

BACKGROUND

This chapter provides background information on the development of this final rule. The first sections detail the legislative background while the later sections provide information on the 1995 CWT proposal, 1996 CWT Notice of Data Availability, and the 1999 CWT supplemental proposal.

LEGAL AUTHORITY**1.0**

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.

LEGISLATIVE BACKGROUND**1.1*****Clean Water Act*****1.1.1**

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 wastewater 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.

Best Practicable Control Technology***Currently Available (BPT) --******Sec. 304(b)(1) of the CWA*****1.1.1.1**

In the guidelines, EPA defines BPT effluent limits for conventional, priority,¹ and non-

¹In 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, BOD5). However, nothing on the face of the statute explicitly restricted BPT limitation to such pollutants. Following passage of the Clean Water Act of 1977 with its requirement for point sources to achieve best available

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.

Best Conventional Pollutant Control Technology (BCT) -- Sec. 304(b)(4) of the CWA 1.1.1.2

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 (BOD₅), 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).

Best Available Technology Economically Achievable (BAT) -- Sec. 304(b)(2) of the CWA 1.1.1.3

In general, BAT effluent limitations guidelines represent the best economically achievable performance of plants in the industrial subcategory or category. 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. The Agency retains considerable discretion in assigning the weight to be accorded these factors. Unlike BPT limitations, BAT limitations may be based on effluent reductions attainable through changes in a facility's processes and operations. 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.

New Source Performance Standards (NSPS) -- Sec. 306 of the CWA 1.1.1.4

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

(continued on next page)

technology limitations to control discharges of toxic pollutants, EPA shifted the focus of the guidelines program to address the listed priority pollutants. BPT guidelines continue to include limitations to address all pollutants.

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.

Pretreatment Standards for Existing Sources (PSES) -- Sec. 307(b) of the CWA

1.1.1.5

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. Those regulations contain a definition of pass-through that addresses localized rather than national instances of pass-through and establish pretreatment standards that apply to all non-domestic dischargers. See 52 FR 1586, January 14, 1987.

Pretreatment Standards for New Sources (PSNS) -- Sec. 307(b) of the CWA

1.1.1.6

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.

Section 304(m) Requirements and Litigation

1.1.2

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. Due to the need to examine issues raised during the Small Business Advocacy Review (SBAR) process, the court approved a modification to the Decree that again extended the deadline for final action to August, 2000.

The Land Disposal

Restrictions Program:

1.1.3

Introduction to RCRA Land Disposal Restrictions (LDR)

1.1.3.1

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 differences in format of the LDR and effluent guidelines is that LDR establishes a single daily limit for each pollutant parameter whereas the effluent guidelines 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 differences in the statutory factors that the Administrator is required to consider in developing technically and economically achievable limitations and standards -- manufacturing products and processes (which, for CWTs involves types of waste received for treatment), raw materials, wastewater characteristics, treatability, facility size, geographic location, age of facility and equipment, non-water quality environmental impacts, and energy requirements. A consequence of these differing approaches is that similar waste streams can be regulated at different levels.

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

1.1.3.2

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. Any CWT facility, however, discharging effluent to a land disposal unit that meets these limitations and standards would meet the Universal Treatment Standards.

**CENTRALIZED WASTE TREATMENT
INDUSTRY EFFLUENT GUIDELINE**

RULEMAKING HISTORY

1.2

January 27, 1995 Proposal

1.2.1

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 from 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 1.1 below. EPA based BCT, BAT, NSPS, PSES, and PSNS on the same technologies as BPT.

Table 1-1. 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	Ultrafiltration or Ultrafiltration, Carbon Adsorption, and Reverse Osmosis
C	Organic Waste Treatment and Recovery	Equalization, Air Stripping, Biological Treatment, and Multimedia Filtration

September 16, 1996 Notice of Data Availability

1.2.2

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 1996 EPA noticed the availability of the new data on this subcategory. 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. 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 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.

January 13, 1999 Supplemental Proposal

1.2.3

On January 13, 1999 (64 FR 2280), EPA published a supplemental proposal which represented the Agency’s second look at Clean Water Act national effluent limitations and standards for wastewater discharges from centralized waste treatment facilities. The supplemental proposal presented revised limitations and standards based on the new information obtained from comments to the 1996

Notice of Data Availability and additional field sampling data. It also included changes to the scope of the rule.

In the supplemental proposal, the Agency proposed limitations and standards that EPA estimated would apply to 206 facilities in three subcategories. These subcategories were the same as those proposed in 1995: metal-bearing

waste treatment and recovery, used/waste oil treatment and recovery, and organic waste treatment. EPA based the BPT effluent limitations proposed in 1999 on different technologies than those selected at the time of the 1995 proposal. The technology basis for the supplemental proposal are listed in Table 1.2 below.

Table 1-2. Technology Basis for 1999 Supplemental Proposal

Proposed Subpart	Name of Subcategory	Technology Basis
A	Metal-Bearing Waste Treatment and Recovery	Batch Precipitation, Liquid-Solid Separation, Secondary Precipitation, Clarification, and Sand Filtration For Metal-Bearing Waste Which Includes Concentrated Cyanide Streams: Alkaline Chlorination in a two step process
B	Used/Waste Oil Treatment and Recovery	Emulsion Breaking/Gravity Separation, Secondary Gravity Separation and Dissolved Air Flotation
C	Organic Waste Treatment	Equalization and Biological Treatment

For the metals subcategory, EPA proposed limitations and standards for BCT, BAT, and PSES based on the same technologies as BPT, but based NSPS and PSNS on a different technology: selective metals precipitation, liquid-solid separation, secondary precipitation, liquid-solid separation, tertiary precipitation, and clarification.

For the oils subcategory, EPA proposed to base BCT, BAT, NSPS, and PSNS on the same technologies as BPT, but based PSES on a different technology: emulsion breaking/gravity separation and dissolved air flotation.

For the organics subcategory, EPA based BCT, BAT, NSPS, PSES, and PSNS on the same technologies as BPT.