



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

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584-3816

HSHB-EW/WP

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SUBJECT: Water Quality Information Paper No. 13

PRETREATMENT REGULATIONS

1. PURPOSE. The purpose of this information paper is to provide current information regarding the state of pretreatment regulations.

2. REFERENCES.

a. Public Law (PL) 92-500, Federal Water Pollution Control Act Amendments of 1972, 18 October 1972, as amended by Clean Water Act of 1977, 27 December 1977, and PL 95-576, Amendments to the Clean Water Act, 14 October 1978.

b. Title 40, Code of Federal Regulations (CFR), 1982 rev, Part 403, General Pretreatment Regulations for Existing and New Sources of Pollution, as amended by 47 Federal Register (FR) 42688, 28 September 1982.

c. Proposed Rules, General Pretreatment Regulations for New and Existing Sources--Removal Credits, 47 FR 42698, 28 September 1982.

d. Executive Order 12291, Federal Regulation, 17 February 1981.

3. REGULATORY BACKGROUND.

a. The development of a National Pretreatment Program has been a long and complicated affair. Originally intended by Congress to be completed within 180 days after promulgation of PL 92-500 in 1972 the National Pretreatment Program is still being developed a decade later. Because of the numerous legal actions and regulatory changes that have occurred, a regulatory history is too lengthy to include here. This information paper will provide a summary of the current regulations, their impact upon Army operations, and possible future changes that could occur.

b. Pretreatment is the reduction, elimination, or alteration of pollutant properties in wastewater prior to discharge to a publicly owned treatment works (POTW). Pretreatment regulations apply to all industrial (i.e., nondomestic) users of POTW's. The regulations are codified in 40 CFR 403.

c. The objectives of pretreatment regulations are threefold:

(1) To prevent the introduction of pollutants into a POTW that would interfere with its operation or sludge disposal.

(2) To prevent the introduction of pollutants into a POTW that would pass through the treatment works.

HSHB-EW/WP

SUBJECT: Water Quality Information Paper No. 13

(3) To improve the opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.

d. There are two mechanisms for the implementation of these objectives:

(1) Prohibited Discharges (40 CFR 403.5). Pollutants which would create a fire hazard, an explosion, obstruct the sewers, or create a hazard to the workers at the POTW are prohibited from being discharged to the POTW unless the treatment works are designed to treat these types of wastes.

(2) Categorical Standards (40 CFR 403.6). These are standards for individual industrial operations. The US Environmental Protection Agency (EPA) is currently developing standards for 29 industrial categories. These standards are technology based. That is, they are based on the ability of a technology to remove a pollutant from a wastewater and not the necessity to remove a pollutant from a wastewater. Categorical Pretreatment Standards are divided into two categories, Pretreatment Standards for Existing Sources (PSES) and Pretreatment Standards for New Sources (PSNS). In most cases, PSES will be equivalent to the effluent limitations of best available technology economically achievable (BAT) with which direct dischargers are required to comply. The PSNS will be equivalent to the effluent limitations of New Source Performance Standards with which new direct dischargers are required to comply. Promulgation was to have been completed by 31 December 1979. The EPA, however, was unable to comply with this deadline. Current EPA target dates call for completion by June 1984 (see Table 1). A discussion of the individual categorical standards and their impact upon the Army will be discussed in separate information papers as the standards are proposed.

e. The enforcement of pretreatment regulations will come from three locations: the EPA, state regulatory agencies, and local municipalities or sanitary authorities.

(1) The local municipality has the ultimate responsibility to enforce pretreatment regulations as it will be a requirement of their POTW's National Pollutant Discharge Elimination System (NPDES) permit (40 CFR 403.8). All POTW's with a design capacity of greater than 5 million gallons per day or significant industrial discharges are required to develop an approved pretreatment program by 1 July 1983. A significant industrial discharge is one that may cause interference with the POTW's operation, contaminate the POTW's sludge, or pass through the POTW without treatment. Because of the high costs of development and the reduction in Federal grants, a large number of POTW's will not meet this deadline. Congress will probably extend this deadline during the reauthorization of the Clean Water Act in 1983.

TABLE 1. CATEGORICAL PRETREATMENT STANDARDS PROMULGATION SCHEDULE

Industry	Proposal Date	Promulgation Date	Industry	Proposal Date	Promulgation Date
Adhesives and Sealants	2/83	11/83	Metal Finishing	8/82	6/83
Aluminum Forming	11/82	7/83	Nonferrous Metals		
Battery Manufacturing	10/82	6/83	(Phase I)	1/83	1/84
Coal Mining	12/80	9/82	Nonferrous Metals		
Coil Coating (Phase I)	12/80	11/82	(Phase II)	9/83	6/84
Coil Coating (Canmaking			Nonferrous Metals Forming ...	9/83	6/84
Segment)	1/83	10/83	Ore Mining	5/82	11/82
Copper Forming	10/82	7/83	Organic Chemicals/Plastics		
Electric and Electronic			and Synthetics	2/83	3/84
Components (Phase I)	8/82	3/83	Pesticides	11/82	12/83
Electric and Electronic			Petroleum Refining	11/79	9/82
Components (Phase II)	2/83	11/83	Pharmaceuticals	11/82	9/83
Foundries	10/82	8/83	Plastics Molding and		
Inorganic Chemicals			Forming	10/83	6/84
(Phase I)	7/80	6/82	Porcelain Enameling	1/81	11/82
Inorganic Chemicals			Pulp and Paper	12/80	10/82
(Phase II)	9/83	6/84	Steam Electric	10/80	11/82
Iron and Steel			Textile Mills	10/79	8/82
Manufacturing	1/81	5/82	Timber Products Processing ...	10/79	1/81
Leather Tanning and					
Finishing	6/79	11/82			

(2) State responsibilities for pretreatment regulations rest only with those states that have an approved pretreatment program (40 CFR 403.10). The EPA has made the development of an approved pretreatment program a requirement for those states wishing primacy over the NPDES permit program. Where a state does not have an approved pretreatment program, the EPA Regional Administrator assumes the state's responsibilities. As of this writing 14 states have approved pretreatment programs: Alabama, Connecticut, Georgia, Iowa, Minnesota, Mississippi, Missouri, New Jersey, North Carolina, Oregon, South Carolina, Vermont, West Virginia, and Wisconsin.

(3) The EPA has the responsibility for management of the National Pretreatment Program. This includes the development of the implementing regulations, approval of state programs, and enforcement where the state does not have an approved program.

4. REGULATORY REQUIREMENTS.

a. Categorical Pretreatment Standards will be applied to operations, not industries. For example, metal finishing operations are subject to metal finishing standards even if they are located at an explosives manufacturing plant. Installations can have many different industrial operations. Mixing of waste streams for combined pretreatment is permitted; however, applicable standards shall be adjusted to account for the dilution effect caused by the mixing effect. This adjustment is known as the combined wastestream formula; see 40 CFR 403 for further discussion. Increasing the use of process water to dilute the wastewater is prohibited. The economic and technical feasibility of mixing waste streams is drastically altered as a result of this regulatory approach. Current end-of-pipe treatment schemes must be closely compared with source control techniques. Recycle/reuse opportunities should be aggressively sought and cultivated. This is especially true as some of the Categorical Pretreatment Standards may have reduced monitoring requirements for small-volume dischargers.

b. Local authorities may impose pretreatment requirements more stringent than the Federal Categorical Pretreatment Standards (40 CFR 403.6). These standards must be based on protection of the POTW's operation, its sludge disposal method, or some other technical reason, and should not be a political decision. In some instances the local POTW will consider the entire installation as a source instead of each individual industrial operation. This is permitted as long as the installation pretreatment standards are equivalent to those that would be applied under the Federal Categorical Pretreatment Standards.

c. Within 30 days after the effective date of a pretreatment standard, an industrial user of a POTW can request the EPA Regional Administrator to certify that the user does or does not fall under that subcategory. This request must include specific information as contained in 40 CFR 403.6(a). If this request is not made, or a negative determination is not contested, then an industrial user is bound by any subsequent determination made by the EPA as to the subcategory to which the user belongs to.

d. Industrial users of POTW's must meet the five report and monitoring requirements contained in 40 CFR 403.12. They are:

(1) Within 180 days of the promulgation of an applicable pretreatment standard, an industry must file a report with the POTW providing information in the seven areas identified in 40 CFR 403.12(b)(1) through (7). Users who have already filed a report under the previous pretreatment regulations (40 CFR 128, now suspended) are not required to file another report.

(2) Users that are operating on a schedule negotiated with the POTW, designed to bring them into compliance with the pretreatment standards, must file a report within 14 days after a schedule deadline. Regardless of the schedule, one report will be filed at least every 9 months. The report will indicate whether the increment of progress was attained and if not, when it will be attained.

HSHB-EW/WP

SUBJECT: Water Quality Information Paper No. 13

(3) Within 90 days of compliance with a pretreatment standard, or the commencement of discharge for a new source, the user shall submit a report indicating the nature and concentration of all pollutants in the waste stream that are limited by pretreatment standards. The user shall report whether the discharge is in compliance with the pretreatment standard and if not, what action is being taken to bring the discharge into compliance.

(4) Users of POTW's subject to pretreatment standards shall submit in June and December of each year a report indicating the nature and concentration of the pollutant in the discharge and a record of any daily flows that exceed the average daily flow reported under the requirements of paragraph 4c(1).

(5) The user shall inform the POTW of any slug discharges.

e. Many Army operations will not be considered in the National Pretreatment Program because they constitute less than 5 percent of the industries in the category (Steam Electric Power Plants), or the EPA will exclude the industrial category (Explosives Manufacturing) from regulation in the near future. The establishment of pretreatment standards for these regulations will be left to the "best engineering judgment" of the EPA Regional Administrator or the State Director, depending on which body has enforcement authority. This could result in similar operations at installations in different states being subject to different standards.

5. REMOVAL CREDITS. The Federal pretreatment regulations (40 CFR 403.7) allow POTW's to revise the Categorical Pretreatment Standards to account for the treatment plant's capability to remove certain pollutants. These revisions are known as Removal Credits. To date, the cost and complexity of obtaining authority to issue Removal Credits has discouraged most POTW's from seeking issuance authority. This process required POTW's to demonstrate "consistent removal" of the pollutant by sampling and analyzing the influent and effluent of the treatment plant for at least 12 months prior to applying for removal credit authority. This is an extremely expensive operation which most POTW's were not prepared to undertake. Recently, however, the EPA has proposed to streamline this process (47 FR 42698), making the issuance of Removal Credits a realistic possibility. These proposed regulations allow POTW's which have complied with secondary treatment requirements or are within 1 year of meeting those requirements to demonstrate "consistent removal" by reliance on national removal rates (see Table 2) that have been generated by the EPA. Using these national removal rates, the POTW can adjust the Categorical Pretreatment Standards using the following formula:

$$Y = \frac{X}{1-R}$$

where Y equals the revised pretreatment standard

X equals the Categorical Pretreatment Standard

R equals the national removal rate.

As can be seen from Table 3, if the national removal rates are applied to the proposed metal finishing PSES, the revision could lead to a considerable cost savings in the design and operation of a pretreatment system.

TABLE 2. PROPOSED NATIONAL REMOVAL RATES FOR POTW's

Pollutant	National Removal Rate (percent)
Cadmium	38
Chromium	65
Copper	58
Lead	48
Nickel	19
Silver	66
Zinc	65
Total Regulated Metals	62
Cyanide	52

TABLE 3. METAL FINISHING PSES TO INCLUDE NATIONAL REMOVAL CREDIT REVISION

Pollutant	PSES		Revised PSES*	
	Daily Max (mg/L)	30-day Average (mg/L)	Daily Max (mg/L)	30-day Average (mg/L)
Cadmium	1.29	0.27	2.06	0.44
Chromium	2.87	0.80	8.20	2.29
Copper	3.72	1.09	8.86	2.60
Lead	0.67	0.23	1.29	0.44
Nickel	3.51	1.26	4.33	1.56
Silver	0.44	0.13	1.29	0.38
Zinc	2.64	0.80	7.54	2.29
Cyanide	1.30	0.28	2.71	0.58
Total Toxic Organics	0.58	-	0.58	-

* Includes allowance of removal credits

6. IMPACT UPON THE ARMY.

a. The Army currently has approximately 55 discharges to POTW's, not including Reserve Training Centers and Army National Guard installations. The majority of these discharges have at least some industrial operation (i.e., steam boiler operation or metal finishing) that will be subject to pretreatment standards.

b. Compliance with the Industrial Categorical Pretreatment Standards is required within 3 years of promulgation. As some of these standards will require construction to achieve compliance and typical planning and construction takes 5 years, some Army installations may have difficulty complying with pretreatment standards.

c. Army-owned treatment plants are not POTW's; thus, national pretreatment regulations are not obligatory for Army-owned treatment plants and their industrial users. To require an industrial contributor to an Army-owned treatment works to meet national pretreatment standards is not prudent. This is because national pretreatment standards are technology based, that is, they reflect the ability of a technology to remove a pollutant, not to protect a treatment plant or its receiving waters. In some instances, national pretreatment standards will not protect a plant's operation or its sludge management. In others, national standards will require the construction of costly, unneeded pretreatment facilities. Pretreatment programs for industrial users of Army-treatment plants should be developed on an individual basis. Sensible pretreatment standards that would protect the plant, its sludge, and the receiving waters should be developed. The EPA pretreatment regulations should serve only as guidelines.

7. FUTURE DEVELOPMENTS. The EPA is required by Executive Order 12291 to conduct a Regulatory Impact Assessment (RIA) for any regulations that have a major impact (costs of over \$100,000,000) on the economy. The EPA is currently conducting the RIA for the pretreatment regulations. This, along with the reauthorization of the Clean Water Act that will occur during 1983, will probably require some changes to the national pretreatment strategy as it currently exists because of the controversy surrounding the program. Two probable changes are listed below.

a. There are considerable political pressures upon the EPA and Congress to modify the current approach towards pretreatment. One popular approach is to move away from the Federal, technology-based, categorical standards and towards local POTW development, using flexible Federal guidelines.

b. The compliance date of 1 July 1983 for POTW development of an approved pretreatment program will have to be extended. A probable extension will be to sometime in 1986 or 1987.

8. SUMMARY.

a. Army installations should determine whether they have any industrial discharges to POTW's.

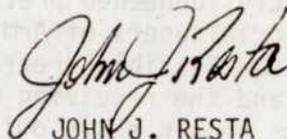
b. Within 30 days of the effective date of an applicable, subcategorical pretreatment standard, the installation should request a written determination from the EPA Regional Administrator whether any installation operations come under that particular subcategory.

c. Installations should conduct an inventory of their industrial contributions to POTW's. These inventories should contain complete characterizations of the wastewaters. This information will be needed for the 180-day facility report.

d. Installations should aggressively seek removal credits from POTW's when available.

e. Installations should keep up-to-date on the status of pretreatment regulations.

f. Pretreatment programs for Army-owned treatment plants should be developed on a case-by-case basis.



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