- *Activated Sludge.* Activated sludge is a continuous flow, aerobic biological treatment process which employs suspended-growth aerobic microorganisms to biodegrade organic contaminants with recycle of biomass.
- *Sequential Batch Reactors.* A sequential batch reactor contains acclimated microorganisms to degrade organic material. The batch process permits equalization, aeration, and clarification in a single tank.
- *Powdered Activated Carbon Biological Treatment.* The addition of granular activated carbon to biological treatment systems enhances the removal of certain organic pollutants.

The typical treatment sequence for a facility depends upon the type of waste accepted for treatment. Most facilities treating metal-bearing wastes use precipitation/sedimentation/filtration to remove metals. Those that treat oily wastes rely on emulsion breaking/gravity separation and/or dissolved air flotation largely to remove oil and grease, organics, and metals. Aerobic batch processes and conventional activated sludge systems were the most widely-used treatment technology for the organic-bearing wastes.

B. Technology Options Considered and Treatment Systems Selected for Basis of Regulation

This section explains how EPA selected the effluent limitations and standards proposed today for the metals, oils, and organics subcategories. To determine the technology basis and performance level for the proposed regulations, EPA developed a database consisting of daily effluent data collected from the Detailed Monitoring Questionnaire and the EPA wastewater sampling program. This database is used to support the BPT, BCT, BAT, NSPS, PSES, and PSNS effluent limitations and standards proposed today. While EPA establishes effluent limitations and pretreatment standards based on a treatment technology, EPA does not require a discharger to use that technology in treating CWT wastewater. Rather, the technologies which may be used to treat wastewater are entirely left to the discretion of the individual CWT operator, as long as the numerical discharge limits are achieved.

In order to establish the proposed limits, EPA reviewed data from treatment systems in operation at a number of treatment facilities to calculate concentration limits that are achievable based on a well-operated system using the proposed technologies. Below is a summary of the technology basis for the proposed effluent limitations in each subcategory.

1. Best Practicable Control Technology Currently Available (BPT)

a. Introduction. EPA today proposes BPT effluent limitations for the three discharge subcategories for the Centralized Waste Treatment Point Source Category. The BPT effluent limitations proposed today would control identified conventional, priority, and non-conventional pollutants when discharged from CWT facilities.

b. Rationale for BPT limitations by subcategory. As previously discussed, CWA Section 304(b)(1)(A) requires EPA to identify effluent reductions attainable through the application of ''best practicable control technology currently available for classes and categories of point sources.'' The Senate Report for the 1972 amendments to the CWA explained how EPA must establish BPT effluent reduction levels. Generally, EPA determines BPT effluent levels based upon the average of the best existing performances by plants of various sizes, ages, and unit processes within each industrial category or subcategory. In industrial categories where present practices are uniformly inadequate, however, EPA may determine that BPT requires higher levels of control than any currently in place if the technology to achieve those levels can be practicably applied. *See A Legislative History of the Federal Water Pollution Control Act Amendments of 1972,* U.S. Senate Committee of Public Works, Serial No. 93–1, January 1973, p. 1468.

In addition, CWA Section 304(b)(1)(B) requires a cost-reasonableness assessment for BPT limitations. In determining the BPT limits, EPA must consider the total cost of treatment technologies in relation to the effluent reduction benefits achieved. This inquiry does not limit EPA's broad discretion to adopt BPT limitations that are achievable with available technology *unless* the required additional reductions are ''wholly out of proportion to the costs of achieving such marginal level of reduction.'' See *Legislative History,* op. cit. p. 170. Moreover, the inquiry does not require the Agency to quantify benefits in monetary terms. See, for example, *American Iron and Steel Institute* v. *EPA,* 526 F. 2d 1027 (3rd Cir., 1975).

In balancing costs against the benefits of effluent reduction, EPA considers the volume and nature of expected discharges after application of BPT, the general environmental effects of pollutants, and the cost and economic impacts of the required level of pollution control. In developing guidelines, the Act does not require or permit consideration of water quality problems attributable to particular point sources, or water quality improvements in particular bodies of water. Therefore, EPA has not considered these factors in developing the limitations being proposed today. See *Weyerhaeuser Company* v. *Costle,* 590 F. 2d 1011 (D.C. Cir. 1978).

In assessing BPT for this industry, EPA considered age, size, process, other engineering factors, and non-water

quality impacts pertinent to the facilities treating waste in each subcategory. For all subcategories, no basis could be found for identifying different BPT limitations based on age, size, process, or other engineering factors for the reasons previously discussed. For a service industry whose service is wastewater treatment, the pertinent factors for establishing the limitations are costs of treatment, the level of effluent reductions obtainable, and non-water quality effects.

EPA determined that, while some CWT facilities are providing adequate treatment of all waste streams, wastewater treatment at some CWT facilities is poor. EPA is concerned that facilities which mix different types of highly concentrated CWT wastes with non-CWT waste streams or with stormwater may not be providing BPT treatment. In addition, while some CWT facilities pretreat subcategory waste streams for effective removal prior to commingling, some facilities mix wastes from different subcategories without pretreatment. This practice reduces the effectiveness of treatment and may lead to inadequate treatment for some waste streams. As a result, the mass of pollutants being discharged at some CWT facilities is higher than that which can be achieved, given the demonstrated removal capacity of certain of the treatment systems that the Agency reviewed. EPA has observed that many CWT facilities recognize that commingling often leads to less effective treatment, and have encouraged their customers to segregate wastes as much as possible. Waste minimization techniques at most manufacturing facilities have also led to increased waste stream segregation.

Comparison of EPA sampling data and CWT industry-supplied monitoring information establishes that, in the case of metal-bearing waste streams, virtually all the facilities are discharging large total quantities of heavy metals. As measured by total suspended solids (TSS) levels following treatment, TSS concentrations are substantially in excess of levels observed at facilities in other industry categories employing the very same treatment technology—10 to 20 times greater than those observed for other point source categories. EPA believes these higher TSS effluent concentrations are due to improper or ineffective treatment of these wastes rather than TSS influent concentration differences between CWT wastewaters and other industrial category wastewaters.

In the case of oil discharges, many facilities are achieving poor removal of oil and grease relative to the performance required for other point source categories. In addition, many sample infrequently for metal and organic constituents in their discharge since these parameters are not included in their discharge permits. Further, some facilities treating organic wastes, while successfully removing organic pollutants through biological treatment, fail to remove metals associated with these organic wastes.

EPA's options to evaluate treatment systems in place at direct discharging CWT facilities were extremely limited since most of the facilities in this industry are indirect dischargers. This is particularly true of the metals and oils facilities. Many CWT indirect dischargers are not required to control discharges of conventional pollutants because the receiving POTWs are designed to achieve removal of conventional pollutants. Therefore, in general, indirect dischargers currently do not monitor or optimize the performance of their treatment systems for control of conventional pollutants. Because BPT applies to direct dischargers, the data used to establish limitations and standards are normally collected from such facilities. For this rule, EPA relied on information and data from widely available treatment technologies in use at CWT facilities discharging indirectly. For non-conventional pollutants, EPA concluded that some technology in place at indirect discharging CWT facilities is appropriate to use as the basis for regulation of direct dischargers. For conventional pollutants, however, EPA largely relied on information and data collected for other point source categories.

(i) *Subcategory A—Metals Subcategory.* The Agency is today proposing BPT limitations for the metals subcategory for 19 pollutants. In developing these limitations, EPA reexamined the treatment options it had looked at for the 1995 proposal at the same time it was assessing one new treatment option. As a result of this reexamination, EPA continues to believe that single-stage, chemical precipitation of mixed, disparate metal-bearing waste streams is not an acceptable technological basis for BPT limitations. As explained in the earlier proposal (60 FR 5478), adequate metals removals are not obtained through single-stage chemical precipitation of mixed-metals waste streams. In the case of complex cyanide, metal-bearing streams, EPA is still proposing to require cyanide removal prior to metals treatment as discussed in the 1995 proposal (60 FR 5477).

For today's proposal, EPA considered three regulatory options (two previously assessed as well as one new treatment option), all relying on chemical precipitation, to reduce the discharge of pollutants from CWT facilities. The three currently available treatment systems for which the EPA assessed performance for the metals subcategory BPT are as follows:

- Option 2[4] Selective Metals Precipitation, Liquid-Solid separation, Secondary Precipitation, and Liquid-Solid Separation.
- Option 3[4] Selective Metals Precipitation, Liquid-Solid Separation, Secondary Precipitation, Liquid-Solid Separation, Tertiary Precipitation, and Clarification.
- Option 4[4] Batch precipitation, Liquid-Solid Separation, Secondary Precipitation, Clarification, and Sand Filtration.

For a more detailed discussion of the basis for the limitations and the basis for the technologies selected, see the technical development document as well as the discussion in the 1995 proposal at 60 FR 5477.

The first treatment option (Option 2) that EPA evaluated as a basis for today's proposed BPT limitations for CWT facilities is based on ''selective metals precipitation.'' ''Selective metals precipitation'' is a specialized metals removal technology that tailors precipitation conditions to the metal to be removed. The extent to which a metal is precipitated from a solution will vary with a number of factors, including pH, temperature, and treatment chemicals. Selective metals precipitation adjusts these conditions sequentially in order to provide maximum precipitation of metals. Selective metals precipitation requires segregation of incoming waste streams and careful characterization of the metals content of the waste stream. Next, there are multiple precipitations in batches at different pH levels in order to achieve maximum removal of specific metals. Selective metals precipitation results in formation of a metal-rich filter cake. This treatment option requires numerous treatment tanks and personnel to handle incoming waste streams, greater quantities of treatment chemicals, and increased monitoring of the batch treatment processes. One of the benefits of this technology, however, is that it results in a metal-rich filter

[4] The numbering of options reflects the numbering for the 1995 proposal. Options 2 and 3 were first considered for that proposal. Option 4 is a new technology EPA evaluated for this proposal. EPA is no longer evaluating Option 1 as the treatment basis for proposed limitations and standards.

cake that facilities employing this treatment have the option of selling as feed material for metal reclamation. For metals streams which contain concentrated cyanide complexes, achievement of the BPT limitations under this option would require alkaline chlorination in a two step process prior to metals treatment. These BPT cyanide limitations are discussed in greater detail below.

The second treatment option EPA evaluated (Option 3) is the same as Option 2 with an additional, third precipitation step added for increased pollutant removals. Again, for metals streams which contain concentrated cyanide complexes, like Option 2, for Option 3, BPT limitations are also based on alkaline chlorination in a two step process before metal precipitation.

The new technology EPA evaluated as the basis of BPT for this regulation (Option 4) is a two stage precipitation process. The first stage of this technology is similar to the Option 1 chemical precipitation technology considered (and rejected) for the earlier proposal. It is based on chemical precipitation followed by some form of solids separation and sludge dewatering. In Option 4, however, a second precipitation step is also performed followed by clarification and sand filtration. Generally, BPT limitations based on Option 4 would require some facilities to use increased quantities of treatment chemicals, perform additional monitoring of batch processes, perform an additional precipitation step, and add a clarification and sand filtration step. Once again, for metals streams which contain concentrated cyanide complexes, like Options 2 and 3, alkaline chlorination in a two step process prior to metals treatment is also part of the Option 4 treatment process that forms the basis for BPT limitations.

At the time of the original proposal, the Agency considered treatment Options 1, 2 and 3 only, and proposed to adopt BPT limitations based on Option 3. In today's proposal, the Agency is proposing to adopt BPT effluent limitations based on Option 4 for the metals subcategory.

EPA's decision to base BPT limitations on Option 4 treatment reflects primarily an evaluation of two factors: the degree of effluent reductions attainable through this technology and the total cost of the proposed treatment in relation to the effluent reductions benefits. The Agency is proposing to adopt BPT limitations based on the removal performance of the Option 4 treatment system for the following reasons. First, the Option 4 technology is one that is readily applicable to all facilities that are treating metal-bearing waste streams. It is currently used at 25 percent of the facilities in this subcategory. Second, the adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. Option 4 would remove approximately 13.8 million pounds annually of conventional pollutants now discharged to the Nation's waters. Third, the Agency assessed the total cost of water pollution controls likely to be incurred for Option 4 in relation to the effluent reduction benefits and determined these costs were economically reasonable—less than $0.19 per pound.

The Agency has decided not to propose BPT limitations based on Option 3, selective metals precipitation, for a number of reasons. First, while both Option 3 and Option 4 provide significant pollutant removals, are economically achievable, and expected to result in non-water quality benefits through increased recycling of metals, Option 3 is nearly four times as costly as Option 4. Furthermore, there is little, if any, expected increase in total removals associated with the Option 3 technology. (Total removals associated with Option 3 are virtually identical to those achieved by Option 4—less than 1.25 percent greater.) Second, EPA has some concern about whether selective metals precipitation could be applied throughout the industry because, currently, only one facility is employing this technology. Moreover, as noted above, the effectiveness of selective metals precipitation depends, in part, on the separation and holding of waste streams in numerous treatment tanks. EPA is aware that there may be physical constraints on the ability of certain facilities to install the additional, required treatment tanks. These and other factors support EPA's determination not to propose limitations based on the Option 3 technology. Because Option 2 treatment also includes selective metals precipitation, the Agency is similarly rejecting it as a basis for BPT.

The Agency used chemical precipitation treatment technology performance data from the Metal Finishing regulation (40 CFR Part 433) to establish direct discharge limitations for TSS because the facility from which the Option 4 limitations were derived is an indirect discharger and the treatment system is not designed to optimize removal of conventional parameters. EPA has concluded that the transfer of this data is appropriate given the absence of adequate treatment technology for this pollutant at the only otherwise well-operated BPT CWT facility. Based on a review of the data, EPA believes that similar wastes (in terms of TSS concentrations) are being treated at both metal finishing and centralized waste treatment facilities, and that the use of the metal finishing data to derive TSS limits for this subcategory is warranted. Since the technology basis for the transferred limitations includes clarification rather than sand filtration, the Agency also included a clarification step prior to sand filtration (which the Option 4 facility does not have) in the technology basis for Option 4 for facilities subject to BPT. Therefore, because the technology basis for CWT is based on primary chemical precipitation, primary clarification, secondary chemical precipitation, secondary clarification, and sand filtration and the technology basis for Metal Finishing is based on primary precipitation and clarification only, EPA concluded that CWT facilities will perform similarly (or better) when treating TSS in wastes in this subcategory. EPA requests comment on its approach to developing TSS limitations for this subcategory.

EPA believes it is important to note that BPT limitations established by Option 4 are based on data from a single, well-operated system. Generally, for purposes of defining BPT effluent limitations, EPA looks at the performance of the best treatment technology and calculates limitations from some level of average performance measured at facilities which employ this ''best'' treatment technology. In reviewing technologies currently in use in this subcategory, however, EPA found that facilities generally utilize a single stage chemical precipitation step—a technology which generally does not achieve adequate metals removals for the waste streams observed at these operations. EPA did identify a handful of facilities which utilize additional metals wastewater treatment, generally secondary chemical precipitation. Of these facilities, EPA believes that only one accepts a full spectrum of waste, often with extremely high metals concentrations and provides, therefore, a suitable basis to determine the performance that a well-designed and operated system can achieve for a wide range of raw waste concentrations. Consequently, EPA is proposing to adopt BPT limitations based on performance data from this facility.

Cyanide Subset. The presence of high cyanide concentrations, as discussed above, detrimentally affects the performance of metal precipitation

processes due to the formation of metal-cyanide complexes. Effective treatment of such wastes typically involves a cyanide destruction step prior to any metal precipitation steps. Consequently, in the case of metal streams which contain concentrated cyanide complexes, EPA based BPT limitations on an additional treatment step to destroy cyanide before metals precipitation. EPA considered three regulatory options for the destruction of cyanide:

- Cyanide Option 1 Alkaline Chlorination.
- Cyanide Option 2 Alkaline Chlorination in a two step process.
- Cyanide Option 3 Confidential Cyanide Destruction.

The Option 1 technology, alkaline chlorination, is widely used for cyanide destruction in this industry as well as others. For this subset, therefore, it represents current performance. EPA also evaluated Option 2 BPT limitations based on the use of alkaline chlorination in a two-step process. In the first step, cyanide is oxidized to cyanate in a pH range of 9 to 11. The second step oxidizes cyanate to carbon dioxide and nitrogen at a controlled pH of 8.5. In addition, EPA considered a third technology which is extremely effective in reducing cyanide. Application of this technology resulted in cyanide reductions of 99.8 percent for both amenable and total cyanide. The Option 3 technology is claimed as confidential.

At the time of the original proposal, the Agency proposed limitations based on what is Cyanide Option 2 for the cyanide subset of the metals subcategory. This technology remains the basis for the BPT limitations for metals streams with concentrated cyanide complexes proposed today. Although Option 3 provides greater removals than Option 2, the Agency has decided to reject Option 3 as a basis for BPT limitations because the technology is not publicly available. The cyanide destruction system used at the one facility employing Option 3 is a proprietary process that does not employ off-the-shelf technology. There are, in addition, several reasons supporting the selection of limitations based on Option 2. First, the facility achieving Option 2 removals accepts a full spectrum of cyanide waste. Consequently, the treatment used by the Option 2 facility can be readily applied to all facilities in the subset of this subcategory. Second, adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subset. Finally, the Agency assessed the total cost for Option 2 in relation to the effluent reduction benefits and determined these costs were economically reasonable.

The proposal would require monitoring for compliance with the cyanide limitations for cyanide-bearing wastes when the wastewater exits the cyanide destruction process rather than after mixing with other process wastewater. Alternatively, the facility may monitor for compliance after mixing if the cyanide limitations are adjusted using the ''building block approach'' (see Section XIV.F), assuming the adjusted cyanide limitations do not fall below the minimum analytical detection limit.

(ii). Subcategory B—Oils Subcategory. The Agency is today proposing BPT limitations for the oils subcategory for 22 pollutants. EPA examined four regulatory options in establishing BPT effluent reduction levels for this subcategory of the CWT Industry. EPA is no longer considering any of the four options it proposed in 1995 (60 FR 5478).

The four technology options considered today for the oils subcategory BPT limitations are based on emulsion breaking/gravity separation and:

- Option 8[5] Dissolved Air Flotation
- Option 8v[5] Air Stripping with Emissions Control and Dissolved Air Flotation
- Option 95 Secondary Gravity Separation and Dissolved Air Flotation
- Option 9v[5] Air Stripping with Emissions Control, Secondary Gravity Separation, and Dissolved Air Flotation

For a more detailed discussion of the basis for the limitations and the basis for the technologies selected, see the technical development document.

As previously noted, at the time of the original proposal, the Agency also evaluated four other options. The first treatment option considered was based on emulsion breaking/gravity separation only. Next, EPA considered BPT limitations based on emulsion breaking/gravity separation and ultrafiltration. The third treatment operation evaluated included emulsion breaking/gravity separation, ultrafiltration, carbon adsorption, and reverse osmosis. Finally, EPA looked at basing limitations on adding an additional carbon adsorption step to the third treatment system. While emulsion breaking/gravity separation alone is widely used in this subcategory, the Agency dropped it from further consideration at the time of the original proposal because EPA believed that emulsion breaking/gravity separation alone did not adequately control the pollutants of concern relative to other widely available technologies, and, therefore, did not represent a BPT technology. The Agency dropped the final option from consideration at the time of the original proposal because EPA's analysis showed that some pollutant concentrations actually increased following the additional carbon adsorption.

At the time of the 1995 proposal, the Agency co-proposed BPT limitations based on emulsion breaking/gravity separation and ultrafiltration as well as emulsion breaking/gravity separation and ultrafiltration with added carbon adsorption and reverse osmosis to remove metals compounds found at significant levels in this subcategory. Because the costs associated with the latter option were four times higher than emulsion breaking/gravity separation and ultrafiltration, EPA was concerned about its impacts on facilities in this subcategory. EPA co-proposed BPT based on both options, because the oil and grease limits based on emulsion breaking/gravity separation and ultrafiltration were less stringent than BPT effluent limitations guidelines promulgated for other industries. EPA was concerned that the effect of promulgating such limitations would be to encourage ineffective off-site treatment of oily waste streams. As mentioned previously, after the 1995 proposal, EPA collected additional information on facilities in the oils subcategory and revisited its conclusion about the size and nature of the oils subcategory. Further, as detailed earlier, EPA published a Notice of Data Availability in 1996 describing the new information and EPA's revised assessment of the oils subcategory. Based on analyses presented in the 1996 Notice, EPA determined it should no longer consider emulsion breaking/gravity separation and ultrafiltration with added treatment steps as the basis for BPT limitations because the projected total costs relative to effluent reduction benefits were not economically reasonable.

Based on comments to the 1995 proposal and the 1996 Notice of Data Availability, EPA was strongly encouraged to look at alternate technology options to emulsion breaking/gravity separation and ultrafiltration. This concern was driven in large measure by the fact that many of the facilities in the oils subcategory are classified as ''small businesses'' and

[5] As noted above, EPA is no longer considering Oils Option 1–4 proposed in 1995. During development of today's proposal, EPA also preliminarily considered seven other options numbered 5–9v. EPA has chosen to focus its attention on Option 8 through 9v.

the economic cost of installing and operating the ultrafiltration technology was quite high. Additionally, many commenters stated that ultrafiltration is a sophisticated technology which would be difficult to operate and maintain with the majority of these waste streams. Commenters also noted that the Agency had failed to consider non-water quality impacts adequately, particularly those associated with the disposal of the concentrated filtrate from these operations. As a result, based on comments to the original proposal, the 1996 Notice of Data Availability, and additional site visits, EPA identified several other treatment options that were efficient, produced tighter oil and grease limits, and were less expensive. As such, EPA is no longer considering emulsion breaking/gravity separation and ultrafiltration as an appropriate technology for limitations for the oils subcategory.

Small entity representatives and SBREFA panel members requested that EPA examine emulsion breaking/gravity separation and secondary gravity separation as a potential treatment technology basis for the oils subcategory. Secondary gravity separation employs additional separation steps following the initial emulsion breaking/gravity separation step. During development of today's proposal, EPA examined emulsion breaking/gravity separation and secondary gravity separation as a possible BPT technology. EPA has data from a single facility which utilizes this technology (as a pretreatment step prior to dissolved air flotation and biological treatment). As previously noted, the oils subcategory wastewaters often contain significant concentrations of metals pollutants. The data show that this technology alone did not adequately control the metal pollutants of concern relative to other widely available technologies. That is, removals of metals were much lower than those obtained from single-stage chemical precipitation and DAF units. Therefore, the Agency is not proposing that emulsion breaking/gravity separation and secondary gravity separation without further treatment as BPT treatment for this subcategory. EPA requests comment on this issue and paired influent/effluent data from well-operated facilities employing this technology.

The first option evaluated for today's proposed BPT limitations for the oils subcategory, Option 8, is based on the use of emulsion breaking/gravity separation and dissolved air flotation (DAF). DAF separates solid or liquid particles from a liquid phase by introducing air bubbles into the liquid phase. The bubbles attach to the particles and rise to the top of the mixture. Often, chemicals are added to increase the removal of metal constituents. Generally, BPT limitations based on this option would require some facilities to install and operate a DAF system or, for some facilities with currently installed DAF systems, to improve monitoring and operation. For oils streams with significant concentrations of metals, this option would also require some facilities to use increased quantities of treatment chemicals to enhance metals removals. The second technology evaluated for BPT limitations, Option 9, is emulsion breaking/gravity separation and secondary gravity separation in combination with dissolved air flotation. Secondary gravity separation involves using a series of tanks to separate the oil and water and then skimming the oily component off. The resulting water moves to the next step. The gravity separation steps are then followed by dissolved air flotation (DAF). As mentioned previously, EPA believes all oils facilities currently utilize some form of gravity separation, although most perform primary gravity separation only. Generally, BPT limitations based on this option would require some facilities to perform additional gravity separation steps, perform better monitoring and operation of their DAF system, or install and operate a DAF system. For oils streams with relatively high concentrations of metals, this option would also require some facilities to use increased quantities of treatment chemicals to enhance the removal of metals.

EPA also considered both options in combination with air stripping (with emissions control) to control the emission of volatile pollutants into the air.

The Agency is today proposing BPT limitations for the oils subcategory based on Option 9, emulsion breaking/gravity separation, secondary gravity separation and dissolved air flotation for two reasons. First, the adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. Second, the Agency assessed the total costs of water pollution controls likely to be incurred for this option in relation to the effluent reduction benefits and determined these costs were reasonable at $0.69/lb ($1997).

EPA proposes to reject Option 8 because BPT pollutant removals based on Option 8, for a number of parameters (particularly oil and grease), are much less stringent than current BPT effluent limitations guidelines promulgated for other industries. EPA believes that the vast majority of DAF systems in use in this subcategory are not performing optimally. As mentioned earlier, all of the DAF systems studied by EPA were used at facilities that discharge to POTWs. As such, optimal control of oil and grease is not required. Many do not even monitor the oil and grease levels in the material entering, and in some cases, leaving the DAF.

For direct dischargers, EPA's cost analysis was not able to distinguish between Option 8 and Option 9. All of the direct discharging facilities in this subcategory for which EPA estimated costs currently employ rather extensive treatment (relative to the rest of the facilities in the oils subcategory), but the treatment technologies for the majority of the facilities are different from the technology basis for Option 8 or Option 9. While EPA believes these treatment technologies would allow these facilities to comply with either option for many pollutants, none of these in-place treatment technologies would achieve significant removals of metals pollutants. Therefore, for both options, EPA included costs of installing and operating dissolved air flotation. EPA believes its estimates (for both options) are, in fact, overestimates. EPA does, however, believe that meeting the more stringent Option 9 will result in additional removals while the cost differences will be negligible. EPA solicits comments on its conclusion as well as quantitative information on the cost differences for such facilities.

EPA has studied the performance of DAF systems in other largely indirect discharging industries and has found the same lack of optimal performance. EPA believes that all facilities, including indirect dischargers, should monitor the levels of oil and grease entering and leaving the DAF system. Even though oil and grease levels are not of great concern for indirect dischargers, removal of many organic compounds is directly related to removal of oil and grease. As such, the overall efficacy of the DAF system in removing the vast majority of specific toxic parameters can be improved by improving removals of oil and grease.

As explained above, the facilities sampled were not required to optimize their oil and grease or TSS removals because they discharge to POTWs that treat these pollutants. Current POTW/local permit limitations for oil and grease in this subcategory range from 100 mg/L to 2,000 mg/L and for TSS from 250 mg/L to 10,000 mg/L. Many have no oil and grease or TSS limits at all. EPA believes that only one of the

systems in this subcategory for which EPA has data was designed to remove oil and grease and TSS effectively. EPA believes the oil and grease and TSS removals are uniformly inadequate at the other facilities included in the proposed BPT limitations calculations for other parameters. Consequently, EPA based the proposed oil and grease and TSS limitations on data from a single facility. EPA solicits additional data on oil and grease and TSS discharges from oils facilities which are designed and operated to effectively remove these parameters.

Additionally, EPA is aware of a direct discharging oils facility which has an oil and grease daily maximum permit limit of 13 mg/L and a TSS daily maximum permit limit of 55 mg/L. EPA plans to request discharge data from this facility when it commences commercial operation and intends to revisit the oil and grease and TSS limitations as proposed today based on its review of new data received, including data from the newly discharging facility. EPA has also reviewed data from the Industrial Laundries and the TECI rulemaking for dissolved air flotation systems. Given the similarities in the treated waste, EPA is considering whether use of this data is appropriate in determining CWT limitations for oil and grease for this subcategory. EPA requests comments on this issue as well as data on the efficacy of dissolved air flotation systems in treating CWT wastewaters.

EPA projects additional pollutant removals associated with the technology basis for the proposed limitations, has costed facilities for the additional technology (a series of gravity separation steps) associated with this option, and has determined that it is economically achievable. However, EPA believes that many CWT facilities may be able to achieve these limitations using emulsion breaking/gravity separation and DAF only. As described above, EPA believes that many DAF systems in this industry are not performing optimally. Careful observation of the influent and effluent of these systems would allow facilities to better understand and control the resulting effluent.

The Agency is not proposing BPT limitations based on air stripping with overhead recovery or destruction. While air stripping with overhead recovery or destruction would seem to provide some additional protection from volatile and semi-volatile pollutants to all environmental media, no substantial additional removal of volatile and semi-volatile parameters from the water would be achieved through these options since the proposed wastewater discharge limits would be the same with or without the additional technology basis of air stripping with overhead recovery. The use of air stripping coupled with emissions capture reduces or eliminates the air emissions that otherwise would occur by the volatilization of the volatile organic pollutants in gravity separation and dissolved air flotation systems. However, compliance with any proposed limitation would not require installation of such equipment.

EPA highly recommends that plants incorporate air stripping with overhead recovery or destruction into their wastewater treatment systems for more complete environmental protection. EPA also notes that CWT facilities determined to be major sources of hazardous air pollutants are currently subject to maximum achievable control technology (MACT) as promulgated for off-site waste and recovery operations on July 1, 1996 (61 FR 34140).

(iii). *Subcategory C—Organics Subcategory.* The Agency is today proposing BPT limitations for the organics subcategory for 17 pollutants. For this proposal, EPA identified two new regulatory options for consideration in establishing BPT effluent reduction levels for this subcategory of the CWT industry.

At the time of the original proposal, EPA also identified two regulatory options for consideration in establishing BPT effluent reduction levels for this subcategory (60 FR 5479). EPA is no longer considering these options as a basis for BPT limitations. The first treatment system EPA examined as a basis for BPT limitations included the following treatment steps: equalization, two air strippers in series equipped with a carbon adsorption unit for control of air emissions, biological treatment in the form of a sequential batch reactor, and finally a multimedia filtration unit. The second option was the same as the first, but included a final carbon adsorption step.

At the time of the original proposal, the Agency selected BPT limitations based on the first treatment system even though, theoretically, the second system under consideration should have provided greater removal of pollutants. EPA selected the first system as the technology basis since EPA's sampling data showed that, following the carbon adsorption treatment step, specific pollutants of concern actually increased. Therefore, for today's proposal, EPA is no longer considering the second system which includes the final carbon adsorption unit as the basis for BPT limitations. Additionally, EPA has concluded that it should no longer consider the first system (equalization, air stripping, biological treatment, and multimedia filtration) as the basis for BPT limitations. The multimedia filtration step is primarily included in the treatment train to protect the carbon adsorption unit installed downstream from high TSS levels. Since EPA rejected the option which includes the carbon adsorption unit, EPA similarly rejects the option which includes the multimedia filtration step.

The two technology options considered for the organics subcategory BPT are as follows:

- Option 3—Equalization, Air-Stripping with emissions control, and Biological Treatment.
- Option 4—Equalization and Biological Treatment.

For a more detailed discussion of the basis for the limitations and the basis for the technologies selected see the technical development document.

The first option, Option 3, evaluated for today's proposed BPT limitations for the organics subcategory is based on the following treatment system: equalization, two air-strippers in series equipped with a carbon adsorption unit for control of air emissions, and biological treatment in the form of a sequential batch reactor. BPT Option 4 effluent limitations are based on the same treatment system as Option 3 without the use of air strippers (and associated carbon adsorption units).

The Agency is today proposing to adopt BPT effluent limitations based on the Option 4 technology for the organics subcategory. As mentioned earlier, the Agency decision is based primarily on the pollutant reductions, the cost and impacts to the industry, and non-water quality impacts. Unlike the other BPT limitations proposed today, the adoption of limitations based on Option 4 would not represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. EPA believes that all direct discharging facilities in this subcategory currently employ equalization and biological treatment systems. EPA has assumed that all facilities which currently utilize equalization and biological treatment will be able to meet the BPT limitations without additional capital or operating costs. While EPA recognizes that some facilities may incur increased operating costs associated with the proposed limits, EPA believes these increases are negligible and has not quantified them. EPA solicits comments on its assumptions for these facilities as well as specific data which would aid in quantifying these increases. Additionally, many of these facilities

are not currently required to monitor for organic parameters or are only required to monitor a couple of times a year. The estimated costs associated with complying with BPT limitations for this subcategory are associated with additional monitoring only. The Agency believes the additional monitoring is warranted, and will promote more effective and consistent treatment at these facilities. The Agency recognizes that in some cases this monitoring may lead to changes in operating procedures that could involve additional costs to the facilities, but does not expect these additional costs will be significant.

The Agency proposes to reject Option 3. BPT effluent limitations associated with Option 3 treatment would be essentially the same as those established by Option 4. The main difference between Option 4 and Option 3 is that Option 3, which includes air stripping with emissions control, would be effective in reducing the levels of volatile and semi-volatile organic pollutants in all environmental media, not just the water. The use of air stripping with emissions control would reduce or eliminate the air emissions that otherwise would occur by the volatilization of the volatile organic pollutants in the biological system.

However, while EPA is concerned about volatile pollutants, particularly for this subcategory, compliance with proposed limitations would not necessarily require installation of equipment to capture air emissions. EPA notes that CWT facilities determined to be major sources of hazardous air pollutants are subject to maximum achievable control technology (MACT) as promulgated for off-site waste and recovery operations on July 1, 1996 (61 FR 34140) as 40 CFR Part 63.

Once again, the selected BPT option is based on the performance of a single indirect discharging facility. While EPA identified four direct discharging organics subcategory facilities which utilize biological treatment, EPA could not use data from these facilities to establish limitations because they commingle organics subcategory wastewaters with other CWT subcategory wastewaters or other categorical wastewaters. Many facilities that are treating wastes that will be subject to effluent limitations for the Organic Waste Subcategory also operate other industrial processes that generate much larger amounts of wastewater than the quantity of off-site generated organic waste receipts. The off-site generated organic waste receipts are directly mixed with the wastewater from the other industrial processes for treatment. Therefore, identifying facilities to sample for limitations development was difficult because the waste receipts and treatment unit effectiveness could not be properly characterized for off-site generated waste. The treatment system on which Option 4 is based was one of the few facilities identified which treated organic waste receipts separately from other on-site industrial wastewater.

The Agency used biological treatment performance data from the Thermosetting Resin Subcategory of the OCPSF regulation to establish direct discharge limitations for BOD_5 and TSS because the facility from which Option 4 limitations were derived is an indirect discharger and the treatment system is not operated to effectively remove conventional pollutants. EPA has concluded that the transfer of this data is appropriate given the absence of adequate treatment technology for these pollutants at the only otherwise well-operated BPT CWT facility in this subcategory that the Agency was able to evaluate. Moreover, EPA concluded that the biological treatment systems at CWT facilities will perform similarly to those at OCPSF facilities. EPA based this conclusion on its review of the NPDES permits for the four direct discharging facilities in this subcategory. Two of these facilities are located at manufacturing facilities which commingle their wastewater for treatment and are already subject to OCPSF. The other two facilities have conventional pollutant limits which are lower than those proposed today. EPA has concluded that all of these facilities should be able to comply with the transferred limitations without incurring additional costs. Likewise, EPA has not estimated any additional pollutant removals associated with this data transfer. EPA requests comment on its approach for developing conventional pollutant limitations for this subcategory.

2. Best Conventional Technology (BCT)

In today's rule, for the conventional pollutants covered under BPT for all subcategories, EPA is not proposing effluent limitations guidelines and standards different from those proposed for BPT. In deciding whether to propose BCT limits, EPA considered whether there are technologies that achieve greater removals of conventional pollutants than proposed for BPT, and whether those technologies are cost-reasonable under the standards established by the CWA—the ''BCT Cost Test.'' For all three subcategories, EPA identified no technologies that can achieve greater removals of conventional pollutants than those that are the basis for BPT that are also cost-reasonable under the BCT Cost Test. Accordingly, EPA is proposing BCT effluent limitations equal to the proposed BPT effluent limitations guidelines and standards. For additional information on the ''BCT Cost Test,'' refer to XI.E.

3. Best Available Technology Economically Achievable (BAT)

EPA today is proposing BAT effluent limitations for all subcategories of the CWT Industry based on the same technologies selected as the basis for BPT for each subcategory. Therefore, the proposed BAT limitations are the same as the proposed BPT limitations. The BAT effluent limitations proposed today would control identified priority and non-conventional pollutants discharged from facilities. As described in the BPT discussion, in general, the adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. Additionally, EPA has evaluated the economic impacts associated with adoption of these limitations and found them to be economically achievable. This analysis is discussed in detail in Section XI.F.

With the exception of the metals subcategory, EPA has not identified any more stringent treatment technology option different from those evaluated for BPT that might represent best available technology economically achievable for this industry. For the metals subcategory of today's proposed rule, EPA did consider as BAT technology two treatment technologies that it had evaluated for the 1995 proposal, Option 2 and Option 3, based on the use of selective metals precipitation. However, the costs to the industry for Option 2 and Option 3 are more than four times greater than the cost of the BPT option, Option 4, with little additional toxics removal.[6] Given the comparable toxic removals, EPA has concluded it should not adopt a more costly option.

For the oils and organics subcategories, EPA has evaluated treatment technologies for BAT limitations, which theoretically should provide greater removal of pollutants of concern. For example, EPA identified an add-on treatment technology to technologies considered for BPT—carbon adsorption—that should have further increased removals of pollutants of concern. However, EPA's data show

[6] EPA's data show that Option 3 would remove approximately 2% more additional toxic pound-equivalents than Option 4.

increases rather than decreases in concentrations of specific pollutants of concern. Consequently, EPA is not proposing BAT limitations based on this technology.

As with BPT limitations, EPA is proposing to require monitoring for compliance with the limitations at a point after treatment, but prior to combining the CWT process wastewater with other wastewater as explained below. Alternatively, as detailed in Section XIV.F, EPA is proposing that the facilities may monitor for compliance after mixing if the limitations are adjusted using the ''building block approach'', assuming the adjusted limitations do not fall below the minimum analytical detection limit. Many facilities operate other processes that generate wastewater. The common treatment of this wastewater with CWT wastewater may result in dilution due to the difference in concentration of waste streams. Also, when a facility mixes CWT wastewater with non-contaminated stormwater before discharge, compliance may be due to dilution rather than treatment. Also, as with BPT, monitoring for compliance for the Total Cyanide limitations at facilities in the metals subcategory which treat concentrated cyanide-bearing metal waste is after cyanide pretreatment and prior to metals treatment, unless the building block approach can be used to calculate end-of-pipe limitations that are not below the detection limit. This ensures that cyanide will not interfere with metals treatment. Therefore, EPA's estimate of compliance monitoring costs associated with the proposed BAT limitations is based on the assumption that facilities will monitor at a point after treatment, but prior to commingling.

While EPA has based its monitoring cost estimates on separate monitoring for each subcategory (and Total Cyanide), as with BPT limitations, if the facility can demonstrate to the permitting authority the capability of achieving the effluent limitations for each subpart (and Total cyanide), the facility may monitor for compliance after mixing. See Section IX.D for further information regarding monitoring to demonstrate compliance with the regulation.

4. New Source Performance Standards (NSPS)

As previously noted, under Section 306 of the Act, EPA must propose and promulgate Federal standards for performance for new sources for categories of sources. Section 306(e) provides that, after the effective date of the standards of performance, the owner or operator of a new source may not operate the source in violation of any applicable standard of performance. The statute defines ''standard of performance'' as a standard for the control of the discharge of pollutants which reflect the greatest degree of effluent reduction achievable through application of the best available demonstrated control technologies, processes, operating methods or other alternatives, including, where practicable, a standard permitting no discharge of pollutants. See Section 306(a)(1) of the CWA, 33 U.S.C. 1316(a)(1). Congress envisioned that new treatment systems could meet tighter controls than existing sources because of the opportunity to incorporate the most efficient processes and treatment systems into plant design. See general discussion of legislative history in *American Iron and Steel Institute* v. *EPA*, 526 F.2d 1027, 1057–59 (3rd Cir. 1975). In establishing these standards, Congress directed EPA to consider the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements. As the legislative history of the CWA makes clear, consideration of cost in establishing new source standards is given less weight than in establishing BAT limitations because pollution control alternatives are available to new sources that would not be available to existing sources. See Legis. Hist. (Sen. Muskie statement of House-Senate Conference Report on 1972 Act).

For the oils and the organics subcategory, EPA is proposing NSPS that would control the same conventional, priority, and non-conventional pollutants proposed for control by the BPT effluent limitations. The technologies used to control pollutants at existing facilities are fully applicable to new facilities. Furthermore, EPA has not identified any technologies or combinations of technologies that are demonstrated for new sources that are different from those used to establish BPT/BCT/BAT for existing sources. Therefore, EPA is establishing NSPS oils and organics subcategories similar to the oils and organics subcategories for existing facilities, and proposing NSPS limitations that are identical to those proposed for BPT/BCT/BAT.

For the metals subcategory, however, EPA is proposing NSPS effluent limitations based on the technology proposed in 1995—selective metals precipitation, liquid-solid separation, secondary precipitation, liquid-solid separation, and tertiary precipitation and clarification. This technology (Option 3) provides the most stringent controls attainable through the application of demonstrated technology. On the other hand, Option 4 provides slightly lower removals than Option 3 at significantly lower costs. EPA's determination to propose limitations based on Option 3 is closely tied to its preliminary conclusion that facilities will generally choose to recover and reuse metals, whereas facilities employing technologies to comply with Option 4 limitations will generally dispose of metal-bearing sludges in landfills. EPA believes that the selection of either Option 3 or Option 4 for NSPS satisfies the requirements that Congress established in the Clean Water Act for new sources. However, provided new sources employ recovery and reuse, Option 3 also promotes the objectives of the Pollution Prevention Act.

EPA believes that this technology is fully applicable to all metal waste streams in the CWT industry, including those with high concentrations of total dissolved solids (TDS). Commenters to the original proposal had questioned whether the level of TDS in wastewater would increase the solubility of the metals, and negatively affect the ability of the Option 3 treatment technology to perform optimally. As detailed in VI.I, EPA has concluded that the evidence do not either support or refute a direct relationship between TDS and the solubility of metals in water. Finally, EPA has concluded that there is no barrier to entry for new sources to install, operate, and maintain treatment systems that will achieve discharge levels associated with these Option 3 technologies. See XI.H for a more detailed discussion of EPA's barrier to entry analysis.

While EPA has concluded that the Option 3 technology does not pose a barrier to entry for new sources (using EPA's standard methodology for evaluating economic impacts for new sources), EPA recognizes that aside from the projected non-water quality benefits, EPA only estimates an additional 3.6 percent removal of pollutants and an additional 2.3 percent removals of toxics associated with the Option 3 technology as compared to the Option 4 technology. Additionally, EPA estimates that the start-up costs associated with the Option 3 technology range from about 46% to 50% greater than those associated with the Option 4 technology. (These estimates do not account for costs associated with RCRA permits, which may be a substantial portion of the start-up costs depending on the flow for which the facility is designed.) Finally, EPA acknowledges that the operating and maintenance

costs associated with Option 3 range from about 23% to 160% greater than those associated with Option 4. These estimates do not include monitoring costs which would be the same for either option, and which can be substantial. These estimates also do not include the reduction in landfilling costs associated with Option 3 or the revenue generated from the sale of recovered metals. For more information on the cost of pollutant removals for existing sources, see Table XI.M–1. EPA solicits comments and data on the market for recovered metals, and revenue generated from the sale of recovered metals. Finally, EPA solicits comments on the extent to which new sources may choose to recover and reuse metals through the Option 3 technology basis or simply comply with the limitations and continue to dispose of their metal sludges in a landfill.

EPA's determination to propose limitations based on Option 3 is closely tied to its preliminary conclusion that facilities will choose to recover and reuse metals. In the event that EPA concludes that new sources would not generally recover and reuse metals despite the improved ability to do so, EPA will promulgate NSPS based on the proposed BAT technology basis, Metals Option 4.

The Agency used performance data from the CWT metals subcategory BAT limitations data set to establish NSPS limitations for oil and grease because the facility from which the NSPS limitations were derived did not have oil and grease in its influent at treatable levels during EPA's sampling episodes. EPA has concluded that transfer of this data is appropriate given that the technology basis for NSPS includes selective metals precipitation and an additional precipitation step. As such, EPA has every reason to believe that facilities employing the NSPS technology could achieve the limitations, given the fact that the oil and grease limitation is based on performance at a facility employing less treatment steps.

5. Pretreatment Standards for Existing Sources (PSES)

Indirect dischargers in the CWT industry, like direct dischargers, accept wastes for treatment that contain many priority and non-conventional pollutants. Like direct dischargers, indirect dischargers may be expected to discharge many of these pollutants to POTWs at significant mass and concentration levels. EPA estimates that CWT indirect dischargers annually discharge approximately 10.2 million pounds of metal and organic pollutants to POTWs.

CWA Section 307(b) requires EPA to promulgate pretreatment standards to prevent pass-through of pollutants from POTWs to waters of the U.S. or to prevent pollutants from interfering with the operation of POTWs. EPA is establishing PSES for this industry to prevent pass-through of the same pollutants controlled by BAT from POTWs to waters of the U.S.

a. Pass-through analysis. Before proposing pretreatment standards, the Agency examines whether the pollutants discharged by the industry pass through a POTW or interfere with the POTW operation or sludge disposal practices. In determining whether pollutants pass through a POTW, the Agency compares the percentage of a pollutant removed by POTWs with the percentage of the pollutant removed by discharging facilities achieving BAT removals. A pollutant is deemed to pass through the POTW when the average percentage removed nationwide by well-operated POTWs (those meeting secondary treatment requirements) is less than the percentage removed by facilities complying with BAT effluent limitations guidelines for that pollutant.

This approach to the definition of pass-through satisfies two competing objectives set by Congress: (1) that standards for indirect dischargers be equivalent to standards for direct dischargers, and (2) that the treatment capability and performance of the POTW be recognized and taken into account in regulating the discharge of pollutants from indirect dischargers. Rather than compare the mass or concentration of pollutants discharged by the POTW with the mass or concentration of pollutants discharged by a BAT facility, EPA compares the percentage of the pollutants removed by the plant with the POTW removal. EPA takes this approach because a comparison of mass or concentration of pollutants in a POTW effluent with pollutants in a BAT facility's effluent would not take into account the mass of pollutants discharged to the POTW from non-industrial sources nor the dilution of the pollutants in the POTW effluent to lower concentrations from the addition of large amounts of non-industrial wastewater.

For this effluent guideline as well as past effluent guidelines, in conducting the pass-through analysis, EPA used a study of 50 well-operated POTWs (''Fate of Priority Pollutants in Publicly Owned Treatment Works,'' September 1982, EPA 440/1–82/303) to estimate the percent removals of CWT pollutants in POTWs. Additionally, due to the large number of pollutants applicable for this industry, EPA also used data from the National Risk Management Research Laboratory (NRMRL) database to augment the POTW database for the pollutants which the 50 POTW Study did not cover. The editing criteria are described in Section VI.F and in Chapter Seven of the technical development document.

In addition to the pass-through analysis described above, EPA has historically considered pass-through analysis for volatile pollutants by applying a volatile override test which is based on the Henry's law constant. Pollutants which are deemed to be volatile by this test are deemed to pass through because a substantial part of the overall percent removal estimated at the POTW represents emission of the pollutant into the air rather than treatment. For this proposal, however, EPA has not applied this test. EPA chose not to apply this test because the overall percent removal for many of these volatile pollutants estimated for the proposed technologies also represents emission of the pollutant into the air rather than treatment. As described under the discussion of BPT and BAT, EPA considered technology options which would have controlled these volatile pollutants in all media, but is proposing not to set limitations based on these technologies. While EPA is concerned about emissions of pollutants in all environmental media, EPA has concluded that limitations based on such technologies (e.g., air stripping with overhead recovery) would not be significantly different from the limitations being proposed today. Thus, EPA has concluded that the use of authorities other than the CWA to address air emissions from CWT wastewater is preferable. As such, EPA did not apply the volatile override test in conducting its pass-through analyses for this industry.

b. PSES options considered. For the metals and organics subcategories, the Agency today is proposing to establish pretreatment standards for existing sources (PSES) based on the same technologies as proposed for BPT and BAT.[7] These standards would apply to existing facilities in the metals or organics subcategories of the CWT industry that discharge wastewater to publicly-owned treatment works (POTWs) and would prevent pass-through of pollutants and help control sludge contamination. Based on EPA's

[7] For the metals subcategory, the technology basis for PSES does not include the second clarification step since this step was only included to meet the transferred TSS limitations which apply to direct dischargers only.

pass-through analysis, all of the BAT pollutants controlled by the metals subcategory and six of the BAT pollutants controlled by the organics subcategory would pass through and are proposed for PSES. The pollutants in the organics subcategory that were determined not to pass-through are antimony, copper, zinc, acetophenone, phenol, pyridine, 2-butanone, 2-propanone, and 2,4,6-trichlorophenol.

As explained earlier, in establishing PSES, the Agency generally sets the technology basis for PSES equivalent to BAT and then conducts a pass-through analysis. The Agency also considers the economic achievability of alternative technology options. In developing PSES for the oils subcategory, EPA carefully considered several types of economic impacts: to the CWT oils facilities, to the CWT oils firms, and to specific segments of the CWT industry such as small businesses. Early results from these analyses supported basing PSES on Option 8 rather than Option 9 (the basis for the BAT limitations) since the additional technology associated with Option 9, while removing some additional pollutants, was associated with higher costs and greater adverse economic impact. Therefore, EPA preliminarily concluded that Option 9 was not economically achievable for indirect dischargers.

As previously explained, EPA held a number of discussions with the small business community engaged in oils treatment operations. EPA also convened a SBREFA review panel for this proposal. The panel and the small entity representatives provided many pertinent discussions and insights on possible impacts of this regulation to small businesses. Many commented that even Option 8 was too expensive. However, as detailed in Section V.B, EPA believes that all CWT wastes should be treated effectively. EPA has concluded based on its economic analysis, that Option 8 is economically achievable—even in light of the projected level of impacts to small businesses.

More recent results of the economic analysis for this proposal (which include final cost estimates, etc.) indicate that projected impacts for Option 9, while greater than Option 8, were not as high as originally projected in our preliminary analyses. However, EPA estimates that removals for Option 9 for indirect dischargers are only about one percent higher than removals for Option 8. As such, the difference in the removals between the two options may be negligible.

In contrast, in estimating the economic impacts associated with Option 9, EPA costed facilities for the additional treatment technology associated with the Option 9 technology basis. While not as high as originally projected, these impacts are still significant. In particular, EPA estimates additional process closures and impacts to small businesses associated with the Option 9 technology basis.

Therefore, EPA today is proposing to establish PSES standards for the oils subcategory based on the oils Option 8 technology—emulsion breaking/gravity separation and dissolved air flotation. Fourteen of the BAT pollutants controlled by the oils subcategory would pass through and are proposed for regulation. The six pollutants in the oils subcategory that were determined not to pass through are arsenic, butyl benzyl phthlate, cadmium, chromium, lead, and mercury. Additionally, EPA requests comments on whether any treatment technology basis more expensive than the Option 8 technology basis (dissolved air flotation) produces significantly greater pollutant removals and is economically achievable for indirect dischargers in this subcategory.

6. Pretreatment Standards for New Sources (PSNS)

Section 307 of the Act requires EPA to promulgate pretreatment standards for new sources (PSNS) at the same time it promulgates new source performance standards (NSPS). Such pretreatment standards must prevent the discharge of any pollutant into a POTW that may interfere with, pass through, or may otherwise be incompatible with the POTW (Section 307(c) of the CWA, 33 U.S.C. § 1317(c)). EPA promulgates categorical pretreatment standards for existing sources based on BAT technology for existing sources. EPA promulgates pretreatment standards for new sources based on best available demonstrated technology for new sources (*National Ass'n of Metal Finishers* v. *EPA*, 719 F.2d 624 (3rd Circ. 1983)). The legislative history explains that Congress required simultaneous establishment of new source standards and pretreatment standards for new sources for two reasons. First, Congress wanted to ensure that any new source industrial user achieve the highest degree of internal effluent controls necessary to insure that such user's contribution to the POTW would not cause a violation of the POTW's permit. Second, Congress wished to eliminate from the new user's discharge any pollutant that would pass through, interfere, or was otherwise incompatible with POTW operations.

As set forth in Section IX.B.5(a) of this preamble, EPA determined that a broad range of pollutants discharged by CWT industry facilities pass through POTWs. EPA considered the same technologies discussed previously for BAT, NSPS, and PSES as the basis for PSNS.

EPA is proposing that pretreatment standards for new sources be set equal to NSPS for priority and non-conventional pollutants for all subcategories. Since the pass-through analysis remains unchanged, the Agency is proposing to establish PSNS for the same priority and non-conventional pollutants as are being proposed for PSES. In addition, given the potential for co-dilution, EPA is again proposing that monitoring to demonstrate compliance with these standards be required immediately following treatment of the regulated streams. However, as with PSES, EPA is alternatively proposing to allow facilities to monitor for compliance after mixing if the standards are adjusted using the combined waste stream formula (see Section XIV.F), assuming the standards do not fall below the minimum analytical detection limits. EPA considered the cost of the proposed PSNS technology for new facilities. EPA concluded that such costs are not so great as to present a barrier to entry, as demonstrated by the fact that currently operating facilities are using these technologies.

C. Non-Regulated Pollutants of Concern

Section VIII.B discusses the pollutants of concern for each of the subcategories. EPA has not chosen to regulate all of these pollutants. Chapter 7 of the technical development document lists the pollutants of concern that EPA proposes not to regulate and the bases for these decisions.

D. Monitoring To Demonstrate Compliance With the Regulation

The effluent limitations and pretreatment standards EPA is proposing today are intended to apply to discharges resulting from treatment of the subcategory wastes and not to mixtures of subcategory wastes with other wastes or mixtures of different subcategory wastes. However, in certain circumstances on a site specific basis, these effluent limitations or pretreatment standards may apply, through the use of the combined waste stream formula or the building block approach (see Section XIV.F), to discharges from the treatment of subcategory wastes that are mixed prior to or after treatment with other wastewater streams prior to discharge. EPA is not proposing to establish a single set of limits (and pretreatment standards) for the pollutants proposed

to be regulated in this category at the point of discharge for mixed waste streams, given the difficulty of ensuring comparable treatment to what would be achieved by the separate subcategory limitations (or standards).

Currently, many facilities in this industry may operate other processes which generate wastes requiring treatment and may add these wastes to CWT wastes before treatment and discharge. If the addition of these other wastes was not taken into account in developing site-specific permit limitations, this may result in dilution rather than required treatment of CWT wastes due to the difference in concentration of waste streams. In addition, if a facility discharges its non-contact stormwater in combination with its CWT discharge and if it was not accounted for in the development of the facility's permit limitations, a similar problem of dilution, rather than treatment of wastes, may result.

Similarly, for facilities which treat concentrated cyanide-bearing metal wastes, the development of limitations and pretreatment standards for Total Cyanide was based on cyanide levels that are demonstrated to be achieved after cyanide pretreatment and prior to metals precipitation. Separate pretreatment of cyanide in metal-bearing waste streams is necessary in order to ensure that cyanide will not interfere with metals treatment. However, in certain circumstances, these Total Cyanide limitations (or standards) may apply, through the use of the combined waste stream formula or the building block approach, to discharges of Total Cyanide mixed with other wastewaters.

Consequently, EPA has preliminarily determined that many plants may need to conduct compliance monitoring immediately following treatment of subcategory waste streams (for example, metal-bearing, oily, or organic-bearing, as appropriate). EPA does not believe that the use of the combined waste stream formula or the building block approach will be possible for all plants in this industry either, because the proportion of wastes being treated from different subcategories will change frequently, or because co-dilution of different subcategory waste types with another would require mixed-waste limits or standards below the minimum analytical detection limit for some regulated pollutants. In such situations, permits will require separate monitoring of each subcategory wastestream following treatment and prior to mixing. Consequently, all compliance monitoring cost estimates presented today are based on separate monitoring of each subcategory. A detailed discussion of compliance monitoring for facilities which accept waste in more than one subcategory can be found in Section XIV.F of today's notice and in Chapter 14 of the technical development document.

In estimating compliance costs and developing limitations, EPA assumed daily monitoring for conventional pollutants by direct dischargers, and monitoring for toxic and non-conventional pollutants by both indirect and direct dischargers as follows: for the metals subcategory, daily monitoring for metals, and for the oils and organics subcategories, weekly monitoring for both metals and organics. EPA believes these frequencies are appropriate given the variability of receipts generally seen on a day-to-day and week-to-week basis at CWT facilities. EPA notes that the recommended monitoring frequencies, as proposed today, are greatly reduced from the recommended monitoring frequencies in the original proposal. Even so, EPA recognizes that, in many cases, monitoring costs still represent a significant share of the compliance costs of this proposed rule, particularly for many of the small businesses in the oils subcategory.

As such, for facilities in the oils subcategory, EPA is considering an alternative monitoring scheme. Facilities may either (1) monitor for all pollutants as proposed today; or (2) monitor for the conventional, metal parameters, and an indicator parameter such as hexane extractable material (HEM) or silica gel treated-hexane extractable material (SGT–HEM) in lieu of the organic pollutants. EPA is currently conducting a study to determine which organic pollutants are measured by SGT–HEM and HEM. If facilities choose to monitor for organics with an indicator parameter, the facility must comply with all applicable requirements, including the requirement that pollutant reductions must not be achieved through dilution. EPA solicits comments on this monitoring scheme and the use of indicator parameters in general.

As another alternative that would target monitoring relief to small businesses, the SBREFA panel discussed at length the merits and disadvantages of providing alternative limitations and pretreatment standards for small businesses based on an assumption of less frequent monitoring for facilities owned and operated by small businesses. Under this approach, EPA would establish two sets of effluent limitations and pretreatment standards. Three major issues with this approach were raised during the panel process.

First, current permit application forms do not require facilities to indicate whether or not they are owned and operated by small businesses. EPA defines small CWT companies as those having sales less than $6 million (the Small Business Administration definition of a small business for SIC code 4953, Refuse Systems). Information on a firm's sales is not always publicly available. Industry representatives have indicated that revenue would be a suitable criterion to identify small businesses for purposes of a reduced monitoring regime and that facilities would be comfortable providing firm-level economic information to the federal, state, or local permitting authority as long as confidentiality is protected. Note that the designation of small business could not be claimed confidential for facilities that are granted monitoring relief or alternative limitations on this basis, although the data on which the designation was based could be. EPA solicits comment on this potential basis for identifying small businesses for purposes of monitoring relief.

Second, EPA does not generally establish nationally-applicable monitoring frequency requirements. Even when EPA has established minimum monitoring requirements (See 63 FR 18504 April 15, 1998), state and local permitting authorities are free to establish more frequent monitoring than that specified by EPA. Permitting authorities have historically used factors such as raw waste variability, wastewater flow, type of treatment, and compliance history to determine appropriate monitoring frequencies. EPA is uncertain whether or not, and to what extent, recommendations on monitoring frequency based upon firm revenue would be considered by permitting authorities. This is even more uncertain given that the factors historically used by permitting authorities do not correlate to firm size in this industry. Permitting authorities that establish more frequent monitoring requirements for facilities that pose a greater threat to water quality or POTW treatment system effectiveness may not be inclined to allow facilities with higher loadings to monitor less frequently than other facilities due to the revenues of the parent firm. EPA solicits comment on the likelihood that permitting authorities would follow EPA recommendations regarding reduced monitoring frequencies for small business owned and operated facilities.

Third, although the technology basis and the long-term average for both sets of limitations would be the same, the

monthly average limitations calculated based upon reduced monitoring assumptions would be higher (less stringent). This is due to the influence of variability on the limitation calculation which is much more pronounced with reduced monitoring: a ''monthly average'' limitation based upon an assumption of once a month monitoring equals the calculated daily maximum limitation; a ''monthly average'' limitation based on daily monitoring would have a value closer to that of the long-term average. While both limitations (daily maximum and monthly average) are based upon the same technology and same long-term average performance, EPA is concerned that higher monthly average limitations for facilities with less frequent required monitoring might allow these facilities to target a less stringent level of treatment than that reflected by the long-term average. Although they would run a greater risk of violation if they did this, they might be able to reduce their liability for violation by monitoring early in the month, and conducting subsequent monitoring within the month if that first event is in violation of their (higher) monthly average. EPA recognizes that this potential exists to some extent even without higher limitations based on less frequent monitoring, but it becomes more pronounced as required monitoring frequencies decrease. One way of addressing this concern would be to allow the alternative limitations to apply only when compliance monitoring is conducted at a comparable frequency to that assumed in the development of the alternate limitations. For example, a facility could be required to determine in advance a random day on which compliance monitoring for a month would be conducted. Any other monitoring that the facility might perform for its own purposes (eg., process control) could not be used to lower the monthly average for compliance purposes. EPA solicits comment on this and other alternatives to ensure that any monitoring relief the Agency might provide does not jeopardize environmental performance.

EPA has issued guidance to permit authorities on implementing reduced reporting and monitoring requirements in its ''Interim Guidance for Performance-based Reduction of NPDES Permit Monitoring Frequencies'' (EPA–833–B–96–001, April 1996). Ordering information is available from http://www.epa.gov/OWM/avail.htm.

E. Determination of Long-Term Averages, Variability Factors, and Limitations

This subsection describes the statistical methodology used to develop long-term averages, variability factors, and limitations for BPT, BCT, BAT, NSPS, PSES, and PSNS. The same basic procedures apply to the calculation of all limitations and standards for this industry, regardless of whether the technology is BPT, BCT, BAT, NSPS, PSES, or PSNS. For simplicity, the following discussion refers only to ''limitations''; however, the discussion also applies to standards.

The proposed limitations for pollutants for each option, as presented in today's notice, are provided as ''daily maximums'' and ''maximums for monthly averages.'' Definitions provided in 40 CFR 122.2 state that the daily maximum limitation is the ''highest allowable 'daily discharge' '' and the maximum for monthly average limitation is the ''highest allowable average of 'daily discharges' over a calendar month, calculated as the sum of all 'daily discharges' measured during a calendar month divided by the number of 'daily discharges' measured during that month.'' Daily discharges are defined to be the '' 'discharge of a pollutant' measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.''

EPA calculates the limitations based upon percentiles chosen with the intention, on one hand, to be high enough to accommodate reasonably anticipated variability within control of the facility and, on the other hand, to be low enough to reflect a level of performance consistent with the Clean Water Act requirement that these effluent limitations be based on the ''best'' technologies. The daily maximum limitation is an estimate of the 99th percentile of the distribution of the daily measurements. The maximum for monthly average limitation is an estimate of the 95th percentile of the distribution of the monthly averages of the daily measurements. The percentiles for both types of limitations are estimated using the products of long-term averages and variability factors.

In the first of two steps in estimating both types of limitations, EPA determines an average performance level (the ''long-term average'') that a facility with well-designed and operated model technologies (which reflect the appropriate level of control) is capable of achieving. This long-term average is calculated from the data from the facilities using the model technologies for the option. EPA expects that all facilities subject to the limitations will design and operate their treatment systems to achieve the long-term average performance level on a consistent basis because facilities with well-designed and operated model technologies have demonstrated that this can be done. In the second step of developing a limitation, EPA determines an allowance for the variation in pollutant concentrations when processed through extensive and well designed treatment systems. This allowance for variance incorporates all components of variability including shipping, sampling, storage, and analytical variability. This allowance is incorporated into the limitations through the use of the variability factors which are calculated from the data from the facilities using the model technologies. For a few pollutants, EPA transferred the long-term average, variability factors, or limitations from another source such as another pollutant group or industrial category (as explained briefly in Section IX.B.1 and in detail in Chapter 10 of the technical development document). If a facility operates its treatment system to meet the relevant long-term average, EPA expects the facility to be able to meet the limitations. Variability factors assure that normal fluctuations in a facility's treatment are accounted for in the limitations. By accounting for these reasonable excursions above the long-term average, EPA's use of variability factors results in limitations that are generally well above the actual long-term averages. The data sources, the selection of pollutants and data, and the calculations of pollutant long-term averages and variability factors are briefly described below. More detailed explanations are provided in the technical development document.

The long-term averages, variability factors, and limitations were based upon pollutant concentrations collected from three data sources: EPA sampling episodes, the 1991 Detailed Monitoring Questionnaire, and data submitted by industry after the 1995 proposal. These data sources are described in Sections VI.B and VI.C. When the data from the EPA sampling episodes at a facility met the data editing criteria described below, EPA used the sampling data and any monitoring data provided by the facility.

EPA calculated long-term averages for the initial pollutant of concern list for each option and each subcategory. As described in section VIII.B, the initial pollutant of concern list for each subcategory consisted of parameters that were detected at treatable levels in at

least 10 percent of the daily influent wastewater samples collected in the EPA sampling episodes. Treatable levels were defined as those equal to or greater than ten times the minimum analytical detection limit. Generally, the ''minimum analytical detection limit'' was the value published in the chemical analytical method. Chapter 15 of the technical development document identifies the minimum analytical detection limit for all pollutants proposed to be regulated. In calculating long-term averages, EPA applied two additional criteria to the concentration data sets for the pollutants of concern. If a pollutant data set from an EPA sampling episode met both criteria, the EPA sampling data and any monitoring data from that facility were used in calculating the long-term averages for the pollutant. The first criteria EPA applied was whether EPA had detected the pollutant at treatable levels in 50 percent or more of the daily influent wastewater samples. If not detected at treatable levels in 50 percent or more of the samples, then EPA looked to see if the long-term average value of the daily influent wastewater samples for a particular pollutant was equal to or greater than the treatable levels for that pollutant and the pollutant was detected in at least 50% of the influent wastewater samples (at any level). If the pollutant data set met the first criteria, then EPA applied the second criteria. In the second criteria, EPA confirmed that the percent removal for the data set was greater than zero. (Percent removal was calculated as 100 times the ratio of the difference between the influent and effluent averages to the influent average.) If the concentration data for any of the pollutant data sets met both criteria, then EPA calculated a long-term average for the pollutant. For some pollutants in some options, none of the data sets from the EPA sampling episodes met both criteria; thus, EPA did not calculate a long-term average for that pollutant for that option. Further, as a result of applying the criteria, EPA may have proposed slightly different lists of regulated pollutants for the options within a given subcategory.

For each facility that met the criteria and that had the model technologies, the long-term average for each pollutant was calculated by arithmetically averaging the daily values of the pollutant concentrations. (For facilities with continuous flow systems, a daily value was the average of the concentrations of a pollutant on a given calendar day. For facilities with batch systems, a daily value was the average of the concentrations of a pollutant in a batch.) The pollutant long-term average for an option was the median of the long-term averages from the facilities with the model technologies for the option.

The daily variability factors for each option were developed in four steps for each group of pollutants with similar chemical structures. (The group for each pollutant is identified in the technical development document.) The first step evaluated the size of the facility data set that met the criteria and the censoring types of its daily values. As described in Chapter 10 of the technical development document, a facility data set was excluded if the number of non-censored values was too small to reliably estimate the statistical distributional parameters used in calculating the daily variability factor. (A non-censored value is a measured value, i.e., a concentration value greater than the minimum analytical detection limit.) The second step was to develop a daily variability factor for each pollutant at each facility by fitting a modified delta-lognormal distribution to the daily values for the pollutant at each facility. The daily variability factor for each pollutant at each facility is the ratio of the estimated 99th percentile of the distribution of the daily pollutant concentration values divided by the expected value, or mean, of the distribution of the daily values. The third step was to develop one daily variability factor for each pollutant for each option by averaging the daily variability factors for the selected facilities with the technology basis for the option. The fourth step was to develop group daily variability factors for each option. The daily variability factor for each group was the median of the daily variability factors obtained in the third step for the pollutants in the group and option. The daily maximum limitation for a pollutant was the product of the pollutant long-term average and its group daily variability factor.

Similarly, the monthly variability factors for each option were developed in the same basic four steps described for the daily variability factors. However, in the second step, the modified delta-lognormal distribution was fit to monthly averages rather than daily measurements. Another change was that the 95th percentile was used rather than the 99th percentile. Thus, the monthly variability factor for each pollutant at each facility was the ratio of the estimated 95th percentile of the distribution of the monthly average divided by the expected value, or mean, of the distribution of the monthly averages. Although the monitoring frequency necessary for a facility to demonstrate compliance is determined by the local permitting authority, EPA must assume a monitoring frequency in order to develop the distribution of monthly averages. The distribution fit to averages of 20 daily values will be different from the distribution fit to averages of 4 daily values. The number of measurements used to calculate the monthly averages corresponds to the number of days that the pollutant is assumed to be monitored during the month. For example, the organic compounds are expected to be monitored once a week (which is approximately four times a month); therefore, the monthly variability factor was based upon the distribution of monthly averages comprising four daily values. Certain pollutants such as oil and grease (HEM) are expected to be monitored daily; therefore, the monthly variability factor was based upon the distribution of averages comprising 20 daily values (most facilities operate only on weekdays of which there are approximately 20 in each month). The assumed monitoring frequency of each pollutant is identified in Table IX.E–1. The maximum for monthly average limitation for a pollutant was the product of the pollutant long-term average and its group monthly variability factor.

TABLE IX.E–1.—MONITORING FREQUENCIES USED TO ESTIMATE MONTHLY VARIABILITY FACTORS

Assumed monitoring frequency	Metals subcategory	Oils subcategory	Organics subcategory
Daily Monitoring (20 per month) ...	Hexane-Extractable Oil and Grease (HEM). TSS ..... Antimony Arsenic Cadmium Chromium	Hexane-Extractable Oil and Grease (HEM). TSS	BOD_5. TSS.

TABLE IX.E–1.—MONITORING FREQUENCIES USED TO ESTIMATE MONTHLY VARIABILITY FACTORS—Continued

Assumed monitoring frequency	Metals subcategory	Oils subcategory	Organics subcategory
	Chromium, hex Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Tin Titanium Vanadium Zinc Total Cyanide (if applicable).		
Weekly Monitoring	None	Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Mercury Molybdenum Tin Titanium Zinc Alpha terpineol Bis-2-ethylhexyl phthalate. Butyl benzyl phthlate. Carbazole. Flouranthene. n-decane. n-octadecane.	Antimony. Copper. Molybdenum. Zinc. Acetophenone. Aniline. Benzoic Acid. o-cresol. p-cresol. Phenol. Pyridine. 2-butanone. 2-propanone. 2,3-dichloroaniline. 2,4,6-trichlorophenol.

In section XVI of today's reproposal, EPA is soliciting comment on two specific aspects of the procedures used to determine the limitations. Both of these requests are described further below.

First, EPA reiterates its request for additional data that can be used to evaluate autocorrelation in the data. When data are said to be positively autocorrelated, it means that measurements taken at different time periods are similar. For example, positive autocorrelation would be present in the data if the final effluent concentration of oil and grease was relatively high one day and was likely to remain at similar high values the next and possibly succeeding days. In many industries, measurements in final effluent are likely to be similar from one day to the next because of the consistency from day-to-day in the production processes and in final effluent discharges due to the hydraulic retention time of wastewater in basins, holding ponds, and other components of wastewater treatment systems. EPA believes that autocorrelation is unlikely to be present in daily measurements from wastewater from this industry. Unlike other industries, where the industrial processes are expected to produce the same type of wastewater from one day to the next, the wastewater from CWT industry is generated by treating wastes from different sources and industrial processes. The wastes treated on a given day will often be different from the waste treated on the following day. Because of this, autocorrelation would be expected to be absent from measurements of wastewater from the CWT industry. In the preamble to the 1995 proposal, EPA requested additional monitoring data that would allow for evaluating autocorrelation in daily measurements. The monitoring data that EPA has received thus far are insufficient for the purpose of evaluating the autocorrelation in CWT operations. To determine autocorrelation in the data, many measurements for each pollutant would be required with values for every single day over an extended period of time. Such data were not available to EPA. EPA again requests additional monitoring data for this purpose in Section XVI.

Second, EPA solicits comment on using pollutant variability factors rather than group variability factors in calculating the limitations. The pollutant variability factor is the average of the variability factors for a particular pollutant from facilities with the model technologies for the option. The group variability factor is the median of the pollutant variability factors from pollutants with similar chemical structures. For the 1995 proposed limitations and in today's proposed limitations, EPA generally used the group variability factor, multiplied by the pollutant long-term average, to calculate each pollutant limitation. (Exceptions are described in Chapter 10 of the technical development document.) For today's reproposal, EPA alternatively considered using the pollutant variability factor instead of the group variability factor. For pollutants where pollutant variability factors could not be calculated (due to data constraints), EPA would continue to use the group variability factor. Using the group variability factor eliminates the low and high pollutant variability factors. Thus, using individual

variability factors, limitations for some pollutants would be more stringent and for others less stringent. EPA solicits comment on whether the pollutant or group variability factors or some combination should be used in calculating the limitations to accurately reflect the variability of the pollutants discharged by the CWT industry.

X. Costs and Impacts of Regulatory Alternatives

A. Methodology for Estimating Costs and Pollutant Reductions Achieved by Treatment Technologies

EPA estimated industry-wide compliance costs and pollutant loadings associated with the effluent limitations and standards proposed today using data collected through survey responses, site visits, sampling episodes, and comments submitted on the 1995 proposal and 1996 Notice of Data Availability. EPA calculated costs based on a computerized design and cost model developed for each of the technology options considered. The Agency estimated current pollutant loads and projected pollutant load reductions using treatment data collected from industry and EPA sampling data.

EPA developed industry-wide costs and pollutant loads using data for 145 facilities which responded to the 308 Questionnaire or commented to the 1996 Notice of Data Availability. These 145 facilities represent a census of the metals and organics subcategory, but only a subset of the facilities in the oils subcategory. For the oils facilities, EPA calculated costs and loads for the subset and then modeled the national population by adjusting the oils results upward to estimate the entire oils subcategory population.

In order to develop costs and to estimate the pollutant reductions associated with this proposal, EPA estimated the current performance of existing wastewater treatment at each of the facilities. In the 308 Questionnaire and in the Detailed Monitoring Questionnaire, EPA had solicited effluent monitoring data in order to estimate current performance. For the majority of facilities, however, data were not available either for all pollutants of concern or for pollutants before mixing CWT wastewater and non-CWT wastewater. Therefore, EPA developed methodologies to estimate current discharge concentrations of each pollutant of concern for each facility. The methodologies vary between subcategory and facility based on: 1) the analytical data available; 2) the characteristics of the facilities in the subcategory; and 3) the facility's treatment train. For facilities in multiple subcategories, EPA estimated loadings for that portion of the waste stream in each subcategory and then added them together. Chapter 12 of the technical development document describes the methodologies used to estimate loadings for each subcategory in detail.

For its costing analysis, EPA assumed that facilities whose current discharge concentrations were not meeting the limitation concentrations proposed in today's notice would incur costs as a result of compliance with this guideline. EPA developed costs for a facility which did not have the BPT treatment technology in place to install the BPT technology. In the case of a facility already having BPT treatment technology in place but not currently meeting the proposed limits, EPA determined the applicable upgrade to the treatment system. Typical upgrades included increasing aeration capacity or residence time, installing new equipment, or increasing chemical usage.

Next, EPA used a computer cost model to estimate compliance costs for the selected technology options after taking into account treatment in place, current discharge concentrations of pollutants, and wastewater flow rates for each facility. EPA programmed the computer cost model with technology-specific modules which calculated the costs for various combinations of technologies as required by the BPT/BAT options and the facilities' wastewater characteristics. The model calculated the following costs for each facility:

- Capital costs for installed wastewater treatment technologies;
- Operating and maintenance (O&M) costs for installed wastewater treatment technologies, including labor, electrical, and chemical usage costs; and
- Solids handling costs, including capital, O&M, and disposal.

EPA developed additional cost factors for the capital and O & M costs in order to account for site work, interface piping, general contracting, engineering, instrumentation and controls, buildings, site improvements, legal/administrative fees, interest, contingency, and taxes and insurance.

Other direct costs associated with compliance included retrofit costs associated with integrating the existing on-site treatment with new equipment, RCRA part B permit modification costs for hazardous facilities, additional land, if any, and monitoring costs.

During the SBREFA panel, one industry representative noted that EPA may have underestimated the costs associated with dissolved air flotation for low-flow facilities. In fact, this industry representative suggested that capital costs for dissolved air flotation for low-flow facilities may be twice as high as EPA's estimate. Subsequently, EPA reexamined its costing curves for dissolved air flotation, and determined that EPA had underestimated DAF costs for low-flow facilities. The DAF costs included in the analyses presented today reflect the revised DAF cost curves.

Detailed information on EPA's compliance cost estimates and methodologies, including the cost curves for all treatment technologies considered as the basis for today's proposed rule, is located in the ''Detailed Costing Document for the Centralized Waste Treatment Industry.'' EPA encourages all interested parties to refer to this document and provide comment on any aspect of the methodology or the data used to estimate compliance costs associated with today's proposal.

B. Regulatory Costs

The Agency estimated the cost for CWT facilities to achieve each of the effluent limitations and standards proposed today. This section summarizes these estimated costs and the technical development document discusses them in more detail. All cost estimates in this section are expressed in terms of 1997 dollars. The cost components reported in this section represent estimates of the investment cost of purchasing and installing equipment, the annual operating and maintenance costs associated with that equipment, land costs associated with that equipment, costs for facilities to modify existing RCRA permits, and additional costs for discharge monitoring.

1. BPT Costs

Table X.B–1 summarizes, by subcategory, the total capital expenditures, and annual O&M costs for implementing BPT (on a pre-tax basis). The total capital expenditures for the process change component of BPT are estimated to be $4.08 million with annual O&M costs of $1.77 million.

TABLE X.B–1.—COST OF IMPLEMENTING BPT REGULATIONS (IN 1997 DOLLARS)

Subcategory	Number of facilities [1]	Total capital and land costs	Annual O&M costs	Pre-tax annual costs [2]
Metals Treatment and Recovery	9	3,195,900	2,471,400	2,852,800
Oils Treatment and Recovery	5	943,200	391,400	485,200
Organics Treatment	4	80,000	215,800	233,200
Combined Regulatory Option	14	4,219,100	3,078,600	3,560,000

[1] There are 14 direct dischargers. Because some direct dischargers include operations in more than one subcategory, the sum of the facilities with operations in any one subcategory exceeds the total number of facilities.

[2] Because annual costs are used to evaluate the economic impacts of options for each subcategory as well as the CWT industry as a whole, lump-sum costs for modifying a RCRA permit are included in the annual costs for each RCRA facility in a subcategory and in the combined option. These costs are counted only once in the combined option, but may appear in the annual costs for more than one subcategory if a RCRA facility has operations in more than one subcategory. Therefore, the annual cost of the combined option is not equal to the sum of the subcategory combined costs. For the combined BPT option, the total lump-sum costs across all facilities of modifying RCRA permits are $340,800.

EPA notes that the BPT costs and all analyses presented today do not include the additional capital costs that may be associated with the transferred TSS limitations for the metals subcategory. For some metals subcategory facilities, EPA intends to include capital costs in addition to the costs associated with the BPT metals subcategory technology basis in order to comply with the transferred TSS limitation. These additional costs are projected to increase EPA's current estimate of the annualized costs for these metals subcategory facilities by zero to fifteen percent, depending on treatment in place. EPA will refine its BPT costs estimates for this subcategory prior to promulgation.

2. BCT/BAT Costs

The Agency estimated that there would be no incremental cost of compliance for implementing BCT/BAT because the technology used to develop BCT/BAT limitations is identical to BPT, and the costs are included with BPT.

3. PSES Costs

The Agency estimated the cost for implementing PSES applying the same assumptions and methodology used to estimate cost of implementing BPT. Table X.B–2 summarizes, by subcategory, the capital expenditures and annual O&M costs for implementing PSES. The total capital expenditures for the process change component of PSES are estimated to be $36.1 million with annual O&M costs of $10.5 million.

TABLE X.B–2.—COST OF IMPLEMENTING PSES REGULATIONS (IN 1997 DOLLARS)

Subcategory	Number of facilities [1]	Total capital and land costs	Annual O&M costs	Pre-tax annual costs [2]
Metals Treatment and Recovery	41	8,014,200	7,140,100	8,088,200
Oils Treatment and Recovery	123	18,519,000	11,343,400	13,362,000
Organics Treatment	14	11,226,200	1,730,800	2,929,200
Combined Regulatory Option	147	40,316,500	20,078,600	24,300,000

[1] There are 147 indirect dischargers. Because some indirect dischargers include operations in more than one subcategory, the sum of the facilities with operations in any one subcategory exceeds the total number of facilities.

[2] Because annual costs are used to evaluate the economic impacts of options for each subcategory as well as the CWT industry as a whole, lump-sum costs for modifying a RCRA permit are included in the annual costs for each RCRA facility in a subcategory and in the combined option.

These costs are counted only once in the combined option, but may appear in the annual costs for more than one subcategory if a RCRA facility has operations in more than one subcategory. Therefore, the annual cost of the combined option is not equal to the sum of the subcategory combined costs. For the combined PSES option, the total lump-sum costs across all facilities of modifying RCRA permits are $2,557,100.

C. Pollutant Reductions

The Agency estimated pollutant reductions for CWT activities achieving each of the effluent limitations and standards proposed today. This section summarizes these estimated reductions and Chapter 12 of the technical development document discusses them in detail. Chapter 12 details the methodologies used to estimate reductions as well as some methodological issues related to the loadings estimates.

Some members of the SBREFA panel expressed concern that the Agency's estimates of baseline loadings, post-regulation loadings, and pollutant removals may be too high for certain parameters due to methodological issues. These issues relate to the relatively small number of CWT plants that EPA uses to characterize typical conditions of the industry as a whole at baseline and post-regulation, EPA's representation of ''non-detect'' data, EPA's method of imputing data, and EPA's randomization procedure for assigning baseline pollutant loadings for the oils subcategory. Following the completion of the SBREFA panel, EPA reexamined all methodological issues raised by the panel. For this proposal, EPA modified its approach to attributing pollutant concentrations values to non-detects in samples with very high sample specific detection values. This, and other issues raised by the panel, is discussed in detail in Chapter 12 of technical development document and the SBREFA Panel Report. EPA encourages all interested parties to refer to these documents and provide comment on any aspect of the methodology used to estimate baseline loadings, post-regulation loadings, and pollutant removals.

1. Conventional Pollutant Reductions

EPA has calculated how adoption of the proposed BPT/BCT limitations

would reduce the total quantity of conventional pollutants that are discharged. To do this, the Agency developed an estimate of the long-term average (LTA) loading of BOD_5, TSS, and Oil and Grease[8] that would be discharged after the implementation of BPT. Next, these BPT/BCT LTAs for BOD_5, TSS, and Oil and Grease were multiplied by annual wastewater flows for each direct discharging facility in the subcategory to calculate BPT/BCT mass discharge loadings for BOD_5, TSS, and Oil and Grease for each facility. The BPT/BCT mass discharge loadings were subtracted from the estimated current loadings to calculate the pollutant reductions for each facility. Each subcategory's BPT/BCT pollutant reduction was summed to estimate the total facility's pollutant reduction for those facilities treating wastes in multiple subcategories. Subcategory reductions, obviously, were obtained by summing individual subcategory results. The Agency estimates that the proposed regulation will reduce BOD_5 discharges by approximately 8.05 million pounds per year, TSS discharges by approximately 6.3 million pounds per year, and oil and grease discharges by approximately 0.32 million pounds per year.

2. Priority and Non-conventional Pollutant Reductions

Today's proposal would reduce discharges of priority and non-conventional pollutants. Applying the same methodology used to estimate conventional pollutant reductions attributable to application of BPT/BCT control technology, EPA has also estimated priority and non-conventional pollutant reductions for each facility by subcategory. Because EPA has proposed BAT limitations equivalent to BPT, there are no additional pollutant reductions associated with BAT limitations.

a. Direct Facility Discharges (BPT/BAT). The estimated reductions in priority and non-conventional pollutants directly discharged in treated final effluent resulting from implementation of BPT/BAT are listed in Table X.C–1. The Agency estimates that proposed BPT/BAT regulations will reduce direct facility discharges of priority and non-conventional pollutants by approximately 1.39 million pounds per year.

TABLE X.C–1.—REDUCTION IN DIRECT DISCHARGE OF PRIORITY AND NON-CONVENTIONAL POLLUTANTS AFTER IMPLEMENTATION OF BPT/BAT REGULATIONS

Subcategory	Priority metal and organics compounds lbs/year	Non-priority metal and organic compounds lbs/year	Total metal and organic compounds lbs/year	Total lbs-equivalent/ year
Metals Treatment and Recovery	582,200	781,400	1,363,600	372,000
Oils Treatment and Recovery	6,490	17,300	23,800	14,810
Organics Treatment[1]	0	0	0	0
Total Removals for all Subcategories	588,700	798,700	1,387,400	386,810

[1] EPA estimates there will be no additional removal of organic compounds for the organics subcategory, because all facilities had the treatment-in-place for removal of organic compounds.

b. PSES Effluent Discharges to POTWs. Table X.C–2 lists the estimated reductions in priority and non-conventional pollutants indirectly discharged to POTWs resulting from implementation of PSES. The Agency estimates that proposed PSES regulations would reduce indirect facility discharge to POTWs by 8.5 million pounds per year. These figures are not adjusted for pollutant removals expected from POTWs, and thus do not reflect reductions in dischargers to waters of the U.S. Estimated reductions in pollutants discharged indirectly to surface waters are provided on a subcategory basis in Tables 12–10 through 12–13 of the technical development document.

TABLE X.C–2.—REDUCTION IN DISCHARGES TO POTWS OF PRIORITY AND NON-CONVENTIONAL POLLUTANTS AFTER IMPLEMENTATION OF PSES REGULATIONS

Subcategory	Priority metal and organics compounds lbs/year	Non-priority metal and organic compounds lbs/year	Total metal and organic compounds lbs/year	Total lbs-equivalent/ year
Metals Treatment and Recovery	51,270	341,500	392,760	372,003
Oils Treatment and Recovery	689,800	3,722,500	4,412,300	9,876,128
Organics Treatment	816,500	2,905,500	3,721,900	110,149
Combined Regulatory Option	1,557,600	6,973,500	8,527,000	10,358,280

XI. Economic Analyses

A. Introduction

EPA's economic impact assessment for this proposal is set forth in a report titled ''Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (hereinafter ''EA''). This report estimates the economic and financial impacts of compliance with the proposed regulation in terms of process and facility closures and company effects. Impacts on new sources are also considered. Community

[8] Oil and grease removals were not included for the metals subcategory since EPA's data show that these wastes do not contain significant concentrations of oil and grease.

impacts, foreign trade impacts, market impacts, and an ''environmental justice'' analysis are also presented there. The EA also includes a Regulatory Flexibility Analysis detailing the effects on small CWT businesses. Results of a cost-effectiveness analysis are presented in a report titled ''Cost-Effectiveness Analysis of Proposed Effluent Limitations Guidelines and Standards for the CWT Industry.''

As discussed previously, EPA identified 205 CWT facilities, including 14 direct dischargers, 147 indirect dischargers, and 44 zero discharge facilities. EPA calculated the economic impact on each of the facilities based on the cost of compliance with the proposed options and the other options considered for the proposal. For direct dischargers, EPA calculated impacts for compliance with the proposed BPT/BCT/BAT; for indirect dischargers, EPA calculated impacts for compliance with PSES. The proposed limitations and standards are based on Metals Option 4, Oils Option 9, and Organics Option 4 for direct dischargers. (As previously noted, for direct dischargers in the organics subcategory, the proposed BPT/BAT is already in place. The only costs associated with this option are monitoring costs.) For indirect dischargers, the proposed limitations and standards are based on Metals Option 4, Oils Option 8, and Organics Option 4. A facility with processes in multiple subcategories was assigned costs for meeting the limits or standards in each subcategory. Section IX.B of this preamble describes the technical basis for each of these options.

The technologies which are the basis for today's proposal are estimated to have a total pre-tax annualized cost of $27.9 million (unlike the costs presented in Section X.B, these costs are annualized to represent the yearly cost of compliance). Table XI.A–1 presents the total annualized costs for BPT/BCT/BAT and PSES in 1997 dollars (these costs are extrapolated to represent the entire universe of CWT facilities). This notice differentiates between pre-tax annualized costs and post-tax annualized costs. The pre-tax annualized costs are the engineering estimates of annualized control costs, but the post-tax costs more accurately reflect the costs businesses will incur. For that reason, post-tax costs are used in the economic impact analysis. Pre-tax costs, however, more accurately reflect the total cost to society of the rule and are used in the cost-effectiveness analysis and elsewhere.

TABLE XI.A–1.—TOTAL ANNUALIZED COSTS ($1997)

	Pre-tax costs ($ million)	Post-tax costs ($ million)
BPT/BCT/BAT Costs (Direct Dischargers)	3.56	2.17
PSES Costs (Indirect Dischargers)	24.3	13.2
Total Costs	27.9	15.4

Impacts on facilities are calculated using a market model (described in Section XI.C and the EA) to determine closures and other impacts at individual CWT facilities. The market model also estimates changes in market prices, quantities, and losses in employment. The facility-specific changes in revenues and costs are aggregated to the company level to predict company-level impacts. The changes in employment are also used in the community-level analysis.

B. Economic Description of the CWT Industry and Baseline Conditions

One source of data used in this analysis is the questionnaire sent in 1991 under authority of Section 308 of the CWA (see Section VI of today's notice and Chapter 2 of the EA for a full discussion of data sources used in the economic analysis). The Agency recognizes that its questionnaire database may not precisely reflect current conditions in the industry. Nevertheless, EPA has concluded that the data provide a sound and reasonable basis for assessing the overall ability of the industry to achieve compliance with the regulations. This survey provided detailed data on 85 facilities. Additional data for the economic analyses are from the Toxic Release Inventory databases and several financial databases.

As detailed in Section VI.E, comments on the original proposed rule indicated that a large number of oils treatment and recovery facilities were not included in the original survey. EPA estimated profiles for these additional oils facilities and analyzed the impacts on these facilities from the proposed rule and published this analysis in the 1996 Notice of Data Availability. EPA sent profiles describing the data used for each additional oils facility to that facility, and received comments and corrections from many of these facilities. Not all facilities who received profiles, however, provided comments. EPA polled non-commenting facilities, and based on this communication, EPA assigned weights to the commenting oils facilities to account for the non-commenting facilities and to represent the total number of CWT facilities in the subcategory. Generally, when dealing with facility-specific information in the oils subcategory, results are weighted to extrapolate to the entire subcategory. When not dealing with facility-specific information, they may or may not be weighted. When dealing with aggregate impacts for a specific geographic area (for example, community-level impacts or water quality benefits), they are not weighted. The choice to weight or not will be described in the relevant sections.

Of the 205 CWT facilities, 201 facilities are commercial, accepting waste generated by other facilities and/or generators for treatment and management for a fee. Four facilities are non-commercial facilities that accept waste from off-site for treatment exclusively from facilities under the same ownership. Some facilities perform both commercial and non-commercial operations. For the purposes of this analysis, a facility's commercial status refers only to the operations subject to today's proposal and not other operations at that facility. That is, a facility that performs non-commercial CWT operations along with other non-CWT commercial operations would still be considered a non-commercial facility.

The companies owning CWT facilities range from large, multi-facility companies to small companies that operate only a single facility. Company-level information is available or estimated for 145 facilities (unweighted). One hundred and fourteen companies own these 145 facilities. Of these 114 companies, EPA has reliable company-level information for 74 companies; for the remaining 40

companies, EPA based its estimate of company revenues on facility-level information. In the case of companies owning only CWT facilities with profiles from the NOA, that company's information was weighted to represent the universe of CWT companies.

EPA currently estimates that 82 companies owning CWT facilities (including zero discharge facilities) are small businesses (for the purposes of this analysis, EPA has defined small businesses as companies with less than $6 million in annual revenues—see Section XI.L). Sixty-three small companies own two direct discharging facilities and 61 indirect discharging facilities.

EPA made a number of assumptions when formulating its company-level profiles. For facilities that had no reliable company-level information, EPA assumed that the facility-level data accurately represented the company, although this may underestimate company-level revenues (if the company has revenues not associated with the facility). In weighting many of these companies to let them represent other companies in the universe of CWT companies, EPA may have exacerbated this underestimation. Furthermore, the weights were based on a survey of facilities and applying these weights to companies may not be accurate. Finally, in order to maintain a consistent baseline, a facility's status of ownership is based on the year data was collected for that facility—1989 or 1995. Although EPA has information about changes in ownership status for many of these facilities, which would decrease the number of small businesses, EPA conservatively is still using its earlier information to maintain consistency with its engineering database. EPA believes that these assumptions overestimate the number of (and therefore impacts to) small businesses owning the CWT facilities in EPA's database. EPA solicits comment on these assumptions, and on its conclusion that small business impacts are overestimated.

At the time of the original CWT proposal, about 20 percent of the commercial CWT facilities appeared to be unprofitable based on the data available to EPA (see Table VI.C–2 in the preamble to the original proposal, 60 FR 5490). Several others were only marginally profitable. The industry had expanded capacity during the 1980s, but in the late 1980s, there was a reduction in demand for these services (perhaps due to pollution prevention efforts by industrial waste generators). EPA believes this trend may have reversed in the 1990s. EPA has learned in conversations with personnel at a number of these facilities that, while some of these facilities were now profitable, most of the remaining unprofitable facilities were still in operation three years after the questionnaire. The continued operation of such a large share of unprofitable facilities in the industry raises a significant question. It suggests that some of the traditional tools of economic analysis used to project potential closures in an industry due to the costs of compliance may not accurately predict real world behavior in a market where owners have historically demonstrated a willingness to continue operating unprofitable facilities. Therefore, while some number of facilities are likely to be unprofitable at baseline, for purposes of today's proposal, EPA is not eliminating baseline closures from its analysis of economic impacts. This decision represents a significant departure from previous effluent guidelines. However, given the nature of the industry, EPA believes that this is a reasonable approach. EPA solicits comments on this decision and on alternative methods that could be used to identify baseline closures.

C. Economic Impact and Closure Methodology

1. Overview of Economic Impact Methodology

Standard economic and financial analysis methods are used to assess the economic effects of the proposed regulation. These methods incorporate an integrated view of CWT facilities, the companies that own these facilities, the markets the facilities serve, and the communities where they are located.

CWT facilities are divided into two groups: commercial (those that charge a fee for their services) and noncommercial (those that handle intracompany waste). Impacts on commercial CWT facilities are estimated based on the results of a market model that allows facilities to adjust operations in response to changes in operating costs. The market model predicts adjustments in market prices and quantities and facility-level changes in revenues and employment. After the markets and facilities have responded to the regulation, facilities are assumed to close CWT treatment operations (or processes) for which operating costs (including compliance costs) exceed operating revenues. Impacts on non-commercial CWT facilities are estimated at the company level, assuming that the firm must absorb the full cost of compliance, because these facilities do not operate in the markets defined by the model.

a. Impacts on commercial facilities. Because industrial wastewater is costly to transport, the markets for CWT services are localized. The model defines six geographic regions for CWT services across the continental U.S. Each commercial CWT facility is assigned to one of the six regions. Within each region, each facility can be assigned to one or more markets for CWT services. These markets are defined by operations or processes (metals recovery, metals treatment, oil recovery, oil treatment, and organics treatment) and cost of treatment (high, medium, and low-cost for metals recovery, metals treatment, and oil recovery, high and low cost for organics treatment, and one market for oil treatment). The markets are divided in this way because of the variability in treatment costs and revenues shown in EPA's data; EPA, therefore, assumes that substantially different costs and revenues reflect distinct operations. Since a facility may provide more than one CWT service, each process line at every facility is assigned to a market based on responses to the 308 questionnaire, Notice of Data Availability (NOA) modeling assumptions, and comments on the NOA assumptions. Each process line is also assigned wastewater quantities and treatment costs.

After assigning facilities to markets, the structure of each regional market is determined by the number of facilities in that market: monopoly for one facility, duopoly for two facilities, or competitive for three or more facilities. The market supply curve is modeled as a step function using process line average costs at each facility (see Appendix C of the EA). Costs of CWT facilities include both those that vary with the quantity of CWT services provided (variable costs) and those whose value is fixed, but, for this analysis, all costs are modeled as variable. Revenues from CWT operations are estimated by multiplying an estimated market price of the CWT service by the quantity of waste treated in the CWT market. The market price is estimated as the average cost of the high-cost facility in each market, consistent with economic theory. (Actual prices vary by waste stream and facility, and would not be possible to include in the analysis.) Compliance treatment costs are added to the baseline costs to form a new post-compliance supply curve. Different assumptions are used about the amount of costs that can be passed on to consumers for each market structure: monopolists or

duopolists can pass on a larger portion of costs than facilities in competitive markets. The model then solves for a new market price and market quantity within each regional market.

The demand for CWT services is characterized based on the responsiveness of quantity demanded to price. In an economic context, CWT services are intermediate goods demanded because they are inputs to production of other goods and services. CWT facilities treat wastewater that results from production of goods at other facilities—a service which these other facilities pay CWT facilities to perform. Therefore, the economic theory on which EPA's analysis is based is the theory of intermediate goods. The sensitivity of quantity demanded to price (elasticity of demand) for an intermediate good depends on the elasticity of demand for the final good, the share of manufacturing costs (for the other good) represented by costs of the intermediate good, and the availability of substitutes for the intermediate good. The elasticity of demand for manufactured products which require CWT services varies widely. The cost of CWT services as a share of manufacturing costs is generally quite small. Substitutes for CWT services include other types of off-site waste management such as underground injection, on-site treatment, or pollution prevention. Overall, as long as generators have alternatives to commercial treatment (for example, on site treatment, or pollution prevention), the quantity of most services traded may be expected to fall (to some extent) as a result of the guidelines and standards. But for some services, such as cyanide treatment or treatment of concentrated metals sludges, there are no other commercially viable alternatives to commercial treatment. EPA's choice of elasticities was governed, in part, by these considerations and a review of the empirical literature.

During the SBREFA panel consideration of the proposal (see discussion in Section VI.H), the Small Business Administration (SBA) expressed concern that EPA's economic methodology understates impacts. In particular, SBA questioned the elasticity of demand assumption used by the Agency. As discussed in the EA and this notice, the elasticity of demand (which varies depending on the number of facilities in each market) is based on economic reasoning that the Agency believes to be sound and reflects the limited empirical evidence available in the literature. In response to SBA's comment, EPA has reexamined the literature and attempted to contact waste generators to obtain further information on their responsiveness to the price of CWT services. EPA has identified several additional empirical studies that support the elasticity parameters used in the EA. The Agency has not been successful, however, in eliciting information from waste generators. For a complete discussion of the elasticity parameters used in this analysis, see Appendix E of the EA.

Each CWT faced with higher costs of providing CWT services may find it economical to shut down a process line in a given market or to reduce the quantity of waste it treats (in fact, the model allows only a single facility in a competitive market to reduce the amount of waste that it treats without closing down a process line although both facilities in a duopoly can reduce the amount of waste that they treat). This decision is simultaneously modeled for all facilities within a regional market (if, during the model run, a process line is shut down, the model continues to run, eliminating that process line from the market supply curve) to develop consistent estimates of facility and market impacts.

EPA notes that its current model, unlike the market model used for the original proposal, does not allow wastewater from processes or facilities that close to go to another facility in the market. Although the price increase caused by increased compliance costs forces the total quantity of waste treated in the market to decline (the amount of this decline is governed by the elasticity of demand for a market), some of the waste treated by facilities that close should be treated at other facilities. To the extent that the EPA's model does not account for transfers, the model may overstate economic impacts. Prior to promulgation of the final rule, EPA may reconfigure its model to allow waste from facilities or process lines that close to be treated elsewhere in the market. EPA solicits comments on this issue and on appropriate ways to model this transfer.

b. Impacts on non-commercial and mixed facilities. For non-commercial facilities, economic impacts were estimated only on the company level, not the facility level. This is because the non-commercial facilities generally do not generate revenues for their companies. They exist to perform a service for the rest of the company and are not expected to be ''profitable'' as a unit. Facilities with mixed commercial and non-commercial operations are included in the market analysis because prices charged for their commercial operations may change. Companies with some commercial operations will raise prices to cover the variable costs of the treatment and help pay for some of their fixed costs (for example to underwrite the company waste treatment costs), but only a share of treatment costs proportionate to the quantity of waste treated commercially is assigned to the commercial portion of the facility. Therefore, a ''closure'' of the commercial portion of a mixed facility indicates that the facility ceases to perform commercial operations. No change in the quantity of CWT wastes treated is projected for the non-commercial aspects of these facilities, nor are market effects analyzed for the products of the parent company, since the share of waste treatment costs in the marketed products are minimal. Employment impacts are also calculated for those facilities with some commercial and some non-commercial operations.

c. Other impacts. Changes in facility revenues and costs result in changes in the revenues and costs of the companies owning the facilities, and thus changes in company profits. Increased borrowing and changes in the assets owned by the companies, together with changes in profits, result in changes in overall company financial health. EPA evaluates company-level impacts by examining changes in company profit margins and returns-to-assets test. These results are presented separately for small businesses. For small businesses, EPA also evaluated the economic impacts of this proposal using a cost-to-sales test, comparing company compliance costs to baseline sales (unadjusted for cost pass-through).

Finally, the communities where the CWT facilities are located may be impacted. Obviously, if facilities cut back operations, employment and income may fall, sending ripple effects throughout the local community. On the other hand, there may be increased employment associated with operating the pollution controls associated with the regulation, resulting in increased community employment and income. Facility-level changes in employment are used to calculate total employment changes. At the same time, for the communities in which CWT facilities are located, water quality may be expected to improve.

2. Changes From Previous Methodology (at Original Proposal and Notice of Availability)

There are two major differences between the economic methodology used for the 1995 proposal and the current methodology. First, EPA assumed there were no competitive markets at proposal. Since EPA now

estimates a large increase in the number of oils facilities, some markets are now structured as competitive. Second, at proposal, EPA examined facility-level profitability, but did not identify closures because so many facilities were unprofitable at baseline. For the current analysis, EPA examines impacts at the process level and has identified facility closures when all processes at a facility are projected to close.

In the proposal analysis, EPA identified 85 facilities, 70 of which were commercial (including zero dischargers). These 70 facilities were assigned to one of six multi-state regions, and one or more of at most nine waste treatment or recovery service markets within each region. The markets were defined in terms of type and cost of treatment or recovery (for example, metals wastewater treatment) and region. These markets were very similar to the markets used in today's proposal.

With at most 12 facilities in a single regional waste treatment or recovery market (39 of 43 regional waste management markets had 5 or fewer facilities), the markets were defined as oligopolistic (small number of competitors) or monopolistic (only one supplier). Because EPA had data that allowed computation of average variable cost of each waste management process at each facility, but not enough data to estimate upward sloping cost curves, each facility's average variable cost for a treatment process was assumed to be constant. EPA used a simultaneous equation solution algorithm to estimate the with-regulation prices, quantities, and profits for each commercial facility.

For the current analysis, EPA has data for 142 commercial CWT facilities (including zero dischargers); these include the 73 facilities identified at proposal (three facilities were redefined as commercial based on updated information) plus 69 NOA oil recovery facilities. Furthermore, some of the NOA facilities are weighted and ultimately represent more than one facility, but no more than two. EPA redesigned the economic impact analysis model, incorporating the new oil facilities into oil recovery or oily wastewater treatment markets in the appropriate regions and also made some adjustments to the market definitions. The addition of the NOA facilities to the oil recovery and oil treatment markets meant that there were now a larger number of facilities in most of the oil markets. For this reason, EPA decided to model them as perfectly competitive. (Perfect competition requires that the number of sellers in a market be sufficiently high that no single seller can influence the market; rather, they accept the market price as a ''given,'' and decide the most profitable quantity of waste to treat based on the given price.) EPA therefore had to redesign the model so that it would allow either a perfectly competitive market structure or imperfect competition. Markets are defined as monopoly, duopoly (two sellers), or perfect competition, depending on the number of sellers. In this modeling approach, any market in any of the subcategories with more than two sellers is defined as perfectly competitive. In reality, markets with three to eight or ten sellers are probably imperfectly competitive oligopolies, but the current modeling approach does not allow that market structure. This may tend to overstate impacts on markets with only a few sellers because they may be able to pass compliance costs on to customers to a greater degree than assumed in the model. Conversely, some of the facilities assigned to monopoly or duopoly markets may actually face some more competition than the model projects, particularly at higher prices, from other segments of the CWT industry or from other waste disposal/reduction opportunities that may be available to their customers. In this case, the model may underestimate impacts because they may be unable to pass on as large a share of compliance costs to their customers as the model projects. As a sensitivity analysis, EPA also estimated process and facility closures assuming no cost pass-through (see Appendix E of the EA). This represents a worst case scenario.

In the proposal analysis, EPA initially analyzed facility closure by focusing on overall facility profits. If a facility was not profitable, EPA assumed it would shut down. Examination of baseline questionnaire data indicated, however, that 22 CWT facilities were unprofitable at baseline. When 18 of these unprofitable facilities were contacted two years after the survey, 16 were still in operation. Owners of CWT facilities did not immediately close their facilities when they were unprofitable (for a variety of reasons):

- 30 of the 70 commercial CWT facilities treated some waste generated by other facilities owned by the same company. They, thus, provide a service to the rest of the company for which they may not receive revenue, and, therefore, may not close if their revenues understate their true value.
- Similarly, some facilities perform a service for the rest of their company. For example, one facility generates a metal-rich sludge which may be incorporated into the parent company's smelting process.
- Many of the CWT facilities are RCRA-regulated and are subject to RCRA clean closure requirements, which would entail expensive long-term monitoring and possibly clean-up of the site. Facilities may decide to try to ''ride out'' an unprofitable period in the hopes of avoiding RCRA closure costs.
- Facility owners may feel that the negative profits are due to the rapidly changing demand conditions in the market, and may hope that once demand conditions stabilize, the facility will become profitable. Additionally, many facilities stay in business hoping that new environmental regulation, such as the RCRA Phase 3 rule, may create more business for facilities.

For whatever reason, many apparently unprofitable CWT facilities continue to operate for years. Thus, EPA decided in 1995 that facility profitability was not a closure criterion. In that impact analysis, EPA, therefore, examined the impacts of the regulation on facility profit, paying particular attention to facilities that had been profitable without the regulation, but became unprofitable with the regulation in effect (but not termed ''closures''). In adjusting to the costs of complying with the regulation, a CWT facility would shut down an individual CWT process (metal recovery, for example) if it became unprofitable, but the facility as a whole would continue to operate, even if it became unprofitable.

In 1995, EPA also examined the data on CWT operation costs and revenues, and found that at most of the unprofitable facilities, the individual CWT operations were at least breaking even (revenues from wastewater treatment, for example, were at least as great as costs of wastewater treatment). The negative profits were due to other conditions at the facility, not the actual operations themselves. Therefore, as in 1995, EPA has decided to focus exclusively on CWT operations and ignore overall facility profits that may be affected by other activities, revenues, or costs at CWT facilities.

In the reproposal analysis, EPA examines impacts on commercial CWT facilities in terms of closures, but focuses on potential closures of CWT processes by examining the costs and revenues of each waste treatment or recovery operation with the regulation in effect (this isolated the analysis to only examine CWT operations and not overall facility operations). If with-regulation costs of the operation exceed revenues, then the operation will be shut down. This is called a ''process closure.'' If all the waste treatment processes at a facility are shut down, this is called a ''facility closure.''

D. Costs and Economic Impacts of Proposed BPT

For BPT, EPA evaluates treatment options first by calculating pre-tax total annualized costs and total pollutant removals in pounds. The ratio of the costs to the removals for each option are presented in Table XI.D–1.

For BPT, EPA is proposing Option 4 for the metals subcategory and Option 9 for the oils subcategory. Direct dischargers in the organics subcategory are only assigned costs for monitoring, so there are no other compliance costs, nor are there incremental conventional removals.

TABLE XI. D–1.—BPT COST ANALYSIS

Option	Pre-tax total annualized costs ($1997 M)	Removals (M lbs)	Average cost reasonableness (1997 $/b)
Metals Subcategory—9 Facilities:			
4	$2.85	15.21	$0.19
2	13.7	14.79	0.93
3	14.2	15.40	0.96
Oils Subcategory—5 Facilities:			
8	[9]0.486	0.625	0.78
9	[9]0.486	0.663	0.69
Organics Subcategory—4 Facilities:			
4	0.237	0	n/a
3	0.426	0	n/a

[9] For direct dischargers, EPA's cost analysis was not able to distingish between Option 8 and Option 9. EPA does, however, believe that meeting the more stringent Option 9 will result in additional removals while the cost differences will be negligible.

Table XI.D–2 presents the economic impact results for the proposed BPT (economic impacts for the options rejected for BPT are presented in section XI.F where those options are considered for BAT). Options in the Metals and Organics subcategories more stringent than proposed BPT are evaluated in Sections XI.E and XI.F. Impacts are presented for process closures, facility closures, and employment losses. Process closures are a direct output of the market model; facility closures are designated if all of the processes at a facility close. Employment losses are calculated from process closures, facility closures, and from reductions in waste treated by process lines that do not close. In all cases, the reduction in employment is calculated as a percentage decrease of the facility's total employment proportionate to the percentage reduction in waste treated.

TABLE XI.D–2.—ECONOMIC IMPACTS OF BPT OPTIONS

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
Metals Subcategory—9 Facilities:				
4	$1.72	1	1	35
Oils Subcategory—5 Facilities:				
9	0.310	0	0	0
Organics Subcategory—4 Facilities:				
4	0.138	2	0	0

Economic impacts of the proposed BPT regulations are only one process closure and one facility closure in the metals subcategory; there are no closures in the oils subcategory; and there are only 2 process closures, but no facility closures, in the organics subcategory. Total job losses for the BPT options are 35. (There are no job losses associated with the organics subcategory even though there are two process closures because job losses are proportional to flow. The organics flow at the facilities with the process closures is so low compared to the facility flow that there are no proportional job losses.)

Many facilities in the CWT industry have operations in more than one subcategory. EPA therefore evaluated the impacts of a combined BPT option on all direct dischargers. This Combined Option consists of Metals Option 4, Oils Option 9, and Organics Option 4. The combined impacts of this option are presented in Table XI.D–3.

TABLE XI.D–3.—ECONOMIC IMPACTS OF COMBINED BPT OPTION

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
All Direct Dischargers—14 Facilities:				
Combined	$2.17	1	2	40

The economic impacts of the combined option are one process closure, two facility closures, and a total employment loss of 40 jobs. The impacts of the chosen BPT options shown in Table XI.D–2 do not add to the impacts shown in Table XI.D–3 because a facility closure is counted when all of the processes at a given facility close, and a process closure is counted when one, but not all, of the processes close. Therefore, for facilities with process closures in more than one subcategory, the analysis of the combined option can show a lower number of process closures and a higher number of facility closures.

As noted above, EPA also conducted a sensitivity analysis assuming no cost pass-through. For direct dischargers (those subject to BPT limitations), the number of projected process and facility closures was unaffected by this worst-case assumption.

E. Results of BCT Cost Test

In July 1986, EPA explained how it developed its BCT methodology (51 FR 24974). EPA evaluates the reasonableness of BCT candidate technologies—those that remove more conventional pollutants than BPT—by applying a two-part cost test: a POTW test and an industry cost-effectiveness test.

EPA first calculates the cost per pound of conventional pollutant removed by industrial dischargers in upgrading from BPT to a BCT candidate technology, and then compares this cost to the cost per pound of conventional pollutant removed in upgrading POTWs from secondary treatment. The upgrade cost to industry must be less than the POTW benchmark of $0.25 per pound (in 1976 dollars). In the industry cost-effectiveness test, the ratio of the incremental BPT to BCT cost divided by the BPT cost for the industry must be less than 1.29 (that is, the cost increase must be less than 29 percent).

Table XI.E–1 presents the results of the BCT cost test for the metals subcategory. For both Option 2 and Option 3, the table presents costs and conventional removals and compares them to the BPT baseline, Option 4. For one of the BCT options to pass the POTW test, incremental cost reasonableness (compared to the BPT option, the ratio of incremental costs to incremental conventional removals) for each option must be less than $0.71 ($1997) per pound. Option 2 removes fewer conventional pounds (see Table XI.D–2), so it is not a candidate BCT technology. Option 3 has an incremental cost-reasonableness of $23.65, well above the benchmark of $0.71, so it fails the POTW test. This option is therefore not BCT, and since it fails the POTW test, it is not necessary to perform the industry cost-effectiveness test. Because the only BCT option fails the POTW test, BCT is set equal to BPT.

TABLE XI.E–1.—BCT COST TEST RESULTS (METALS SUBCATEGORY)

Option	Pre-tax total annualized costs ($1997 M)	Conventional removals (M lbs)	Incremental cost-reasonableness ($/ lb.)	Pass POTW test?
4	$2.85	13.84	n/a	n/a
3	14.2	14.32	$23.65	no

F. Costs and Economic Impacts of BAT Options

EPA also evaluated options more stringent than BPT in the metals and organics subcategories for BAT (in the oils subcategory, EPA set BPT equal to the most stringent option that it considered). These are Metals Option 2 and Option 3 and Organics Option 3. For a given technology to be the basis for BAT limitations it must be economically achievable. EPA is today proposing BAT limitations equivalent to proposed BPT for all subcategories; economic impacts are, therefore, equivalent to those presented in Section XI.D for the final BPT limits. Table XI.F-1 presents the economic impact results for the options considered for BAT.

TABLE XI.F–1.—ECONOMIC IMPACTS OF BAT OPTIONS

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
Metals Subcategory—9 Facilities:				
4	$1.72	1	1	35
2	8.28	1	1	37
3	8.60	1	1	37

TABLE XI.F–1.—ECONOMIC IMPACTS OF BAT OPTIONS—Continued

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
Oils Subcategory—5 Facilities:				
8	0.310	0	0	0
9	0.310	0	0	0
Organics Subcategory—4 Facilities:				
4	0.138	2	0	0
3	0.263	2	0	0

The economic impacts of the proposed BAT options are minimal: three process closures, one facility closure and 35 job losses. In all cases, the closure impacts for the rejected options (Metals options 2 and 3 and Organics option 3) are equivalent to the impacts for the proposed BPT options, although there are slightly more employment losses for the rejected metals options. However, as discussed in Section IX.B.3, EPA is not proposing these options for BAT.

G. Costs and Economic Impacts of Proposed PSES Options

In addition to evaluating impacts to direct dischargers for BPT/BCT/BAT, EPA evaluated the impacts to indirect dischargers for complying with PSES. EPA considered the same technology options for PSES that it did for BPT and BAT. For the metals and organics subcategories, EPA is proposing the same options for PSES that is for BPT/BAT: Metals Option 4 and Organics Option 4. For the oils subcategory, however, EPA is proposing Option 8 rather than Option 9 as discussed in Section IX.B. The impacts of the PSES options are presented in Table XI.G–1. Impacts are presented for process closures, facility closures, and employment losses. Process closures are a direct output of the market model; facility closures are designated if all of the processes at a facility close. Employment losses are calculated from process closures, facility closures, and from reductions in waste treated by process lines that do not close. In all cases, the reduction in employment is calculated as a decrease of the facility's total employment proportionate to the reduction in waste treated.

TABLE XI.G–1.—IMPACTS OF PSES OPTIONS

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
Metals Subcategory—41 Facilities:				
4	$4.23	5	0	124
2	14.7	8	1	126
3	15.5	8	1	126
Oils Subcategory—123 Facilities:				
8	7.35	12	11	216
9	10.7	14	11	213
Organics Subcategory—14 Facilities				
4	1.66	6	0	4
3	2.12	7	0	27

For each subcategory, EPA is proposing the least costly option for PSES. For the metals and organics subcategory, PSES is set equal to BAT. In the metals subcategory, Option 4 results in five process closures, no facility closures, and 124 job losses. Options 2 and 3 results in eight process closures, one facility closure, and 126 job losses. For the organics subcategory, Option 4 results in six process closures and no facility closures, with 4 job losses. Organics Option 3 results in seven process closures and 27 job losses. There are fewer employment losses with the more stringent Oils Option 9 because different facilities with different numbers of employees close in the market model under the two options.

Many facilities in the CWT industry have operations in more than one subcategory. EPA, therefore, evaluated the impacts of a combined PSES option on all indirect dischargers. This option consists of Metals Option 4, Oils Option 8, and Organics Option 4. To further evaluate the impacts of Oils Option 9, a combined option with this option was also considered. The impacts of both combined options are presented in Table XI.G–2. The impacts of the selected PSES options shown in Table XI.G–1 do not add to the impacts shown in Table XI.G–2 because a facility closure is counted if all of the processes at a given facility close while a process closure is counted if one, but not all, processes close. Therefore, in the combined options, the number of process closures can go down while facility closures go up if processes in difference subcategories close. The employment losses also do not add up because of rounding. The economic impacts of the combined option with Oils Option 9 are higher than the combined option with Oils Option 8, and the former also has more extensive impacts on small businesses (see Section XI.L) .

TABLE XI.G–2.—ECONOMIC IMPACTS OF COMBINED PSES OPTION

Option	Post-tax total annualized costs ($1997 M)	Process closures	Facility closures	Total employment losses
All Indirect Dischargers—147 Facilities:				
w/Oils 8	$13.2	15	13	298
w/Oils 9	16.6	19	13	302

In the sensitivity analysis in which no costs are passed through to customers, among indirect dischargers, 29 process closures and 16 facility closures are projected under the proposed options.

H. Economic Impacts for New Sources

EPA is establishing NSPS limitations equivalent to the limitations that are established for BPT/BCT/BAT for both the organics and oils subcategories. In general, EPA believes that new sources will be able to comply at costs that are similar to, or less than, the costs for existing sources, because new sources can apply control technologies more efficiently than sources that need to retrofit for those technologies. BPT/BCT/BAT limitations are found to be economically achievable; therefore, NSPS limitations will not present a barrier to entry for new facilities in these subcategories. EPA is setting PSNS equal to PSES limitations for existing sources for the oils and organics subcategories. As a result, given EPA's finding of economic achievability for PSES in those two subcategories, EPA also finds that the PSNS regulation will be economically achievable and will not constitute a barrier to entry for new sources.

For the metals subcategory, however, EPA is proposing Option 3 for NSPS and for PSNS. While EPA acknowledges that Option 3 achieves slightly greater removals than Option 4 at much higher costs for existing sources (see detailed discussion in Section IX.B.4), EPA does not believe that this option is a barrier to entry for new sources. Unlike the oils subcategory, the information collected by the Agency indicates that the metals subcategory is stable over time, with little entry or exit, and EPA does not expect this trend to change. Furthermore, metals facilities tend to be involved in specialized operations and are frequently RCRA-permitted. Therefore, EPA has concluded that start-up costs are not the primary factor considered in starting a new facility. However, EPA solicits comment on this conclusion.

I. Firm Level Impacts

Complying with the proposed effluent limitations guidelines and standards affects the revenues and profitability of firms owning CWT facilities. In Section 6.1.4 of the EA, the Agency examines two financial ratios to assess the magnitude of these impacts: firm profit margin (profit/revenues) and return on assets or ROA (profit/total assets). Baseline values are compared to post-regulation values that are determined by calculating changes in profits based on output from the market model. EPA does not have complete data for all firms, but the two measures decline for more than half of the firms for which EPA has data. EPA also examined these measures by size categories, including a category for small businesses. For most size categories, median profit margin and median ROA decline. If not, they stay the same. EPA has profit data on 56 small firms and asset data for 15 small firms; profit margin declines for 34 of the 56 firms and ROA declines for 7 of the 15 firms. As discussed more fully in the EA, these results are dependent on the assumptions used in the market model and the market in which EPA placed the facilities. EPA is currently considering how to refine this analysis for the final rule.

J. Community Impacts

EPA estimated impacts on communities in which CWT facilities were located by estimating the overall change in employment in the community as a result of the CWT rule. EPA estimated the change in employment at each CWT associated with reductions in the quantity of waste treated at facilities incurring economic impacts. Then, EPA applied state-specific direct-effect employment multipliers to estimate the total change in employment. Most of the change in employment will occur in the community where the CWT is located. Thus, EPA estimated the change in community employment as a result of the rule by assigning all of the change in employment to the community. Table XI.J–1 shows a distribution of the estimated changes in community employment resulting from the economic impacts of the regulation. Community employment losses range from zero to 213 full time equivalents. Even the largest reduction in employment represents only 0.7 percent of the baseline employment in that community. Thus, the Agency expects the negative employment impacts of the regulation to be extremely small. In fact, EPA estimates that most facilities will have to hire from one to three additional workers to comply with the regulation (although this is not taken into account in Table XI.J–1). Taking these impacts into effect, almost all facilities will experience increases in employment due to the regulation. The overall impact of the regulation on community employment is, therefore, generally expected to be positive.

TABLE XI.J–1.—ESTIMATED COMMUNITY EMPLOYMENT IMPACTS OF THE CWT REGULATION [1]

Reductions in community employment as a result of process and facility closures	Number of communities
Greater than 50 full time equivalents	5
20 to 50	11
1 to 20	14
0 to 1	12
Zero	100

[1] Does not account for employment gains associated with compliance.

The Agency also examined the distribution of benefits across communities with different socioeconomic and ethnic characteristics. Pursuant to Executive Order 12898, EPA must, to the greatest extent practicable and permitted by law, make achieving environmental justice part of its mission. Environmental justice concerns arise when communities of color and/or low income communities experience disproportionately high and adverse human health or environmental impacts. CWT facilities are frequently located in industrial areas; as such, the communities frequently have higher minority populations and greater poverty than their surrounding states or

the nation as a whole. Reductions in pollutant exposures to these populations would, therefore, improve environmental justice. Table XI.J–2 characterizes the communities in which CWT facilities are located.

TABLE XI.J–2.—SOCIOECONOMIC PROFILE OF COMMUNITIES IN WHICH CWT FACILITIES ARE LOCATED

Percentage	Number of communities
Percent of the Population that are Non-Caucasian (National Percentage=16.8%)	
Less than 10	32
10 to 20	17
20 to 30	35
30 to 50	39
Over 50	23
Percent of the Population With Incomes Below Poverty Level (National Percentage=13.5)	
Less than 7	19
7 to 13	33
13 to 20	56
20 to 30	31
Over 30	7

Using the most recent census data, in 1990, the nation as a whole had a population that was 16.8 percent non-Caucasian. Of the communities in which CWT facilities were located, on the other hand, 38 percent had populations that were at least 30 percent minority, and 54 percent of communities had populations whose minority percentage exceeded that of the state in which they were located by more than five percentage points. In 1990, 13.5 percent of the U.S. population had incomes below the poverty level, 22 percent of communities with CWT facilities had at least 20 percent of their residents in poverty, and 33 percent had percentages of the population in poverty that exceeded by at least 5 percentage points the percentage of the population in poverty for the states in which they were located. Thus, environmental justice is a concern for these communities. The costs of the rule fall disproportionately on facilities in minority and low-income communities. Benefits may also accrue to these communities as a result of this rule, but a large share of benefits are likely to accrue to communities downstream from the CWT or POTW, which may not be the same community.

K. Foreign Trade Impacts

The EA does not project any foreign trade impacts as a result of the effluent limitations guidelines and standards. Many of the affected CWT facilities treat waste that is considered hazardous under RCRA and international trade in CWT services for treatment of hazardous wastes is virtually nonexistent. There is also very little, if any, international trade in treatment of non-hazardous CWT wastes.

L. Regulatory Flexibility Analysis

The Agency prepared an initial regulatory flexibility analysis to assess the impacts on small companies owning CWT facilities. For purposes of this analysis, EPA defines small CWT companies as those having sales less than $6 million—the Small Business Administration definition of a small business for SIC code 4953, Refuse Systems. This is the SIC code that most CWT facilities listed in their questionnaire responses (see EA Chapter 3). Two small companies own facilities that discharge directly. There are 61 small companies that own facilities that discharge indirectly (the total number of small indirects includes applying weights to some of the facilities). EPA evaluated the impact on small CWT companies using a cost-to-sales test, which compares baseline sales to compliance costs (adjusted for inflation so that the costs and sales are expressed in the same year's dollars). This assessment does not account for any ability of the companies to pass any increase in operating costs through to their customers. EPA recognizes that costs-to-sales ratios in excess of one percent, and particularly those in excess of three percent, may represent significant impacts because they will generally correspond to much higher rates of cost to pre-compliance profits, and, thus, serve as a signal for additional analysis.

The two small companies that own direct discharging facilities, both in the oils subcategory, have cost-to-sales ratios of over three percent. Results of the cost-to-sales test for the PSES options are presented in Table XI.L–1 for the number of facilities with costs exceeding one percent and three percent. Some companies own facilities with operations in more than one subcategory.

TABLE XI.L–1.—RESULTS OF COST-TO-SALES TEST FOR PSES OPTIONS FOR SMALL BUSINESSES

Option	Number of small companies with cost/sales >1%	Number of small companies with cost/sales >3%
Metals Subcategory—4 Small Businesses:		
4	3	1
2	3	3
3	3	3
Oils Subcategory—57 Small Businesses:		
8	40	21
9	49	31
Organics Subcategory—2 Small Businesses:		
4	2	1
3	2	1

As can be seen from Table XI.L–1, the economic impact on small businesses of the proposed PSES options is not as great as for the other alternatives. In particular, Oils Option 8 has 40 firms (70 percent of the small businesses) with cost-to-sales ratios in excess of 1 percent and 21 firms (37 percent of the small businesses) with cost-to-sales ratios in excess of 3 percent (without adjustment for pass-through of costs). On the other hand, Oils Option 9 has 49 firms (87 percent of the small businesses) with cost-to-sales ratios in excess of 1 percent and 31 firms (55 percent of the small businesses) with cost-to-sales ratios in excess of 3 percent.

Many of the facilities owned by small businesses operate processes in more than one subcategory so, as with the economic impact analyses presented

earlier in this section, cost-to-sales test results are presented for two combined PSES options: one with Oils Option 8 and one with Oils Option 9. These results are presented in Table XI.L–2.

TABLE XI.L–2.—RESULTS OF COST-TO-SALES TEST FOR COMBINED PSES OPTIONS FOR SMALL BUSINESSES

Combined option	Number of small companies with cost/sales >1%	Number of small companies with cost/sales >3%
Indirect Dischargers—61 Small Businesses:		
w/ Oils Option 8	43	23
w/ Oils Option 9	52	33

The PSES options combined with Oils Option 8 has 43 firms (70 percent of small businesses) with cost-to-sales ratios in excess of 1 percent and 23 firms (38 percent of small businesses) with cost-to-sales ratios in excess of 3 percent. On the other hand, the combined option with Oils Option 9 has 52 firms (85 percent of small businesses) with cost-to-sales ratios in excess of 1 percent and 33 firms (54 percent of small businesses) with cost-to-sales ratios in excess of 3 percent.

As detailed in Section VI.H, EPA convened a SBREFA panel during the development of this rule. As part of those exercises, EPA considered several regulatory alternatives to provide relief for small businesses. Some of these alternatives are discussed in detail in other sections of this document. For example, one option considered by EPA was a reduced monitoring alternative. This option is discussed in Section IX.D.

EPA also analyzed several bases for not including small businesses within the scope of this proposal. EPA examined several criteria for establishing an exclusion for small businesses such as the volume of wastewater flow, employment, or annual revenues. The objective was to minimize the impacts on small businesses, still achieve the environmental benefits, and stay responsive to the Clean Water Act. EPA is defining small CWT businesses according to the SBA size definition of $6 million in annual revenue, but considered other criteria that would be easier to implement in practice, such as wastewater flow. To target relief to small businesses, EPA examined the correlation between these criteria and the size definition.

Since most CWT facilities have similar numbers of employees regardless of their size, EPA first eliminated employment as a basis for establishing a small business exclusion. While EPA also found no correlation between annual volume of wastewater and the size of a facility, EPA retained this criteria due to the anticipated ease in implementing an exclusion based on this criteria. If an exclusion based on volume of wastewater is ultimately selected, the regulation would exclude both small and large businesses.

EPA evaluated alternative levels for criteria based on wastewater flow and size as potential bases for limiting the scope of the proposed regulation to: (i) indirect dischargers with flows greater than 3.5 million gallons per year (MGY), (ii and iii) indirect dischargers that manage non-hazardous wastes only with flows greater than either 3.5 MGY or 7.5 MGY. EPA also considered limiting the applicability of the proposed regulation to indirect dischargers not owned by small businesses without any specific reference to flow (referred to as ''no smalls'' below). The justification for EPA's choice of these particular exclusion alternatives is included in the record in materials submitted to the SBREFA panel.

For each potential limitation, EPA estimated the projected economic impacts, both in absolute terms and in relative terms (that is, whether the impacts were higher, proportionately, for small businesses). The economic impacts that EPA considered for small companies include process closures, facility closures, employment losses, and the cost-to-sales test. Table XI.L–3 shows the results of the facility-level analyses (if current facility receipts do not change) and the results of the analyses for the selected options for comparison purposes for all indirect dischargers. Table XI.L–4 shows the results of the cost-to-sales test, which are company-level impacts for small companies that own indirect dischargers. Preliminary versions of these results were provided to all small entity representatives and SBREFA panel members.

TABLE XI.L.—IMPACTS OF PSES OPTIONS WITH LIMITED SCOPE

Option	Post-tax total annualized costs ($1997 M)	Process closures (small/large)	Facility closures (small/large)	Total employment losses
All Indirect Dischargers—147 Facilities				
Combined Option w/ Oils 8	$13.2	5/10	7/6	298
Reduced monitoring	11.03	5/11	4/7	286
>3.5 MGY, non-hazardous	11.7	5/10	3/3	273
>3.5 MGY	10.3	2/7	0/1	161
>7.5 MGY, non-hazardous	10.9	5/10	3/3	273
''No smalls''	8.81	0/12	0/12	142

TABLE XI.L–4.—RESULTS OF COST-TO-SALES TEST FOR SMALL BUSINESSES FOR PSES OPTIONS WITH LIMITED SCOPE

Option	Cost/ sales>1%	Cost/ sales>3%
Indirect Dischargers—61 Small Businesses		
Combined Option w/Oils Option 8	43	23
Reduced monitoring	32	14
>3.5 MGY, non-hazardous	27	18
>3.5 MGY	22	14
>7.5 MGY, non-hazardous	22	18
''No smalls''	0	0

Some panel members and small entity representatives (SERs) believe that these results support not including small businesses in the regulation. As described in the Panel's final report, these panel members and SERs believe that the ''lost'' pollutant reductions associated with not including small businesses would not be environmentally significant. Based on analysis available at the time of the panel, limiting the applicability to not include all oils facilities owned by small businesses would have reduced removals by 12 percent. Not including indirect dischargers with flows under 3.5 MGY would have reduced removals by 6 percent. They also suggested that these facilities provide an important ''safety valve'' for an affordable and effective treatment alternative for industrial facilities that would otherwise find it prohibitively expensive to comply with industry-specific categorical standards.

Other SERs opposed this approach. These commenters believe that not including small businesses in the scope of this rule would adversely impact the image of the industry. One of these commenters preferred reduced monitoring and also suggested that small businesses might be granted additional time to comply with the new standards, rather than not including those businesses within the scope of the rule. EPA expressed concern that the absence of categorical standards for CWT facilities has been a major ''loophole'' in a national program to control industrial pollution, allowing wastes to be treated off-site less effectively than would be required of the same wastes if treated on-site. One of EPA's primary concerns with any of the alternatives that limit the scope of the rule is that they represent one snapshot of a rapidly changing industry. If a segment of the industry is not subject to national regulation, these companies might quickly expand leading to much greater discharges within a few years than predicted by existing data—with environmentally deleterious consequences. In addition, EPA believes that most CWT facilities have substantial amounts of unused capacity. Because this industry is extremely competitive, by limiting the scope of the CWT rule, EPA could actually be encouraging ineffective treatment while discouraging effective treatment.

The panel discussed several ways of addressing this concern. One idea was to put mass-based limits on receipts as part of the eligibility requirement for not subjecting certain facilities to the rule, ensuring that these facilities would not handle significant volumes of contaminated wastes. However, this approach would also limit the flexibility of small businesses not subjected to this rule, and might require CWT facilities owned by small companies to give up a significant share of their existing waste receipts.

In summary, in an effort to limit the rule's applicability to mitigate small business impacts and still preserve the benefits of the rule, EPA considered a variety of potential alternatives. For the reasons discussed elsewhere, however, EPA is not proposing to include any alternatives that limit the scope of the rule for small businesses. However, EPA has followed the panel recommendation that it include a full and balanced discussion of possible small business relief measures in this preamble and solicits both comments and data that might address some of the concerns that have been raised. Examples of such data would include plant capacity, as well as influent and effluent concentrations. Finally, as recommended by the panel, EPA will strongly consider developing some form of regulatory relief for small businesses for the final rule if its analyses continue to show significant economic impacts on a substantial number of small businesses.

M. Cost-Effectiveness Analysis

EPA also conducted an analysis of the cost-effectiveness of the alternative treatment technology options that were considered. The report, ''Cost-Effectiveness Analysis of Proposed Effluent Limitations Guidelines and Standards for the CWT Industry'' (hereinafter, ''Cost-Effectiveness Report''), describes the methodology, data, and results; the report is included in the record of this rulemaking. The results of this cost-effectiveness analysis are expressed in terms of the costs (in 1981 dollars) per pound-equivalent removed, where pounds-equivalent removed for a particular pollutant is determined by multiplying the number of pounds of a pollutant removed by each option by a toxic weighting factor. The toxic weighting factors account for the differences in toxicity among pollutants and are derived using ambient water quality criteria. Cost effectiveness results are presented in 1981 dollars as a reporting convention. Cost-effectiveness is calculated as the ratio of pre-tax annualized costs of an option to the annual pounds-equivalent removed by that option, and can be expressed as the average or incremental cost-effectiveness for an option.

Average cost-effectiveness can be thought of as the ''increment'' between no regulation and the selected option for any given rule. For direct dischargers, the technologies used as the basis for BPT/BCT/BAT in all subcategories have an average cost-effectiveness ratio of $5.58/lb-equivalent. For indirect dischargers, the technologies used as the basis for PSES in all subcategories have an average cost-effectiveness ratio of $23.59/lb-equivalent. These results incorporate all subcategories with their selected options.

Incremental cost-effectiveness is the appropriate measure for comparing one regulatory option to an alternative, less stringent regulatory option for the same subcategory. Cost-effectiveness results by subcategory and option are presented for direct dischargers in Table XI.M–1 and indirect dischargers in Table XI.M–2. The options are listed in order of increasing removals. The calculations reflect only those increments that are ''efficient,'' in that they remove more for an incremental cost. In this context,

''inefficient'' options (i.e., those that cost more but remove less) are eliminated from the analysis. For example, Metals Subcategory Option 4 for direct dischargers has greater removals than Option 2, but costs less. Therefore, the incremental ''cost-effectiveness'' of the ''inefficient'' option—Option 2—is displayed as ''n/a'' for ''not applicable,'' and Option 4 becomes the first option in the series against which further increments are compared.

TABLE XI.M–1.—BPT/BCT/BAT COST-EFFECTIVENESS ANALYSIS

Option	Pre-tax total annualized costs ($1981 M)	Removals (lbs-eq)	Average cost effectiveness (1981 $/lb-eq)	Incremental cost-effectiveness (1981 $/lb-eq)
Metals Subcategory—9 Facilities:				
2	$8.85	369,112	$23.99	n/a
4	1.84	370,040	4.95	
3	9.18	379,571	24.18	974.19
Oils Subcategory—5 Facilities:				
8	0.314	13,943	22.49	
9	0.314	14,811	21.17	n/a [a]
Organics Subcategory—4 Facilities:				
4	0.151	0		
3	0.275	27,055	10.17	4.58

[a] EPA is not able to distinguish between the costs to direct dischargers to comply with Options 8 and 9, and therefore is not able to compute incremental cost-effectiveness.

TABLE XI.M–2.—PSES COST-EFFECTIVENESS ANALYSIS

Option	Pre-tax total annualized costs ($1981 M)	Removals (lbs-eq)	Average cost effectiveness (1981 $/lb-eq)	Incremental cost-effectiveness (1981 $/lb-eq)
Metals Subcategory—9 Facilities:				
4	$5.23	25,843	$202.22	.....
2	17.86	26,943	662.86	11,484.84
3	18.84	27,480	685.58	1,825.82
Oils Subcategory—5 Facilities:				
8	8.63	510,740	16.90	.....
9	12.30	514,398	23.91	725.50
Organics Subcategory—4 Facilities:				
4	1.89	87,917	21.53	.....
3	2.42	165,392	14.63	6.80

One of the issues discussed at length by the SBREFA panel members was EPA's analyses of toxic loadings and removals which underlie the cost-effectiveness analysis for the various regulatory options for the oils subcategory. For the oils subcategory, the cost-effectiveness analysis appears to be driven largely by a limited number of observations for one or two pollutants. For example, a single pollutant, benzo(a)pyrene, accounts for 88% of the estimated toxic removals by indirect dischargers and 80% of the estimated toxic removals by direct dischargers in the oils subcategory. Benzo(a)pyrene was detected in the effluent from the emulsion breaking/gravity separation process (which EPA used to establish baseline loadings for this subcategory) in four out of nine daily composite samples from one of the facilities sampled in this subcategory. One of the four daily composite samples was biphasic—the technology did not completely separate the oil from the water phase. The concentration of benzo(a)pyrene in the oil phase of this sample was several orders of magnitude greater than the concentration in the water phase and in the other samples at that facility. Therefore, the average concentration of benzo(a)pyrene for that facility is largely driven by its concentration in the oil phase of the biphasic sample. Applying its baseline loading methodology (see detailed discussion in Chapter 12 of the technical development document), EPA also attributed the average concentration of benzo(a)pyrene for the facility with the biphasic sample to 10 other facilities (approximately 13% of all the oils subcategory indirect dischargers). Consequently, the benzo(a)pyrene concentration detected in the oil phase of the daily composite biphasic sample accounts for a third to a half of the total pound-equivalent removals estimated for indirect dischargers in the oils subcategory.

EPA acknowledges that this daily composite sample significantly influences its estimate of pound-equivalent removals for indirect dischargers in the oils subcategory. However, EPA believes it is reasonable to project that some portion of other oils subcategory indirect discharging facilities may experience biphasic effluents from emulsion breaking/gravity separation and may thus also contain high baseline concentrations of highly toxic pollutants. Even if the concentration of benzo(a)pyrene in this sample were non-representative of other oily waste facilities, there may be other, highly toxic pollutants that were not detected in the waste streams of the plants sampled. The nature of this industry is to accept highly variable waste streams, so there is no ''typical'' set of pollutants and representative

concentrations. EPA solicits comment and data on this conclusion.

Finally, EPA notes that its extension of the average pollutant concentrations for the facility with the biphasic sample to 10 other facilities (unscaled) in this subcategory was conducted without consideration of whether these facilities treat non-hazardous materials or a mixture of hazardous and non-hazardous materials. If EPA were to analyze facilities on this basis, it might also effect EPA's estimate of toxic removals for this subcategory. This issue is discussed in more detail in Section IV.S.

XII. Water Quality Analysis and Environmental Benefits

In addition to costs and impacts, EPA also estimated the environmental and human health benefits of today's proposed requirements. Benefits identified as a result of this proposed rule are associated with improvements in water quality. Section X.C of this notice and Chapter 12 of the technical development document (TDD) describe the estimated reductions in effluent discharges. Those reductions and the estimates of incremental environmental improvements are derived by a comparison of estimated post-compliance discharges to a baseline of current discharges. Because current discharges are a function of current technology, this is the same baseline that is used to establish the costs of complying with this rule.

EPA is confident that its estimate of compliance costs is a full and accurate account of such costs. EPA is less confident, however, that its estimate of benefits is similarly complete. EPA is not currently able to evaluate all human health and ecosystem benefits associated with water quality improvements quantitatively. EPA is even more limited in its ability to assign monetary values to these benefits. The economic benefit values described below and in the ''Economic Analysis of the Proposed Effluent Limitations, Guidelines and Standards for the Centralized Waste Treatment Industry'' (EA) should be considered a subset of the total benefits of this rule and should be evaluated along with descriptive assessments of benefits and the acknowledgment that even these may fall short of the real-world benefits that may result from this rule. For example, the analyses consider the effects of metals and organic pollutants, but do not evaluate the impacts of other classes of pollutants, such as five-day biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), and total suspended solids (TSS), which can produce significant adverse environmental impacts. In addition, EPA has not calculated any benefits from water quality improvement at facilities that are represented by survey weights from the NOA (Notice of Data Availability) facilities. Assigning benefits to these facilities requires data specific to the reach into which the facility discharges. The monetized benefits presented in this section are therefore underestimated, and should not be directly compared with the costs presented in Section XI.

Within these confines, EPA analyzes the effects of current water discharges and assesses the benefits of reductions in these discharges resulting from this proposed regulation. EPA evaluated water quality benefits of controlling the discharge from CWT facilities to surface waters and POTWs for direct and indirect dischargers located throughout the United States. CWT industry waste effluents contain pollutants that, when discharged into freshwater and estuarine ecosystems, may alter aquatic habitats, affect aquatic life, and adversely affect human health. In fact, all 105 pollutants of concern considered in this analysis have at least one toxic effect (they are a human health carcinogen and/or human health systemic toxicant or aquatic life toxicant). Many of these pollutants are persistent and bioaccumulate in aquatic organisms. In addition, many of these pollutants can also adversely affect POTW operations or contribute to POTW biosolid contamination.

Water quality problems from four direct discharging CWT facilities and nine POTWs (which receive discharges from 14 indirect facilities) have been documented in State 304(l) Short Lists of impaired water bodies. In the case of indirect dischargers, the 9 POTWs have had water quality problems with pollutants that are typical of CWT discharges and these POTWs receive discharges from CWT facilities. However, EPA cannot definitely link the water quality problems with these CWT facilities. Finally, EPA has documented seven cases of impairment of POTW operations.

EPA expects a variety of human health, environmental, and economic benefits to result from these reductions in effluent loadings (see ''Environmental Assessment of the Proposed Effluent Guidelines for the Centralized Waste Treaters Industry,'' (Environmental Assessment)). In particular, the benefits assessment addresses the following benefit categories: a) human health benefits due to reductions in excess cancer risk; b) human health benefits due to reductions in lead exposure; c) human health benefits due to reductions in non-carcinogenic hazard (systemic); d) ecological and recreational benefits due to improved water quality with respect to toxic pollutants; and e) benefits to POTWs from reductions in interference, pass-through, and biosolid contamination, and elimination of some of the efforts associated with establishing local pretreatment limits.

Out of a total of 205 CWT facilities, EPA evaluated 10 direct wastewater dischargers and 85 indirect wastewater dischargers discharging up to 105 pollutants. Facilities not evaluated either are zero dischargers (44) or had insufficient data to conduct the water quality analysis. To estimate some of the benefits from the improvements in water quality expected to result from this rule, instream concentration estimates are modeled and then compared to both aquatic life and human health ambient water quality criteria (AWQC) or toxic effect levels to evaluate whether these discharges pose risk to aquatic organisms or to human health. The analyses were first performed on a subcategory-specific basis. The subcategory-specific analyses, however, consider only impacts of discharges from individual subcategories, and therefore, underestimate overall water quality impacts for facilities that treat wastes in more than one subcategory. At least 20 percent of facilities in the CWT industry accept wastes in multiple subcategories. In order to evaluate overall benefits of the proposed technologies, EPA also analyzed water quality and POTW impacts for subcategory combinations, as appropriate, for individual facilities.

For indirect dischargers, EPA also evaluates the potential inhibition of POTW operations and biosolid contamination (thereby limiting its use for land application) based on current and proposed pretreatment levels. Inhibition of POTW operations are projected by comparing modeled POTW influent concentrations to known inhibition levels from the literature; potential contamination of biosolids is estimated by comparing projected pollutant concentrations in biosolids to available EPA biosolid regulatory standards.

EPA monetizes the estimated benefits for reduced cancer risk, reduced lead health risk, improved recreational activity, improved nonuse (intrinsic) value, and reduced biosolid contamination at POTWs. However, EPA is unable to quantify the dollar value of benefits from the other benefit categories such as reduced noncarcinogenic hazards. The methodology and data used in the

estimate of all benefits are described in detail in the EA.

A. Reduced Human Health Cancer Risk

EPA expects that reduced loadings to surface waters associated with the proposal will reduce cancer incidences by approximately 0.65 per year with estimated monetized benefits of $1.5 to $8.0 million ($1997) per year. These estimated benefits are attributable to reducing the cancer risks associated with consuming contaminated fish tissue. EPA developed these benefit estimates by applying an existing estimate of the value of a statistical life to the estimated number of excess cancer cases avoided. The estimated range of the value of a statistical life used in this analysis is $2.3 million to 12.4 million ($1997).

B. Reduced Lead Health Risk

EPA expects that reduced loadings to surface waters will significantly reduce lead. Under the proposed treatment levels, the ingestion of lead-contaminated fish tissues by recreational and subsistence anglers would be substantially reduced at four water bodies. Because elevated blood lead levels can cause intellectual impairment in exposed children 0 to 6 years of age, benefits to the at-risk child populations are quantified by estimating the reduced potential IQ point loss. Benefits to adults are quantified by estimating the reduced risk for cardiovascular diseases including hypertension, coronary heart disease, and strokes (the benefits of reduced heart disease and strokes include both fatal and non-fatal cases). The benefits are quantified and monetized using methodologies developed in the Retrospective Analysis of the Clean Air Act (Final Report to Congress on Benefits and Costs of the Clean Air Act, 1970 to 1990; EPA 410–R–97–002). EPA estimates that this proposed regulation would reduce annual cases of these adverse health effects: 3.209 cases of hypertension valued at $838 per case, 0.185 cases of heart disease valued at $63,690 per case, 0.012 cases of cerebrovascular accidents valued at $246,000 per case for men and $123,000 per case for women, 0.008 cases of brain infarctions also valued at $246,000 per case for men and $123,000 per case for women, .222 cases of premature mortality valued at $2.3 million to $12.4 million per case, 72 increased IQ points in children valued at $3,637 per case, and 34 children with an IQ that is prevented from going below 70 (and thus requiring special education) valued at $64,800 per case. The total benefit for these reductions would range from approximately $3.0 million to $5.2 million ($1997). EPA also solicits comment on the methods that it used to calculate benefits from the reduction of lead health risks.

C. Reduced Noncarcinogenic Human Health Hazard

Exposure to toxic substances poses risk of systemic and other effects to humans, including effects on the circulatory, respiratory or digestive systems, and neurological and developmental effects. This proposed rule is expected to generate human health benefits by reducing exposure to these substances, thus reducing the hazards of these associated effects. EPA expects that reduced loadings to surface waters would reduce the number of persons potentially exposed to non-cancer effects due to consumption of contaminated fish tissue by 19,000 people. Presently, EPA does not have methodology for monetizing these benefits.

D. Improved Ecological Conditions and Recreational Activity

EPA expects this proposed rule to generate environmental benefits by improving water quality. There is a wide range of benefits associated with the maintenance and improvement of water quality. These benefits include use values (e.g., recreational fishing), ecological values (e.g., preservation of habitat), and passive-use values. For example, water pollution might affect the quality of the fish and wildlife habitat provided by water resources, thus affecting the species using these resources. This, in turn, might affect the quality and value of recreational experiences of users, such as anglers fishing in the affected streams. EPA considers the value of the recreational fishing benefits and intrinsic benefits resulting from this proposed rule, but does not evaluate the other types of recreational benefits and improvements to other recreational activities, such as swimming, boating, water skiing, and wildlife observation due to data limitations.

The projected reductions in loadings of metals and organics to surface waters and POTWs are significant. Modeled (unscaled) end-of-pipe metals and organic pollutant loadings are estimated to decline by about 83 percent, from 5.04 million pounds per year under current conditions to 0.88 million pounds per year under this proposed rule. The analysis comparing modeled instream pollutant levels to AWQC estimates that current discharge loadings result in 110 contraventions at 18 receiving water locations. The proposed rule would reduce this to 53 contraventions at 13 receiving water locations.

EPA estimates that the annual monetized recreational benefits to anglers associated with the expected changes in water quality range from $0.41 million to $1.2 million ($1997). EPA evaluates these recreational benefits, applying a model that considers the increase in value of a ''contaminant-free fishery'' to recreational anglers resulting from the elimination of all pollutant concentrations in excess of AWQC at 5 of the 18 receiving water locations. The monetized value of impaired recreational fishing opportunity is estimated by first calculating the baseline value of the receiving stream using a value per person day of recreational fishing, and the number of person-days fished on the receiving stream. The value of improving water quality in this fishery, based on the increase in value to anglers of achieving contaminant-free fishing, is then calculated. Because the valuation of these benefits is based on estimates of a willingness to pay for recreational fishing benefits in different fisheries with different water quality conditions, EPA recognizes that they are only approximate.

In addition, EPA estimates that the annual monetized intrinsic benefits to the general public, as a result of the same improvements in water quality, range from at least $0.20 million to $0.60 million ($1997). These intrinsic benefits are estimated as half of the recreational benefits and may be over or underestimated.

E. Improved POTW Operations

EPA considers two potential sources of benefits to POTWs from this proposed regulation: (1) reductions in the likelihood of interference, pass-through, and biosolid contamination problems; and (2) reductions in costs potentially incurred by POTWs in analyzing toxic pollutants and determining whether to, and the appropriate level at which to, set local limits. EPA is unable to quantify these benefits, but they are discussed qualitatively below.

First, regarding potential interference, pass-through and biosolid contamination, this proposed rule is expected to help reduce these problems by reducing pollutant loadings in the industry's effluent and reducing shock releases. Anecdotal evidence from POTW operators and sampling results indicate that such effects can occur. EPA also expects the proposed rule to improve the biosolid quality of 4,100

metric tons permitting the use of less expensive disposal mechanisms. The estimated monetized benefit for improving biosolid quality is $0.15–$0.93 million ($1997).

EPA recognizes that POTWs already have responsibility and full authority to prevent interference and pass-through due to discharges by industrial users by the establishment and enforcement of local limits. Reducing the pollutant load to local POTWs may eliminate some of the efforts associated with establishing these local limits for new CWT facilities or existing CWT facilities which begin to accept different waste types other than those upon which their permits are based. (Local limits have already been established for existing CWT facilities, and will need to be recalculated based on the new limits once promulgated.) Local limits are sometimes required to protect against pass-through and interference, and to protect worker health and safety. Several POTWs indicated that establishment of more effective national pretreatment standards would reduce the time and effort required to establish local limits.

Furthermore, reducing the discharge of toxic pollutants reduces the likelihood that the POTW effluents will exhibit excessive toxicity. When POTW effluent exhibits excessive toxicity, the POTW must enact a rigorous, costly analytical program to identify and reduce the source of toxicity. As noted above, however, POTWs generally address this issue through the establishment of local limits.

F. Other Benefits Not Quantified

The above benefit analyses focus mainly on identified compounds with quantifiable toxic or carcinogenic effects. This potentially leads to an underestimation of benefits, since some pollutant characterizations are not considered. For example, the analyses do not include the benefits associated with reducing the particulate load (measured as TSS), or the oxygen demand (measured as BOD_5 and COD) of the effluents. TSS loads can degrade ecological habitat by reducing light penetration and primary productivity, and from accumulation of solid particles that alter benthic spawning grounds and feeding habitats. BOD_5 and COD loads can deplete oxygen levels, which can produce mortality or other adverse effects in fish, as well as reduce biological diversity.

G. Summary of Benefits

EPA estimates that the annual monetized benefits resulting from this proposed rule are in the range of $5.3 million to $15.9 million ($1997). Table XII.F.1 summarizes these benefits, by category. The range reflects the uncertainty in evaluating the effects of this proposed rule and in placing a dollar value on these effects. As indicated in Table XII.F.1, these monetized benefits ranges do not reflect some of the benefit categories such as improved POTW operations. Therefore, the reported benefit estimate may understate the total benefits of this proposed rule. On the other hand, EPA has not applied a discount factor to any of the monetized health and environmental benefits, although there are likely to be significant lags between implementation of the rule and realization of some types of benefits. This would tend to overstate the benefits of the rule. However, EPA also repeats that benefits were quantified and/or monetized for the 105 (out of the 205 total) CWT facilities for which EPA had enough data to perform the analysis, whereas the costs of the rule accounted for 205 facilities.

TABLE XII.F.1—POTENTIAL ECONOMIC BENEFITS

Benefit category	Millions of 1997 dollars per year
Reduced Cancer Risk	1.5–8.0.
Reduced Lead Health Risk	3.0–5.2.
Reduced Non-Carcinogenic Hazard	Unquantified.
Improved Ecological Conditions	Unquantified.
Improved Recreation Value	0.41–1.2.
Improved Intrinsic Value	0.20–0.60.
Reduced Biosolid Contamination at POTW	0.65–0.93.
Improved POTW Operation (inhibition)	Unquantified.
Improved Occupational Conditions at POTWs	Unquantified.
Total Monetized Benefits	5.3–15.9.

XIII. Non-Water Quality Environmental Impacts

The elimination or reduction of one form of pollution may create or aggravate other environmental problems. Therefore, Sections 304(b) and 306 of the Act require EPA to consider non-water quality environmental impacts of effluent limitations guidelines and standards. Accordingly, EPA has considered the effect of these regulations on air pollution, solid waste generation, and energy consumption.

While it is difficult to balance environmental impacts across all media and energy use, the Agency has determined that the impacts identified below are acceptable in light of the benefits associated with compliance with the limitations and standards.

A. Air Pollution

CWT facilities generate wastewater that contain significant concentrations of organic compounds, some of which are also on the list of Hazardous Air Pollutants (HAP) in title 3 of the Clean Air Act Amendments (CAAA) of 1990. These wastewaters often pass through a series of collection and treatment units that are open to the atmosphere and allow wastewater containing organic compounds to contact ambient air. Atmospheric exposure of the organic-containing wastewater may result in significant volatilization of both volatile organic compounds (VOC), which contribute to the formation of ambient ozone, and HAP from the wastewater.

As discussed previously, EPA considered including air stripping in the technology basis for today's proposed limitations and standards, but rejected it because it would not have resulted in significantly different limitations. Because the proposed rule would not allow any less stringent control of VOCs than is currently in place at most CWT facilities, EPA does not project any net increase in air emissions of volatile pollutants due to today's proposal. As such, no adverse air impacts are expected to occur as a result of the proposed regulations.

Finally, while this proposal does not require the use of air stripping with emissions control to control the

emission of volatile pollutants, EPA encourages all facilities which accept waste containing volatile pollutants to incorporate air stripping with overhead recovery or destruction into their wastewater treatment systems. Additionally, EPA also notes that CWT sources of hazardous air pollutants are subject to maximum achievable control technology (MACT) as promulgated for off-site waste and recovery operations on July 1, 1996 (61 FR 34140) as 40 CFR Part 63.

B. Solid Waste

Solid waste will be generated due to a number of the proposed treatment technologies. These wastes include sludge from biological treatment systems, chemical precipitation and clarification systems, and gravity separation and dissolved air flotation systems. EPA costed off-site disposal in Subtitle C and D landfills of the solid wastes generated due to the implementation of the technologies discussed above. These costs were included in the economic evaluation of the proposed technologies.

The precipitation and subsequent separation proposed as the technology basis for the metals subcategory will produce a metal-rich filter cake which requires disposal. EPA estimates that metals subcategory facilities will generate annually 3.7 million gallons of filter cake. Dissolved air flotation and additional gravity separation steps proposed as the technology basis for the oils subcategory will also produce a metal-rich filter press cake requiring disposal. EPA estimates that oils subcategory facilities will generate annually 22.7 million gallons of filter press cake. Finally, the biological treatment system proposed for the organics subcategory will also produce a sludge requiring disposal. EPA estimates that 4.3 million gallons will be generated annually by the organics subcategory facilities.

C. Energy Requirements

EPA estimates that the attainment of BPT, BCT, BAT, and PSES will increase energy consumption by a small increment over present industry use. With the exception of the oils subcategory, the projected increase in energy consumption is primarily due to the incorporation of components such as power pumps, mixers, blowers, and controls. For the metals subcategory, EPA projects an increased energy usage of 3.3 million kilowatt hours per year and, for the organics subcategory, an increased energy usage of 0.5 million kilowatt hours per year. For the oils subcategory, however, the main energy requirement in today's proposed rule is for the operation of dissolved air flotation units. Dissolved air flotation units require air sparging to help separate the waste stream. For the oils subcategory, EPA projects an increased energy usage of 3.5 million kilowatt hours per year. Overall, an increase of 7.5 million kilowatt-hours per year would be required for the proposed regulation which equates to 20 barrels of oil per day. In 1996, the United States consumed 18.3 million barrels of oil per day. The costs associated with these energy requirements are included in EPA's estimated operating costs for compliance with the proposed rule.

XIV. Regulatory Implementation

A. Applicability

The regulation proposed today is just that—a proposed regulation. While today's proposal represents EPA's best judgment at this time, the effluent limitations and standards may still change based on additional information or data submitted by commenters or developed by the Agency. Consequently, the permit writer should consider the proposed limits in developing permit limits, but should continue to base limits on BPJ until final limits for this industry are promulgated. Although the information provided in this preamble and the accompanying documents may provide useful information and guidance to permit writers in determining BPJ permit limits, the permit writer will still need to justify any permit limits based on the conditions at the individual facility.

B. Upset and Bypass Provisions

A ''bypass'' is an intentional diversion of waste streams from any portion of a treatment facility. An ''upset'' is an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. EPA's regulations concerning bypasses and upsets for direct dischargers are set forth at 40 CFR 122.41(m) and (n) and for indirect dischargers at 40 CFR 403.16 and 403.17.

C. Variances and Modifications

The CWA requires application of the effluent limitations established pursuant to Section 301 or the pretreatment standards of Section 307 to all direct and indirect dischargers. However, the statute provides for the modification of these national requirements in a limited number of circumstances. Consequently, the Agency has established administrative mechanisms to provide an opportunity for relief from the application of national effluent limitations guidelines and pretreatment standards for categories of existing sources for priority, conventional, and non-conventional pollutants.

1. Fundamentally Different Factors Variances

EPA has established procedures for determining effluent limitations or standards different from the otherwise applicable requirements if an individual existing discharging facility is fundamentally different with respect to factors considered in establishing the limitations or standards applicable to the individual facility. Such a modification is known as a ''fundamentally different factors'' (FDF) variance. The SBREFA panel that reviewed this proposal encouraged the consideration of ways to streamline the Agency's processes for obtaining an FDF variance. One suggestion advanced was that the Agency provide for facilities to submit ''group'' FDF requests.

Early on, EPA, by regulation, provided for FDF modifications from BPT effluent limitations, BAT limitations for priority and non-conventional pollutants, and BCT limitations for conventional pollutants for direct dischargers. For indirect dischargers, EPA provided for FDF modifications from pretreatment standards for existing facilities. FDF variances for priority pollutants were challenged judicially and ultimately sustained by the Supreme Court (*Chemical Manufacturers Ass'n* v. *NRDC*, 479 U.S. 116 (1985)).

Subsequently, in the Water Quality Act of 1987, Congress added new Section 301(n) of the Act explicitly to authorize modification of the otherwise applicable BAT effluent limitations or categorical pretreatment standards for existing sources if a facility is fundamentally different with respect to the factors specified in Section 304 (other than costs) from those considered by EPA in establishing the effluent limitations or pretreatment standards. Section 301(n) also defined the conditions under which EPA may establish alternative requirements. Under Section 301(n), an application for approval of FDF variance must be based solely on (1) information submitted during the rulemaking raising the factors that are fundamentally different, or (2) information the applicant did not have an opportunity to submit. The alternate limitation or standard must be no less stringent than justified by the difference, and not result in markedly more adverse non-water quality

environmental impacts than the national limitation or standard.

EPA regulations at 40 CFR part 125 Subpart D, authorizing the Regional Administrators to establish alternative limitations and standards, further detail the substantive criteria used to evaluate FDF variance requests for existing direct dischargers. Thus, 40 CFR 125.31(d) identifies six factors (for example, volume of process wastewater, age, and size of a discharger's facility) that may be considered in determining if a facility is fundamentally different. The Agency must determine whether, on the basis of one or more of these factors, the facility in question is fundamentally different from the facilities and factors considered by the EPA in developing the nationally applicable effluent guidelines. The regulation also lists four other factors (for example, infeasibility of installation within the time allowed or a discharger's ability to pay) that may not provide a basis for an FDF variance. In addition, under 40 CFR 125.31(b)(3), a request for limitations less stringent than the national limitation may be approved only if compliance with the national limitations would result in either (a) a removal cost wholly out of proportion to the removal cost considered during development of the national limitations, or (b) a non-water quality environmental impact (including energy requirements) fundamentally more adverse than the impact considered during development of the national limits. EPA regulations provide for an FDF variance for existing indirect dischargers at 40 CFR 403.13. The conditions for approval of a request to modify applicable pretreatment standards and factors considered are the same as those for direct dischargers.

In reality, the Agency has only granted a limited number of the requests for FDF variances.

The legislative history of Section 301(n) underscores the necessity for the FDF variance applicant to establish eligibility for the variance. EPA's regulations at 40 CFR 125.32(b)(1) are explicit in imposing this burden upon the applicant. The applicant must show that the factors relating to the discharge controlled by the applicant's permit which are claimed to be fundamentally different are, in fact, fundamentally different from those factors considered by the EPA in establishing the applicable guidelines. The pretreatment regulations incorporate a similar requirement at 40 CFR 403.13(h)(9).

The Agency requests comment on how to modify its existing regulation to provide additional flexibility to small businesses in obtaining FDF variances in light of the specific statutory requirement that each individual discharger establish the fundamental difference in its operations through information submitted during development of the limitations and standards or show there was no opportunity to submit such information. It would be helpful if commenters supplied specific suggested changes to the regulatory language found at 40 CFR 125.32 and 403.13.

An FDF variance is not available to a new source subject to NSPS or PSNS.

2. Permit Modifications

Even after EPA (or an authorized State) has issued a final permit to a direct discharger, the permit may still be modified under certain conditions. (When a permit modification is under consideration, however, all other permit conditions remain in effect.) A permit modification may be triggered in several circumstances. These could include a regulatory inspection or information submitted by the permittee that reveals the need for modification. Any interested person may request a permit modification. There are two classifications of modifications: major and minor. From a procedural standpoint, they differ primarily with respect to the public notice requirements. Major modifications require public notice while minor modifications do not. Virtually any modification that results in less stringent conditions is treated as a major modification, with provisions for public notice and comment. Conditions that would necessitate a major modification of a permit are described in 40 CFR 122.62. Minor modifications are generally non-substantive changes. The conditions for minor modification are described in 40 CFR 122.63.

3. Removal credits

The CWA establishes a discretionary program for POTWs to grant ''removal credits'' to their indirect discharges. This credit, in the form of a less stringent pretreatment standard, allows an increased concentration of a pollutant in the flow from the indirect discharger's facility to the POTW. *See* 40 CFR 403.7. EPA has promulgated removal credit regulations as part of its pretreatment regulations. Under EPA's pretreatment regulations, the availability of a removal credit for a particular pollutant is linked to the POTW method of using or disposing of its sewage sludge. The regulations provide that removal credits are only available for certain pollutants regulated in EPA's 40 CFR Part 503 sewage sludge regulations (58 FR 9386). The pretreatment regulations at 40 CFR Part 403 provide that removal credits may be made potentially available for the following pollutants:

(1) If a POTW applies its sewage sludge to the land for beneficial uses, disposes of it on surface disposal sites, or incinerates it, removal credits may be available, depending on which use or disposal method is selected (so long as the POTW complies with the requirements in Part 503). When sewage sludge is applied to land, removal credits may be available for ten metals. When sewage sludge is disposed of on a surface disposal site, removal credits may be available for three metals. When the sewage sludge is incinerated, removal credits may be available for seven metals and for 57 organic pollutants (40 CFR 403.7(a)(3)(iv)(A)).

(2) In addition, when sewage sludge is used on land or disposed of on a surface disposal site or incinerated, removal credits may also be available for additional pollutants so long as the concentration of the pollutant in sludge does not exceed a concentration level established in Part 403. When sewage sludge is applied to land, removal credits may be available for two additional metals and 14 organic pollutants. When the sewage sludge is disposed of on a surface disposal site, removal credits may be available for seven additional metals and 13 organic pollutants. When the sewage sludge is incinerated, removal credits may be available for three other metals (40 CFR 403.7(a)(3)(iv)(B)).

(3) When a POTW disposes of its sewage sludge in a municipal solid waste landfill (MSWLF) that meets the criteria of 40 CFR Part 258, removal credits may be available for any pollutant in the POTW's sewage sludge (40 CFR 403.7(a)(3)(iv)(C)).

Given the statutory requirements for removal credits, the Agency has only received a very limited number of removal credit requests (2 or fewer).

Given compliance with the requirements of EPA's removal credit regulations, following promulgation of the pretreatment standards being proposed today, removal credits may be authorized for any pollutant subject to pretreatment standards if the applying POTW disposes of its sewage sludge in a MSWLF that meets the requirements of 40 CFR Part 258. If the POTW uses or disposes of its sewage sludge by land application, surface disposal or incineration, removal credits may be available for the following metal pollutants (depending on the method of use or disposal): arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc.

Some facilities may be interested in obtaining removal credit authorization for other pollutants being considered for regulation in this rulemaking for which removal credit authorization would not otherwise be available under Part 403. Under Sections 307(b), EPA may authorize removal credits only when EPA determines that, if removal credits are authorized, the increased discharges of a pollutant to POTWs resulting from removal credits will not prevent POTW sewage sludge use or disposal in accordance with EPA's regulations. As discussed in the preamble to amendments to the Part 403 regulations (58 FR 9382–83), EPA has interpreted these sections to authorize removal credits for a pollutant only in one of two circumstances. Removal credits may be authorized for any categorical pollutant for which EPA either has established a numerical pollutant limit in Part 503, or determined will not threaten human health and the environment when used or disposed of in sewage sludge. The pollutants described in paragraphs (1)—(3) above include all those pollutants that EPA either specifically regulated in Part 503 or evaluated for regulation and determined would not adversely affect sludge use and disposal.

EPA will soon propose to amend Part 403 to make removal credits available for those pollutants that are not now listed in Appendix G as eligible for removal credits provided a POTW seeking removal credit authority studies the impact that granting removal credits would have on the concentration of the pollutant in the POTW's sewage sludge, and establishes that the pollutants will not interfere with sewage sludge use or disposal. This proposed change would provide POTWs and their industrial users with additional opportunities to use removal credits to efficiently allocate treatment.

The proposal addresses the availability of removal credits for pollutants for which EPA has not developed a Part 503 pollutant limit or determined through a national study a concentration for the pollutant in sewage sludge below which public health and the environment are protected when the sewage sludge is used or disposed. Because EPA is only considering two additional pollutants for regulation under Part 503, the proposal would provide a mechanism for evaluating other pollutants for removal credit purposes. As noted above, EPA has interpreted the Court's decision in NRDC v. EPA as only allowing removal credits for a pollutant if EPA had either regulated the pollutant or established a concentration of the pollutant in sewage sludge below which public health and the environment are protected when sewage sludge is used or disposed. The proposal would allow the POTW to perform the study that would establish that allowable concentration. The POTW analysis would need to establish that the granting of removal credits will not increase the level of pollutants in the POTW's sewage sludge to a level that would fail to protect public health and the environment from reasonably anticipated adverse effects of the pollutant.

D. Relationship of Effluent Limitations and Pretreatment Standards to Monitoring Requirements

Effluent limitations and pretreatment standards act as a primary mechanism to control the discharges of pollutants to waters of the United States. These limitations are applied to individual facilities through NPDES permits and local limits developed for POTWs issued by the EPA or authorized States under Section 402 of the Act and local pretreatment programs under Section 307 of the Act.

The Agency has developed the limitations and standards for this proposed rule to cover the discharge of pollutants for this industrial category. In specific cases, the NPDES permitting authority or local POTW may elect to establish technology-based permit limits or local limits for pollutants not covered by this proposed regulation. In addition, if State water quality standards or other provisions of State or Federal law require limits on pollutants not covered by this regulation (or require more stringent limits or standards on covered pollutants to achieve compliance), the permitting authority must apply those limitations or standards.

Working in conjunction with the effluent limitations and standards are the monitoring conditions set out in an NPDES or local POTW pretreatment permit. An integral part of the monitoring conditions is the point at which a facility must monitor to demonstrate compliance. The point at which a sample is collected can have a dramatic effect on the monitoring results for that facility. Therefore, it may be necessary to require internal monitoring points in order to assure compliance. EPA's regulations authorize establishment of monitoring requirements for internal waste streams in prescribed circumstances. See 40 CFR 122.44(i)(1)(iii), 122.45(h), and 403.6(e). Control authorities may establish additional internal monitoring points to the extent consistent with EPA's regulations.

Some observers have questioned EPA's authority to require in-plant monitoring in light of the recent decision in *American Iron and Steel Institute (AISI)* v. *EPA*, 115 F.3d 979 (D.C. Cir. 1997). There, a court held that, although EPA has the authority to require monitoring of internal waste streams, *see AISI*, 115 F.3d at 995, the CWA does not authorize EPA to require compliance with water quality-based effluent limitations at a point inside the facility and thereby deprive a permittee of the ability to choose its own control system to meet the limitations, see *id*. at 966. EPA does not believe that decision would affect the Agency's approach taken for today's proposal. The *AISI* court did not consider the question of whether EPA has authority to take internal waste streams into consideration in establishing technology-based controls such as BPT/BAT, PSES, and NSPS/PSNS. Unlike water quality-based effluent limitations, which are calculated to ensure that water quality standards for the receiving water are attained, technology-based limitations and standards are derived to measure the performance of specific model technologies that EPA is required by statute to identify. In identifying these technologies, EPA is directed to consider precisely the type of internal controls that are irrelevant to the development of water quality-based effluent limitations, such as the processes employed, process changes, and the engineering aspects of various types of control technologies. EPA's technology-based effluent limitations are intended to reflect, for each industrial category or subcategory, the ''base level'' of technology (including process changes) and to ensure that ''in no case * * * should any plant be allowed to discharge more pollutants per unit of production than is defined by that base level'' (*E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. at 129 (1973)).

EPA concluded that it can require in-plant monitoring to demonstrate compliance with technology-based effluent limitations in accordance with the CWA and its regulations at 40 CFR 122.44(i), 122.45(h), 122.3(e), and 403.6(e) if such monitoring is necessary to demonstrate that wastes are being treated to a level corresponding to the technology basis of the standards. In today's rule, EPA is, therefore, requiring in-plant monitoring for compliance with limitations in the circumstances described above. Were EPA to require compliance monitoring of the final effluent without adjustment for the amount of dilution, there would be no

way to determine whether the facility had adequately controlled for pollutants or whether the effluent had simply been diluted below the analytical detection level. Diluting pollutants in this manner, rather than preventing their discharge, is inconsistent with achieving the removals represented by the technology-based levels of control and hence with the purposes of the limitations. It is also inconsistent with the goals of the CWA in general.

E. Subcategorization Determination

EPA believes that the paperwork and analyses currently performed at CWT facilities, as part of their waste acceptance procedures (as detailed in V.A), provide CWT facilities with sufficient information for them to determine into which of the proposed subcategories their treated waste would fall. EPA tried to base its recommended subcategorization determination procedure on information generally obtained during these waste acceptance and confirmation procedures. In EPA's view, permit writers and local pretreatment authorities should not (because they need not) require additional monitoring or paperwork solely for the purpose of subcategory determinations. EPA believes that if CWT facilities follow EPA's recommendations, they should easily classify their wastes. Permit writers and local authorities, in these, circumstances, would only need to satisfy themselves that the facility made a good-faith effort to determine the category of wastes treated. In most cases, as detailed below, EPA believes the subcategory determination can be made on the type of waste receipt, e.g., metal-bearing sludge, waste oil, or landfill leachate. Certainly, in EPA's estimation, all CWT facilities should, at a minimum, collect adequate information from the generator on the type of waste received at the CWT facility, because this is the minimum information required by CWT facilities to treat off-site wastes effectively.

To determine an existing facility's subcategory classification(s), the facility should review data for a period of one year on its incoming wastes. Information in Table XIV.E–1 below should aid CWT facilities in classifying each of its waste receipts for that one year period into a subcategory.

TABLE XIV.E–1.—WASTE RECEIPT CLASSIFICATION

Metals Subcategory	spent electroplating baths and/or sludges
	metal finishing rinse water and sludges
	chromate wastes
	air pollution control blow down water and sludges
	spent anodizing solutions
	incineration wastewaters
	waste liquid mercury
	cyanide-containing wastes (> 136 mg/L)
	waste acids and bases with or without metals
Oils Subcategory	used oils
	oil-water emulsions or mixtures
	lubricants
	coolants
	contaminated groundwater clean-up from petroleum sources
	used petroleum products
	oil spill clean-up
	bilge water
	rinse/wash waters from petroleum sources
	interceptor wastes
	off-specification fuels
	underground storage remediation waste
	tank clean-out from petroleum or oily sources
Organics Subcategory	landfill leachate
	contaminated groundwater clean-up from non-petroleum sources
	solvent-bearing wastes
	off-specification organic product
	still bottoms
	used glycols
	wastewater from paint washes
	wastewater from adhesives and/or epoxies
	wastewater from chemical product operations
	tank clean-out from organic, non-petroleum sources

If the CWT facility receives the wastes listed above, the subcategory determination may be made solely from this information. If, however, the wastes are unknown or not listed above, EPA recommends that the facility use the following hierarchy to determine how to characterize the wastes it is treating, so as to identify the appropriate regulatory subcategory.

(1) If the waste receipt contains oil and grease at or in excess of 100 mg/L, the waste receipt should be classified in the oils subcategory;

(2) If the waste receipt contains oil and grease <100 mg/L, and has any of the pollutants listed below in concentrations in excess of the values listed below, the waste receipt should be classified in the metals subcategory.

Cadmium: 0.2 mg/L

Chromium: 8.9 mg/L

Copper: 4.9 mg/L

Nickel: 37.5 mg/L

(3) If the waste receipt contains oil and grease < 100 mg/L, and does not have concentrations of cadmium, chromium, copper, or nickel above any of the values listed above, the waste receipt should be classified in the organics subcategory.

Once all wastes receipts have been categorized, the facility should determine the relative percent of the amount of off-site wastes accepted in each subcategory (by volume). For ease of implementation during development of this proposal, EPA considered an approach which would allow the facility to round the relative percent of wastes in each subcategory to the nearest five percent (by volume). Thus, under such an approach, a facility which discharges one million gallons per year, 950,000 gallons of which is classified in the metals subcategory and 50,000 gallons of which is classified in the oils subcategory, would be considered a metals subcategory facility only. However, EPA is concerned that this approach would potentially allow facilities to discharge large quantities of untreated pollutants on a mass basis, particularly from facilities with large discharge flows. Therefore, for today's notice, EPA is not proposing this approach. At the same time, EPA recognizes the practical difficulty of implementing limits for facilities that may receive waste in more than one subcategory due to the significant paperwork involved in detailed tracking of waste receipts. Thus, EPA solicits comments on this approach and ways to implement it while ensuring treatment, rather than dilution.

Members of the CWT industry have expressed concern that wastes may be received from the generator as a ''mixed waste'', i.e., the waste may be classified in more than one subcategory. Using the subcategorization procedure recommended in this section, EPA has had no difficulty classifying each waste receipt in one of the subcategories. Therefore, EPA believes that these ''mixed waste receipt'' concerns have been addressed in the current subcategorization procedure. EPA requests comments on the subcategorization determination procedure in general. Additionally, EPA requests specific information on mixed waste receipts that cannot be classified into a single subcategory using this procedure, as well as information on additional types of waste receipts that EPA should include in Table XIV.E–1 above.

Once a facility's subcategory determination has been made, EPA does not believe the facility should be required to repeat this annual determination process unnecessarily. However, if a single subcategory facility alters its operation to accept wastes from another subcategory or if a mixed waste facility alters its annual operations to change the relative percentage of waste receipts in one subcategory by more than 20 percent, the facility should notify the appropriate permit writer or pretreatment authority and the subcategory determination should be revisited. EPA notes that current permit regulations require notification to the permitting authority when significant changes occur. EPA also recommends that the subcategory determination be reevaluated whenever the permit is reissued, though this would not necessarily require complete characterization of a subsequent year's waste receipts if there were no indication that the make-up of the facility's receipts had significantly changed.

For new CWT facilities, the facility should estimate the percentage of waste receipts expected in each subcategory. Alternatively, the facility could compare the treatment technologies being installed to the selected treatment technologies for each subcategory. After the initial year of operation, the permit writer or pretreatment authority should revisit the facility's subcategory determination and follow the procedure outlined for existing facilities.

F. Implementation for Facilities in Multiple Subcategories

EPA estimates that many facilities in the CWT industry accept wastes in two or more of the subcategories being proposed for regulation here. In other words, the facilities actively accept a variety of waste types. This situation is different from the case in which metal-bearing waste streams may include low-level organics or that oily wastes may include metals due to the origin of the waste stream accepted for treatment.

In implementing this rule for multiple subcategory CWT facilities, the permit writer or pretreatment authority needs to ensure that the CWT facility has an optimal waste management program. First, the control authority should verify that the CWT facility is identifying and segregating waste streams appropriately since segregation of similar waste streams is the first step in obtaining optimal mass removals of pollutants from industrial wastes. Next, the control authority should verify that the CWT facility is employing treatment technologies designed to treat all off-site waste receipts effectively. If a facility accepts for treatment a mixture of waste types, it is still subject to limitations and standards (and monitoring to demonstrate compliance) that reflect the treatment performance achievable for the unmixed streams. In other words, if a facility accepts metal-bearing and oily waste for treatment, the facility must comply with the limitations and standards based on a treatment system which achieves the same pollutant reductions as the model system (dissolved air flotation or secondary gravity separation and dissolved air flotation) to ''adequately treat'' the oily waste for the oils and organics constituents. Similarly, discharges from the metal-bearing stream must comply with the limitations and standards defined by a treatment system that achieves the same reduction as the model system (two stage chemical precipitation and multimedia filtration).

EPA wants to ensure that wastes treated at multiple subcategory facilities are treated to the same level as wastes at single subcategory facilities. Therefore, EPA has costed all CWT facilities for compliance monitoring immediately following treatment of subcategory waste streams.

EPA recognizes, however, that the costs associated with monitoring immediately following treatment of subcategory waste streams can be significant. Additionally, EPA recognizes that requiring compliance monitoring immediately following treatment of subcategory waste streams would require some facilities to reconfigure their facility. Consequently, EPA is additionally proposing a monitoring alternative which would allow compliance monitoring at the discharge point only. Under this alternative, a multi subcategory CWT facility's limitations or pretreatment standards would be determined using the combined waste stream formula (CWF) or ''building block approach.'' Limitations or standards developed through the use of the combined waste stream formula or building block approach are essentially flow-weighted combinations of BPT/BAT/PSES limitations for the applicable subcategories.

The source of information used for calculating ''building block approach'' NPDES categorical limitations for direct dischargers is the ''U.S. EPA NPDES Permit Writer's Manual'' (December 1996, EPA–833–B–96–003). The sources of information that should be used for the CWT point source category for applying the combined waste stream formula in calculating federal pretreatment standards for indirect dischargers are 40 CFR Part 403.6 and ''EPA's Industrial User Permitting Guidance Manual.'' However, for this subcategory, EPA is proposing to amend the CWF to define an individual parameter as having a ''regulated flow'' if the pollutant is limited through BAT (not PSES). For pollutants which are limited through BAT and not PSES, EPA has included an allowance which is

based on the PSES standard if one had been proposed. EPA is proposing this approach, since a pollutant may pass the pass-through test and not be regulated as PSES, but still provide a significant contribution of that pollutant in the combined waste stream. By adopting this approach, EPA can ensure that standards for indirect dischargers are equivalent to standards for direct dischargers, and still allow for any contribution by this pollutant to the combined waste stream.

Chapter 14 of the technical development document provides a more thorough discussion, including specific examples, of the use of the combined waste stream formula or building block approaches. EPA encourages all interested parties to refer to this document and provide comment on its selected and alternative compliance monitoring requirements.

Some facilities, such as those located near auto manufacturers, claim that their waste streams vary significantly for very limited time spans each year, and that they would be unable to meet limitations based on their annual waste receipts during these time periods. In these cases, one set of limits or standards may not be appropriate for the permit's entire period. EPA recommends that a tiering approach be used in such situations. In tiered permits, the control authority issues one set of permits for ''standard'' conditions and another set which take effect when there is a significant change in the waste receipts accepted. ''EPA's Industrial User Permitting Guidance Manual'' (September 1989) recommends that tiered permits should be considered when production rate varies by 20 percent or greater. Since this rule is not production based, EPA recommends that for the CWT industry, tiered permits should be considered when the subcategory determination varies for selected time periods by more than 20 percent. An example when a tiered approach may be appropriate in the CWT industry would be if a CWT facility's major customer (in terms of flow) does not operate for a two week period in December. The CWT facility would not be receiving waste receipts from the generating facility during its two week closure which could greatly alter the relative percent of waste accepted by the CWT facility for the two week period only.

As explained previously, many facilities have waste streams that vary on a daily basis. EPA cautions that the tiering approach should only be used for facilities which have limited, well-defined, ''non-standard'' time periods. A tiered permit should only be considered when the control authority thoroughly understands the CWT facility's operations and when a substantial change in the relative percentages of waste in each subcategory would effect permit conditions.

Finally, as described in Section VII.D, the Agency considered, but is not proposing to establish, and rejected the suggestion to establish, a separate set of limitations for facilities that commingle flows from all subcategories. EPA is concerned that this approach would not address its concerns about co-dilution, instead of treatment, occurring as a result of commingling different types of waste streams. The Agency solicits comment on its approach to multiple subcategory facilities, particularly in regard to ensuring effective treatment. EPA is requesting commenters to supply additional data which they may have that would aid in characterizing the efficiency of waste treatment systems for facilities which commingle waste from multiple subcategories prior to treatment. If adequate data become available, EPA will reconsider this issue for the final rule.

XV. Related Acts of Congress, Executive Orders, and Agency Initiatives

A. Executive Order 12866

Under Executive Order 12866 [58 **Federal Register** 51735, (October 4, 1993)], the Agency must determine whether a regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

''(1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

Pursuant to the terms of Executive Order 12866, it has been determined that this proposal is a ''significant regulatory action.'' As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act

Under the Regulatory Flexibility Act (RFA), 5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), EPA generally is required to prepare an initial regulatory flexibility analysis (IRFA) describing the impact of a proposed rule on small entities as part of rulemaking. Under section 605(b) of the RFA, if the Administrator certifies that the rule will not have a significant economic impact on a substantial number of small entities, EPA is not required to prepare an IRFA.

Based on its preliminary assessment of the economic impact of regulatory options being considered for the proposed rule, EPA had concluded that the proposal might significantly affect a number of small entities. Accordingly, EPA prepared an IRFA pursuant to section 603(b) of the RFA.

The IRFA is discussed at Section XI.L and found in Chapter 8 of the ''Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry.'' As described above, while there is not a large number of small businesses in absolute terms that would be subject to the proposal, a large percentage of those that would be (forty-five out of 63) would incur annual costs under the proposal greater than one percent of sales (that is, annual costs as a percentage of annual revenue). Somewhat fewer (twenty-three firms) would have costs exceeding three percent of sales. EPA notes that this analysis does not account for the extent that a company can pass the additional costs of compliance on to their customers, and so may overstate the impacts of the proposed rule.

Pursuant to the RFA as amended by SBREFA, EPA convened a Small Business Advocacy Review panel as described above at VI.H. Section VI.H. provides detail on the purpose of the panel and summarizes the issues raised by the panel. The panel's findings are presented in the ''Final Report of the SBREFA Small Business Advocacy Review Panel on EPA's Planned Proposed Rule for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry—January 23, 1998.'' (This document is included in the public record). The panel made several recommendations that are reflected in today's proposal. Because the panel discussions and recommendations addressed integral

analyses and decision factors that formed the basis of today's proposal, their discussions and recommendations have been identified throughout this notice. In addition, the following discussion summarizes the panel's recommendations, describes EPA's actions, and identifies where the issues are discussed in today's notice.

(a) *EPA should solicit comment on the number of small entities that would be subject to this rule.* EPA solicited names and addresses of additional CWT facilities in the specific data and comments solicitation section, XVI.B.

(b) *EPA should consider alternatives to reduce monitoring costs.* EPA today solicits comments on an alternative monitoring scheme in which facilities may either (1) monitor for all pollutants as regulated today, or (2) monitor for the conventional, metal parameters, and an indicator parameter such as hexane extractable material (HEM) for the organic pollutants. EPA also solicits comments on recommending reduced monitoring frequencies for small businesses to alleviate economic impacts. These issues, as well as potential bases for identifying small businesses for purposes of providing monitoring relief, are discussed in more detail in IX.D and in the comment solicitation section, XVI.B.

(c) *EPA should consider ways to streamline the FDF variance process for small businesses.* EPA considered ways to streamline the FDF variance process for small businesses to the extent permitted by the Clean Water Act. One option considered would have allowed facilities to submit a ''group'' FDF request. However, EPA determined that the Clean Water Act requires that facilities submit FDF requests on a facility-specific basis. FDF variances are discussed in detail in XIV.C.1 of today's notice.

(d) *EPA should consider less costly technology, specifically, emulsion breaking and secondary gravity separation for the oils subcategory.* EPA is concerned that emulsion breaking and secondary gravity separation may not achieve acceptable pollutant removals as evidenced by EPA's limited sampling data for facilities employing this technology. EPA is requesting comment and additional data on this issue. This issue is discussed in greater detail in IX.B.1.ii. In addition, for indirect dischargers in all three subcategories, EPA is proposing pretreatment standards based on the least expensive technology option considered. In fact, PSES for the oils subcategory are based on less costly and less effective technology than the oils subcategory BAT limitations. The less costly and effective technology was selected for the basis of PSES largely due to small business impact concerns. Finally, in Section XVI.B, EPA solicits comments on alternative treatment technologies that would accomplish the stated objectives of the CWA and minimize any significant economic impact on small entities.

(e) *EPA should include a full and balanced discussion of possible small business relief measures.* In addition to the monitoring alternatives discussed above and the selection of the less costly PSES technology basis, EPA also considered several other regulatory alternatives to provide relief for small businesses. These alternatives, all of which involve different bases for exemptions, and the results of EPA's analyses are discussed in detail in XI.L Additionally, EPA solicits comment in IV.S and XVI.B on regulatory alternatives for small businesses. Specifically, EPA solicits comments on whether exclusions are warranted for any portion of this industry.

(f) *EPA should consider the degree of flexibility available under the Clean Water Act to select a cost-effective treatment option on which to base new source standards for the metals subcategory.* Under the Clean Water Act, in establishing NSPS, EPA is directed to select the most stringent controls attainable through the application of the best control technology for all pollutants. In addition, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements. EPA does not consider the increased cost of NSPS for the metals subcategory to be a barrier to entry for new sources in that subcategory (see Section XI.H). However, EPA's technology basis for the proposed limitations is closely tied to its preliminary conclusion that facilities will choose to recover and reuse metals. In the event that EPA concludes that new sources would not generally do so, EPA will promulgate NSPS based on the proposed BAT technology basis. EPA solicits comments on the technology basis selected for NSPS for the metals subcategory and its barrier to entry analysis in Section XI.H.

(g) *EPA should identify any limitations of the pollutant loadings estimate methodologies.* Based on recommendations by panel members, EPA reviewed its loadings methodologies, specifically its use of non-detects and its modeling procedures for assigning current performance estimates to oils subcategory facilities. Section X.C of today's notice discusses all of the pollutant loading methodological issues raised during the SBREFA panel and requests comment on them. Additionally, each of the issues is discussed in detail in the technical development document. Finally, in XVI.B, EPA solicits wastewater monitoring data, current performance information, and current pollutant loadings from the treatment and/or recovery of oily wastes, wastewaters and/or used materials.

(h) *EPA should solicit additional data and perhaps itself perform additional sampling to determine if an adequate basis exists for distinguishing between hazardous and non-hazardous flows.* EPA is not proposing a regulatory distinction based on whether a facility has a RCRA permit because its current analyses do not support such a distinction. This issue is discussed further in Section IV.T. As discussed in VI.C, following the completion of the SBREFA panel, EPA obtained grab samples of non-hazardous oily wastewaters from 10 additional oils facilities. Additionally, in today's notice, EPA solicits additional analytical data on the pollutants and concentration of pollutants in non-hazardous CWT waste receipts and hazardous CWT waste receipts. While the analytical results of the recent sampling episodes are in the appendix of the technical development document, EPA has not included these results in the analyses presented today. EPA will reconsider this issue based on the recent sampling data and any analytical data submitted during the comment period prior to promulgation.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are

inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes the final rule with an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed, under section 203 of the UMRA, a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that the proposed rule, if promulgated, would not contain a Federal mandate that will result in expenditures of $100 million or more for State, local and tribal governments, in the aggregate, or the private sector in any one year. Accordingly, today's proposal is not subject to the requirements of sections 202 and 205 of the UMRA. EPA has determined that this proposal contains no regulation requirements that might significantly or uniquely effect small governments, and, thus, is not subject to the requirements of section 203 of UMRA. The proposal itself, if promulgated, would not establish requirements that would apply to small governments. Any new costs that may result would arise from previously promulgated regulatory requirements, not promulgation of CWT limitations and standards. EPA has, however, sought meaningful and timely input from the private sector, states, and small governments on the development of this notice. Prior to issuing this proposed rule, EPA met with members of private sector as discussed earlier in the preamble.

As noted, EPA has determined that the requirements being proposed today will not significantly or uniquely affect small governments, including tribal governments. EPA recognizes that small governments may own or operate POTWs that will need to enter into pretreatment agreements with the indirect dischargers of the CWT industry that would be subject to this proposed rule. However, EPA currently estimates that the added costs of entering into or modifying existing pretreatment agreements will be minimal. The main costs resulting from this proposed rule will fall upon the private entities that own and operate CWT facilities.

D. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, EPA must submit an information collection request covering information collection requirements in proposed rules to the Office of Management and Budget (OMB) for review and approval. OMB has previously approved information collection requirements for CWA direct dischargers to comply with their NPDES permits and for indirect dischargers to comply with pretreatment requirements. Burden estimates for direct dischargers to comply with this rule are contained in the ''National Pollutant Discharge Elimination System (NPDES)/Compliance Assessment/ Certification Information'' ICR (OMB control no. 2040–0110). Burden estimates for indirect discharging facilities to comply with 40 CFR Part 403 are included in the ''National Pretreatment Program (40 CFR Part 403)'' ICR (OMB control no. 2040–0009).

E. National Technology Transfer and Advancement Act

Under § 12(d) of the National Technology Transfer and Advancement Act (NTTAA), the Agency is required to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standards bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the Office of Management and Budget (OMB), an explanation of the reasons for not using such standards. The following discussion summarizes EPA's response to the requirements of the NTTAA.

EPA performed a search of the technical literature to identify any applicable analytical test methods from industry, academia, voluntary consensus standard bodies, and other parties that could be used to measure the analytes in today's proposed rulemaking. EPA's search revealed that there are consensus standards for many of the analytes specified in the tables at 40 CFR 136.3. Even prior to enactment of the NTTAA, EPA has traditionally included any applicable consensus test methods in its regulations. Consistent with the requirements of the CWA, those applicable consensus test methods are incorporated by reference in the tables at 40 CFR 136.3. The consensus test methods in these tables include American Society for Testing Materials (ASTM) and Standard Methods.

Today's proposal would require dischargers to monitor for up to 18 metals, 18 organics, BOD_5, total cyanide, hexavalent chromium, TSS, and Oil and Grease (HEM). Examples of pollutants with consensus methods promulgated by reference in today's rule include the metals, total cyanide, BOD_5, TSS, and some organic pollutants such as fluoranthene and 2,4,6-trichlorophenol. In addition, EPA is developing additional data for certain nonconventional pollutants not included in the tables at 40 CFR 136.3 in support of the centralized waste treatment rule and the relevant analytical methods are discussed in section VI.D of this preamble. The pollutants for which additional data are being gathered include acetophenone, aniline, pyridine, o-cresol, p-cresol, 2,3-dichloroaniline, and benzoic acid. EPA notes that no applicable consensus methods were found for those pollutants. EPA plans to approve use of test methods for these pollutants, including any applicable consensus methods, if available, in conjunction with the promulgation of the CWT final rule. Commenters should identify any potentially applicable voluntary consensus standards for EPA's consideration.

F. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that (1) is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health risk or safety risk that the Agency has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to E.O. 13045 because it is not an economically significant rule as defined under Executive Order 12866. However, EPA did evaluate children's health effects (specifically, impaired IQ) in its analysis of environmental benefits (see XII.B).

G. The Edible Oil Regulatory Reform Act

The Edible Oil Regulatory Reform Act, Public Law 104–55, requires most federal agencies to differentiate between, and establish separate classes for (1) animal fats and oils and greases, fish and marine mammal oils, and oils of vegetable origin, and (2) other greases and oils, including petroleum, when issuing or enforcing any regulation or establishing any interpretation or guideline relating to the transportation, storage, discharge, release, emission, or disposal of a fat, oil, or grease.

The Agency believes that vegetable oils and animal fats pose similar types of threats to the environment as petroleum oils when spilled to the environment (62 FR 54508 Oct. 20, 1997).

The deleterious environmental effects of spills of petroleum and non-petroleum oils, including animal fats and vegetable oils, are produced through physical contact and destruction of food sources (via smothering or coating) as well as toxic contamination (62 FR 54511). However, the permitted discharge of CWT wastewater containing residual and dilute quantities of petroleum and non-petroleum oils is significantly different from an uncontrolled spill of pure petroleum or non-petroleum oil products.

CWT facilities that would be subject to the proposal do not typically accept wastes with appreciable amounts of animal fats and oils, etc. The exception are grease trap wastes. Today's proposal would not apply to that portion of wastewater treated at CWT facilities that represents grease trap wastes.

H. Executive Order 12875: Enhancing Intergovernmental Partnerships

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

Today's proposed rule would not, if promulgated, create a mandate on State, local, or tribal governments. The rule does not impose any enforceable duties on these entities. The proposal would establish requirements that apply to directly and indirectly discharging CWT facilities and not to State, local, or tribal governments. Accordingly, the requirements of section 1(a) of Executive Order 12875 would not apply to this rule.

I. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's proposed rule would not, if promulgated, significantly or uniquely affect the communities of Indian tribal governments or impose substantial direct compliance costs on those communities. The proposal would establish requirements that apply to directly and indirectly discharging CWT facilities and not to tribal governments or their communities. Accordingly, the requirements of Executive Order 13084 would not apply to this rule.

XVI. Solicitation of Data and Comments

A. Introduction and General Solicitation

EPA invites and encourages public participation in this rulemaking. The Agency asks that comments address any perceived deficiencies in the record of this proposal and that suggested revisions or corrections be supported by data.

The Agency invites all parties to coordinate their data collection activities with EPA to facilitate mutually beneficial and cost-effective data submissions. EPA is interested in participating in study plans, data collection and documentation. Please refer to the ''For Further Information'' section at the beginning of this preamble for technical contacts at EPA. Comments on the proposal must be received by [60 days after publication in Federal Register].

B. Specific Data and Comment Solicitations

1. Estimation of Industry Size

Based on data gathered from various sources for today's proposal, EPA has estimated there are 205 facilities in the CWT industry. EPA solicits general comments on this estimate as well as specific information on the number, name, location, and company information (particularly size status) of facilities within the industry (See Section V.A and Section VI). In addition, EPA is aware that an emerging activity at many CWT facilities is the recovery of used glycols. EPA requests information on CWT facilities that are performing this service alone or in combination with other CWT activities.

2. Applicability to Facilities Subject to 40 CFR (Parts 400 through 471)

As described in Section IV.B, EPA is today proposing to include within the scope of the CWT rule wastewater received from off-site (and commingled for treatment with on-site wastewater) at facilities currently subject to limitations or standards unless the wastes received from off-site for treatment would be subject to the limitations or standards as the on-site generated wastes.

Alternatively, EPA is considering an option that allows (subject to permit writer's discretion) manufacturing facilities who treat off-site wastes to meet all categorical limitations and standards that would otherwise apply to the off-site wastewater and to set limitations and pretreatment standards using the ''combined waste stream formula'' or ''building block approach'' as modified by today's notice. EPA envisions that the second alternative

would be preferable for facilities that only receive continuous flows of process wastewaters with relatively consistent pollutant profiles from a limited number of customers. The decision to base limitations in this manner would be at the permit writers' discretion only. EPA solicits comment on this alternative as well as the application of the CWT rule to manufacturing facilities in general.

3. Applicability to Manufacturing Facilities That Are Not Subject to 40 CFR (Parts 400 through 471)

EPA has not established effluent limitations guidelines or pretreatment standards for all manufacturing industries. Under EPA regulations, the permit writer would develop BPJ limits for such facilities. However, like the facilities described in Solicitation 2 above, some of these may accept off-site wastewater that is commingled for treatment with on-site process wastewater. These off-site wastewaters may be subject to existing guidelines and standards. EPA's present thinking is that, with respect to such wastewater, the facility would be a CWT facility and the associated wastewater, subject to CWT limits. Its on-site wastewater would be subject to BPJ limits. Alternatively, applying either a building block or combined waste stream formula approach, on-site wastewater would be subject to BPJ limits or standards and the off-site categorical wastewater subject to categorical limits. The Agency solicits comment on how it should treat such facilities. (See discussion in Section IV.B.).

4. Zero Discharge Requirement for Facilities Engaged in High Temperature Metals Recovery

EPA's data show that high temperature metals recovery (HTMR) operations generate no process wastewater. Accordingly, EPA excluded HTMR recovery operations from the scope of the CWT rule. EPA is also considering whether this rule, when promulgated, should include a subcategory for HTMR operations with a zero discharge requirement. EPA is requesting comment on such an approach and specifically seeks any data on facilities that may produce a process wastewater in their HTMR operations.

5. Used Oil Filter Recycling

EPA's data show that used oil filter recycling operations generate no process wastewater. Therefore, EPA excluded used oil filter recycling operations from the scope of the CWT rule as proposed today. EPA is also considering whether this rule, when promulgated, should include a subcategory for used oil filter recycling with a zero discharge requirement for such operations. EPA is requesting comment on such an approach and the number of facilities engaged in this activity. EPA specifically seeks any data on any such facilities that may produce a process wastewater in their operations.

6. Stabilization

EPA's data show that waste solidification/stabilization operations are dry and do not produce a wastewater. As such, stabilization/solidification processes are not subject to the CWT rule as proposed today. EPA is also considering whether this rule, when promulgated, should include a subcategory for stabilization operations with a zero discharge requirement. EPA is requesting comment on such an approach and specifically seeks any data on facilities that may produce a process wastewater in their stabilization operations.

7. Other Applicability Issues

In addition to the applicability issues discussed above, EPA solicits comments on each of the issues discussed in IV as well as any other applicability issues that are not specifically addressed in today's notice.

8. Mixed Waste Subcategory

Based on comments on the original proposal, for today's proposal, EPA considered a fourth subcategory, a mixed waste subcategory, that would apply to facilities that accept wastes in multiple subcategories. Limitations and pretreatment standards for this subcategory would combine pollutant limitations from all three subcategories, selecting the most stringent value where they overlap. EPA has chosen, however, not to propose a mixed waste subcategory. EPA is eager to ensure that mixed wastes receive adequate treatment. In many cases, facilities that accept wastes in multiple subcategories do not have treatment in place to provide effective treatment of all waste receipts. EPA solicits comments on ways to develop a ''mixed waste subcategory'' while ensuring treatment rather than dilution (See discussion in Section VII.D).

Alternatively, EPA considered an approach which would allow facilities to round the relative percent of wastes in each subcategory to the nearest five percent (by volume). However, EPA is concerned that this approach may allow facilities to discharge large quantities of untreated pollutants on a mass basis, particularly from facilities with large discharge flows. Therefore, for today's notice, EPA is not proposing this approach. EPA solicits comments on this approach and ways to implement it while ensuring treatment, rather than dilution.

Finally, EPA requests additional data that would aid in characterizing the efficiency of waste treatment systems that commingle waste from multiple subcategories prior to treatment.

9. Characterization of Wastewater Resulting From Dissolved Air Flotation

EPA solicits data on the chemical composition of wastewaters resulting from the effective treatment of CWT wastewaters using dissolved air flotation (DAF). EPA is particularly interested in obtaining data on DAF systems which are designed and operated to effectively remove oil and grease and TSS. All of the DAF systems studied by EPA were used at facilities that discharge to POTWs and, therefore, optimal control of oil and grease and TSS is not required. In addition, EPA solicits data on the effectiveness of dissolved air flotation systems in general. As such, EPA solicits data on the composition of CWT wastewaters entering and leaving dissolved air flotations systems. (See discussion in Section IX.B.1.b.ii).

10. Economic Achievability of Oils Subcategory PSES Options

As detailed in IX.B of today's notice, while EPA generally sets the technology basis for PSES equivalent to BAT, EPA is proposing a less stringent option for PSES for the oils subcategory than that established for BAT based on economic achievability concerns. EPA requests comments on whether any treatment technology basis more stringent, albeit more expensive, than dissolved air flotation is economically achievable.

11. Use of Indicator Parameters for Organic Pollutants

EPA recognizes that monitoring costs represent a significant portion of the compliance costs of this proposed rule. This is particularly true for facilities in the oils subcategory, many of which are owned by small businesses. The majority of the costs associated with EPA's recommended monitoring scheme are for organic pollutants. As such, EPA is considering an alternative to allow facilities to either (1) monitor for all pollutants as regulated today, or (2) monitor for the conventional and metal parameters and an indicator parameter such as hexane extractable material (HEM) or silica gel treatment—hexane extractable material (SGT–HEM) for the organic pollutants. EPA solicits

comment on this alternative, the appropriateness of HEM or SGT–HEM as an indicator parameter, alternative indicator parameters, and the use of indicator parameters in general. (See Section IX.D).

12. Reduced Monitoring Frequencies for Facilities Owned by Small Businesses

EPA recognizes that monitoring costs represent a significant share of the compliance costs of this proposed rule, particularly for small businesses. EPA is considering offering facilities an alternative monitoring scheme involving indicator parameters to alleviate some of the costs associated with monitoring. In the event that a suitable indicator parameter cannot be found, EPA is also considering recommending reduced monitoring frequencies for small businesses to alleviate economic impacts.

As detailed in Section IX.D, under a reduced monitoring alternative, two sets of limitations and pretreatment standards would be promulgated. Although the long-term average for both sets of limitations would be based upon the same technology and same long-term average performance, the monthly average limitations calculated based upon reduced monitoring assumptions would be higher (less stringent). EPA is concerned that facilities may target the monthly average as the basis for their design and operation of pollution control and treatment to comply with the regulation, rather than the long-term average that formed the basis of the limitations. One way to ensure that the appropriate level of control is not jeopardized in favor of reduced monitoring costs would be to allow the alternative limitations to apply only when monitoring is conducted at a lower frequency than assumed in the development of the limitations that apply to non-small business facilities. EPA solicits comment on this and other alternatives to ensure that the monitoring relief provides relief without jeopardizing environmental performance. EPA also solicits comment on the likelihood that permitting authorities would follow EPA recommendations regarding reduced monitoring frequencies for small-business owned and operated facilities.

Finally, EPA solicits comments on potential bases for defining small businesses for purposes of this monitoring relief. (See discussion in Section IX.D).

13. Loadings Methodology

Section X.C and Chapter 12 of the technical development document detail the methodologies EPA used to estimate baseline loadings, post-regulation loadings, and pollutant removals. EPA solicits comment on these methodologies. Specifically, EPA requests comment on its representation of ''non-detect'' data, its method of imputing data, and the modeling procedures used for estimating baseline pollutant loadings for the oils subcategory.

14. Regulatory Costs

Section X.B, Chapter 11 of the technical development document, and the ''Detailed Costing Document for the Centralized Waste Treatment Industry'' discuss EPA's estimates of the cost for CWT facilities to achieve the effluent limitations and standards proposed today. EPA solicits comment on all aspects of the methodology and data used to estimate these compliance costs.

15. Cost Estimates for Direct Dischargers in Oils Subcategory

For direct dischargers, EPA's cost analysis was not able to distinguish between Option 8 and Option 9. All of the direct discharging facilities in this subcategory for which EPA estimated costs currently employ rather extensive treatment (relative to the rest of the facilities in the oils subcategory), but the treatment technologies for the majority of the facilities are different from the technology basis for Option 8 or Option 9. While EPA believes these treatment technologies would allow these facilities to comply with either option for many pollutants, none of these in-place treatment technologies would achieve significant removals of metals pollutants. Therefore, for both options, EPA included costs of installing and operating dissolved air flotation. EPA believes its estimates (for both options) are, in fact, overestimates. EPA does, however, believe that meeting the more stringent Option 9 will result in additional removals while the cost differences will be negligible. EPA solicits comments on its conclusion as well as quantitative information on the cost differences for such facilities.

16. Cost Estimates for Direct Dischargers in Organics Subcategory

EPA believes that all direct discharging facilities in the organics subcategory currently employ equalization and biological treatment systems. EPA has assumed that all facilities which currently utilize equalization and biological treatment will be able to meet the BPT limitations without additional capital or operating costs. While EPA recognizes that some facilities may incur increased operating costs associated with the proposed limits, EPA believes these increases are negligible and has not quantified them. EPA solicits comments on its assumptions for these facilities as well as specific data which would aid in quantifying these increases.

17. Baseline Closures

Based on information obtained in the Waste Treatment Industry Questionnaire, at the time of the original proposal EPA estimated that approximately 20 percent of the commercial CWT facilities were unprofitable. Through telephone calls to these facilities, EPA found that many of these facilities were still in operation three years later, even though they continued to be unprofitable. The continued operation of such a large share of unprofitable facilities in the industry raises a significant issue. It suggests that some of the traditional tools of economic analysis used to project potential closures in an industry due to costs of compliance may not accurately predict real world behavior in a market where owners have historically demonstrated a willingness to continue operating unprofitable facilities. Therefore, for this proposal, EPA has not eliminated baseline closures from its analysis of economic impacts. EPA solicits comments on this approach and on alternative methods that could be used to identify baseline closures for this industry (See Section XI.B).

18. Market Model Approach

For this industry, EPA developed a market model to predict the impact of the regulation on the industry. Markets are defined as monopoly, duopoly, or perfect competition, depending on the number of facilities. Any market with more than three facilities is defined as perfectly competitive. This approach may overstate impacts in markets with one or two facilities, and may understate impacts on markets with three to ten facilities. EPA solicits comments on this approach and on appropriate ways to determine levels of competition for CWT markets (See XI.C.2).

19. SBREFA Panel Recommendations

In today's notice, VI.H. and XV.B detail the Small Business Regulatory Enforcement Fairness Act (SBREFA) and the recommendations of the SBREFA Small Business Advocacy Review panel. Additional references to the panel discussions and recommendations have been identified throughout this notice. In particular, Section XV.B describes many of the panel's recommendations and

summarizes EPA's response. EPA solicits data and comments on all issues raised by the panel members.

20. Regulatory Alternatives for Small Businesses

Because EPA projects significant costs for many CWT facilities owned by small firms, EPA analyzed several alternatives which would exempt various portions of the industry.

EPA's primary concern with an exclusion based on these analyses is that they represent one snapshot of a rapidly changing industry. EPA is concerned that if any segment of the industry were excluded, the segment might quickly expand as a result of the exclusion, leading to much greater discharges within a few years than predicted by existing data. In addition, EPA believes that most CWT facilities have substantial unused capacity.

EPA solicits comments on a small business exclusion that would minimize impacts on small firms for which projected compliance costs represent a significant share of costs or net income, or, more generally, any regulatory alternative that would minimize the economic impacts on small businesses. EPA is particularly interested in obtaining information on any less costly, but effective, treatment technology alternatives. Additionally, EPA solicits information on the current amount of unused capacity in the CWT industry (See Section XI.L).

21. Waste Receipt Characterization

As detailed in Sections VIII.B, industry has provided very little information on the concentration of pollutants in their waste receipts. EPA requests qualitative and quantitative data on a subcategory basis on the types of waste accepted for treatment as well as constituents found in the incoming wastes, wastewaters, and used materials. EPA specifically requests quantitative data on waste receipts from the organics subcategory that have not been commingled with waste receipts from other subcategories.

22. Characterization of Wastewater

EPA is interested in the pollutant levels in wastewater resulting from treatment processes currently in place at CWT facilities including the technologies discussed in this preamble and any other effective technologies. EPA is particularly interested in the pollutant levels currently being discharged in the treated final effluent resulting solely from the treatment of organics wastes and wastewaters at organics facilities. Specifically, EPA requests discharge monitoring data from treatment trains that treat wastes from a sole subcategory prior to commingling with wastewaters from other subcategories, non-contaminated stormwater, or other sources of water. As supporting information for this information, EPA requests the concentrations of pollutants in waste receipts and in intermediate waste streams that correspond to the reporting period of the final effluent discharges.

EPA also requests detailed information about the treatment system at the facility. To determine autocorrelation in the data, EPA requests final effluent data that contain many measurements for each pollutant for every single day over an extended period of time. (When data are said to be positively autocorrelated, it means that measurements taken at different time periods are similar. See discussion in IX.E)

Prior to submitting information about the wastewater currently in place at your CWT facility, please discuss your data submission with one of the technical contacts in the ''For Further Information'' section at the beginning of this preamble.

23. RCRA Classification

EPA's database contains information that was collected at facilities which treat hazardous waste only, non-hazardous waste only, and a mixture of hazardous and non-hazardous wastes. EPA solicits comments and data on the pollutants and concentration of pollutants in non-hazardous CWT waste receipts and in hazardous CWT waste receipts.

24. Waste Receipt Subcategorization Determination Procedure

EPA solicits comment on the subcategorization determination procedure outlined in XIV.E of this notice. Specifically, EPA requests data on waste receipts that have not been subcategorized and mixed waste receipts that can not be classified into a single subcategory using the recommended approach.

25. Facility Subcategorization Determination

In developing today's notice, for ease of implementation, EPA considered a facility subcategorization approach which would allow CWT facilities to round the relative percentage of wastes in each subcategory to the nearest five percent (by volume). EPA solicits comments on this approach and ways to implement it while ensuring treatment, rather than co-dilution (see XIV.E).

26. Status of Companies Owning CWT Facilities

EPA had to make a number of assumptions when formulating its company-level profiles, as detailed in Section XI.B EPA solicits comments on these assumptions.

27. New Source Performance Standards Selection for Metals Subcategory

In establishing NSPS, EPA is directed to select the technology basis that represents the most stringent controls attainable through the application of the best control technology for all pollutants. EPA is also directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impact. In today's proposal, EPA proposed limitations and standards for the metals subcategory based on the metals option 3 technology. The model facility for metals Option 3 recovers metals and sells them to a smelter for reuse. EPA solicits comments and data on the market for recovered metals and revenue generated from the sale of recovered metals. EPA also solicits comments on the extent to which new sources may chose to recover and reuse metals through the Option 3 technology basis or simply comply with the limitations and continue to dispose of their metal sludges in a landfill.

Finally, for today's proposal, in evaluating NSPS for the metals subcategory, EPA used a ''barrier to entry'' analysis. EPA has traditionally evaluated different technologies for NSPS by testing whether the cost of a particular technology is so great as to act as a barrier to the entry of new firms into the business. EPA has tentatively determined that the proposed technology basis will not pose a barrier to entry. However, as discussed further in Section IX.B, EPA also considered another technology basis that would remove only slightly less pollutants at significantly lower costs. EPA solicits comment on its technology basis selected for NSPS for the metals subcategory.

28. Transfer of Oil and Grease Limitations From Industrial Laundries or TECI

As discussed in IX.B, EPA has reviewed data from the Industrial Laundries and the TECI rulemaking for dissolved air flotation systems. For similar influent oil and grease concentrations, these systems removed oil and grease to levels well below those achieved at the DAF systems sampled for development of this regulation. Given the similarities in the oil and

grease levels of these wastes, EPA is considering whether use of this data is appropriate in determining CWT limitations. EPA requests comments on this issue as well as data generally on the efficacy of dissolved air flotation systems in treating CWT wastewaters.

29. Group FDF Requests

The Agency requests comment on how to modify its existing regulation to provide additional flexibility to small businesses in obtaining FDF variances in light of the specific statutory requirement that each individual discharger establish the fundamental difference in its operations through information submitted during development of the limitations and standards or show there was no opportunity to submit such information. It would be helpful if commenters supplied specific suggested changes to the regulatory language found at 40 CFR 125.32 and 403.13.

30. Small Business Identification

EPA defines small CWT companies as those having sales less than $6 million—the Small Business Administration definition of a small business for SIC Code 4953, Refuse Systems. Industry representatives have indicated that revenue would be a suitable criterion to identify small businesses for purposes of any small business regulatory alternatives (including reduced monitoring) and that facilities would be comfortable providing firm-level economic information to the federal, state, or local permitting authority as long as confidentiality is protected. EPA solicits comment on this basis, particularly from CWT facilities that are owned by a parent company, as well as alternative bases for identifying small businesses.

31. Effect of TDS on Chemical Precipitation

As detailed in Section VI.I, EPA conducted a laboratory study designed to determine the effect of TDS levels on chemical precipitation treatment performance. The resulting data and analysis are included in the record. EPA solicits comments on this data and analyses. Additionally, EPA consulted various literature sources to obtain information about the effect of TDS levels on chemical precipitation. EPA found no data or information which related directly to TDS effects on chemical precipitation. EPA solicits comment on and copies of any such literature sources.

Finally, the facility which forms the technology basis for Metals Option 4 (see Section IX.B.1.b.i) had high influent levels of TDS in their wastewaters during EPA's sampling episode. Consequently, the proposed BPT, BAT, and PSES limitations and standards can be achieved by all metals subcategory facilities, even those with high levels of TDS. EPA solicits comment and any data commenters may have bearing on this issue.

32. Benefits of Lead Health Risk Reduction

EPA quantified and monetized the benefits of health risk reductions from lower discharges of lead using methodologies developed in the Retrospective Analysis of the Clean Air Act (Final Report to Congress on Benefits and Costs of the Clean Air Act, 1970 to 1990; EPA 410–R–97–002). This exercise required a number of assumptions. EPA solicits comment on the methodology used to calculate lead benefits.

33. Elasticity Assumptions Used in the Economic Model

As discussed in Section XI.C, EPA chose specific elasticity parameters for use in the economic model based on reasoning that it believes to be sound and on the available literature. EPA solicits comments on the elasticity assumptions and, in particular, requests additional studies that provide elasticity estimates. EPA prefers studies that have been peer-reviewed, but is interested in any well-done study. EPA also requests data that could be used to calculate an elasticity and has placed a detailed description of data requirements in the record.

34. Variability Factors

Today's proposal discusses two different approaches to calculate variability factors—one based on pollutant variability factors and one based on group variability factors. The pollutant variability factor is the average of the variability factors from facilities with the model technologies for the option, and the group variability factor is the median of the pollutant variability factors from pollutants with similar chemical structures. In today's proposal, EPA generally used the product of the group variability factor and the pollutant long-term average in calculating each pollutant limitation. The calculation of variability factors is discussed in more detail in Section IX.E. EPA solicits comment on whether the pollutant or group variability factors or some combination should be used in calculating the limitations to accurately reflect the variability of the pollutants discharged by the CWT industry.

Appendix A: Definitions, Acronyms, and Abbreviations Used in This Notice

ADMINISTRATOR—The Administrator of the U.S. Environmental Protection Agency.

AGENCY—The U.S. Environmental Protection Agency.

AVERAGE MONTHLY DISCHARGE LIMITATION-The highest allowable average of ''daily discharges'' over a calendar month, calculated as the sum of all ''daily discharges'' measured during the calendar month divided by the number of ''daily discharges'' measured during the month.

BAT—The best available technology economically achievable, applicable to effluent limitations to be achieved by July 1, 1984, for industrial discharges to surface waters, as defined by section 304(b)(2)(B) of the CWA.

BCT—The best conventional pollutant control technology, applicable to discharges of conventional pollutants from existing industrial point sources, as defined by section. 304(b)(4) of the CWA.

BPT—The best practicable control technology currently available, applicable to effluent limitations to be achieved by July 1, 1977, for industrial discharges to surface waters, as defined by section 304(b)(1) of the CWA.

CENTRALIZED WASTE TREATMENT FACILITY—Any facility that treats and/or recovers or recycles any hazardous or non-hazardous industrial waste, hazardous or non-hazardous industrial wastewater, and/or used material from off-site.

CENTRALIZED WASTE TREATMENT WASTEWATER—Wastewater generated as a result of CWT activities. CWT wastewater sources may include, but are not limited to: liquid waste receipts, solubilization water, used oil emulsion-breaking wastewater, tanker truck/drum/roll-off box washes, equipment washes, air pollution control scrubber blow-down, laboratory-derived wastewater, on-site industrial waste combustor wastewaters, on-site landfill wastewaters, and contaminated stormwater.

CLEAN WATER ACT (CWA)—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. Section 1251 *et seq.*), as amended by the Clean Water Act of 1977 (Pub. L. 95–217), and the Water Quality Act of 1987 (Pub. L. 100–4).

CLEAN WATER ACT (CWA) SECTION 308 QUESTIONNAIRE—A questionnaire sent to facilities under the authority of Section 308 of the CWA, which requests information to be used in the development of national effluent guidelines and standards.

COMMERCIAL FACILITY—A CWT facility that accepts off-site generated wastes, wastewaters, or used material from other facilities not under the same ownership as this facility. Commercial operations are usually made available for a fee or other remuneration.

CONTAMINATED Stormwater—Stormwater which comes in direct contact with the waste or waste handling and treatment areas.

CONVENTIONAL POLLUTANTS—Constituents of wastewater as determined by Sec. 304(a)(4) of the CWA, including, but not limited to, pollutants classified as

biochemical oxygen demand, total suspended solids, oil and grease, fecal coliform, and pH.

CWT—Centralized Waste Treatment

DAILY DISCHARGE—The discharge of a pollutant measured during any calendar day or any 24-hour period that reasonably represents a calendar day.

DETAILED MONITORING QUESTIONNAIRE (DMQ)—Questionnaires sent to collect monitoring data from 20 selected CWT facilities based on responses to the Section 308 Questionnaire.

DIRECT DISCHARGER—A facility that discharges or may discharge treated or untreated wastewaters into waters of the United States.

EFFLUENT LIMITATION—Any restriction, including schedules of compliance, established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean (CWA Sections 301(b) and 304(b)).

EXISTING SOURCE—Any facility from which there is or may be a discharge of pollutants, the construction of which is commenced before the publication of the proposed regulations prescribing a standard of performance under Sec. 306 of the CWA.

FACILITY—All contiguous property owned, operated, leased, or under the control of the same person or entity

FUEL BLENDING—The process of mixing waste, wastewater, or used material for the purpose of regenerating a fuel for reuse.

HAZARDOUS WASTE—Any waste, including wastewater, defined as hazardous under RCRA, TSCA, or any state law.

HIGH TEMPERATURE METALS RECOVERY (HTMR)—A metals recovery process in which solid forms of metal containing materials are processed with a heat-based pyrometallurgical technology to produce a remelt alloy which can then be sold as feed material in the production of metals.

IN-SCOPE—Facilities and/or wastewaters that EPA proposes to be subject to this guideline.

INDIRECT DISCHARGER—A facility that discharges or may discharge wastewaters into a publicly-owned treatment works.

INTERCOMPANY—Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities not under the same corporate ownership. These facilities are also referred to as ''commercial'' CWT facilities.

INTRACOMPANY TRANSFER—Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities under the same corporate ownership. These facilities are also referred to as ''non-commercial'' CWT facilities.

LTA (Long-Term Average)—For purposes of the effluent guidelines, average pollutant levels achieved over a period of time by a facility, subcategory, or technology option. LTAs were used in developing the limitations and standards in today's proposed regulation.

MARINE-GENERATED WASTE—Waste, wastewater, and/or used material generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal, or open waters.

METAL-BEARING WASTES—Wastes and/or used materials that contain significant quantities of metal pollutants, but not significant quantities of oil and grease (generally less than 100 mg/L), from manufacturing or processing facilities or other commercial operations. These wastes include, but are not limited to, the following: spent electroplating baths and sludges, metal finishing rinse water and sludges, chromate wastes, air pollution control blow down water and sludges, spent anodizing solutions, incineration air pollution control wastewaters, waste liquid mercury, cyanide containing wastes greater than 136 mg/L, and waste acids and bases with or without metals.

MINIMUM LEVEL—the lowest level at which the entire analytical system must give a recognizable signals and an acceptable calibration point for the analyte.

MIXED COMMERCIAL/NON-COMMERCIAL FACILITY—Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities both under the same corporate ownership and different corporate ownership.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT—A permit to discharge wastewater into waters of the United States issued under the National Pollutant Discharge Elimination system, authorized by Section 402 of the CWA.

NEW SOURCE—Any facility from which there is or may be a discharge of pollutants, the construction of which is commenced after the proposal of regulations prescribing a standard of performance under section 306 of the Act and 403.3(k).

NON-COMMERCIAL FACILITY—Facilities that accept waste from off-site for treatment and/or recovery from generating facilities under the same corporate ownership as the CWT facility.

NON-CONTAMINATED STORMWATER—Stormwater which does not come into direct contact with the waste or waste handling and treatment areas.

NON-CONVENTIONAL POLLUTANTS—Pollutants that are neither conventional pollutants nor priority pollutants listed at 40 CFR Section 401.

NON-DETECT VALUE—The analyte is below the level of detection that can be reliably measured by the analytical method. This is also known, in statistical terms, as left-censoring.

NON-WATER QUALITY ENVIRONMENTAL IMPACT—Deleterious aspects of control and treatment technologies applicable to point source category wastes, including, but not limited to air pollution, noise, radiation, sludge and solid waste generation, and energy used.

NSPS—New Sources Performance Standards, applicable to industrial facilities whose construction is begun after the publication of the proposed regulations, as defined by Sec. 306 of the CWA.

OCPSF—Organic chemicals, plastics, and synthetic fibers manufacturing point source category. (40 CFR Part 414).

OFF SITE—Outside the boundaries of a facility.

OILY WASTES—Wastes and/or used materials that contain oil and grease (generally at or in excess of 100 mg/L) from manufacturing or processing facilities or other commercial operations. These wastes include, but are not limited to, the following: used oils, oil-water emulsions or mixtures, lubricants, coolants, contaminated groundwater clean-up from petroleum sources, used petroleum products, oil spill clean-up, bilge water, rinse/wash waters from petroleum sources, interceptor wastes, off-specification fuels, underground storage remediation waste, and tank clean out from petroleum or oily sources.

OLIGOPOLY—A market structure with few competitors, in which each producer is aware of his competitors' actions and has a significant influence on market price and quantity.

ON SITE—The same or geographically contiguous property, which may be divided by a public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection, and access is by crossing as opposed to going along the right-of-way. Non-contiguous properties owned by the same company or locality but connected by a right-of-way, which it controls, and to which the public does not have access, is also considered on-site property.

ORGANIC-BEARING WASTES—Wastes and/or used materials that contain organic pollutants, but not a significant quantity of oil and grease (generally less than 100 mg/L) from manufacturing or processing facilities or other commercial operations. These wastes include, but are not limited to, landfill leachate, contaminated groundwater clean-up from non-petroleum sources, solvent-bearing wastes, off-specification organic product, still bottoms, used glycols, wastewater from paint washes, wastewater from adhesives and/or epoxies, wastewater from chemical product operations, and tank clean-out from organic, non-petroleum sources.

OUTFALL—The mouth of conduit drains and other conduits from which a facility effluent discharges into receiving waters.

OUT-OF-SCOPE—Out-of-scope facilities are facilities which only perform centralized waste treatment activities which EPA has not proposed to be subject to provisions of this guideline. Out-of-scope operations are centralized waste treatment operations which EPA has not proposed to be subject to provisions of this guideline.

PIPELINE—Pipeline means an open or closed conduit used for the conveyance of material. A pipeline includes a channel, pipe, tube, trench, ditch, or fixed delivery system.

PASS THROUGH—A pollutant is determined to ''pass through'' a POTW when the average percentage removed by an efficiently operated POTW is less than the average percentage removed by the industry's direct dischargers that are using well-defined, well-operated BAT technology.

POINT SOURCE—Any discernable, confined, and discrete conveyance from which pollutants are or may be discharged.

POLLUTANTS OF CONCERN (POCs)—Pollutants commonly found in centralized waste treatment wastewaters. For the purposes of this guideline, a POC is a pollutant that is detected at or above a treatable level in influent wastewater samples from centralized waste treatment facilities. Additionally, a CWT POC must be present in at least ten percent of the influent wastewater samples.

PRIORITY POLLUTANT—One hundred twenty-six compounds that are a subset of the 65 toxic pollutants and classes of pollutants outlined in Section 307 of the CWA. The priority pollutants are specified in the NRDC settlement agreement (*Natural Resources Defense Council et al* v. *Train,* 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]).

PRODUCT STEWARDSHIP—A program practiced by many manufacturing facilities which involves taking back spent, used, or unused products, shipping and storage containers with product residues, off-specification products, and waste materials from use of products.

PSES—Pretreatment standards for existing sources of indirect discharges, under Sec. 307(b) of the CWA.

PSNS—Pretreatment standards for new sources of indirect discharges, under Sec. 307(b) of the CWA.

PUBLICLY OWNED TREATMENT WORKS (POTW)—Any device or system, owned by a state or municipality, used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature that is owned by a state or municipality. This includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment (40 CFR 122.2).

RCRA—The Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S.C. Section 6901 *et seq.*), which regulates the generation, treatment, storage, disposal, or recycling of solid and hazardous wastes.

RE-REFINING—Distillation, hydrotreating, and/or other treatment employing acid, caustic, solvent, clay and/or chemicals of used oil in order to produce high quality base stock for lubricants or other petroleum products.

SIC—Standard Industrial Classification (SIC)—A numerical categorization system used by the U.S. Department of Commerce to catalogue economic activity. SIC codes refer to the products, or group of products, produced or distributed, or to services rendered by an operating establishment. SIC codes are used to group establishments by the economic activities in which they are engaged. SIC codes often denote a facility's primary, secondary, tertiary, etc. economic activities.

SMALL-BUSINESS—Businesses with annual sales revenues less than $6 million. This is the Small Business Administration definition of small business for SIC code 4953, Refuse Systems (13 CFR Ch.1, § 121.601) which is being used to characterize the CWT industry.

SOLIDIFICATION—The addition of sorbents to convert liquid or semi-liquid waste to a solid by means of adsorption, absorption or both. The process is usually accompanied by stabilization.

STABILIZATION—A waste process that decreases the mobility of waste constituents by means of a chemical reaction. For the purpose of this rule, chemical precipitation is not a technique for stabilization.

VARIABILITY FACTOR—Used in calculating a limitation (or standard) to allow for reasonable variation in pollutant concentrations when processed through extensive and well designed treatment systems. Variability factors assure that normal fluctuations in a facility's treatment are accounted for in the limitations. By accounting for these reasonable excursions above the long-term average, EPA's use of variability factors results in limitations that are generally well above the actual long-term averages. WASTE RECEIPT—Wastes, wastewater, or used material received for treatment and/or recovery. Waste receipts can be liquids or solids.

ZERO OR ALTERNATIVE DISCHARGE—No discharge of pollutants to waters of the United States or to a POTW. Also included in this definition is disposal of pollutants by way of evaporation, deep-well injection, off-site transfer, and land application.

List of Subjects in 40 CFR Part 437

Environmental protection, Waste treatment and disposal, Water pollution control.

Dated: December 29, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the code of Federal Regulations is proposed to be amended by adding part 437 as follows:

PART 437—THE CENTRALIZED WASTE TREATMENT INDUSTRY POINT SOURCE CATEGORY

GENERAL PROVISIONS

Sec.

Subpart A—Metals Treatment and Recovery Subcategory

Subpart B—Oils Treatment and Recovery Subcategory

Subpart C—Organics Treatment or Recovery Subcategory

Subpart D—Combined Waste stream Formula

Authority: Sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, as amended (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361).

GENERAL PROVISIONS

§ 437.01 Applicability.

(a) Except as provided in paragraphs (b) through (g) of this section, this part applies to that portion of wastewater discharges from a centralized waste treatment (CWT) facility that results from any of the following activities:

(1) The treatment of metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site.

(2) The treatment of CWT wastewater.

(3) Used oil re-refining operations.

(4) Solvent recovery operations based on fuel blending.

(b) This part does not apply to that portion of wastewater discharges from a CWT facility that results from:

(1) The treatment of wastes that are generated on-site and are subject to another part of subchapter N.

(2) The treatment of a mixture of wastes that are generated off-site and on-site so long as the wastewater resulting from the treatment of the off-site wastes, if discharged at the site where generated, would have been subject to the same provisions of subchapter N as the wastewater resulting from the treatment of wastes generated on-site.

(3) The treatment of wastes received from off-site solely via conduit (e.g., pipelines, channels, ditches, trenches, etc.) from the facility that generates the wastes. A facility that acts as a waste collection or consolidation center is not a facility that generates wastes.

(4) The treatment of sanitary wastes and wastes of domestic origin including chemical toilet wastes, septage, and restaurant wastes.

(5) The treatment or recovery of animal or vegetable fats/oils from grease traps or interceptors generated by facilities engaged in food service activities.

(c) This part does not apply to the discharge of wastewater from facilities which are engaged exclusively in cleaning the interiors of tanker trucks, rail tank cars, or barges. The discharge resulting from the treatment of off-site wastewater generated in cleaning transportation equipment (or on-site wastewater generated in cleaning equipment) treated at a CWT facility along with other off-site wastes not generated in cleaning transportation equipment is, however, subject to this part.

(d) This part does not apply to the discharge of wastewater that results from the treatment of landfill wastes generated on-site at a CWT facility so long as landfill wastes are not mixed with other wastes for treatment. The discharge resulting from the treatment of landfill wastewater, whether generated on-site or off-site, treated at CWT facilities along with other off-site waste is, however, subject to this part.

(e) This part does not apply to wastewater discharges at a CWT facility that is exclusively engaged in the treatment of wastewater generated by industrial waste combustors. The discharge resulting from the treatment of off-site wastewater generated in the incineration of industrial waste that is treated at a CWT facility along with other off-site waste streams is subject to this part.

(f) This part does not apply to the discharge of wastewater generated in solvent recovery operations so long as the solvent recovery operations involve the separation of solvent mixtures by distillation. The discharge of wastewater resulting from distillation-based solvent recovery operations is subject to 40 CFR part 414.

(g) This part does not apply to marine generated wastes including wash water from equipment and tank cleaning, ballast water, bilge water, and other wastes generated as part of routine ship maintenance and operation as long as they are treated and discharged at the ship servicing facility where it is off-loaded. The discharges resulting from the treatment of marine generated wastes that are off-loaded and subsequently sent to a centralized waste treatment facility at a separate location are, however, subject to this part.

§ 437.02 Definitions.

As used in this part:

(a) The general definitions, abbreviations and methods of analysis in 40 CFR parts 122 and 401 and 403 shall apply.

(b) The term *centralized waste treatment (CWT) facility* means any facility that treats any hazardous or non-hazardous industrial wastes received from off-site by tanker truck, trailer/roll-off bins, drums, barge, or other forms of shipment. ''CWT facility'' includes both a facility that treats waste received from off-site exclusively, as well as a facility that treats wastes generated on-site and waste received from off-site. For example, an organic chemical manufacturing plant may, in certain circumstances, be a CWT facility if it treats industrial wastes received from offsite as well as industrial waste generated at the organic chemical manufacturing plant. The term CWT facility does not apply to facilities engaged in the following activities:

(1) Solids recovery operations so long as the wastes recovered are from non-industrial sources, do not generate a wastewater, or do not leach any metal or organic chemicals into the water. Solids recovery operations include, but are not limited to, the recycling of aluminum cans, glass, and plastic bottles.

(2) High temperature metals recovery operations that use heat-based pyrometallurgical technologies to recover metals.

(3) Used oil filter recycling operations generating no process wastewater.

(4) Waste solidification/stabilization operations that generate no process wastewater.

(5) Electrolytic plating operation with metallic replacement silver recovery operations on used photographic and x-ray materials. A facility that treats off-site silver-bearing wastes using other processes is a CWT.

(c) The term *centralized waste treatment wastewater* means water that comes in contact with wastes received from off-site for treatment or recovery, or water that comes in contact with the area in which the off-site wastes are received, stored or collected.

(d) The term *conventional pollutants* means those pollutants EPA has identified as conventional pollutant pursuant to section § 304(a)(4) of the CWA (see 40 CFR § 401.16)

(e) The term *electrolytic plating operation* means the application of various types of processes which lower the concentration of dissolved metals in solution by the passage of current through an electrolyte.

(F) The term *facility* means all contiguous property owned, operated, leased or under the control of the same person or entity. The contiguous property may be divided by public or private right-of-way may .

(g) The term *fuel blending* means the process of mixing hydrocarbon wastes for the purpose of regenerating a fuel for reuse. However, fuel blending may be loosely applied to any process where recovered hydrocarbons are combined as a fuel product where some pretreatment operations generate wastewater.

(h) The term *high temperature metals recovery* means a metals recovery process in which solid forms of metal containing materials are processed with a heat-based pyrometallurgical technology to produce a remelt alloy which can then be sold as feed material in the production of metals.

(i) The term *metal-bearing wastes* means wastes and/or used materials that contain significant quantities of metal pollutants, but not significant quantities of oil and grease (generally less than 100 mg/L), from manufacturing or processing facilities or other commercial operations. Examples of these wastes are spent electroplating baths and sludges, metal finishing rinse water and sludges, chromate wastes, air pollution control blow down water and sludges, spent anodizing solutions, incineration air pollution control wastewaters, waste liquid mercury, cyanide containing wastes greater than 136 mg/L, and waste acids and bases with or without metals.

(j) The term *off-site* means outside the boundaries of a facility.

(k) The term *oily wastes* means wastes and/or used materials that contain oil and grease (generally at or in excess of

100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are used oils, oil-water emulsions or mixtures, lubricants, coolants, contaminated groundwater clean-up from petroleum sources, used petroleum products, oil spill clean-up, bilge water, rinse/wash waters from petroleum sources, interceptor wastes, off-specification fuels, underground storage remediation waste, and tank clean out from petroleum or oily sources, and wastes that contain oil and grease from manufacturing or processing facilities or other commercial operations.

(l) The term *on-site* means within the boundaries of a facility.

(m) The term *organic wastes* means wastes and/or used materials that contain organic pollutants, but not a significant quantity of oil and grease (generally less than 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are landfill leachate, contaminated groundwater clean-up from non-petroleum sources, solvent-bearing wastes, off-specification organic product, still bottoms, used glycols, wastewater from paint washes, wastewater from adhesives and/or epoxies, wastewater from chemical product operations, and tank clean-out from organic, non-petroleum sources.

(n) The term *pipeline* means an open or closed conduit used for the conveyance of material. A pipeline includes a channel, pipe, tube, trench, or ditch.

(o) The term *solvent recovery* includes fuel blending operations and the recycling of spent solvents through separation of solvent mixtures in distillation columns. Solvent recovery may require an additional, pretreatment step prior to distillation.

(p) The term *treatment* means any method, technique, or process designed to change the physical, chemical or biological character or composition of any metal-bearing, oily, or organic waste so as to neutralize such wastes, to render such wastes amenable to discharge or to recover energy or recover metal, oil, or organic content from the wastes.

(q) The term *used oil filter recycling* means crushing and draining of used oil filters of entrained oil and/or shredding and separation of used oil filters.

(r) The term *waste* includes aqueous, non-aqueous and solid wastes.

§ 437.03 Monitoring requirements.

(a) Permit compliance monitoring is required for each regulated pollutant.

(b) Any CWT facility that discharges wastewater resulting from the treatment of metal-bearing waste, oily waste, or organic-bearing waste must monitor as follows:

(1) Facilities subject to more than one subpart must monitor for compliance for each subpart after treatment and before mixing of the waste with any other subpart wastes, stormwater, or wastewater subject to another effluent limitation or standard in Subchapter N. If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the effluent limitation or standard for each subpart, the facility may monitor for compliance after mixing.

(2) Whenever a CWT facility is treating any waste receipt that contains more than 136 mg/l of Total Cyanide, the CWT facility must monitor for cyanide after cyanide treatment and before dilution with other waste streams. If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the Total Cyanide limitation or standard after cyanide treatment and before mixing with other waste steams, the facility may monitor for compliance after mixing.

Subpart A—Metals Treatment and Recovery Subcategory

§ 437.10 Applicability; description of the Metals Subcategory.

The provisions of this subpart are applicable to that portion of wastewater discharges from a centralized waste treatment facility that results from the treatment of, or recovery of metals from, metal-bearing wastes received from off-site and that CWT facility's contact water.

§ 437.11 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 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations listed in the following table. These limitations apply to the pretreatment of metal-bearing waste which contain cyanide and the metals treatment effluent.

IN-PLANT BPT LIMITATIONS FOR CYANIDE PRETREATMENT—METALS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one Day	Monthly average
Total Cyanide	500	178

BPT EFFLUENT LIMITATIONS—METALS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Conventional Pollutants:		
TSS	60.0	31.0
Oil and Grease	88.4	27.8
Priority and non-conventional pollutants:		
Antimony	0.214	.176
Arsenic	0.106	0.087
Cadmium	0.111	0.052
Chromium	2.93	1.37
Chromium, hexavalent	2.68	0.988
Cobalt	0.285	0.133
Copper	1.45	0.674
Lead	0.290	0.135
Manganese	0.121	0.057
Mercury	0.0027	0.0013
Nickel	2.66	1.24
Selenium	2.83	0.583
Silver	0.057	0.026
Tin	0.223	0.104
Titanium	0.141	0.066
Vanadium	0.124	0.058
Zinc	1.05	0.489

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). The limitations for TSS and oil and grease are the same as those specified in § 437.11 of this subpart.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Except for the conventional pollutants, the limitations are the same as those specified in § 437.11 of this subpart.

§ 437.14 New source performance standards (NSPS).

Any new source subject to this subpart must achieve new source performance standards (NSPS). These limitations apply to the metals treatment effluent. The cyanide

pretreatment limitations are the same as those specified in § 437.11 of this subpart. The NSPS limitations are:

NSPS EFFLUENT LIMITATIONS—METALS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Conventional Pollutants:		
TSS	29.6	11.3
Oil and Grease	88.4	27.8
Priority and non-conventional pollutants:		
Antimony	0.111	0.031
Arsenic	0.059	0.017
Cadmium	0.319	0.104
Chromium	0.155	0.051
Chromium, hexavalent	0.138	0.057
Cobalt	0.224	0.073
Copper	0.658	0.216
Lead	0.215	0.070
Manganese	0.058	0.019
Mercury	0.0008	0.0003
Nickel	1.05	0.345
Silver	0.039	0.013
Tin	0.117	0.038
Titanium	0.020	0.006
Vanadium	0.195	0.064
Zinc	0.803	0.263

§ 437.15 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing user subject to this subpart must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES).

IN-PLANT PSES FOR CYANIDE PRETREATMENT—METALS SUBCATEGORY (MG/L)

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Total Cyanide	500	178

PSES—METALS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Priority and non-conventional pollutants:		
Antimony	0.214	.176
Arsenic	0.106	0.087
Cadmium	0.111	0.052
Chromium	2.93	1.37
Chromium, hexavalent	2.68	0.988
Cobalt	0.285	0.133
Copper	1.45	0.674

PSES—METALS SUBCATEGORY—Continued

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Lead	0.290	0.135
Manganese	0.121	0.057
Mercury	0.003	0.001
Nickel	2.66	1.24
Selenium	2.83	0.583
Silver	0.057	0.026
Tin	0.223	0.104
Titanium	0.141	0.066
Vanadium	0.124	0.058
Zinc	1.05	0.489

§ 437.16 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new user subject to this subpart must comply with 40 CFR Part 403. The cyanide pretreatment limitations are the same as those specified in § 437.15. The pretreatment standards for new sources (PSNS) are:

PSNS—METALS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Priority and non-conventional pollutants:		
Antimony	0.111	0.031
Arsenic	0.059	0.017
Cadmium	0.319	0.104
Chromium	0.155	0.051
Chromium, hexavalent	0.138	0.057
Cobalt	0.224	0.073
Copper	0.658	0.216
Lead	0.215	0.070
Manganese	0.058	0.019
Mercury	0.0008	0.0003
Nickel	1.05	0.345
Silver	0.039	0.013
Tin	0.117	0.038
Titanium	0.020	0.006
Vanadium	0.195	0.064
Zinc	0.803	0.263

Subpart B—Oils Treatment and Recovery Subcategory

§ 437.20 Applicability; description of the Oils Subcategory.

The provisions of this subpart are applicable to that portion of wastewater discharges from a centralized waste treatment facility that results from the treatment of, or recovery of oils from, oily waste received from off-site and CWT facility contact water.

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

Except as provided in 40 CFR 125.30 through 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).

BPT EFFLUENT LIMITATIONS—OILS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Conventional pollutants:		
Oil & Grease	127	38.0
TSS	74.1	30.6
Priority and non-conventional pollutants:		
Antimony	0.237	0.141
Arsenic	1.81	1.08
Barium	0.783	0.359
Cadmium	0.027	0.012
Chromium	0.650	0.298
Cobalt	26.3	12.1
Copper	0.400	0.183
Lead	0.350	0.160
Mercury	0.011	0.005
Molybdenum	5.48	2.51
Tin	0.380	0.174
Titanium	0.077	0.035
Zinc	7.20	3.30
Alpha-terpineol	0.166	0.081
Bis-2-ethylhexylphthalate	0.215	0.101
Butyl benzyl phthlate	0.188	0.089
Carbazole	0.520	0.255
Fluoranthene	0.045	0.024
n-decane	0.778	0.403
n-octadecane	0.662	0.343

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

Except as provided in 40 CFR 125.30 through 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 conventional pollutant control technology (BCT). The limitations for oil and grease and TSS are the same as those specified in § 437.21 of this subpart.

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

Except as provided in 40 CFR 125.30 through 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). Except for the conventional pollutants, the limitations are the same as those specified in § 437.21 of this subpart.

§ 437.24 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). These limitations apply to the oils treatment effluent. The limitations are the same as those specified in § 437.21 of this subpart.

§ 437.25 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing user subject to this subpart must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES).

PSES—OILS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Priority and non-conventional pollutants:		
Antimony	0.237	0.141
Barium	0.703	0.340
Cobalt	23.7	11.4
Copper	0.500	0.242
Molybdenum	4.92	2.38
Tin	0.341	0.165
Titanium	0.069	0.034
Zinc	10.0	4.84
Alpha-terpineol	0.141	0.071
Bis-2-ethylhexylphthalate	0.267	0.158
Carbazole	0.440	0.222
Fluoranthene	0.611	0.347
n-decane	5.96	3.48
n-octadecane	1.99	1.16

§ 437.26 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new user subject to this subpart must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS).

PSNS—OILS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Priority and non-conventional pollutants:		
Antimony	0.237	0.141
Barium	0.783	0.359
Cobalt	26.3	12.1
Copper	0.400	0.183
Molybdenum	5.48	2.51
Tin	0.380	0.174
Titanium	0.077	0.035
Zinc	7.20	3.30
Alpha-terpineol	0.166	0.081
bis-2-ethylhexylphthalate	0.215	0.101
carbazole	0.520	0.255
fluoranthene	0.045	0.024
n-decane	0.778	0.403
n-octadecane	0.662	0.343

Subpart C—Organics Treatment or Recovery Subcategory

§ 437.30 Applicability; description of the Organics Subcategory.

The provisions of this subpart are applicable to that portion of wastewater discharges from a centralized waste treatment facility that result from the treatment of, or recovery of organics from, organic-bearing waste received from off-site and CWT facility contact water.

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

Except as provided in 40 CFR 125.30 through 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).

BPT EFFLUENT LIMITATIONS—ORGANICS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Conventional pollutants:		
BOD_5	163	53
TSS	216	61
Priority and non-conventional pollutants:		
Antimony	0.972	0.691
Copper	0.850	0.752
Molybdenum	1.14	1.01
Zinc	0.461	0.408

BPT EFFLUENT LIMITATIONS—ORGANICS SUBCATEGORY—Continued

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Acetophenone	0.155	0.072
Aniline	0.046	0.021
Benzoic Acid	1.39	0.638
o-cresol	1.89	0.556
p-cresol	0.677	0.199
Phenol	3.70	1.09
Pyridine	0.370	0.182
2-butanone	8.83	2.62
2-propanone	20.7	6.15
2,3-dichloroaniline	0.100	0.046
2,4,6-trichlorophenol	0.155	0.106

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

Except as provided in 40 CFR 125.30 through 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 conventional pollutant control technology (BCT). The limitations for BOD5 and TSS are the same as those specified in § 437.31 of this subpart.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). Except for the conventional pollutants, the limitations are the same as those specified in § 437.31 of this subpart.

§ 437.34 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS). These limitations apply to the organics treatment effluent. The limitations are the same as those specified in § 437.31 of this subpart.

§ 437.35 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing user subject to this subpart must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES).

PSES—ORGANICS SUBCATEGORY

[mg/L]

Pollutant or pollutant parameter	Maximum for any one day	Monthly average
Priority and non-conventional pollutants:		
Molybdenum	1.14	1.01
Aniline	0.046	0.021
Benzoic Acid	1.39	0.638
o-cresol	1.89	0.556
p-cresol	0.677	0.199
2,3-dichloroaniline	0.100	0.046

§ 437.36 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new user subject to this subpart must comply with 40 CFR Part 403 and achieve pretreatment standards for new sources (PSNS). The standards are the same as those specified in § 437.35 of this subpart.

Subpart D—Combined Waste stream Formula

§ 437.40 Combined waste stream formula.

Whenever any new or existing user subject to pretreatment standards mixes wastewater subject to subparts A, B, or C of this Part prior to treatment, the Control Authority, as defined in § 403.12(a) or Industrial User with the written concurrence of the Control Authority, must calculate fixed alternative discharge concentration limits using the ''combined waste stream formula'' of § 403.7(e). For purposes of calculating fixed alternative discharge limits pursuant to § 403.6(e), wastewater subject to this part is a ''regulated flow.'' In calculating fixed alternative discharge limits pursuant to § 403.6(e), the Control Authority should use the following categorical concentration limits:

(a) *Metals subcategory categorical concentration standards.* There are no allowances for the metals subcategory.

(b) Oils subcategory categorical concentration limits.

OILS SUBCATEGORY

[mg/L]

Pollutant or Pollutant Parameter	Maximum for any one day	Monthly average
Arsenic	1.81	1.08

OILS SUBCATEGORY—Continued

[mg/L]

Pollutant or Pollutant Parameter	Maximum for any one day	Monthly average
Cadmium	0.024	0.012
Chromium	0.584	0.283

(c) Organics subcategory categorical concentration limits.

ORGANICS SUBCATEGORY

[mg/L]

Pollutant or Pollutant Parameter	Maximum for any one day	Monthly average
Antimony	0.972	0.691
Copper	0.850	0.752
Zinc	0.461	0.408
Acetophenone	0.155	0.072
Phenol	3.70	1.09
Pyridine	0.370	0.182
2-butanone	8.83	2.62
2-propanone	20.7	6.15
2,4,6-trichlorophenol	0.155	0.106

[FR Doc. 99–130 Filed 1–12–99; 8:45 am]

BILLING CODE 6560–50–P