ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 442

[FRL–6100–6]

RIN 2040–AC23

Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Transportation Equipment Cleaning Point Source Category

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This proposed regulation establishes technology-based effluent limitations guidelines for the discharge of pollutants into waters of the United States and into publicly owned treatment works (POTWs) by existing and new facilities that perform transportation equipment cleaning operations. Transportation equipment cleaning (TEC) facilities are defined as those facilities that generate wastewater from cleaning the interior of tank trucks, closed-top hopper trucks, rail tank cars, closed-top hopper rail cars, intermodal tank containers, inland tank barges, closed-top hopper barges, ocean/sea tankers, and other similar tanks (excluding drums and intermediate bulk containers) used to transport materials or cargos that come into direct contact with the tank or container interior. Facilities which do not engage in cleaning the interior of tanks are not considered within the scope of this proposal.

EPA is proposing to subcategorize the TEC Point Source Category into 11 subcategories based on types of cargos carried and transportation mode. EPA is proposing to establish effluent limitations for existing facilities and new sources discharging wastewater directly to surface waters in the following subcategories: Truck/Chemical, Rail/Chemical, Barge/Chemical & Petroleum, Truck/Food, Rail/Food and Barge/Food Subcategories.

EPA is proposing to establish pretreatment standards for existing facilities and new sources discharging wastewater to POTWs in the following subcategories: Truck/Chemical and Rail/Chemical Subcategories. Additionally, EPA is proposing to establish effluent limitations for new sources discharging wastewater to POTWs in the Barge/Chemical & Petroleum Subcategory.

EPA is proposing not to establish effluent limitations or pretreatment standards for existing or new facilities in the Truck/Petroleum, Rail/Petroleum, Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories. Also, EPA is proposing not to establish pretreatment standards for existing or new sources in the Truck/Food, Rail/Food, and Barge/Food Subcategories because the pollutants generated by these subcategories are amenable to treatment in a Publicly Owned Treatment Works (POTW).

This proposal would not apply to wastewater discharges from cleaning operations located at industrial facilities regulated under other Clean Water Act effluent guidelines, provided that the facility cleans only tanks containing cargos or commodities generated or used on-site, or by a facility under the same corporate structure.

The wastewater flows covered by the rule include all contact washwaters which have come into direct contact with the tank or container interior including pre-rinse cleaning solutions, chemical cleaning solutions, and final rinse solutions. Additionally, the rule covers wastewater generated from washing vehicle exteriors, equipment and floor washings, and TEC contaminated wastewater at those facilities subject to the TEC guidelines and standards. Compliance with this proposal is estimated to reduce the discharge of priority pollutants by at least 100,000 pounds per year and result in recreational benefits of $1.8 million to $6.3 million in 1997 dollars. Additional non use benefits are projected to range from $ 885,000 to $3.2 million. Compliance with this proposal is expected to result in a total pretax compliance cost of $37.5 million annually.

DATES: Comments on the proposal must be received by September 23, 1998.

In addition, EPA will conduct a public hearing on Tuesday, August 18, 1998, from 9:00 a.m. to 11:00 a.m.

ADDRESSES: Send written comments and supporting data on this proposal to: John Tinger, US EPA, (4303), 401 M St. SW, Washington, D.C. 20460.

The public hearing covering the rulemaking will be held at the EPA headquarters auditorium, Waterside Mall, 401 M St. SW, Washington, DC. Persons wishing to present formal comments at the public hearing should have a written copy for submittal.

The public record is available for review in the EPA Water Docket, 401 M St. SW, Washington, D.C. 20460. The public record for this rulemaking has been established under docket number W–97–25, and includes supporting documentation, but does not include any information claimed as Confidential Business Information (CBI). The record is available for inspection from 9 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. For access to docket materials, please call (202) 260–3027 to schedule an appointment.

FOR FURTHER INFORMATION CONTACT: For additional technical information contact Mr. John Tinger at (202) 260–4992. For additional economic information contact Mr. George Denning at (202) 260–7374.

SUPPLEMENTARY INFORMATION: *Regulated Entities:* Entities potentially regulated by this action include:

Category	Examples of regulated entities
Industry	Facilities that clean the interiors of tank trucks, rail tank cars, or barges that have been used to transport cargos and that are not already covered by Clean Water Act effluent guidelines.

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 in Section III of the proposed rule. If you have questions regarding the applicability of this action to a particular entity, consult the person listed for technical information in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Supporting Documentation

The regulations proposed today are supported by several major documents:

1. ''Development Document for Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category'' (EPA–821–B–98–011). Hereafter referred to as the Technical Development Document, the document

presents EPA's technical conclusions concerning the proposal. EPA describes, among other things, the data collection activities in support of the proposal, the wastewater treatment technology options, wastewater characterization, and the estimation of costs to the industry.

2. ''Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category'' (EPA–821–B–98–012).

3. ''Cost-Effectiveness Analysis of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category'' (EPA–821–B–98–013).

4. ''Statistical Support Document of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category'' (EPA–821–B–98–014).

5. ''Environmental Assessment of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category'' (EPA–821–B–98–015).

How to Obtain Supporting Documents: All documents are available from the Office of Water Resource Center, RC–4100, U.S. EPA, 401 M Street SW, Washington, D.C. 20460; telephone (202) 260–7786 for the voice mail publication request. The Technical Development Document can also be obtained through EPA's Home Page on the Internet, located at WWW.EPA.GOV/OST/RULES. The preamble and rule can also be obtained at this site.

Table of Contents

I. Legal Authority
II. Background
A. Clean Water Act
B. Section 304(m) Requirements
C. Pollution Prevention Act
III. Scope of the Proposed Regulation
IV. Profile of the Transportation Equipment Cleaning Industry
A. Transportation Equipment Cleaning Facilities
B. Transportation Equipment Cleaning Processes
C. Regulatory History for the Transportation Equipment Cleaning Industry
V. Summary of Data Collection Activities
A. Preliminary Data Summary
B. Development of TECI Site Identification Database
C. Survey Questionnaires
1. 1993 Transportation Equipment Equipment Cleaning Industry Screener Questionnaire
2. 1994 Transportation Equipment Cleaning Industry Detailed Questionnaire
D. Development of National Population Estimates
E. Site Visits and Wastewater Sampling Program
VI. Industry Subcategorization
A. Factors Considered for Basis of Subcategorization
1. Cleaning Processes
2. Tank Type Cleaned
3. Cargo Type Cleaned
4. Water Use Practices
5. Wastewater Characteristics
6. Facility Age
7. Facility Size
8. Geographical Location
9. Water Pollution Control Technologies
10. Treatment Costs
11. Non-water Quality Impacts
B. Selection of Subcategorization Approach
VII. Wastewater Generation and Characteristics
VIII. Development of Effluent Limitations Guidelines and Standards
A. Description of Available Technologies
1. Pollution Prevention Controls
2. Flow Reduction Technologies
3. End-of-Pipe Wastewater Treatment Technologies
B. Technology Options Considered for Basis of Regulation
1. BPT Technology Options Considered and Selected
a. Introduction
b. Truck/Chemical Subcategory
c. Rail/Chemical Subcategory
d. Barge/Chemical & Petroleum Subcategory
e. Truck/Food, Rail/Food, and Barge/Food Subcategories
f. Truck/Petroleum and Rail/Petroleum Subcategories
g. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories
2. BCT Technology Options Considered and Selected
3. BAT Technology Options Considered and Selected
a. Truck/Chemical Subcategory
b. Rail/Chemical Subcategory
c. Barge/Chemical & Petroleum Subcategory
d. Truck/Food, Rail/Food, and Barge/Food Subcategories
e. Truck/Petroleum and Rail/Petroleum Subcategories
f. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories
4. NSPS Technology Options Considered and Selected
a. Introduction
b. Truck/Chemical Subcategory
c. Rail/Chemical Subcategory
d. Barge/Chemical & Petroleum Subcategory
e. Truck/Food, Rail/Food, and Barge/Food Subcategories
f. Truck/Petroleum and Rail/Petroleum Subcategories
g. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories
5. PSES Technology Options Considered and Selected
a. Introduction
b. Pass-Through Analysis
c. Truck/Chemical Subcategory
d. Rail/Chemical Subcategory
e. Barge/Chemical & Petroleum Subcategory
f. Truck/Food, Rail/Food, and Barge/Food Subcategories
g. Truck/Petroleum and Rail/Petroleum Subcategories
h. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories
6. PSNS Technology Options Considered and Selected
a. Introduction
b. Truck/Chemical Subcategory
c. Rail/Chemical Subcategory
d. Barge/Chemical & Petroleum Subcategory
e. Truck/Food, Rail/Food, and Barge/Food Subcategories
f. Truck/Petroleum and Rail/Petroleum Subcategories
g. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories
C. Development of Effluent Limitations
IX. Costs and Pollutant Reductions Achieved by Regulatory Alternatives
A. Methodology for Estimating Costs
B. Methodology for Estimating Pollutant Reductions
X. Economic Analysis
A. Introduction
B. Economic Impact Methodology
1. Introduction
2. Methodology Overview
C. Summary of Costs and Economic Impacts
1. Number of Facilities Incurring Costs
2. Total Costs and Impacts of the Proposed Rule
a. Introduction
b. Impacts From PSES
c. Impacts From BPT, BCT, and BAT
d. Impacts From PSNS
e. Impacts from NSPS
3. Economic Impacts of Accepted and Rejected Options
4. Small Business Analysis
D. Cost-Benefit Analysis
E. Cost-Effectiveness Analysis
XI. Water Quality Impacts of Proposed Regulations
A. Characterization of Pollutants
B. Truck/Chemical Subcategory
C. Rail/Chemical Subcategory
D. Barge/Chemical & Petroleum Subcategory
XII. Non-Water Quality Impacts of Proposed Regulations
A. Energy Impacts
B. Air Emission Impacts
C. Solid Waste Impacts
1. Wastewater Treatment Sludge
2. Waste Oil
3. Spent Activated Carbon
4. Spent Organo-Clay
XIII. Related Acts of Congress, Executive Orders, and Agency Initiatives
A. Summary of Public Participation
B. Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act
C. Executive Order 12866 (OMB Review)
D. Unfunded Mandates Reform Act (UMRA)
E. Paperwork Reduction Act
F. National Technology Transfer and Advancement Act
G. The Edible Oil Regulatory Reform Act
H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

XIV. Regulatory Implementation
A. Applicability
B. Upset and Bypass Provisions
C. Variances and Modifications
1. Fundamentally Different Factors Variances
2. Permit Modifications
3. Removal Credits
D. Relationship of Effluent Limitations to NPDES Permits and Monitoring Requirements
E. Best Management Practices (BMPs)
XV. Solicitation of Data and Comments
A. Introduction and General Solicitation
B. Specific Data and Comment Solicitations
XVI. Guidelines for Comment Submission of Analytical Data
A. Types of Data Requested
B. Analytes Requested
C. Quality Assurance/Quality Control (QA/QC) Requirements
Appendix A: Definitions, Acronyms, and Abbreviations Used in This Notice

I. Legal Authority

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

II. 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) and (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.

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

In the guidelines for an industry category, 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 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. BCT is not an additional limitation, but replaces Best Available Technology (BAT) for control of conventional pollutants. 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 existing economically achievable performance of direct discharging plants in the industrial subcategory or category. The factors considered in assessing BAT include the cost and economic impact of achieving BAT effluent reductions, the age of equipment and facilities involved, the processes employed, engineering aspects of the control technology, potential process changes, non-water quality impacts (including energy requirements), and such factors as the Administrator deems appropriate. The Agency retains considerable discretion in assigning the weight to be accorded to these factors. An additional statutory factor considered in setting BAT is economic achievability. Generally, the achievability is determined on the basis of the total cost to the industrial subcategory and the overall effect of the rule on the industry's financial health. BAT limitations may be based upon effluent reductions attainable through changes in a facility's processes and operations. As with BPT, where existing performance is uniformly inadequate, BAT may be based upon technology transferred from a different subcategory within an industry or from another industrial category. BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice.

[1] In the initial stages of EPA CWA regulation, EPA efforts emphasized the achievement of BPT limitations for control of the ''classical'' pollutants (e.g., TSS pH, BOD_5). However, nothing on the face of the statue explicitly restricted BPT limitation to such pollutants. Following passage of the Clean Water Act of 1997 withits 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 toxic pollutants under the guidelines program. BPT guidelines continue to include limitations to address all pollutants.

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 (BDAT). 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 greatest degree of effluent reduction attainable through the application of the best available demonstrated control technology for all pollutants (i.e., conventional, nonconventional, and priority pollutants). In determining the BADT, 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 (POTWs). The CWA authorizes EPA to establish pretreatment standards for pollutants that pass through POTWs or interfere with treatment processes 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.

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.

B. Section 304(m) Requirements

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 Transportation Equipment Cleaning Industry.

In 1992, EPA entered into a Consent Decree requiring proposal and final agency action of effluent limitations guidelines and standards final rule for the Transportation Equipment Cleaning Industry (*NRDC* v. *Browner* D.D.C. 89–2980). In December of 1997, the Court modified the decree revising the deadlines for proposal to May 15, 1998 and a deadline of June 15, 2000 for final action.

C. Pollution Prevention Act

The Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101 *et seq.*, Pub. L. 101–508, November 5, 1990) ''declares it to be the national policy of the United States that pollution should be prevented or reduced whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or release into the environment should be employed only as a last resort * * *'' (Sec. 6602; 42 U.S.C. 13101 (b)). In short, preventing pollution before it is created is preferable to trying to manage, treat or dispose of it after it is created. The PPA directs the Agency to, among other things, ''review regulations of the Agency prior and subsequent to their proposal to determine their effect on source reduction'' (Sec. 6604; 42 U.S.C. 13103(b)(2)). This effluent guideline was reviewed for its incorporation of pollution prevention.

According to the PPA, source reduction reduces the generation and release of hazardous substances, pollutants, wastes, contaminants, or residuals at the source, usually within a process. The term source reduction ''include[s] equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training or inventory control. The term ''source reduction'' does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to or necessary for the production of a product or the providing of a service.'' 42 U.S.C. 13102(5). In effect, source reduction means reducing the amount of a pollutant that enters a waste stream or that is otherwise released into the environment prior to out-of-process recycling, treatment, or disposal.

EPA has evaluated pollution prevention related activities involving the management of heels (residual material) in the Transportation Equipment Cleaning (TEC) Industry. During the data collection phase of the development of the proposed rule, a number of potential pollution prevention practices and technology applications were identified. Discussion of the pollution prevention technologies and practices and their uses with respect to this proposed rule are contained in Section VI of this preamble and in the Technical Development Document.

III. Scope of the Proposed Regulation

EPA is today proposing effluent limitations guidelines and pretreatment standards for wastewater discharges from facilities engaged in cleaning the interiors of tanks including, but not limited to: tank trucks; rail tank cars; intermodal tank containers; inland tank barges; and ocean/sea tankers used to transport commodities that come into direct contact with the tank or container interior. Facilities which do not engage in cleaning the interior of tanks are not considered within the scope of this proposal.

EPA is proposing to subcategorize the TEC point source category into 11 subcategories based on types of cargos carried and transportation mode. The subcategories proposed for the TEC point source category are set forth below. Further details and definitions of EPA's subcategorization approach are in Section VI of this notice.

- Subcategory A: Truck/Chemical;
- Subcategory B: Rail/Chemical;
- Subcategory C: Barge/Chemical & Petroleum;
- Subcategory D: Truck/Petroleum;
- Subcategory E: Rail/Petroleum;
- Subcategory F: Truck/Food;
- Subcategory G: Rail/Food;
- Subcategory H: Barge/Food;
- Subcategory I: Truck/Hopper;
- Subcategory J: Rail/Hopper; and
- Subcategory K: Barge/Hopper.

EPA is proposing to establish effluent limitations for existing facilities and new sources discharging wastewater

directly to surface waters in the following subcategories: Truck/Chemical, Rail/Chemical, Barge/Chemical & Petroleum, Truck/Food, Rail/Food and Barge/Food.

EPA is proposing to establish pretreatment standards for existing facilities and new sources discharging wastewater to POTWs in the Truck/Chemical and Rail/Chemical Subcategories. Additionally, EPA is proposing to establish effluent limitations for new sources discharging wastewater to POTWs in the Barge/Chemical & Petroleum Subcategory. The following table presents the regulatory approach proposed in today's notice.

TABLE 1.—SUBCATEGORIES PROPOSED FOR REGULATION

Subcategory	BPT or BCT	BAT	NSPS	PSES	PSNS
A: Truck/Chemical	X	X	X	X	X
B: Rail/Chemical	X	X	X	X	X
C: Barge/Chemical & Petroleum	X	X	X	.....	X
D: Truck/Petroleum	.....	.....	.....	.....	.....
E: Rail/Petroleum	.....	.....	.....	.....	.....
F: Truck/Food	X	.....	X	.....	.....
G: Rail/Food	X	.....	X	.....	.....
H: Barge/Food	X	.....	X	.....	.....
I: Truck/Hopper	.....	.....	.....	.....	.....
J: Rail/Hopper	.....	.....	.....	.....	.....
K: Barge/Hopper	.....	.....	.....	.....	.....

The wastewater flows covered by the proposed rule include all washwaters which have come into direct contact with the tank or container interior including pre-rinse cleaning solutions, chemical cleaning solutions, and final rinse solutions. Additionally, the rule would cover wastewater generated from washing vehicle exteriors, equipment and floor washings, and TEC contaminated wastewater at those facilities subject to the TEC guidelines and standards.

EPA is proposing not to establish effluent limitations or pretreatment standards for existing or new facilities in the following subcategories: Truck/Petroleum and Rail/Petroleum. Initially, in its assessment of the industry, EPA analyzed the removals, benefits and costs of establishing guidelines for the Truck/Petroleum and Rail/Petroleum Subcategories. EPA has determined that very few pounds of toxic pollutants are being discharged by existing facilities in the Truck/Petroleum and Rail/Petroleum Subcategories. The pollutant loads and technology options analyzed for these subcategories are further discussed in Section VIII of today's notice. The low pollutant loadings associated with these subcategories are, in part, due to the small volumes of wastewater discharged by these facilities, which range from 900 to a maximum of 175,000 gallons per year. Based on this analysis, EPA preliminarily concluded that there is no need to develop nationally applicable regulations for these subcategories. Rather, direct dischargers will remain subject to effluent limitations established on a case by case basis using best professional judgement, and indirect dischargers may be subject to local pretreatment limits as necessary to prevent pass-through or interference.

EPA recognizes the limitations of currently available data and the impact of assumptions on the subsequent conclusions, especially due to the lack of available data on raw wastewater characteristics on the Truck/Petroleum and Rail/Petroleum Subcategories, as described in Section VII of this notice. EPA solicits data and comments which may support or refute the Agency's conclusion that wastewater generated in the petroleum subcategories does not contain significant toxic loadings. EPA is also concerned about the difficulty of determining whether particular cargos fall into the chemical or petroleum subcategories. As explained below, and in EPA's proposed subcategorization approach, EPA is soliciting comment on an alternative subcategorization approach that would combine the petroleum and chemical subcategories.

EPA realizes that much of the TEC industry is characterized by each facility accepting and cleaning a wide range of commodities and cargos which may vary on a daily, seasonal, or yearly basis. EPA raises the issue that it may be difficult to determine the limits appropriate to a particular facility due to the changing nature of the cargos being accepted by a facility. In this notice, EPA has provided definitions of each subcategory and each type of cargo. EPA believes it has established definitions that are most applicable to the industry, and has subsequently modeled wastewater treatment performance and developed effluent limitations applicable to each subcategory. However, EPA also acknowledges that there may be some difficulties associated with implementing this rule as proposed. Specifically, EPA is concerned that there may be difficulties associated with the determination of whether a facility is cleaning transportation equipment that contained ''petroleum'' or ''chemical'' commodities. EPA recognizes that there are many products, especially petrochemical products, being transported by the industry which may not clearly be defined as a ''chemical'' or a ''petroleum'' product. Additionally, according to the proposed subcategorization approach, there may be significant overlap of the two subcategories.

EPA notes from its data collection activities that 92 percent of not previously regulated facilities classified in the Rail/Chemical Subcategory also accept commodities characterized as ''petroleum,'' and that 52 percent of facilities classified in Truck/Chemical Subcategory also accept commodities characterized as ''petroleum.'' EPA solicits comment on the difficulty of defining petroleum and chemical products from a regulatory standpoint.

Because of potential difficulty in defining petroleum and chemical products, in order to ease implementation of this rule, EPA considered establishing one set of effluent limitations for each mode of transportation (e.g., truck, rail, barge) which cleans chemical and/or petroleum cargos. The rationale for the proposed subcategories is further discussed in Section VI of this notice. EPA is soliciting comment on potential applicability issues associated with the proposed subcategorization, and on the feasibility of establishing one set of effluent limitations for facilities

accepting chemical and/or petroleum products.

EPA's assessment of the industry indicates, however, that there is little overlap of cleaning facilities among transportation modes. EPA's survey demonstrated that TEC facilities are almost exclusively involved in cleaning equipment from only one mode of transportation: either highway, railway, waterway, or ocean-going. The one exception is intermodal containers. Intermodal containers are completely enclosed storage vessels which may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport, and are approximately the same size as tank trucks. EPA found that these containers are almost exclusively cleaned at facilities which clean tank trucks. Based on EPA's survey of the industry, intermodals typically account for one to 10 percent of the tanks cleaned at individual tank truck facilities, although at one facility intermodals accounted for up to 94 percent of the tanks cleaned. Therefore, EPA proposes that wastewater generated from cleaning intermodal tanks be handled according to the regulations established for the truck transportation subcategories.

EPA is proposing to establish effluent limitations for existing and new facilities discharging directly to surface waters in the following subcategories: Truck/Food, Rail/Food, and Barge/Food. However, EPA is proposing not to establish pretreatment standards for facilities discharging to POTWs in the following subcategories: Truck/Food, Rail/Food, and Barge/Food Subcategories. EPA is proposing effluent limitations for the food subcategories to control discharges of conventional pollutants which may adversely affect waterways when discharged directly to surface waters. However, because few priority toxic pollutants were found in food wastewaters and POTWs have the ability to treat conventional pollutants, EPA concluded that it was unnecessary to propose pretreatment limits for the food subcategories.

EPA is also proposing not to establish effluent limitations or pretreatment standards for existing or new facilities in the remaining subcategories: Truck/Hopper, Rail/Hopper and Barge/Hopper. Closed-top hopper trucks, rails, and barges are generally used to transport dry bulk materials such as coal, grain, and fertilizers. Raw wastewater generated from cleaning the interiors of hoppers was found to contain very few priority toxic pollutants at treatable levels. This is likely due to the fact that the residual materials (heels) from dry bulk goods are easily removed prior to washing and that relatively little wastewater is generated from cleaning the interiors of hopper tanks due to the dry nature of bulk materials transported. This results in low pollutant loadings present in the wastewater discharges from hopper tank cleaning. Based on the low pollutant loads associated with wastewater discharge from the hopper subcategories, the Agency concluded that it need not establish nationally-applicable effluent limitations for these subcategories. Rather, direct dischargers will remain subject to effluent limitations established on a case by case basis using best professional judgement, and indirect dischargers may be subject to local pretreatment limits as necessary to prevent pass-through or interference. EPA solicits comments on the appropriateness of not regulating hopper facilities. EPA also solicits data on pollutant levels in wastewater from hopper facilities.

The proposed regulation would not apply to wastewaters generated from cleaning the interiors of drums or intermediate bulk containers (IBCs). In 1989, EPA conducted an analysis on the pollutant loadings associated with the drum reconditioning industry. Drum reconditioning operations generate wastewater from cleaning the interiors of drums before the drum is reconditioned, scrapped, or recycled. The Preliminary Data Summary for the Drum Reconditioning Industry (EPA 440/1–89/101 September 1989) estimated that there were 450 facilities which accepted approximately 50 million drums in 1985. These drums contained approximately 124 million pounds of residue. This study of the industry concluded that wastewater generated from drum reconditioning operations did not merit national regulation at that time because of the low pollutant loads associated with this industry. Since this study was conducted, the reconditioning industry has grown to include other forms of transportation containers which were not initially considered in EPA's study, namely IBCs. IBCs are portable containers with 450 liters (119 gallons) to 3,000 liters (793 gallons) capacity. In comparison, drums typically have 208 liters (55 gallons) capacity. Facilities cleaning IBCs generate wastewater from cleaning the interior of the IBC prior to re-using the container. Based on data collected in EPA's questionnaire, there are approximately 173 TEC facilities which accept IBCs for cleaning. The Association of Container Reconditioners estimates that there are approximately 600,000 IBCs manufactured each year. By comparison, they estimate that there are over 40 million drums manufactured and recycled each year.

Although EPA does not have data on the pollutant loadings associated with the cleaning of IBCs, EPA has concluded that IBCs are used by industries as an interchangeable replacement for drums and are therefore used for the storage and transport of cargos similar to drums. Because of this, EPA expects that wastewater generated from cleaning the interiors of IBCs may be similar to the wastewater generated from cleaning the interiors of drums. For this reason, EPA is proposing not to regulate wastewater generated from cleaning IBCs. EPA is soliciting comment and data on the pollutant loads associated with IBC cleaning wastewater, and on the initial decision not to include IBC wastewater within the scope of this guideline.

The focus of this proposed rule is on transportation equipment cleaning facilities that function independently of other industrial activities that generate wastewater. This proposal would therefore not apply to wastewater discharges from transportation equipment cleaning operations located at industrial facilities regulated under other Clean Water Act effluent guidelines, provided that the facility cleans only tanks containing cargos or commodities generated or used on-site, or by a facility under the same corporate structure.

EPA has identified TEC wastewaters at facilities subject to guidelines which include Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) (40 CFR part 414); Centralized Waste Treatment (CWT) (proposed 40 CFR part 437, 60 FR 5464, January 27,1995); Dairy products processing point source category (40 CFR part 405); Inorganic chemicals manufacturing point source category (40 CFR part 415); Petroleum refining point source category (40 CFR part 415); Industrial Waste Combusters (proposed 40 CFR part 444, 63 FR 6325, February 6, 1998); and Metal Products and Machinery (MP&M) (new regulation to be proposed in 2000). Most such facilities commingle tank cleaning wastewater with wastewater from other processes for treatment. For example, the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) (40 CFR part 414) effluent guidelines specifically list tank car washing as a covered process wastewater.

The promulgated and proposed regulations for these industries typically include on-site washwaters. The general regulatory definition of process wastewater includes water that comes in contact with raw materials (40 CFR 401.11(q)), which would include wastewater generated from cleaning the

interiors of tanks containing those raw materials. For those facilities where on-site washwaters are not specifically covered by the applicable guideline, EPA believes that facilities will commingle and treat washwaters with other process wastewater because an industrial facility will clean tanks that have transported commodities similar in nature to the products produced at that facility. Therefore, the wastewater generated from cleaning the tank interiors will contain contaminants similar in treatability to process wastewater at that facility.

Not previously regulated facilities are those facilities whose major process wastewater streams are not already covered or proposed to be covered by other Clean Water Act effluent guidelines. In order to prevent an industrial facility from accepting tank cargos which may generate wastewater inconsistent with treatment in place at the facility, EPA proposes that the exclusion for industrial facilities be allowed only if that facility is cleaning tanks containing materials which have been generated at, or used by, that facility. This would prevent an industrial facility that accepts tanks for commercial cleaning purposes from being excluded from the TEC guideline.

The rule also does not apply to facilities that are commercial treaters of wastewater that only clean tanks and containers as a part of the off-loading process of the wastes. The categorical limitations and standards to be established for the Centralized Waste Treatment Category and codified at 40 CFR part 429, would specifically cover tank washings at CWT facilities (60 FR 5464.) EPA currently intends to repropose CWT limitations and standards in 1998 and take final action in 1999.

Although EPA believes that it has clearly defined what operations are intended to be covered by this regulation, EPA expects that there are some facilities engaged in operations which may be difficult to define, especially with regard to repair and maintenance. An example of a facility which would be regulated under the TEC effluent guidelines would be a site which only engages in the cleaning of the interiors of railcars after the transportation of chemicals. The site would clearly be considered an affected facility under the TEC effluent guidelines. An example of a site engaged in operations which could potentially overlap with other effluent guidelines and cause confusion for permitting authorities would be a facility which cleans the interiors of railcars prior to performing maintenance and rebuilding operations on the railcar.

EPA is currently developing effluent limitations guidelines and standards for the Metal Products and Machinery (MP&M) industry. The MP&M category applies to industrial sites engaged in the manufacturing, maintaining or rebuilding of finished metal parts, products or machines. This regulation will apply to process wastewater discharges from sites performing manufacturing, rebuilding or maintenance on a metal part, product or machine to be used in one of the following industrial sectors: Aerospace; Aircraft; Electronic Equipment; Hardware; Mobile Industrial Equipment; Ordnance; Stationary Industrial Equipment; Bus and Truck; Household Equipment; Instruments; Motor Vehicle; Office Machine; Printed Wiring Boards; Job Shops; Precious Metals; Railroad; and Ships and Boats.

Typical MP&M unit operations which may overlap with TEC operations include abrasive blasting, acid and alkaline cleaning, chemical conversion coating, corrosion preventive coating, and associated rinsing.

There may be instances where facilities which predominately engage in cleaning operations perform ancillary MP&M operations on the barges, railcars, or tankers they are cleaning as a part of their TEC operations. EPA proposes that the process wastestreams from those ancillary MP&M activities be regulated solely by the TEC effluent guideline. Likewise, facilities which are predominately engaged in MP&M operations and clean barges, railcars, or tankers as part of those activities are proposed to be regulated by the MP&M guideline and are excluded from this guideline.

EPA is soliciting comment from any industrial site which has the potential to be covered by TEC and MP&M but is uncertain as to their appropriate classification. Such facilities may supply information detailing what operations they are performing, and the volume and nature of wastewater generated from those operations. The Agency does recognize that the approach listed above requires the permitting authority to decide whether a facility is predominately engaged in either TEC or MP&M operations. The general pretreament regulations do set forth a procedure by which an industrial user may request that EPA or the State, as appropriate, provide a written certification as to whether the industrial user falls within a particular pretreatment subcategory (40 CFR 403.6) EPA is also soliciting comment from permitting authorities as to whether the approach outlined above will result in easier, or more difficult, implementation of the TEC and MP&M regulations, and on alternative applicability approaches.

EPA also has considered establishing a minimum flow level for defining the scope of the regulation in order to ensure appropriate regulatory requirements for small businesses. EPA focused its analysis on the Truck/Chemical, Rail/Chemical and Barge/Chemical & Petroleum Subcategories because of the large population of facilities potentially affected by this proposal. The Agency's analysis found that 54 small facilities (about 7.8 percent of all regulated facilities) in the Truck/Chemical Subcategory have a wastewater flow of 8,000 gallons or less per day. These 54 small facilities (18.7 percent of the total facilities in the subcategory) discharge 56,900 toxic pounds or 14 percent of the total discharge for the subcategory at the 8,000 gallons per day flow level. The Agency notes that the discharge of pollutants from small facilities constitutes a proportional amount of the pollutant loadings discharged in the subcategory. The Agency has also looked at 2,000, 4,000, and 6,000 gallons per day flow levels for this subcategory, in addition to conducting a similar analysis for the Truck/Food, Rail/Food, and Barge/Food Subcategories.

In each case where EPA examined a potential flow cut off, the pollutant loadings discharged by smaller facilities were proportional to the loadings discharged by the subcategory as a whole. EPA concluded that there was no obvious breakpoint that could be used to establish an exclusion for small facilities that would not also exclude a proportional amount of pollutants discharged to the nation's waterways. For comparison, in the MP&M effluent guideline, EPA proposed a flow exclusion for small facilities. In this case, EPA demonstrated that 80 percent of the total industry loadings were discharged by only 20 percent of the MP&M facilities. EPA concluded that a minimum flow level was reasonable because excluding 80 percent of the facilities in the industry only excluded 20 percent of the pollutant loadings. However, in the case of the TEC industry, EPA has identified no similar rationale for providing such a low flow exclusion for small facilities. EPA is therefore not proposing to establish a minimum regulatory flow level for the TEC point source category.

At the request of the Small Business Advocacy Review Panel, EPA also estimated the effects of excluding all small businesses, defined as those with revenues under $5 million annually.

This would eliminate an estimated 191 of 692 facilities (28%) from coverage by the proposed rule, while eliminating 20 to 25 percent of the baseline toxic loadings. Thus, as with the flow based facility exclusion discussed above, this option would remove roughly a proportionate amount of both loadings and facilities from coverage. EPA is therefore not proposing to establish an exclusion for small businesses, but is soliciting comment on this option, or on any alternative approaches that the Agency may use to minimize impacts on small businesses.

IV. Profile of the Transportation Equipment Cleaning Industry

A. Transportation Equipment Cleaning Facilities

The TEC industry includes facilities that generate wastewater from cleaning the interiors of tank trucks, closed-top hopper trucks, rail tank cars, closed-top hopper rail cars, intermodal tank containers, inland tank barges, closed-top hopper barges, ocean/sea tankers, and other similar tanks or containers used to transport cargos or commodities that come into direct contact with the tank or container interior. Transportation equipment cleaning is performed in order to prevent cross-contamination between products or commodities being transported in the tanks, containers, or hoppers, and to prepare transportation equipment for repair and maintenance activities such as welding. The cleaning activity is a necessary part of the transportation process.

Based upon responses to EPA's 1994 Detailed Questionnaire for the Transportation Equipment Cleaning Industry (see discussion in Section V.B of this notice), the Agency estimates that there are approximately 2,405 TEC facilities in the United States. This includes approximately 1,166 previously regulated TEC facilities and 1,239 not previously regulated TEC facilities. Of the TEC facilities not previously regulated, EPA estimates that 692 facilities discharge to either a POTW or to surface waters. The remaining 547 facilities are considered zero discharging.

TEC facilities are located in at least 37 states and in all 10 EPA regions. By state, the largest number of facilities are in Illinois. By EPA region, the largest concentration of facilities is in Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin). Most TEC facilities are located in the industrial portions of the United States.

The TEC industry consists of facilities that vary in size from one-or two-person shops to large corporations that operate many facilities nationwide. The TEC industry shows a correspondingly wide range of annual number of tanks cleaned by facilities, from less than 10 tanks per year to more than 10,000 tanks per year.

Tank cleaning may be performed as a commercial activity or as an in-house cost of doing business. Additionally, the tanks being cleaned may be owned by the facilities performing cleaning or may be owned by their customers. Overall, the TEC industry is characterized by a large number of facilities that clean relatively few tanks and a small number of facilities that clean a relatively large number of tanks.

The TEC industry consists of distinct transportation sectors: the trucking sector, the rail sector, and the barge shipping sector. Each one of these sectors may have different technical and economic characteristics. The transportation industry transports a wide variety of commodities, and TEC facilities therefore clean tanks and containers with residues (heels) from a broad spectrum of commodities such as food-grade products, petroleum-based commodities, organic chemicals, inorganic chemicals, soaps and detergents, latex and resins, hazardous wastes, and dry bulk commodities. TEC facilities also vary greatly in the level of wastewater treatment that they currently have in place. Treatment at existing TEC facilities ranges from no treatment to advanced tertiary treatment. The majority of TEC facilities discharging to surface waters currently employ primary treatment such as oil water separation or gravity separation followed by biological treatment. Indirect discharging facilities typically employ some form of primary treatment, such as oil water separation, gravity separation, dissolved air flotation, or coagulation and flocculation. A relatively small number of direct and indirect currently facilities currently employ advanced tertiary treatment such as activated carbon adsorption.

In 1994, approximately 2,440,000 tanks and containers were cleaned in the U.S by not previously regulated TEC facilities. Of all tanks cleaned commercially, tank trucks account for approximately 87 percent, intermediate bulk containers account for three percent, closed-top hopper trucks account for three percent, intermodal tank containers account for three percent, and rail tank cars account for two percent. The remaining tank types each account for less than one percent of all tanks cleaned. Approximately 52 percent of TEC facilities clean a variety of cargo types. Approximately 31 percent clean only food grade products, beverages, and animal and vegetable oils (food grade facilities), approximately eight percent clean only petroleum and coal products (petroleum facilities), and approximately two percent clean only dry bulk cargos.

The majority of TEC facilities discharge their wastewater indirectly to a publicly owned treatment works (POTW). EPA estimates that there are 669 indirect discharging TEC facilities. A smaller number, approximately 23, discharge wastewater directly to surface waters of the United States.

EPA estimates that there are approximately 547 facilities which are considered zero or alternative dischargers and do not discharge wastewater directly to surface waters or indirectly to a POTW. Methods of zero or alternative discharge in use by the TEC industry include applying wastewater to land, hauling wastewater off-site to other treatment works (e.g., Centralized Waste Treatment Works (CWT) or hazardous waste Treatment Storage and Disposal Facilities (TSDFs)), deep well injecting wastewater, sending wastewater to an on-site evaporation pond or mat, or employing total recycle/reuse of wastewater.

B. Transportation Equipment Cleaning Processes

Interior cleaning of cargo tanks and containers is conducted for two primary reasons: to prevent contamination between cargos and to facilitate internal inspection and repair. An additional purpose of tank cleaning is to render the tank interior nonexplosive and nonflammable to provide a safe environment for manual cleaning and for tank repairs that require ''hot work'' (e.g., welding or cutting).

Although different types of tanks are cleaned in various manners, the basic cleaning process for each tank is similar. A typical tank cleaning process is as follows:

- Identify the cargo last transported in the tank;
- Determine the next cargo to be transported;
- Drain the tank heel (residual cargo) and, if necessary, segregate the heel for off-site disposal;
- Rinse the tank (pre-rinse);
- Wash the tank using one or more cleaning methods and solutions;
- Rinse the tank; and
- Dry the tank.

The cleaning facility determines the cargo last transported in the tank to: (1) Assess the facility's ability to clean the tank efficiently; (2) determine the appropriate cleaning sequence and

cleaning solutions; (3) evaluate whether the residue cleaned from the tank will be compatible with the facility's wastewater treatment system; and (4) establish an appropriate level of health and safety protection for the employees who will clean the tank. The next cargo to be transported in the tank is identified to determine if the available level of cleaning at the facility is adequate to prevent contamination of the next cargo. The facility may decide to not clean a tank based on any of the preceding concerns.

Once a tank has been accepted for cleaning, the facility checks the volume of heel (residual cargo) in the tank and determines an appropriate heel disposal method. Any water-soluble heels that are compatible with the facility's treatment system and the conditions of the facility's wastewater discharge permit are usually combined with other wastewater for treatment and discharge at the facility. Incompatible heels are segregated into drums or tanks for disposal or re-use by alternative means, which may include re-use onsite, return to consignee, sale to a reclamation facility, landfilling, or incineration. The TEC facility may re-use heels such as soaps, detergents, solvents, acids, or alkalis as tank cleaning solutions or as neutralizers for future heels and for wastewater treatment.

Cleaning processes vary among facilities depending on available cleaning equipment, the cargos last transported in the tanks to be cleaned, and the state of the product last transported in the tank. Some residuals require only a water rinse (e.g., sugar), while others require a detergent or strong caustic solution followed by a final water rinse (e.g., latex or resins). Hardened or caked-on products sometimes require extended processing time or special cleaning equipment. Typical cleaning equipment includes low- or high-pressure spinner nozzles or hand-held wands and nozzles. Spinner nozzles, which are operated through the main tank hatch, are designed to rotate in an overlapping spray pattern that cleans the entire interior of the tank. Operating cycles range from rinse bursts to 20 minutes or longer caustic washes. Washing with hand-held wands and nozzles achieves the same result as with high-pressure spinner nozzles, but requires facility personnel to manually direct the wash solution across the interior surface of the tank. After cleaning, tanks are usually dried and inspected.

Section 4.0 of the Technical Development Document contains a more detailed description of the TEC industry and the unique cleaning processes used for different types of tanks and cargos.

C. Regulatory History for the Transportation Equipment Cleaning Industry

In 1986, EPA published the Domestic Sewage Study ''Report to Congress on the Discharge of Hazardous Wastes to Publicly Owned Treatment Works'' (EPA–503/SW–86–004, February 1986), which identified TEC facilities as potentially contributing large amounts of hazardous wastes to POTWs.

In response to the Domestic Sewage Study, EPA conducted a sampling program to obtain and analyze wastewater and wastewater treatment sludge samples at eight TEC facilities. During this program, EPA sampled one aircraft, three tank truck, two rail tank car, and two tank barge cleaning facilities. Raw TEC wastewater samples and, where appropriate, treated effluent and sludge samples were collected at each facility. In addition, EPA's Toxicity Characteristic Leaching Procedure was used to obtain extracts of sludge samples for analysis. The samples were analyzed for analytes in the 1987 Industrial Technology Division List of Analytes. This list contains conventional pollutants and EPA's priority toxic pollutants (excluding fecal coliform bacteria and asbestos) as well as 285 other organic and inorganic nonconventional pollutants or pollutant characteristics. These additional pollutants were derived from other EPA lists, including the Superfund Hazardous Substance List, RCRA Appendix VIII and Appendix IX, and the list of analytes proposed to be added to RCRA Appendix VII by the Michigan Petition (49 FR 49793).

EPA also investigated the size of the TEC industry by identifying TEC facilities from several sources, including trade publications, Dun & Bradstreet, EPA's Permit Compliance System, trade associations, state regulatory agencies, and the U.S. Coast Guard. Using the wastewater sampling data and industry size data, EPA estimated the total discharge of pollutants from the TEC industry and performed an environmental impact analysis.

In 1989, EPA published the ''Preliminary Data Summary for the Transportation Equipment Cleaning Industry'' (EPA 440/1–89/104, 1989) which summarized the findings of the 1986–87 study and forms the basis for EPA's decision to develop effluent guidelines specifically for the TEC point source category. A description of EPA's data gathering efforts on the TEC industry since completion of the 1986–1987 study is provided in Section V below.

V. Summary of Data Collection Activities

EPA collected data necessary to develop effluent limitations guidelines and standards for the TEC point source category from many sources, including questionnaires and EPA's sampling program. This section of the preamble summarizes these data-collection activities, which are further discussed in Section 3.0 of the Technical Development Document.

A. Preliminary Data Summary

Prior to 1992, EPA conducted two studies of the TEC industry. The first study was performed during the 1973–1974 period for the Transportation Industry Point Source Category. Information was obtained from only a few TEC facilities and was limited to conventional pollutants. The study was not specific to TEC processes and wastewaters and did not result in any regulations for the TEC industry. The second study was performed during the 1986–87 period in response to the Domestic Sewage Study (DSS), which found that TEC facilities discharged high levels of conventional, toxic, and nonconventional pollutants in raw and treated wastewaters. The study focused on characterizing raw wastewater at eight TEC facilities, and, where appropriate, treated effluent and sludge samples. The second study also included a preliminary investigation to determine the size of the TEC industry by identifying TEC facilities. The resulting TEC wastewater sampling data and industry size data were used to estimate the total discharge of priority toxic pollutants from the TEC point source category and to perform an environmental impacts analysis. The results of the study were published in the Preliminary Data Summary for the Transportation Equipment Cleaning Industry in September of 1989 (EPA 44/1–89/104), which formed the basis for EPA's decision to develop effluent guidelines specifically for the TEC industry.

B. Development of the TECI Site Identification Database

The first phase of data collection for development of effluent limitation guidelines for the TEC industry entailed a comprehensive search to identify facilities that potentially perform TEC operations. EPA identified all potential segments within the TEC industry and then attempted to identify all facilities or a statistical sample of all facilities that potentially perform TEC operations

within each industry segment. The TEC industry is characterized by industry segments based on tank type cleaned and business operational structure. Tank types initially considered within the potential scope of the TEC industry include tank trucks, closed-top hopper tank trucks, intermodal tank containers, intermediate bulk containers, rail tank cars, closed-top hopper rail cars, inland tank barges, closed-top hopper barges, ocean/sea tankers, and other similar tanks (excluding drums). Business operational structures include independents, carriers, shippers, and builders/leasers.

EPA was unaware of any single source or set of sources that specifically identify facilities that perform TEC operations. Likewise, there is no single Standard Industrial Classification (SIC) code or set of SIC codes that specifically identify facilities that perform TEC operations. Therefore, EPA performed an exhaustive search to identify all available sources listing facilities that potentially perform TEC operations. These sources included transportation industry directories, Dun & Bradstreet's Information Services, several Agency databases, state and local authorities, trade journals, and trade associations. Some sources specifically identified facilities that perform TEC operations. Other sources identified potential TEC facilities by one or more of the following criteria: (1) They own, operate, or maintain transportation equipment; (2) they own, operate, or maintain equipment used by the transportation segments applicable to the TEC industry; or (3) they report under an SIC code that includes facilities that have the potential to own, operate, or maintain transportation equipment.

Listings of facilities that potentially perform TEC operations were entered into the TECI Site Identification Database. The database contains information for 7,940 facilities that represent a total potential industry population of 30,280 facilities (for some sources, only a portion (i.e., a statistical sample) of the total available records were received and entered into the database). This database formed the basis of EPA's statistical sample frame for subsequent data-gathering activities.

C. Survey Questionnaires

Industry responses to questionnaires administered by EPA under the authority of Section 308 of the Clean Water Act were a major source of information and data used in developing the proposed TEC industry effluent limitations guidelines and standards. EPA administered two questionnaires to the TEC industry—the 1993 screener questionnaire and the 1994 detailed questionnaire.

1. 1993 Transportation Equipment Cleaning Industry Screener Questionnaire

EPA developed a screener questionnaire to distribute to a statistical sample of all facilities that potentially perform TEC operations. The objectives of the questionnaire were to: (1) Identify facilities that perform TEC operations; (2) evaluate TEC facilities based on wastewater, economic, and/or operational characteristics; (3) develop technical and economic profiles of the TEC industry; (4) select a statistical sample of screener respondents to receive a detailed questionnaire; and (5) select facilities for EPA's TEC industry engineering site visit and sampling program.

EPA developed the screener questionnaire for the TEC industry based on experience with previous screener questionnaires from other point source categories. The Agency requested site-specific 1992 calendar year information in the four-page screener questionnaire. Information requested included facility name, address, contact person, owner, number of employees, annual revenues, and operational structure (e.g., carrier, independent). Also included were questions concerning TEC operations such as whether the facility performs TEC operations, generates TEC process wastewater, discharge information (type and daily volume), number of tank interior cleanings performed by tank type, percentage of tank interior cleanings performed by cargo type, types of cleaning processes performed, and treatment technologies or disposal methods on-site.

The screener questionnaire was sent to a stratified random sample of 3,240 facilities identified from the TECI Site Identification Database. The Agency did not mail screener questionnaires to all 7,940 potential tank interior cleaning facilities in the TECI Site Identification Database; however, the Agency believed that a sample size of 3,240 would sufficiently represent the variety of technical and economic characteristics of the TEC industry and meet the objectives of the screener questionnaire while minimizing the burden to both industry and government. EPA used facility type (e.g., tank truck cleaning, rail tank car cleaning, tank barge cleaning, and transfer facilities) and level of assurance (i.e., the probability that the facility performs TEC operations) as criteria to select facilities to receive a screener questionnaire. These criteria were chosen to account for both the diverse nature of the TEC industry and the varying reliability of the sources used to develop the TECI Site Identification Database. Additional detail concerning selection of the statistical sample of facilities to receive a screener questionnaire is included in Section V.D of this preamble.

EPA received responses from 730 of these facilities that indicated that they performed TEC operations and generated TEC wastewater (i.e., in scope responses). These facilities represent an estimated TEC industry population of 2,739 facilities. The distribution of estimated industry population by industry segment are as follows:

TABLE 2.—POPULATION ESTIMATES

Industry segment	Estimated total number of facilities
Barge	72
Truck	2,432
Rail	189
Transfer Stations	46
Total	2,739

2. 1994 Transportation Equipment Cleaning Industry Detailed Questionnaire

EPA developed a detailed questionnaire for distribution to a statistical sample of facilities that perform TEC operations and generate TEC wastewater. The objectives of the questionnaire were to: (1) Develop an industry profile; (2) characterize TEC processes, industry production (i.e., number and type(s) of tanks cleaned), and water usage and wastewater treatment; (3) perform an industry subcategorization analysis; (4) develop pollutant loadings and reductions estimates; (5) develop compliance cost estimates; and (6) determine the impacts of the rulemaking on the TEC industry.

The Agency developed the detailed questionnaire to collect information necessary to develop effluent limitations guidelines and standards for the TEC point source category. The detailed questionnaire included two parts: (1) Part A: Technical Information and (2) Part B: Financial and Economic Information. Technical information collected was specific to calendar year 1994. Financial and economic information collected was specific to calendar years 1992 through 1994. In part A, EPA requested information necessary to identify the facility and to determine wastewater discharge locations. It also requested information necessary to develop an industry profile, characterize TEC processes and

production, and perform an industry subcategorization analysis. Information regarding wastewater generation, wastewater recycle/reuse, treatment technologies currently in place, the availability of wastewater stream characterization data and/or treatability data, use of pollution prevention, and water conservation activities were also requested. In part B, EPA requested information necessary to identify the facility and facility's corporate hierarchy, to develop an industry economic profile, and to assess facility-level, business entity-level, and corporate parent-level economic impacts associated with TEC industry effluent guidelines.

The Agency sent the Detailed Questionnaire to a stratified random sample of 275 facilities that perform TEC operations and generate TEC wastewater as identified from responses to the TECI screener questionnaire. The following four variables were considered (although not necessarily directly selected as basis for sample stratification) in selecting facilities to receive a detailed questionnaire: tank type, operational structure, number of employees, and treatment in place. Each of the potential detailed questionnaire recipients was classified based on these four variables. Facilities with multiple classifications were assigned a primary classification. The sampling strategy was designed to meet two objectives most effectively: (1) to ensure that at least one facility was sampled from most cells (i.e., combinations of the four variables listed above), and (2) to ensure the variance around the national estimates would not be grossly inflated in attempting to meet the first objective.

EPA received responses from 176 of these facilities that were used in subsequent analyses. During review of the detailed questionnaire responses, EPA classified each facility into one of the following categories:

(1) Direct or Indirect Discharge: TEC facilities that discharge wastewaters directly to surface waters or indirectly to a POTW that are not located at industrial facilities covered under existing effluent guidelines.

(2) Zero or Alternative Discharge: TEC facilities that do not discharge wastewater to U.S. surface waters or to a POTW, including facilities that haul TEC wastewater off site to a Centralized Waste Treatment facility, practice total wastewater recycle/reuse, or land apply TEC wastewater.

(3) Previously Regulated Facilities: Industrial facilities that are covered by existing or upcoming effluent guidelines which also generate transportation equipment cleaning wastewaters. TEC operations are a very small part of their overall operations. These include facilities subject to the Organic Chemicals, Plastics, and Synthetic Fibers Effluent Guidelines, Dairies Effluent Guidelines, Centralized Waste Treaters Effluent Guidelines, and Metals Products and Machinery Effluent Guidelines.

TABLE 3.—NATIONAL ESTIMATES OF TEC INDUSTRY POPULATION BY FACILITY TYPE

Facility type	Estimated number of facilities in total population
Direct or Indirect Discharge	692
Zero Discharge	547
Previously regulated	1,166

TABLE 4.—NATIONAL ESTIMATED TEC INDUSTRY POPULATION BY SUBCATEGORY FOR ALL TEC FACILITIES NOT PREVIOUSLY REGULATED

Subcategory	Estimated number of facilities in total population [a]
Truck/Chemical	288
Rail/Chemical	38
Barge/Chemical & Petroleum	15
Truck/Food	173
Rail/Food	86
Barge/Food	2
Truck/Petroleum	34
Rail/Petroleum	3
Truck/Hopper	34
Rail/Hopper	5
Barge/Hopper	12
Total	692

[a] Differences occur due to rounding.

As evidenced by the data collection activities undertaken by EPA, the Agency has attempted to develop accurate population estimates for each subcategory. The Agency solicits comment and sources of data which may provide additional information on the population of affected facilities.

D. Development of National Population Estimates

As discussed previously, EPA distributed screener questionnaires to a statistical sample of all facilities that potentially perform TEC operations. EPA then distributed detailed questionnaires to a statistical sample of facilities that perform TEC operations and generated TEC wastewater as identified by responses to the screener questionnaires. This section describes EPA's approach in developing national population estimates for the TEC industry based on these statistical samples. Section 3.0 of the Technical Development Document and the Statistical Support Document contained in the administrative record for this rule contain additional detail concerning development of national population estimates.

EPA considered each source used to develop the TEC industry Site Identification Database to be a statistical ''stratum.'' EPA selected a simple random sample of facilities from each stratum to receive a screener questionnaire. Following this approach, each sampled facility can be used to characterize other facilities within the same stratum. For example, if a sampled facility falls within stratum ''A'' and the ''weight'' of that stratum is five, the responses received from that facility represent a total of five facilities in the overall TEC industry population. Following receipt of the screener questionnaire responses (to account for non-respondents), EPA determined a weight associated with each stratum using the following equation:

Stratum Weight = N_h/n_h

Where:

N_h = Total number of facilities in stratum.

n_h = Number of facilities that responded to the screener questionnaire.

Note that several screener questionnaire strata with similar weighting factors were collapsed into a single stratum, and assigned a conglomerated weighting factor for the entire collapsed stratum, to reduce the variability of the population estimates.

The approach used to develop TEC industry population estimates based on the detailed questionnaire responses is similar to that used for the screener questionnaire, with two differences. One, EPA developed additional strata to ensure selection of adequate sample populations within the following four variables: tank type, operational structure, number of employees, and wastewater treatment in place. Two, the statistical methodology used to account for non-respondents was based on facility subcategory rather than stratum.

E. Site Visits and Wastewater Sampling Program

EPA conducted 39 engineering site visits at 38 facilities from 1993 through 1996 to collect information about TEC processes, water use practices, pollution prevention practices, wastewater treatment technologies, and waste disposal methods. These facilities were also visited to evaluate them for potential future sampling. In general, EPA visited facilities that encompass

the range of TEC facilities, including tank type cleaned, cargo cleaned, operational structure, discharge status, and wastewater treatment in place.

EPA conducted 20 sampling episodes at 18 facilities (two facilities were sampled twice) from 1994 through 1996. Sampling episodes were conducted to: (1) Characterize the pollutants in the wastewater being discharged directly to surface waters and indirectly to POTWs; and (2) generate pollutant treatment system performance data from facilities with well-operated wastewater treatment systems. The Agency used the same general criteria to select facilities for sampling as those used to select facilities for site visits. Of these sampling episodes, 12 were conducted to obtain untreated TEC process wastewater and treated final effluent characterization data from facilities representative of the variety of TEC facilities. Wastewater treatment sludge was also characterized at two of the 12 facilities to determine whether the sludge was hazardous. Each of these ''characterization'' sampling episodes comprised one sampling day.

EPA conducted eight additional sampling episodes to obtain both untreated TEC process wastewater characterization data and to evaluate the effectiveness and variability of wastewater treatment units used to treat TEC wastewater. Of these eight sampling episodes, one was conducted for one day, two were conducted for three days each, four were conducted for four days each, and one was conducted for five days.

At several facilities, sampled waste streams included TEC wastewater commingled with other wastewater sources including exterior cleaning wastewater, boiler wastewater, and contaminated storm water. At one facility, boiler condensate was sampled to characterize this waste stream. Waste stream samples were typically analyzed for volatile organics, semivolatile organics, organo-halide pesticides, organo-phosphorus pesticides, phenoxy-acid herbicides, dioxins and furans, metals, and classical wet chemistry parameters. The analytes typically found in TEC wastewaters are discussed in Section VII of this preamble and in the Technical Development Document.

VI. Industry Subcategorization

For today's 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. In reaching its decision that subcategorization is required, EPA considered various factors. The Clean Water Act (CWA) requires EPA, in developing effluent limitations, to assess several factors including manufacturing processes, products, the size and age of the facility, wastewater use, and wastewater characteristics. The TEC industry, however, is not typical of many of the other industries regulated under the CWA because it does not produce a product. Therefore, EPA developed additional factors that specifically address the characteristics of TEC operations. Similarly, several factors typically considered for subcategorization of manufacturing facilities were not considered applicable to this industry. The factors considered for subcategorization are listed below:

(1) Cleaning processes (production processes);
(2) Tank type cleaned;
(3) Cargo type cleaned;
(4) Water use practices;
(5) Wastewater characteristics;
(6) Facility age;
(7) Facility size;
(8) Geographical location;
(9) Water pollution control technologies;
(10) Treatment costs; and
(11) Non-water quality impacts.

A. Factors Considered for Basis of Subcategorization

EPA considered a number of potential subcategorization approaches for the TEC industry. EPA used information collected during 39 engineering site visits, the 1993 screener questionnaire for the TEC industry, and the 1994 Detailed Questionnaire for the TEC industry to develop potential subcategorization approaches. EPA considered eleven factors in developing its subcategorization scheme for the TEC industry. A discussion of each is presented below.

1. Cleaning Processes

EPA considered subcategorizing the TEC industry based on the cleaning process used. Cleaning processes vary among facilities depending on the type of tank cleaned and the type of cargo last transported in the tank. Cleaning can be performed using many types of cleaning equipment including low or high pressure spinner nozzles, hand-held wands and nozzles, steam cleaning equipment, or manual cleaning with scouring pads or shovels. Typical cleaning solutions include detergents, acids, caustics, solvents, or other chemical cleaning solutions. The cleaning process used depends greatly on the type of cargo last hauled in the tank. Certain residual material (e.g., sugar) only require a water rinse, while other residual materials (e.g., latexes or resins) require a detergent or strong caustic solution followed by a final water rinse. The state of the product last contained in the tank also affects the cleaning process. Hardened or caked-on products sometime require additional processing time, or may require manual cleaning. For each type of tank cleaned and cargo hauled, the selection of cleaning processes among available alternatives can affect the volume of wastewater generated and the constituents of that wastewater. Flow restriction and the availability of less harmful cleaning solutions as methods of pollution prevention and source control should be considered pollutant control technologies, rather than a defining production characteristic. EPA has decided that subcategorizing the TEC industry based on cleaning processes is not an appropriate means of subcategorization, and considered subcategorization based on either type of tank cleaned or type of cargo transported.

2. Tank Type Cleaned

EPA considered subcategorizing the TEC industry based on the type of tank cleaned. Facilities responding to the TEC industry Detailed Questionnaire reported cleaning nine primary tank types. The tank types reported by respondents are: (1) Tank truck; (2) intermediate bulk container; (3) intermodal tank container; (4) closed-top hopper truck; (5) rail tank car; (6) ocean/sea tanker; (7) closed-top hopper barge; (8) closed-top hopper rail car; and (9) inland tank barge. Based on data obtained in the TEC industry Detailed Questionnaire, approximately 87 percent of all tanks cleaned are tank trucks. Intermediate bulk containers, intermodal tank containers, and closed-top hopper trucks each account for three percent of all tanks cleaned. Rail tank cars comprise two percent and inland tank barges, ocean/sea tankers, closed-top hopper rail cars, and closed-top hopper barges each comprise less than one percent of all tanks cleaned. Seventy-four percent of all facilities responding to the TEC industry Detailed Questionnaire clean only one primary tank type. An additional 12 percent of facilities clean both tanks and closed-top hoppers within the same mode of transport. Only one percent of responding facilities clean tank types with multiple modes of transport and an additional 13 percent of responding facilities clean miscellaneous combinations of tank types within the same mode of transport.

For each type of tank cleaned, the heel volume and availability of

wastewater flow minimization techniques vary, which may affect wastewater treatment efficiency.

EPA has preliminarily concluded that subcategorizing the TEC industry based, in part, on the type of tank cleaned is an appropriate means of subcategorization due to these differences. Additionally, the vast majority of facilities clean tanks within the same mode of transport and are thus easily identified according to the tank type cleaned.

3. Cargo Type Cleaned

EPA considered subcategorizing the TEC industry based on the cargo type cleaned. Respondents to the TEC industry Detailed Questionnaire reporting cleaning tanks which transported 15 general cargo types. The reported cargo types are listed below:

- Group A—Food Grade Products, Beverages, and Animal and Vegetable Oils;
- Group B—Petroleum and Coal Products;
- Group C—Latex, Rubber and Resins;
- Group D—Soaps and Detergents;
- Group E—Biodegradable Organic Chemicals;
- Group F—Refractory (Nonbiodegradable) Organic Chemicals;
- Group
- G—Inorganic Chemicals;
- Group H—Agricultural Chemicals and Fertilizers;
- Group I—Chemical Products;
- Group J—Hazardous Waste (as defined by RCRA in 40 CFR Part 261);
- Group K—Nonhazardous Waste;
- Group L—Dry Bulk Cargos (i.e., hopper cars); and
- Group M, N, and O—Other (Not Elsewhere Classified).

Of all responding TEC facilities not previously regulated, 48 percent clean only one cargo type while 52 percent clean a variety of cargo types. Of the facilities that reported cleaning only one cargo type, 65 percent reported cleaning food grade products, beverages, and animal and vegetable oils (Group A), 16 percent reported cleaning petroleum and coal products (Group B), and 10 percent reported cleaning ''other cargos'' (Groups M, N and O). A review of the data for facilities that clean two or more cargos suggests that no apparent trend in cargo types cleaned, but rather a wide variety of combinations of ''chemical-type'' cargos.

There are several reasons to consider subcategorization based on type of cargo. Facilities that clean tanks which contained only food grade products (Group A), petroleum grade products (Group B), or dry bulk goods (Group L) represent distinct and relatively large segments of the TEC industry that differ significantly from facilities that clean tanks containing a wide variety of cargos. The type of cargo transported and the type of cleaning processes utilized influences wastewater characteristics. EPA therefore concluded that subcategorization of the TEC industry based, in part, on cargo type may be an appropriate means of subcategorization.

EPA was not able to identify any other distinct segments of the TEC industry among the remaining groups which included Latex, Rubber and Resins (Group C), Soaps and Detergents (Group D), Biodegradable Organic Chemicals (Group E), Refractory (Nonbiodegradable) Organic Chemicals (Group F), Inorganic Chemicals (Group G), Agricultural Chemicals and Fertilizers (Group H), Chemical Products (Group I), Hazardous Waste (Group J), Nonhazardous Waste (Group K), and Groups M, N, and O consisting of cargos not elsewhere classified. EPA concluded that facilities which do not clean primarily food grade products (Group A), petroleum grade products (Group B), or dry bulk goods (Group L) are likely to clean a wide variety of cargos types consisting of various combination of cargos types products. EPA has therefore created a subcategory termed ''chemical'' for any facility that cleans a wide variety of cargos and commodities.

EPA has then defined a ''chemical'' cargo as including Latex, Rubber and Resins, Soaps and Detergents, Biodegradable Organic Chemicals, Refractory (Nonbiodegradable) Organic Chemicals, Inorganic Chemicals, Agricultural Chemicals and Fertilizers, Chemical Products, Hazardous Waste, Nonhazardous Waste, and any other cargo not elsewhere classified. In summary, the ''chemical'' classification includes any cargo or commodity not defined as a food grade product, petroleum grade product, or dry bulk good. EPA has placed any facility in a Chemical Subcategory if 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos or commodities.

EPA originally considered developing separate subcategories for barge chemical and barge petroleum facilities. However, based on raw wastewater characterization data collected in support of this proposed rule, EPA concluded that the wastewater characteristics and treatability of wastewaters generated from barge chemical and barge petroleum facilities were similar, and thus it was reasonable to combine these subcategories. As mentioned previously in Section III, EPA is soliciting comments and data that would address whether the Truck/Chemical and Truck/Petroleum Subcategories should be combined; and whether the Rail/Chemical and Rail/Petroleum Subcategories should also be combined.

As described in Section VII of this notice, Wastewater Use and Characterization, the data collected from the Truck/Chemical and Truck/Petroleum Subcategories, and the Rail/Chemical and Rail/Petroleum Subcategories did not conclusively support combining these subcategories. However, sampling data obtained from the Centralized Waste Treatment Industry was used to characterize TEC wastewater for the Truck/Petroleum and Rail/Petroleum Subcategories. Therefore, the Agency is soliciting comment and data on this preliminary conclusion that the Truck/Chemical and Truck/Petroleum Subcategories; and Rail/Chemical and Rail/Petroleum Subcategories, should not be combined.

Additionally, while the Agency has proposed definitions for ''petroleum'' and ''chemical'' cargos, the Agency realizes that there may be cargos, especially various ''petrochemical'' cargos, which may not obviously be categorized as one type or the other. The determination of whether a facility is accepting ''petroleum'' or ''chemical'' cargos may be critical, due to the fact that the Agency has not proposed regulation for the petroleum subcategory. The Agency is concerned that this determination may be difficult and burdensome for the permitting authority and the affected facility. The Agency solicits comment from permitting authorities and affected facilities on the implementation issues surrounding the proposed subcategorization approach, especially with regard to the chemical and petroleum subcategories.

In order to address these concerns, the Agency has considered combining the petroleum and chemical subcategories and establishing one set of effluent limitations for facilities accepting chemical or petroleum cargos. EPA solicits comment on this alternative approach.

As part of today's proposal, the Agency calculated pollutant loadings for each option in each subcategory, as described in section VIII of this notice. The loadings calculations were used as a parameter for evaluating technology options in each subcategory. The Agency notes that a substantial amount of the toxic pounds-equivalent of pollutants removed in several subcategories are due to the removals of

a few pesticides found in the raw wastewater at one or two facilities. Specifically, about 90% of the toxic removals estimated for 288 indirect dischargers in the truck chemical subcategory are accounted for by 6 pesticides (Azinphos Ethyl, Coumaphos, Disulfoton, EPN, 4,4′-DDT, and Dieldrin—note that the latter three have been banned for a number of years); and about 80% of the toxic removals estimated for the 38 indirect dischargers in the rail chemical subcategory are accounted for by 3 pesticides (Dieldrin, Simazine, and Strobane). Pesticides are fairly toxic and generally have high toxic weighting factors. Relatively small removals in terms of loadings can result in significant reductions in toxic impacts. Because most of the projected toxic removals for indirect dischargers in the truck and rail chemical subcategories come from a few pesticides, the Agency solicits comment on an alternative regulatory approach that would establish separate subcategories for such facilities which accept tanks containing pesticide-containing cargos for cleaning.

This approach was discussed at some length by the Small Business Advocacy Review (SBAR) Panel in its consideration of options that might provide relief to small businesses, and was specifically endorsed by SBA. If the Agency were to pursue this approach, it might decide to establish a set of effluent limitations guidelines for a variety of pesticides for any facility that accepts, or potentially accepts, cargos which have transported pesticides. The Agency is concerned, however, that it may be difficult to define a subcategory for pesticide-containing cargos, because the exact source of pesticides found in TEC wastewater samples has often been difficult to establish. Furthermore, if the Agency were to set limits for pesticides, it would need to require monitoring for pesticides, which is generally more expensive than monitoring for the parameters regulated under the current approach. (Note that although pesticides are among the pollutants of concern, the Agency is not currently proposing to establish limits for pesticides; rather the Agency is establishing limits for other pollutants of concern, which it believes will also ensure that treatment adequate to control pesticides is adopted.) Thus, the Agency does not know how many of the estimated 326 indirect dischargers in the truck chemical and rail chemical subcategories would actually benefit from such an approach, and how many might incur higher monitoring costs because they clean some tanks with pesticide residues. EPA requests comment on this issue. EPA would specifically be interested to know whether indirect dischargers in these two subcategories believe such an approach would be workable, and whether there is a significant number of such facilities that do not handle any tanks that might contain pesticide residues. For those facilities that do handle tanks containing pesticide residues, EPA would like to know what percentage of tanks cleaned might contain such residues. EPA might use this information to define a subcategory for facilities with more than a certain percentage of such tanks, in the same way that it is currently defining the chemical subcategories as including facilities for which more than 10% of tanks cleaned had chemical cargos.

This approach may also result in the Agency pursuing a less stringent regulatory technology option for those facilities which do not accept pesticide containing cargos. The SBAR Panel recommended that EPA request comment on whether the remaining loadings of non-pesticide chemicals for indirect dischargers in the truck and rail subcategories warrant regulation. The Agency is thus soliciting comment on the loading reduction estimates, cost-effectiveness and benefits to the environment and POTWs of non-pesticide chemical removals. Note that in these subcategories in today's notice, EPA is not proposing effluent limitations guidelines and standards for any pesticide, nor is it proposing to establish a subcategory for pesticide cargos. Concern has also been expressed about the representativeness of the samples on which the pesticide removal estimated are based. Because pesticides are highly toxic and thus of particular concern, the Agency modified its screening criteria for including samples in which pesticides were detected in its loadings and removals analysis. In general, in order to ensure that detections are representative of the industry and present at treatable concentrations, contaminants are only included in the analysis if they show up in samples from at least two facilities at concentrations of 5 times the minimum detection level or greater, and are at least 50% removed by the proposed treatment. In contrast, all pesticides that were detected even once, at any level, were included in the analysis. Most of the pesticides accounting for the bulk of estimated toxic removals from indirect dischargers in the truck and rail chemical subcategories would not have been included in the analysis under the standard screening criteria, either because they were detected at only one facility or because they were only detected at close to the minimum detection level, or both. EPA believes, however, that the modified screening criteria for pesticides are appropriate for several reasons. First of all, as already noted, pesticides are highly toxic and thus of particular concern. Second, a relatively small amount of sampling data is available for this industry. In the truck chemical subcategory, for example, only ten samples of raw wastewater were analyzed, so that even a single detect represents 10% of samples, which EPA believes is a significant fraction. Finally, wastes from TEC facilities are highly variable, so that one might expect that many of the contaminants that are potentially of concern would only show up in a single sample, and others might not show up in any samples at all. For these reasons, EPA believes that its modified screening criteria for pesticides are appropriate, its loadings and removals analysis is based on the best available data, and the regulatory limits it has proposed for indirect dischargers in these subcategories, based partly on this analysis, is also appropriate. However, the Agency requests comments on this issue, and any data commenters may be able to provide on the loadings of pesticides, or any other contaminant, and TEC facilities.

4. Water Use Practices

TEC facilities use water for cleaning and rinsing as well as for a number of ancillary purposes such as hydrotesting, air pollution control, and process cooling water. Water use varies based on a number of factors including type of tank cleaned, type of cleaning solution utilized, type of cargo last contained in the tank, type of cargo to be transported, and tank capacity. Facilities which clean predominantly tank trucks typically use significant volumes of water for exterior cleaning, whereas facilities which clean rail and barge tanks frequently do little exterior washing. Facilities which clean rail tanks frequently use large volumes of water for tank hydrotesting, whereas tank truck cleaning facilities generate substantially less hydrotesting wastewater. Based on these variations in water use practices among different types of facilities, EPA concluded that the most appropriate method of subcategorization that encompasses water use practices is subcategorization based on the type of tank cleaned and type of cargo cleaned at a facility.

5. Wastewater Characteristics

The volumes and pollutant concentrations contained in TEC tank

interior cleaning wastewater show a large degree of variation among different types of facilities. Wastewater volumes vary greatly based on a number of factors including those cited above. Likewise, the concentration of pollutants present in tank interior cleaning wastewater can vary depending on the type of cargo last hauled, the tank size, the cleaning process utilized and the amount of water used per cleaning operation. Since all of these factors, with the exception of type of tank cleaned and type of cargo cleaned, have been rejected, EPA has concluded that the most appropriate method of subcategorization that encompasses wastewater characteristics is subcategorization based on the type of tank cleaned and type of cargo cleaned at a facility.

6. Facility Age

EPA evaluated the age of facilities as a possible means of subcategorization. EPA evaluated the treatment technologies in place as related to the year in which the facility first conducted TEC operations. Based on this evaluation, the Agency concluded that there is little difference in the treatment technologies in use by older facilities (defined as beginning TEC operations before 1980) as compared to those of newer facilities (defined as beginning TEC operations in or after 1980). EPA has tentatively concluded that subcategorization based on age of facilities is not an appropriate means of subcategorization.

7. Facility Size

EPA considered subcategorization of the TEC industry on the basis of facility size. Four parameters were identified as relative measures of facility size: number of employees, number of tanks cleaned, wastewater flow and revenue. EPA found that facilities of varying sizes generate similar wastewaters and use similar treatment technologies within the proposed subcategorization approach. EPA is not proposing to subcategorize the industry based on facility size.

8. Geographical Location

EPA evaluated the distribution of TEC facilities based on geographic location. In general, TEC facilities tend to be located within the industrialized regions of the country, with relatively high concentrations in the area between Houston and New Orleans and within specific urban areas such as Los Angeles, Chicago, and St. Louis. The major concentrations of rail, truck, and barge cleaning facilities are along the major thoroughfares by rail, road, and inland waterways, respectively. There are no apparent trends of geographic distribution of TEC facilities as related to wastewater characteristics. Based on these analyses, geographic location is not an appropriate means of subcategorization.

9. Water Pollution Control Technologies

There are a number of water pollution control technologies in use in the TEC industry. This variety of technologies results from the wide range of pollutants present in TEC wastewater. As discussed previously, the pollutants present in TEC wastewater are based on factors such as the tank type cleaned and the cargos last contained in the tanks. EPA did not consider subcategorization of the industry based solely on the water pollution control technologies in use as a reasonable method of subcategorization. These control technologies are appropriately considered in evaluation technology options and determining effluent limitations.

10. Treatment Costs

Treatment costs are dependent upon facility water pollution control technologies and facility wastewater flow rates and facility size. These costs vary with the specific treatment technologies and waste disposal methods employed, and therefore do not apply uniformly across a particular segment of the industry. EPA has tentatively determined that subcategorization of the TEC industry based solely on treatment costs is not an appropriate means of subcategorization.

11. Non-Water Quality Impacts

Non-water quality impacts of TEC operations include, among others, impacts from transporting wastes, impacts from disposal of solid wastes, and impacts due to emissions of volatile organics to the air. These impacts vary with the specific treatment technologies and waste disposal methods employed, and therefore do not apply uniformly across a particular segment of the industry. EPA has concluded that subcategorization of the TEC industry based on non-water quality impacts is not an appropriate means of subcategorization.

B. Selection of Subcategorization Approach

Based on its evaluation of above factors, EPA determined that subcategorization of the TEC industry is necessary and that different effluent limitations and pretreatment standards should be developed for subcategories of the industry. EPA concluded that the most appropriate basis for subcategorization of the industry be based on tank type and cargo type cleaned.

EPA solicits comment on the appropriateness of this subcategorization approach. As mentioned previously, EPA believes it has developed a subcategorization approach which addresses the complexities inherent in this industry. Of particular concern to the Agency is the potential difficulty associated with implementing this rule due to potentially overlapping subcategories. EPA solicits comment regarding the proposed subcategorization and on other subcategorization approaches which may be appropriate.

EPA realizes that there may be some overlap between transportation sectors, although this is not a great concern because 99 percent of the facilities surveyed cleaned tanks belonging to only one transportation sector.

EPA also realizes that determining the applicable subcategory of a facility may be somewhat complex, given that many facilities accept a wide range of cargos and commodities which may vary on a daily, monthly, seasonal, or yearly basis.

EPA is proposing that the definition of each subcategory include a production cutoff. In developing this subcategorization approach, EPA has attempted to strike a balance between several divergent factors. On the one hand, EPA's data collection activities indicate that the wastewater generated from cleaning certain cargos and tank types do not discharge significant quantities of toxic pollutants. This includes wastewater generated from cleaning tank trucks, rail tank cars, and barges containing food cargos; closed top hopper trucks, rail cars, and barges containing dry bulk goods; and rail tank cars and tank trucks containing petroleum cargos. On the other hand, EPA has identified wastewaters that contain toxic pollutants in significant quantities from tank trucks and rail tank cars which transport chemical cargos, and barges which transport chemical and petroleum cargos.

EPA is proposing to establish effluent limitations guidelines and pretreatment standards for toxic parameters in the Truck/Chemical, Rail/Chemical, and Barge/Chemical & Petroleum Subcategories. In its subcategorization approach, EPA has attempted to establish guidelines and pretreatment standards for toxic parameters for those facilities that generate wastewater containing toxic pollutants. However, EPA also realizes that a facility may generate wastewater from a variety of cargos which do not all belong to one

classification of food, petroleum, chemical, or dry bulk goods.

In order to address these concerns, EPA has attempted to classify a facility into one subcategory by establishing a hierarchy of applicability as follows: if 10 percent or more of the tanks cleaned on a yearly basis at a tank truck or rail car facility contain chemical cargos, then that facility is placed in the Truck/Chemical or Rail/Chemical Subcategory, and subject to the effluent limitations and pretreatment standards proposed for the Truck/Chemical or Rail/Chemical Subcategory. For a barge facility, if 10 percent or more of the tanks cleaned on a yearly basis contain chemical or petroleum cargos, then that facility is placed in the Barge/Chemical & Petroleum Subcategory and is subject to the effluent limitations proposed for the Barge/Chemical & Petroleum Subcategory.

If a truck or rail facility does not clean more than 10 percent of tanks containing chemical cargos, but does clean more than 10 percent of tanks containing food grade cargos on a yearly basis, then that facility is placed in the Truck/Food or Rail/Food Subcategory. There are no effluent limitations proposed for indirect discharging Truck/Food or Rail/Food facilities, but EPA is proposing effluent limitations for conventional pollutants for direct discharging Truck/Food and Rail/Food facilities.

Similarly, if a barge facility does not clean more than 10 percent of tanks containing chemical and/or petroleum cargos, but does clean more than 10 percent of tanks containing food grade cargos on a yearly basis, then that facility is placed in the Barge/Food Subcategory. There are no effluent limitations proposed for indirect discharging Barge/Food facilities, but EPA is proposing effluent limitations for conventional pollutants for direct discharging Barge/Food facilities.

Remaining rail and truck facilities which clean more than 80 percent of tanks containing petroleum cargos on a yearly basis have been placed in the Truck/Petroleum and Rail/Petroleum Subcategories. Facilities which clean hopper tanks have been placed in the Truck/Hopper, Rail/Hopper, or Barge/Hopper Subcategories. EPA is not proposing to regulate wastewater discharged from the Truck/Petroleum and Rail/Petroleum, and Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories.

EPA is not proposing to regulate toxic parameters for facilities that clean tanks that have transported only petroleum, food, or dry bulk cargos, with the exception of barge facilities that clean tanks containing petroleum cargos.

The Agency believes that this proposed subcategorization approach would allow a facility in a subcategory which is not subject to regulation of toxic parameters the flexibility to accept a variety of cargos without necessarily needing to be re-classified in a different subcategory, and therefore, be subject to a different set of effluent limitations. By establishing such a production cutoff, EPA believes that the toxic characteristics of the wastewater will not vary considerably from facilities that perform 80 to 100 percent of its operations within the confines of one subcategory. In this manner, EPA believes that a facility within one subcategory will be allowed the flexibility to clean transportation equipment that contained different types of cargos without discharging substantial quantities of toxic pollutants. EPA solicits comment on the hierarchy of applicability that EPA is proposing as the basis for subcategorization.

From the possible combinations of tank types and cargos last hauled, EPA proposes subcategorization of the TEC industry into 11 subcategories. The tank type classifications include: (1) tank trucks and intermodal tank containers (2) rail tank cars (3) inland tank barges and ocean/sea tankers (4) closed-top hopper trucks (5) closed-top hopper rail cars and (6) closed-top hopper barges. A description of each of these tank type classifications is presented in Appendix A of this notice. Containers defined as drums or Intermediate Bulk Containers (IBCs) are proposed not to be covered by this guideline.

The cargo type classifications used as a basis for subcategorization include: (1) petroleum; (2) food grade; (3) dry bulk; and (4) chemical. A description of the cargo type classifications is provided below.

Petroleum

Petroleum cargos include the products of the fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other refining processes. Petroleum cargos also include products obtained from the refining or processing of natural gas and coal. Specific examples of petroleum products include but are not limited to: asphalt; benzene; coal tar; crude oil; cutting oil; ethyl benzene; diesel fuel; fuel additives; fuel oils; gasoline; greases; heavy, medium, and light oils; hydraulic fluids, jet fuel; kerosene; liquid petroleum gases (LPG) including butane and propane; lubrication oils; mineral spirits; naphtha; olefin, paraffin, and other waxes; tall oil; tar; toluene; xylene; and waste oil.

Food Grade

''Food grade'' cargos include edible and non-edible food grade products such as corn syrup, sugar, juice, soybean oil, beverages, and animal and vegetable oils.

Dry Bulk

The dry bulk classification includes closed-top hoppers that transport dry bulk products such as fertilizers, grain, and coal.

Chemical

Chemical cargos are defined to include but are not limited to the following cargos: latex, rubber, plastics, plasticizers, resins, soaps, detergents, surfactants, agricultural chemicals and pesticides, hazardous waste, organic chemicals including: alcohols, aldehydes, formaldehydes, phenols, peroxides, organic salts, amines, amides, other nitrogen compounds, other aromatic compounds, aliphatic organic chemicals, glycols, glycerines, and organic polymers; refractory organic compounds including: ketones, nitriles, organo-metallic compounds containing chromium, cadmium, mercury, copper, zinc; and inorganic chemicals including: aluminum sulfate, ammonia, ammonium nitrate, ammonium sulfate, and bleach. In the development of this regulation, EPA has considered any cargo not specifically defined as food, petroleum, or dry bulk good as a ''chemical'' cargo.

Based on tank type and cargo type classifications described above, EPA is proposing to subcategorize the TEC industry into the following 11 subcategories. A detailed explanation of each of these subcategories is provided below:

Subcategory A: Truck/Chemical

Subcategory A would apply to TEC facilities that clean tank trucks and intermodal tank containers where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos.

Subcategory B: Rail/Chemical

Subcategory B would apply to TEC facilities that clean rail tank cars where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos.

Subcategory C: Barge/Chemical & Petroleum

Subcategory C would apply to TEC facilities that clean tank barges or

ocean/sea tankers where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical and/or petroleum cargos.

Subcategory D: Truck/Petroleum

Subcategory D would apply to TEC facilities that clean tank trucks and intermodal tank containers where 80 percent or more of the total tanks cleaned at that facility in an average year contained petroleum cargos, so long as that facility is not in Subcategory A: Truck/Chemical or Subcategory F: Truck/Food.

Subcategory E: Rail/Petroleum

Subcategory E would apply to TEC facilities that clean rail tank cars where 80 percent or more of the total tanks cleaned at that facility in an average year contained petroleum cargos, so long as that facility is not in Subcategoy B: Rail/Chemical or Subcategory G: Rail/Food.

Subcategory F: Truck/Food

Subcategory F would apply to TEC facilities that clean tank trucks and intermodal tank containers where 10 percent or more of the total tanks cleaned at that facility in an average year contained food grade cargos, so long as that facility does not clean 10 percent or more of tanks containing chemical cargos. If 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos, then that facility is in Subcategoy A: Truck/Chemical.

Subcategory G: Rail/Food

Subcategory G would apply to TEC facilities that clean rail tank cars where 10 percent or more of the total tanks cleaned at that facility in an average year contained food grade cargos, so long as that facility does not clean 10 percent or more of tanks containing chemical cargos. If 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos, then that facility is in Subcategoy B: Rail/Chemical.

Subcategory H: Barge/Food

Subcategory H would apply to TEC facilities that clean tank barges or ocean/sea tankers where 10 percent or more of the total tanks cleaned at that facility in an average year contained food grade cargos, so long as that facility does not clean 10 percent or more of tanks containing chemical cargos. If 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical and/or petroleum cargos, then that facility is in Subcategory C: Barge Chemical & Petroleum.

Subcategory I: Truck/Hopper

Subcategory I would apply to TEC facilities that clean closed-top hopper trucks which transport dry bulk commodities.

Subcategory J: Rail/Hopper

Subcategory J would apply to TEC facilities that clean closed-top hopper rail cars which transport dry bulk commodities.

Subcategory K: Barge/Hopper

Subcategory K would apply to TEC facilities that clean closed-top hopper barges which transport dry bulk commodities.

VII. Wastewater Generation and Characteristics

Wastewater generated by the industry includes water and steam used to clean the tank interiors, prerinse solutions, chemical cleaning solutions, final rinse solutions, tank exterior washing wastewater, boiler blowdown, tank hydrotesting wastewater, safety equipment cleaning rinsate, and TEC-contaminated storm water. Of the facilities that discharge TEC wastewater, the majority (97 percent) discharge their wastewater to publicly owned treatment works (POTWs). The majority of the barge facilities (77 percent) discharge directly to U.S. surface waters.

Primary sources of pollutants in TEC wastewater include heels and cleaning solutions. Heel is residual cargo remaining in a tank or container following unloading, delivery, or discharge of the transported cargo and is the primary source of pollutants in TEC wastewater. Water-soluble heels that are compatible with the facility's wastewater treatment system and the conditions of the facility's wastewater discharge permit are often combined with other wastewater for treatment and discharge at the facility. Incompatible heels are drained and segregated into drums or tanks for disposal or reuse by alternate means, which may include reuse onsite, return to consignee, sale to a reclamation facility, land filling, or incineration. However, even when the heel is drained, residual cargo adheres to the tank or container interior, and is removed by tank cleaning operations and ultimately discharged in TEC wastewater.

Pollutants contained in heels are dependent upon the constituents contained in the cargos transported. Based on responses to the Detailed Questionnaire, tank truck cleaning facilities reported cleaning at least 429 unique cargos, rail tank car cleaning facilities reported cleaning at least 159 unique cargos, and tank barge cleaning facilities reported cleaning at least 111 unique cargos.

Cleaning solutions are another primary source of pollutants in TEC wastewater. TEC facilities commonly use the following four types of chemical cleaning solutions: (1) acid solution; (2) caustic solution; (3) detergent solution; and (4) presolve solution. Acid solutions typically comprise hydrofluoric and/or phosphoric acid and water. Acid solutions are also used as metal brighteners on aluminum and stainless steel tank exteriors. Caustic solutions typically comprise sodium hydroxide and water. The most common components of detergent solutions are sodium metasilicate and phosphate-based surfactants. Some facilities use off-the-shelf brands of detergent solutions such as Tide®, Arm & Hammer®, and Pine Power®. Often, concentrated detergents (''boosters''), such as glycol ethers and esters, are added to acid and caustic solutions to improve their effectiveness. Presolve solutions usually consist of diesel fuel, kerosene, or other petroleum-based solvent. Other miscellaneous cleaning solutions used by the TEC industry include passivation agents (oxidation inhibitors), odor controllers such as citrus oils, and sanitizers.

Some TEC facilities commingle spent cleaning solutions with TEC wastewater, while other facilities dispose of spent cleaning solutions off site. However, even when spent cleaning solutions are not discharged with TEC wastewater, residual cleaning solution adheres to the tank or container interior and is removed during tank rinses and ultimately discharged in TEC wastewater.

TEC operations or control technologies that minimize the amount of heel remaining in the tank prior to starting TEC operations or that reduce the use or toxicity of chemical cleaning solutions significantly reduce the pollutant loading in TEC wastewater. EPA estimates, based on data collected during EPA's sampling program, that facilities implementing heel and cleaning solution pollution prevention practices generate one half to an order of magnitude less wastewater pollutant loadings than facilities that do not implement these practices.

EPA conducted 20 sampling episodes at 18 facilities representative of the variety of facilities in the TEC industry (2 facilities were sampled twice). As part of this sampling program, EPA routinely analyzed wastewater samples for conventional, priority toxic, and

nonconventional pollutants. Raw wastewater streams sampled typically comprised TEC wastewater commingled with tank exterior cleaning wastewater, TEC-contaminated storm water, tank hydrotesting wastewater, and other wastewater streams. Additional details concerning EPA's sampling program, including the types of facilities sampled, are provided in Section V.E.

EPA detected 330 of 478 pollutants analyzed for in TEC wastewaters. Ninety of the 126 priority toxic pollutants analyzed were detected. Detected pollutants vary by subcategory and include the conventional pollutants oil and grease (analyzed as hexane extractable materials (HEM)), 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH; certain priority toxic pollutants; and certain nonconventional pollutants.

In its analysis of the industry, EPA sampled one facility in the Truck/Petroleum Subcategory. This facility treated only final rinse wastewater on-site. Initial rinses and other TEC wastewaters were contract hauled for off-site treatment and were therefore not included in the sampling performed by EPA. There was no additional data provided by the industry on raw TEC wastewater characteristics. EPA therefore reviewed other sources of raw wastewater characterization data in order to determine whether data could be transferred from other sources to characterize TEC wastewater for the Truck/Petroleum and Rail/Petroleum Subcategories. One facility sampled in support of the Centralized Waste Treatment effluent guideline accepted only oily wastewater for treatment. The wastewater consisted of wastewater contaminated with lube oils and other petroleum products. Additionally, the sources of oily wastewater which comprised the sampled wastestream closely matched the types of commodities cleaned by the sampled TEC facility. Therefore, the sampling data obtained from the Centralized Waste Treatment Industry was used to characterize TEC wastewater for the Truck/Petroleum and Rail/Petroleum Subcategories in addition to the TEC sampled facility.

Listed below are pollutants identified in all TEC raw wastewater characterization samples collected and analyzed by EPA for each subcategory or subcategory grouping. These pollutants have been found in raw wastewater but have not necessarily been identified as pollutants of concern for the industry. See Section 6.0 of the Technical Development Document for a more comprehensive summary of the specific pollutants detected and the mean and range of pollutant concentrations by subcategory.

Truck/Chemical Subcategory

- Conventional pollutants: BOD_5, TSS, Oil and Grease, and pH;
- Priority toxic pollutants: methylene chloride, copper, nickel, and zinc; and
- Nonconventional pollutants: acetone, benzoic acid, aluminum, barium, boron, calcium, iron, magnesium, manganese, molybdenum, phosphorus, potassium, sodium, strontium, sulfur, titanium, octachlorodibenzo-p-dioxin, adsorbable organic halides (AOX), ammonia as nitrogen, chemical oxygen demand (COD), chloride, fluoride, nitrate/nitrite, surfactants (MBAS), total dissolved solids (TDS), total organic carbon (TOC), total phosphorus, and volatile residue.

Rail/Chemical Subcategory

- Conventional pollutants: BOD_5, TSS, Oil and Grease, and pH;
- Priority toxic pollutants: toluene, arsenic, chromium, copper, nickel, zinc, tetrachlorodibenzo-p-dioxin and tetrachlorodibenzofuran.
- Nonconventional pollutants: n-eicosane, n-octadecane, aluminum, barium, boron, calcium, cobalt, iron, magnesium, manganese, phosphorus, potassium, silicon, sodium, strontium, sulfur, titanium, AOX, ammonia as nitrogen, COD, chloride, fluoride, silica-gel hexane extractable material (SGT–HEM), MBAS, TDS, TOC, total phenols, total phosphorus, and volatile residue.

Barge/Chemical and Petroleum Subcategory

- Conventional pollutants: BOD_5, TSS, Oil and Grease, and pH;
- Priority toxic pollutants: benzene, ethylbenzene, toluene, naphthalene, copper, nickel, zinc, tetrachlorodibenzo-p-dioxin and tetrachlorodibenzofuran.
- Nonconventional pollutants: acetone, o-+ p-xylene, 2-methylnaphthalene, n-docosane, n-dodecane, n-eicosane, n-hexadecane, n-octadecane, n-tetradecane, styrene, malathion, parathion (ethyl), aluminum, barium, boron, calcium, hexavalent chromium, iron, magnesium, manganese, potassium, sodium, strontium, sulfur, AOX, ammonia as nitrogen, COD, chloride, fluoride, nitrate/nitrite, SGT–HEM, MBAS, TOC, total phenols, total phosphorus, and total sulfide.

Food Grade Subcategories

- Conventional pollutants: BOD_5, TSS, and pH;
- Priority toxic pollutants: none; and
- Nonconventional pollutants: aluminum, barium, calcium, europium, iron, magnesium, manganese, neodymium, niobium, silicon, sodium, strontium, ammonia as nitrogen, COD, chloride, fluoride, MBAS, TDS, TOC, total phenols, total phosphorus, total sulfide, and volatile residue.

Petroleum Subcategories

- Conventional pollutants: BOD_5, Oil and Grease, TSS, and pH;
- Priority toxic pollutants: bis(2-ethylhexyl)phthalate, and zinc; and
- Nonconventional pollutants: acetone, n-eicosane, n-octacosane, n-octadecane, n-tetradecane, aluminum, barium, boron, calcium, holmium, iron, magnesium, manganese, molybdenum, phosphorus, potassium, silicon, sodium, strontium, sulfur, tantalum, ammonia as nitrogen, COD, chloride, fluoride, TDS, TOC, and total phosphorus.

Hopper Subcategories

- Conventional pollutants: BOD5, TSS, and pH;
- Priority toxic pollutants: bis(2-ethylhexyl)phthalate, arsenic, beryllium, cadmium, chromium, copper, nickel, silver, and zinc; and
- Nonconventional pollutants: aluminum, calcium, iron, magnesium, phosphorus, potassium, sodium, sulfur, ammonia as nitrogen, COD, chloride, fluoride, TDS, TOC, and total phosphorus.

VIII. Development of Effluent Limitations Guidelines and Standards

A. Description of Available Technologies

There are three major approaches currently used by the TEC industry to improve effluent quality: (1) cleaning process technology changes and controls to prevent or reduce the generation of wastewater pollutants; (2) flow reduction technologies to increase pollutant concentrations and the efficiency of treatment system pollutant removal; and (3) end-of-pipe wastewater treatment technologies to remove pollutants from TEC wastewater prior to discharge. These approaches and specific available technologies within these approaches are described in the following subsections.

1. Pollution Prevention Controls

EPA has defined pollution prevention as source reduction and other practices that reduce or eliminate the formation of pollutants. Source reduction includes any practices that reduce the amount of any hazardous substance or pollutant entering any waste stream or otherwise released into the environment, or any practices that reduce the hazards to public health and the environment associated with the release of such

pollutants. The principal pollution prevention controls applicable to the TEC industry are the use of dedicated tanks, heel reduction techniques, and reduction in the amount or toxicity of chemical cleaning solutions.

a. Use of dedicated tanks. Tanks dedicated to hauling a single cargo (e.g., gasoline) do not require, or require less frequent, tank cleaning between loads. Use of dedicated tanks eliminates the generation of tank cleaning wastewater and associated pollutant loading.

b. Heel reduction. Heel (residual cargo remaining in tanks following unloading) is the primary source of pollutants in TEC wastewater. Heel reduction techniques include the following: (1) refusal to accept tanks with excess heel; (2) assessment of fees for excess heel; (3) use of steam in tank interiors to lower the viscosity of heels for improved draining; (4) manual use of squeegees to move heel toward valve openings; (5) cold or hot water prerinses to enhance heel removal; (6) heel recycle or reuse; and (7) heel disposal rather than commingling and discharging with TEC wastewater.

c. Reduction in the amount and toxicity of chemical cleaning solutions. Chemical cleaning solutions are the second major source of pollutants in TEC wastewater. Chemical cleaning solution reduction techniques include the following: (1) recirculation and reuse of solutions; (2) use of prerinses to extend cleaning solution effectiveness; (3) increased use of steam cleaning and other cleaning processes that do not include chemical cleaning solutions; (4) solution disposal rather than being commingled and discharged with TEC wastewater; and (5) substitution with less toxic cleaning solutions.

2. Flow Reduction Technologies

Flow reduction technologies applicable to the TEC industry reduce the amount of fresh water required for tank cleaning through cleaning process modifications and/or recycle and reuse of process wastewaters to TEC or other processes. Flow reduction technologies applicable to the TEC industry include the use of high-pressure/low-volume cleaning equipment, TEC water use monitoring, equipment monitoring programs, dry cleaning, cascading tank cleaning, and wastewater recycle and reuse.

a. High-pressure/low-volume cleaning equipment. High-pressure (up to 1,000 psi) delivery of water washes, cleaning solutions, and rinses can clean as efficiently as low-pressure delivery while requiring significantly less volume of water or cleaning solutions.

b. TEC water use monitoring. Careful monitoring of TEC water use can ensure that the minimum adequate amount of water is used to clean tank interiors. Visual inspection may be used to determine an appropriate duration and amount of water required for cleaning. Alternatively, cleaning personnel can use predetermined cleaning times and amounts of water to clean specific tank type and cargo type combinations based on experience.

c. Equipment monitoring program. Preventative maintenance and periodic inspection of cleaning equipment such as pumps, hoses, nozzles, and water and cleaning solution storage tanks can significantly reduce fresh water requirements by eliminating water waste.

d. Cleaning without use of water. Cleaning personnel may enter the tank to shovel or sweep dry-bulk cargos or mop or squeegee liquid cargos. Mechanical devices are also used to vibrate hoppers to improve heel removal. Depending on the effectiveness of these dry cleaning processes, the need for subsequent tank cleaning with water may be eliminated. At a minimum, these techniques will reduce the amount of water and cleaning solutions required to clean the tank interior.

e. Cascade tank cleaning. ''Cascade'' tank cleaning processes involve the use of fresh water for final tank rinses with recycle and reuse of final rinse wastewater in initial rinses. This technique uses water at least twice prior to discharge or disposal.

f. Wastewater recycle and reuse. Water recycle and reuse techniques reduce or eliminate the need for fresh process water. Wastewater streams most commonly recycled and reused in TEC processes include tank interior cleaning wastewater, hydrotesting wastewater, uncontaminated storm water, and non-contact cooling water. These water sources typically do not require extensive treatment prior to recycle and reuse. Tank interior cleaning wastewater generated by cleaning tanks used to transport petroleum products can be recycled and reused in TEC processes after treatment by oil/water separation and activated carbon treatment. Wastewater generated by cleaning tanks that last transported chemical products generally requires more extensive treatment prior to recycle and reuse in TEC processes.

3. End-of-Pipe Wastewater Treatment Technologies

End-of-pipe wastewater treatment includes physical, chemical, and biological processes that remove pollutants from TEC wastewater prior to discharge to a receiving stream or POTW. Typical end-of-pipe treatment currently used by the TEC industry includes pretreatment and primary treatment. Facilities that practice extensive water and wastewater recycle and reuse or that discharge TEC wastewater directly to surface waters may also operate biological and/or advanced treatment units. Use of treatment technologies by the TEC industry is presented as the percentage of direct or indirect discharging facilities that use the technologies.

a. Oil/water separation. Approximately 36 percent of TEC facilities use oil/water separation to remove oil and grease. The most common type of oil/water separator used by TEC facilities is an oil skimmer. Coalescing and corrugated plate separators are also used.

b. Gravity settling. Gravity settling or sedimentation removes suspended solids from TEC process wastewater. Approximately 57 percent of TEC facilities use gravity settling.

c. Equalization. Equalization provides wastewater retention time to homogenize wastewater to control fluctuations in flow and pollutant characteristics, reduce the size and cost of subsequent treatment units, and improve the efficiency of subsequent treatment units. Approximately 42 percent of TEC facilities use equalization.

d. pH adjustment. Many treatment technologies used by the TEC industry are sensitive to pH. For example, chemical precipitation requires a relatively high pH while biological treatment requires a neutral pH. In addition, pH adjustment may also be required to meet permit conditions for wastewater discharge. Approximately 44 percent of TEC facilities use pH adjustment.

e. Grit removal. Grit removal involves the use of a settling chamber to remove heavy, suspended material from wastewater. This is typically used at the headworks of a treatment system to remove larger particles which may damage pumps or treatment equipment. Approximately four percent of TEC facilities use grit removal.

f. Coagulation/Flocculation. Coagulation involves the addition of a ''coagulant,'' such as an electrolyte or polymer, to destabilize colloidal and fine suspended matter. Flocculation involves the agglomeration of destabilized particles into flocs for subsequent removal by gravity settling in a clarifier. Approximately 24 percent of TEC facilities use coagulation/flocculation.

g. Chemical precipitation/separation. Chemical precipitation removes dissolved pollutants from wastewater. Precipitation agents, such as polyaluminum chloride, ferric chloride, and lime, work by reacting with pollutant cations (e.g., metals) and some anions to convert them into an insoluble form for subsequent removal by gravity settling in a clarifier. The pH of the wastewater also affects how much pollutant mass is precipitated, as pollutants precipitate more efficiently at different pH ranges. Coagulation/flocculation may also be used to assist particle agglomeration and settling. Approximately six percent of TEC facilities use chemical precipitation/separation.

h. Clarification. Approximately 23 percent of TEC facilities use clarification as either a pre- or post-treatment step to remove settleable solids, free oil and grease, and other floating material. Primary clarifiers remove settleable solids from raw wastewater or wastewater treated by coagulation/flocculation; secondary clarification is used in activated sludge systems to remove biomass. Clarifiers consist of settling tanks commonly equipped with a sludge scraper mounted on the floor of the clarifier to rake sludge into a sump for removal to sludge handling equipment. The bottom of the clarifier may be sloped to facilitate sludge removal.

i. Filtration. Filtration removes solids from wastewater by passing the wastewater through a material that retains the solids on or within itself. A wide variety of filter types are used by the TEC industry including media filters (e.g., sand, gravel, charcoal), bag filters, and cartridge filters. Approximately 24 percent of TEC facilities use filtration technologies.

j. Sludge dewatering. Sludge dewatering reduces sludge volume by decreasing its water content, thereby substantially reducing sludge disposal costs. Sludge dewatering technologies used by TEC facilities include sludge drying beds, filter presses, rotary vacuum filters, and centrifuges. Approximately 28 percent of TEC facilities use sludge dewatering.

k. Dissolved air flotation. Dissolved air flotation devices introduce gas bubbles into wastewater which attach to suspended particles such as free and dispersed oil and grease, suspended solids, and some dissolved pollutants, causing them to float. Floating material is removed from the surface by rakes. Approximately 25 percent of TEC facilities use dissolved air flotation.

l. Biological oxidation. Biological oxidation involves the biological conversion of dissolved and colloidal organics into biomass, gases, and other end products. Activated sludge systems, consisting of an aeration basin, a secondary clarifier, and a sludge recycle line, are the most commonly used biological oxidation systems in the TEC industry. Aerated stabilization basins and anaerobic technologies are also used. Approximately nine percent of TEC facilities use biological oxidation.

m. Chemical oxidation. Chemical oxidation involves the addition of oxidants such as hydrogen peroxide to chemically oxidize toxic pollutants to form less toxic constituents. Approximately two percent of TEC facilities use chemical oxidation.

n. Activated carbon adsorption. Activated carbon removes pollutants from wastewater by physical and chemical forces that bind the constituents to the carbon surface. In general, pollutants with low water solubility, high molecular weight, and those containing certain chemical structures such as aromatic functional groups are most amenable to treatment by activated carbon adsorption. Less than one percent of TEC facilities use activated carbon adsorption.

o. Membrane filtration. Membrane filtration uses a pressure-driven, semipermeable membrane to separate suspended, colloidal, and dissolved solutes from wastewater. The size of pores in the membrane is selected based on the type of contaminant to be removed. Types of membrane filtration technologies used by the TEC industry include microfiltration, ultrafiltration, and reverse osmosis. A relatively large pore size is used to remove precipitates or suspended materials, whereas a relatively small pore size is used to remove inorganic salts or organic molecules. Less than one percent of TEC facilities use membrane filtration.

B. Technology Options Considered for Basis of Regulation

This section explains how EPA selected the effluent limitations and standards proposed today for each of the TEC subcategories proposed for regulation. To determine the technology basis and performance level for the proposed regulations, EPA developed a database consisting of daily influent and effluent data collected during EPA's wastewater sampling program. This database is used to support the BPT, BCT, BAT, NSPS, PSES, and PSNS effluent limitations and standards.

The effluent limitations and pretreatment standards EPA is proposing to establish today are based on well-designed, well-operated treatment systems. Below is a summary of the technology bases for the proposed effluent limitations and pretreatment standards in each subcategory. When final guidelines are promulgated, a facility is free to use any combination of wastewater treatment technologies and pollution prevention strategies at the facility so long as the numerical discharge limits are achieved.

In developing the regulatory options for proposing limitations and pretreatment standards for the TEC industry, EPA utilized technology bases from the wastewater treatment technologies and the pollution prevention technologies described in Section VIII.A.

EPA incorporated the utilization of two common practices into the technology options for all subcategories. The first is good heel removal and management practices which prevent pollutants from entering waste streams. These practices may reduce wastewater treatment system capital and annual costs due to reduced wastewater pollutant loadings and may provide a potential to recover/reuse valuable product. The majority of TEC facilities currently operate good heel removal and management practices. Because of the many benefits of these practices, and a demonstrated trend in the TEC industry to implement these practices, EPA believes that the TEC industry will have universally implemented good heel removal and management practices prior to implementation of TEC effluent guidelines.

The second common element is good water conservation practices which reduce the amount of wastewater generated. Good water conservation will improve wastewater treatment performance efficiency, reduce wastewater treatment system capital and annual costs, and reduce water usage and sewer fees. EPA considered good water conservation practices to be represented by the median tank interior cleaning wastewater volume discharged per tank cleaning (including commingled non-TEC wastewater streams not easily segregated) for each subcategory. This volume is referred to as the ''regulatory flow'' for each subcategory. For the 50 percent of facilities not currently meeting the regulatory flow, a flow reduction technology was costed. Flow reduction technologies include operator training, new spinners, and new cleaning systems.

In assessing the costs and loads for each regulatory option, EPA considered the treatment in place at each facility potentially affected by the regulation. In cases where the facility had treatment in place, that facility was ''given credit''

for each treatment unit currently in place that was a part of EPA's proposed treatment option. That facility was then assumed not to incur additional costs for the installation of that particular unit. Often, a facility had in place a treatment unit that was similar, but not identical to, the treatment option proposed. In these cases, EPA evaluated the existing treatment and gave credit for similar treatment systems.

The following subsections discuss the regulatory options that were considered for BPT, BCT, BAT, NSPS, PSES and PSNS. The Agency solicits comment on alternative treatment technologies not considered by EPA which may attain similar treatment removal efficiencies but that may be less expensive to install and operate.

1. BPT Technology Options Considered and Selected

a. Introduction. EPA today proposes BPT effluent limitations for the following subcategories for the TEC Point Source Category: Truck/Chemical, Rail/Chemical, Barge/Chemical & Petroleum, and Truck/Food, Rail/Food, and Barge/Food. The BPT effluent limitations proposed today would control identified conventional, priority, and non-conventional pollutants when discharged from TEC facilities. For further discussion on the basis for the limitations and technologies selected see the Technical Development Document.

As previously discussed, Section 304(b)(1)(A) of the CWA 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 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 e.g. *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).

EPA identified relatively few direct discharging facilities for most subcategories in the TEC industry as compared to the number of indirect discharging facilities. However, the Agency concluded that direct discharging facilities are similar to indirect discharging facilities in terms of types of tanks cleaned, types of commodities cleaned, water use, and wastewater characteristics. With respect to existing end-of-pipe wastewater treatment in place, direct discharging facilities typically operate biological treatment in addition to physical/chemical treatment technologies typically operated by indirect discharging facilities.

b. Truck/Chemical Subcategory. The Agency's engineering assessment of BPT consisted of the following options:

- Option I: Flow Reduction, Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification, Biological Treatment, and Sludge Dewatering. Option I demonstrated treatment efficiency of 57 percent or greater for all organic pollutants, 57 percent or greater for all metals, and 92 percent or greater for all conventional pollutants present in Truck/Chemical Subcategory wastewater. All existing Truck/Chemical Subcategory facilities received credit in EPA's costing model for equalization, coagulation/clarification, and biological treatment in-place, sixty-six percent received credit for existing sludge dewatering, and no facilities received credit for existing oil/water separation. (Oil/water separation was characterized at an indirect discharge Truck/Chemical Subcategory facility).
- Option II: Flow Reduction, Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification, Biological Treatment, Activated Carbon Adsorption, and Sludge Dewatering. Option II is equivalent to Option I with the addition of activated carbon adsorption for wastewater polishing following biological treatment. Option II removed 85 percent or greater of organics, 79 percent or greater of metals and 98 percent or greater of conventional pollutants present in Truck/Chemical Subcategory wastewater. All Truck/Chemical Subcategory facilities received credit for existing activated carbon adsorption treatment.

EPA is proposing to establish BPT effluent limitations based on Option II for the Truck/Chemical Subcategory. Agency data indicate that a treatment train consisting of physical/chemical treatment for the removal of metals and toxics, biological treatment for the removal of decomposable organic material and activated carbon adsorption for removal of residual organics and toxics represents the average of the best treatment in the industry. As noted above, all existing direct discharging facilities in this subcategory currently employ equalization, coagulation/clarification, biological treatment and activated adsorption. Although no direct discharging facilities were given credit in EPA's costing model for a coelescing plate oil/water separator, this technology is common and demonstrated practice in the industry to improve the overall efficiency of the treatment system. EPA has included the use of oil/water separation in its cost estimates to the industry in order to ensure that the biological system performs optimally.

EPA's decision to base BPT limitations on Option II treatment reflects primarily two factors: (1) the degree of effluent reductions attainable and (2) the total cost of the proposed treatment technologies in relation to the effluent reductions achieved.

No basis could be found for identifying different BPT limitations based on age, size, process or other engineering factors. Neither the age nor the size of the TEC facility will directly affect the treatability of the TEC wastewaters. For Truck/Chemical

facilities, the most pertinent factors for establishing the limitations are costs of treatment and the level of effluent reductions obtainable.

EPA estimates that implementation of Option II will cost $0.43 per pound of pollutants removed, and has found that cost to be reasonable. Finally, EPA also looked at the costs of all options to determine the economic impact that this proposal would have on the TEC industry. EPA anticipates that the economic impact, in terms of facility closures and employment losses, due to the controls established by BPT would be comparable to that estimated in EPA's assessment for indirect dischargers, which resulted in no facility closures or employment losses. EPA therefore projects that implementation of BPT Option II will result in no facility closures and no employment losses. Therefore, EPA has concluded that the total costs associated with the proposed BPT option are achievable and are reasonable as compared to the removals achieved by this option. Further discussion on the economic impact analysis can be found in Section X of today's notice.

c. Rail/Chemical Subcategory. The Agency's engineering assessment of BPT consisted of the following options:

- Option I: Flow Reduction, Oil/Water Separation, Equalization, Biological Treatment, and Sludge Dewatering. Option I removed 64 percent or greater of organic pollutants, 95 percent or greater of BOD_5, and 98 percent or greater of oil and grease. All Rail/Chemical Subcategory facilities received credit in EPA's costing model for existing biological treatment and sludge dewatering. No Rail/Chemical Subcategory facilities received credit for existing oil/water separation treatment. (Oil/water separation was characterized at a zero discharge Rail/Chemical Subcategory facility that recycled/reused 100 percent of TEC wastewater.)
- Option II: Flow Reduction, Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), Biological Treatment and Sludge Dewatering. Option II is equivalent to Option I with the addition of Dissolved Air Flotation for the removal of oil and grease and the organic and metallic compounds contained in the oily fraction. Option II removed 81 percent or greater of organic pollutants, 84 percent or greater of metals, 99 percent or greater of oil and grease, and 92 percent or greater of TSS present in Rail/Chemical Subcategory wastewater. All Rail/Chemical Subcategory facilities received credit for existing equalization and pH adjustment. No Rail/Chemical Subcategory facilities received credit for existing dissolved air flotation. (Dissolved air flotation was characterized at a zero discharge Rail/Chemical Subcategory facility that recycled/reused 100 percent of TEC wastewater.)
- Option III: Flow Reduction, Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), Biological Treatment, Organo-Clay/Activated Carbon Adsorption, and Sludge Dewatering. Option III is equivalent to Option II with the addition of an organo-clay/activated carbon adsorption system for wastewater polishing following biological treatment. Option III removed 84 percent or greater of organic pollutants, and 99 percent or greater of TSS present in Rail/Chemical Subcategory wastewater. No Rail/Chemical Subcategory facilities received credit in EPA's costing model for existing organo-clay/activated carbon adsorption treatment. (Organo-clay/activated carbon adsorption treatment was characterized at a zero discharge Rail/Chemical Subcategory facility that recycled/reused 100 percent of TEC wastewater.)

EPA is proposing to set BPT regulations for the Rail/Chemical Subcategory based on technology Option I. EPA's decision to base BPT limitations on Option I treatment reflects primarily two factors: (1) the degree of effluent reductions attainable and (2) the total cost of the proposed treatment technologies in relation to the effluent reductions achieved.

No basis could be found for identifying different BPT limitations based on age, size, process or other engineering factors. Neither the age nor the size of the TEC facility will directly affect the treatability of the TEC wastewaters. For Rail/Chemical facilities, the most pertinent factors for establishing the limitations are costs of treatment and the level of effluent reductions obtainable.

EPA has selected Option I based on the comparison of the three options in terms of total costs of achieving the effluent reductions, pounds of pollutant removals, economic impacts, and general environmental effects of the reduced pollutant discharges.

EPA estimates that implementation of Option I will cost $103 dollars per pound of pollutants removed. Although this projected cost per pound appears to be high, EPA has used a very conservative cost approach to project costs to the industry. The one facility in EPA's cost model is already projected to meet the proposed effluent limitations due to the low effluent levels achieved at this facility, which average 8 mg/l of BOD_5. However, because EPA's proposed treatment technology includes oil/water separation, the cost model has assumed that this facility will incur additional costs to install this treatment. Additionally, EPA has given no credit to any facility for current monitoring practices. Therefore, EPA has assumed that all monitoring requirements will result in an increase in costs to the industry. In reality, this facility will likely not need to install additional treatment to meet the proposed limits, and some of the monitoring costs assumed by EPA will not be an additional cost burden to the industry.

The technology proposed in Option I represents the average of the best performing facilities due to the prevalence of biological treatment and sludge dewatering. Although no direct discharging facilities were given credit in EPA's costing model for oil/water separation, this technology is common and demonstrated practice in the industry to improve the overall efficiency of the wastewater treatment system. EPA has included the use of oil/water separation in its cost estimates to the industry in order to ensure that the biological system performs optimally.

Finally, EPA also looked at the costs of all options to determine the economic impact that this proposal would have on the TEC industry. EPA expects the financial and economic profile of the direct dischargers to be comparable to that of the estimated 38 indirect dischargers. EPA anticipates that the economic impact, in terms of facility closures and employment losses, due to the additional controls at BPT Option II and III levels would be comparable to that estimated in EPA's assessment for indirect discharges, potentially leading to six facility closures and the associated loss of over 400 employees. The annual cost per facility for BPT Option I is projected to be $12,900 less than the technology evaluated for PSES which caused six facility closures. Therefore, EPA has concluded that the costs of BPT Option I are achievable and are reasonable as compared to the removals achieved by this option. Further discussion on the economic impact analysis can be found in Section X of today's notice.

d. Barge/Chemical & Petroleum Subcategory. The Agency's engineering assessment of BPT consisted of the following options:

- Option I: Flow Reduction, Oil/Water Separation, Dissolved Air Flotation, Filter Press, Biological Treatment, and Sludge Dewatering. Option I removed 81 percent or greater

of organic pollutants, 82 percent or greater of metals and 96 percent or greater of conventional pollutants present in Barge/Chemical & Petroleum wastewater.

Approximately 79 percent of Barge/Chemical & Petroleum Subcategory facilities received credit in EPA's costing model for existing oil/water separation, 21 percent for dissolved air flotation, 74 percent for biological treatment and 42 percent for sludge dewatering. Although at least one Barge/Chemical & Petroleum facility is known to have filter press treatment in place, no facilities received credit for filter press treatment in EPA's cost and pollutant removal estimates. (Filter press treatment was characterized at a direct discharging facility).

- Option II: Flow Reduction, Oil/Water Separation, Dissolved Air Flotation, Filter Press, Biological Treatment, Reverse Osmosis, and Sludge Dewatering. Option II is equivalent to Option I with the addition of reverse osmosis for wastewater polishing following biological treatment. Option II removed 99 percent or greater of organic pollutants, 88 percent or greater of metals and 99 percent or greater of conventional pollutants present in Barge/Chemical & Petroleum wastewater. Although at least one Barge/Chemical & Petroleum facility is known to have reverse osmosis treatment in place, no facilities received credit for existing reverse osmosis in EPA's cost and pollutant removal estimates. (Reverse osmosis treatment was characterized at a direct discharging Barge/Chemical & Petroleum Subcategory facility.)

EPA's decision to base BPT limitations on Option I treatment reflects primarily two factors: (1) the degree of effluent reductions attainable and (2) the total cost of the proposed treatment technologies in relation to the effluent reductions achieved.

EPA estimates that implementation of Option I will cost $0.35 per pound of pollutants removed, and has found that cost to be reasonable. Additionally, the Agency concluded that reverse osmosis is not commonly used in the industry, and therefore Option II does not represent the average of the best treatment. Finally, EPA also looked at the costs of all options to determine the economic impact that this proposal would have on the TEC industry. EPA's assessment showed that implementation of BPT is projected to result in no facility closures and no employment losses. Therefore, EPA has concluded that the total costs associated with the proposed BPT option are achievable and are reasonable as compared to the removals achieved by this option. Further discussion on the economic impact analysis can be found in Section X of today's notice.

e. Truck/Food, Rail/Food, and Barge/Food Subcategories. EPA considered the following BPT options for these subcategories:

- Option I—Flow Reduction and Oil/Water Separation.
- Option II—Flow Reduction, Oil/Water Separation, Equalization, Biological Treatment and Sludge Dewatering. Option II is equivalent to Option I with the addition of biological treatment for biological decomposition of organic constituents. (All facilities have biological treatment in place.)

Based on screener survey results, EPA estimates that there are 19 direct discharging facilities in the Truck/Food, Rail/Food, and Barge/Food Subcategories. However, EPA's survey of the TEC industry did not initially identify any direct discharging facilities through the Detailed Questionnaire sample population.

Because all types of facilities in the food subcategories accept similar types of cargos which generate similar types of wastewater in terms of treatability and toxicity, EPA has tentatively determined that the same BPT can be applied to all three (truck, rail and barge) food subcategories. The wastewater generated by the food subcategories contains high loadings of biodegradable organics, and few toxic pollutants. EPA conducted sampling at a direct discharging barge food-grade facility which EPA believes to be representative of the entire population.

Based on the data collected by EPA, raw wastewater contained significant levels of organic material in the raw wastewater, exhibiting an average BOD^5 concentration of 3500 mg/l. Therefore, EPA concluded that some form of biological treatment is necessary to reduce potential impacts to receiving waters from direct-discharging facilities and EPA anticipated that all direct discharging facilities in these subcategories would have some form of biological treatment in place. All existing facilities which responded to the screener survey questionnaire indicated that they did, in fact, have a biological treatment system in place. Therefore, EPA proposes to establish BPT based on Option II for the Truck/Food, Rail/Food, and Barge/Food Subcategories

EPA projects no additional pollutant removals and no additional costs to the industry based on EPA's selection of Option II because all facilities identified by EPA currently have the proposed technology in place.

f. Truck/Petroleum and Rail/Petroleum Subcategories. EPA did not develop or evaluate BPT Options for these subcategories for the following reasons: (1) All direct discharging facilities previously identified by the Agency are no longer in operation; (2) EPA is not aware of any new facilities that have recently begun operations; and (3) EPA currently believes permit writers can more appropriately control discharges from these facilities, if any, using best professional judgement.

g. Truck/hopper, Rail/hopper, and Barge/hopper Subcategories. EPA is not proposing to establish BPT regulations for any of the hopper subcategories. EPA concluded that hopper facilities discharge very few pounds of conventional or toxic pollutants. This is based on EPA sampling data, which found very few priority toxic pollutants at treatable levels in raw wastewater. Additionally, very little wastewater is generated from cleaning the interiors of hopper tanks due to the dry nature of bulk materials transported. Therefore, nationally-applicable regulations are unnecessary at this time and direct dischargers will remain subject to limitations established on a case by case basis using best professional judgement.

2. BCT Technology Options Considered and Selected

In July 1986, EPA promulgated a methodology for establishing BCT effluent limitations. EPA evaluates the reasonableness of BCT candidate technologies—those that are technologically feasible—by applying a two-part cost test: (1) A POTW test; and (2) 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 pollutants 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 (i.e., the cost increase must be less than 29 percent).

In today's proposal, EPA is proposing to establish BCT effluent limitations guidelines equivalent to the BPT guidelines for the conventional pollutants for the following subcategories: Truck/Chemical, Rail/Chemical, Barge/Chemical & Petroleum, Truck/Food, Rail/Food, and Barge/Food. In developing 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 according to the BCT Cost Test. In each subcategory, EPA identified no technologies that can achieve greater removals of conventional pollutants than proposed for BPT that are also cost-reasonable under the BCT Cost Test, and accordingly EPA proposes BCT effluent limitations equal to the proposed BPT effluent limitations guidelines for all subcategories. The detailed results of EPA's assessment of candidate technologies, and the results of the cost test, are presented in the Technical Development Document.

3. BAT Technology Options Considered and Selected

a. Truck/Chemical Subcategory. EPA has not identified any more stringent treatment technology option which it considered to represent BAT level of control applicable to Truck/Chemical facilities in this industry, and is therefore proposing that BAT be established equivalent to BPT for toxic and nonconventional pollutants. Further, EPA anticipates, based on the economic analysis for indirect dischargers, that implementing this level of control will result in no facility closures or employment losses. EPA found this Option to be economically achievable. Therefore, EPA is establishing BAT for the Truck/Chemical Subcategory equal to BPT for the priority and non-conventional pollutants.

b. Rail/Chemical Subcategory. EPA evaluated BPT Options II and III as a basis for establishing BAT more stringent than the BPT level of control being proposed today. EPA anticipates that the financial and economic profile of the direct dischargers in this subcategory is similar to that of the estimated 38 indirect dischargers. EPA anticipates that the economic impact due to the additional controls at Option II and III levels would be comparable to that estimated in EPA's assessment for indirect discharges, potentially leading to six facility closures and the associated loss of over 400 employees. Although these options result in improved pollutant reductions, the cost of implementing the level of control associated with Options II and III are disproportionately high, making these options no longer economically achievable for this Subcategory as a whole. Option I is projected to result in no facility closures and no associated employment losses. Additionally, Option I was demonstrated to achieve a high level of pollutant control, treating all priority pollutants to very low levels, often at or near the analytical minimum level.

Therefore, EPA is establishing BAT for the Rail/Chemical Subcategory equivalent to BPT for the priority and non-conventional pollutants.

c. Barge/Chemical & Petroleum Subcategory. EPA evaluated BPT Option II as a basis for establishing BAT more stringent than the BPT level of control being proposed today. Although BPT Option II results in the removal of an estimated additional 167 toxic pounds equivalent of priority and non-conventional pollutants over Option I (a one percent increase in removals achieved by BPT), no additional water quality benefits are projected to result. At both Option I and Option II level of control, EPA predicts that there will remain three water quality excursions nationally. This excursion is caused by a TEC facility modeled to discharge treated effluent to a very low flow stream, and is therefore not projected to be eliminated by either treatment option.

The Agency also concluded that reverse osmosis may not represent the best available treatment because cost-effective disposal methods for the concentrate (the wastewater containing the concentrated pollutants, compared to the permeate) may not be available for all facilities. Concentrate may account for 10 to 30 percent of the original wastewater flow, depending on the efficiency of the reverse osmosis system, and may result in significant disposal costs for large flow facilities.

Additionally, Option I was demonstrated to achieve a high level of pollutant control, treating all priority pollutants to very low levels, often at or near the analytical minimum level. For these reasons, EPA has determined that BPT Option I represents the best available technology. BPT Option I is also economically achievable. Therefore, EPA is proposing BAT for the Barge/Chemical & Petroleum Subcategory equivalent to BPT for the priority and non-conventional pollutants.

d. Truck/Food, Rail/Food, and Barge/Food Subcategories. EPA has not identified any more stringent treatment technology option which it considered to represent BAT level of control applicable to Food Subcategory facilities in this industry. Based on EPA sampling data, EPA found that food grade facilities discharge very few pounds of toxic pollutants. Therefore, EPA is proposing not to establish BAT for the Food Subcategories.

e. Truck/Petroleum and Rail/Petroleum Subcategories. EPA did not develop or evaluate BAT Options for these subcategories for the following reasons: (1) All direct discharging facilities previously identified by the Agency are no longer in operation; (2) EPA is not aware of any new facilities that have recently begun operations; and (3) EPA currently believes permit writers can more appropriately control discharges from these facilities, if any, using best professional judgement.

f. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories. EPA is not proposing to establish BAT regulations for any of the hopper subcategories. EPA concluded that hopper facilities discharge very few pounds of toxic pollutants. EPA estimates that nine hopper facilities discharge 21 pound equivalents per year to surface waters, or about two pound equivalents per year per facility. The loadings calculations are based on EPA sampling data, which found very few priority toxic pollutants at treatable levels in raw wastewater. Additionally, very little wastewater is generated from cleaning the interiors of hopper tanks due to the dry nature of bulk materials transported. Therefore, nationally-applicable regulations are unnecessary at this time and direct dischargers will remain subject to limitations established on a case by case basis using best professional judgement.

4. NSPS Technology Options Considered and Selected

a. Introduction. As previously noted, under Section 306 of the Act, new industrial direct dischargers must comply with standards which reflect the greatest degree of effluent reduction achievable through application of the best available demonstrated control technologies. Congress envisioned that new sources could meet tighter controls than existing sources because of the opportunity to incorporate the most efficient processes and treatment systems into plant design. Therefore, Congress directed EPA, in establishing NSPS, to consider the best demonstrated process changes, in-plant controls, operating methods and end-of-pipe treatment technologies that reduce pollution to the maximum extent feasible.

New direct discharging facilities have the opportunity to incorporate the best available demonstrated technologies, including process changes, in-plant controls, and end-of-pipe treatment technologies. The general approach followed by EPA for developing NSPS options was to evaluate the best demonstrated processes for control of priority toxic, nonconventional, and

conventional pollutants. Specifically, EPA evaluated the technologies used as the basis for BPT (BCT and BAT are equivalent to BPT). The Agency considered these options as a starting point when developing NSPS options because the technologies used to control pollutants at existing facilities are fully applicable to new facilities.

b. Truck/Chemical Subcategory. EPA has not identified any more stringent treatment technology option which it considered to represent NSPS level of control applicable to Truck/Chemical facilities in this industry. Further, EPA has made a finding of no barrier to entry based upon the establishment of this level of control for new sources. Therefore, EPA is proposing that NSPS for the Truck/Chemical Subcategory be established equivalent to BPT for conventional, priority, and nonconventional pollutants.

c. Rail/Chemical Subcategory. EPA evaluated BPT Options II and III as a basis for establishing NSPS more stringent than the BAT level of control being proposed today. The cost implications anticipated for new sources are not as severe as those projected for existing sources. By utilizing good heel removal and management practices which prevent pollutants from entering waste streams, and good water conservation practices in the design of new facilities, treatment unit size can be substantially reduced and treatment efficiencies improved. As a result, costs of achieving BPT Options II and III can be significantly reduced by new sources. BPT Options II and III technologies have been demonstrated at an existing zero discharge rail/chemical facility. EPA anticipates no barrier to entry for new sources employing these technologies at lower cost. Furthermore, based on an analysis of benefits for existing sources, significant environmental differences would be anticipated between Options I and II and Option III for new sources. Therefore, EPA is proposing to establish new source performance standards for the Rail/Chemical Subcategory based on BPT Option III. Option III consists of flow reduction, oil/water separation, equalization, dissolved air flotation (with flocculation and pH adjustment), biological treatment, organo-clay/activated carbon adsorption, and sludge dewatering.

d. Barge/Chemical & Petroleum Subcategory. EPA evaluated BPT Option II as a basis for establishing NSPS more stringent than the BAT level of control being proposed today. EPA rejected BPT Option II as a basis for NSPS for the same reasons this additional technology was rejected for BAT. Even though the cost implications for new sources are not as severe as those projected for existing sources, the cost and economic implications of BPT Option II do bear upon the determination that reverse osmosis technology as inappropriate for consideration as part of the best available technology for the control of pollutants for this subcategory.

Reverse osmosis was not considered to be the best available technology due to the small incremental removals achieved by this option, the lack of additional water quality benefits potentially achieved by this option, the potential issue of disposing the liquid concentrate created by treatment, and the high level of pollutant control achieved by the proposed BAT option.

Therefore, EPA is proposing that NSPS for the Barge/Chemical & Petroleum Subcategory be established equivalent to BPT for conventional, priority, and nonconventional pollutants.

e. Truck/Food, Rail/Food, and Barge/Food Subcategories. EPA has not identified any more stringent treatment technology option which it considered to represent NSPS level of control applicable to Food Subcategory facilities in this industry. Further, EPA has made a finding of no barrier to entry based upon the establishment of this level of control for new sources. Therefore, EPA is proposing that NSPS for the Food Subcategories be established equivalent to BPT for conventional pollutants.

f. Truck/Petroleum and Rail/Petroleum Subcategories. EPA did not develop or evaluate BAT Options for these subcategories for the following reasons: (1) all direct discharging facilities previously identified by the Agency are no longer in operation; (2) EPA is not aware of any new facilities that have recently begun operations; and (3) EPA currently believes permit writers can more appropriately control discharges from these facilities, if any, using best professional judgement. EPA is therefore proposing not to establish NSPS for the Truck/Petroleum and Rail/Petroleum Subcategories.

g. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories EPA is not proposing to establish NSPS regulations for any of the hopper subcategories. EPA concluded that hopper facilities discharge very few pounds of toxic pollutants, and contain very few priority toxic pollutants at treatable levels in raw wastewater. Additionally, very little wastewater is generated from cleaning the interiors of hopper tanks due to the dry nature of bulk materials transported. Therefore, nationally-applicable regulations are unnecessary at this time and direct dischargers will remain subject to limitations established on a case by case basis using best professional judgement.

5. PSES Technology Options Considered and Selected

a. Introduction. Section 307(b) of the Act 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. After a thorough analysis of indirect discharging facilities in the EPA database, EPA has decided to propose PSES in several subcategories for the reasons explained in more detail below.

b. Pass-Through Analysis. Before proposing pretreatment standards, the Agency examines whether the pollutants discharged by an industry pass through a POTW or interfere with the POTW . 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 applying BAT. A pollutant is deemed to pass through the POTW when the average percentage removed nationwide by representative 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 wastewater treatment performance for indirect dischargers be equivalent to that 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 proposed treatment system 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 past effluent guidelines, a study of 50 representative POTWs was used for

the pass-through analysis. Because the data collected for evaluating POTW removals included influent levels of pollutants that were close to the detection limit, the POTW data were edited to eliminate low influent concentration levels. For analytes that included a combination of high and low influent concentrations, the data was edited to eliminate all influent values, and corresponding effluent values, less than 10 times the minimum level. For analytes where no influent concentrations were greater than 10 times the minimum level, all influent values less than five times the minimum level and the corresponding effluent values were eliminated. For analytes where no influent concentration was greater than five times the minimum level, the data was edited to eliminate all influent concentrations, and corresponding effluent values, less than 20 ug/l. These editing rules were used to allow for the possibility that low POTW removal simply reflected the low influent levels.

EPA then averaged the remaining influent data and the remaining effluent data from the 50 POTW database. The percent removals achieved for each pollutant was determined from these averaged influent and effluent levels. This percent removal was then compared to the percent removal for the BAT option treatment technology. Due to the large number of pollutants applicable for this industry, additional data from the Risk Reduction Engineering Laboratory (RREL) database was used to augment the POTW database for the pollutants for which the 50 POTW Study did not cover. For a more detailed description of the pass-through analysis, see the Technical Development Document.

c. Truck/Chemical Subcategory. In the Agency's engineering assessment of the best available technology for pretreatment of wastewaters from the Truck/Chemical Subcategory, EPA considered two options comprised of technologies currently used by facilities in the Truck/Chemical Subcategory.

- Option I—Flow Reduction, Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification, and Sludge Dewatering. Option I removed 57 percent or greater of organic pollutants and 57 percent or greater of metals. Approximately 56 percent of Truck/Chemical Subcategory facilities received credit in EPA's costing model for existing equalization, nine percent for oil/water separation, 27 percent for coagulation/clarification, and 28 percent for sludge dewatering.
- Option II—Flow Reduction, Equalization, Oil/Water Separation, Chemical Oxidation, Neutralization, Coagulation, Clarification, Activated Carbon Adsorption, and Sludge Dewatering. Option II is equivalent to Option I with the addition of activated carbon adsorption for wastewater polishing following clarification. Option II removed 80 percent or greater of organics and 79 percent of metals. No Truck/Chemical Subcategory facilities received credit for existing activated carbon adsorption treatment. (Activated carbon adsorption treatment was characterized at two indirect discharging Truck/Chemical Subcategory facilities that were not selected to receive a detailed questionnaire.)

EPA is proposing to establish pretreatment standards based on Option II based on the additional removals achieved by this option. EPA has determined that Option II is economically achievable and results in no facility closures or projected employment losses. EPA notes that Option II removes 22,000 pound equivalents more than Option I. Additionally, the cost per pound equivalent removed is $114, which is within the range of other effluent guidelines promulgated by EPA.

EPA conducted a pass-through analysis on the pollutants proposed to be regulated under BPT and BAT for Truck/Chemical facilities to determine if the Agency should establish pretreatment standards for any pollutant. (The pass-through analysis is not applicable to conventional parameters such as BOD_5 and TSS.) Several pollutants were determined to pass-through a POTW and are therefore proposed for PSES regulation in the Truck/Chemical Subcategory.

d. Rail/Chemical Subcategory. In the Agency's engineering assessment of the best available technology for pretreatment of wastewaters from the Rail/Chemical Subcategory, EPA considered three options comprised of technologies currently used by facilities in the Rail/Chemical Subcategory.

- Option I—Flow Reduction, Oil/Water Separation. Approximately 16 percent of Rail/Chemical Subcategory facilities received credit in EPA's costing model for existing oil/water separation.
- Option II—Flow Reduction, Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), and Sludge Dewatering. Approximately 61 percent of Rail/Chemical Subcategory facilities received credit in EPA's costing model for existing equalization, 15 percent for dissolved air flotation, 30 percent for pH adjustment, and 17 percent for sludge dewatering.
- Option III—Flow Reduction, Oil/Water Separation, Equalization, Dissolved Air Flotation (with Flocculation and pH Adjustment), Organo-Clay/Activated Carbon Adsorption, and Sludge Dewatering. Option III is equivalent to Option II with the addition of an organo-clay/activated carbon adsorption system for wastewater polishing following the dissolved air flotation unit. No Rail/Chemical Subcategory facilities received credit for existing organo-clay/activated carbon adsorption treatment. (Organo-clay/activated carbon adsorption treatment was characterized at a zero discharge Rail/Chemical Subcategory facility that recycled/reused 100 percent of TEC wastewater.)

Option I removed entrained oil and grease with incidental removal of 61 percent or greater of organic pollutants, Option II removed 72 percent or greater of organic pollutants and 84 percent of metals, and Option III removed 84 percent or greater of organic pollutants.

EPA is proposing to establish pretreatment standards for the Rail/Chemical Subcategory based on Option I. EPA estimates that this option does not result in any facility closures or employment losses to the industry. Option II, however, was projected to result in six facility closures and is not economically achievable.

The Small Business Advocacy Review Panel commented extensively on the difference in the proposed treatment options for indirect dischargers in the truck chemical and rail chemical subcategories and on the related costs and pollutant removals. Based on current data, the proposed option for the Truck/Chemical Subcategory is estimated to remove about 49 percent of toxic loading, at an average cost of about $70,000 per facility, while the proposed option for the Rail/Chemical Subcategory is estimated to remove about 59 percent of toxic loadings, at an average cost of $33,000 per facility. The panel recognized that a direct comparison of the costs and removals between the two types of facilities may not be appropriate, because facilities in the truck chemical subcategory may discharge a different mix of pollutants. Nonetheless, the Panel recommended that EPA give serious consideration to proposing treatment technology for the truck chemical subcategory closer to that proposed for the rail chemical subcategory. After serious consideration of the record, the Agency continues to believe that it is appropriate to propose the more stringent technology for

indirect dischargers in the truck chemical subcategory at this time.

Intuitively, it is reasonable to assume that the characteristics and treatability of raw wastewater generated from the truck and rail sectors will be similar because similar types of commodities are generally transported by tank trucks and rail cars. However, wastewater volumes per tank are much larger for rail cars than for tank trucks (approximately 605 gallons compared to 2,091 gallons). This difference in wastewater flow volumes has a direct impact on the costs that must be incurred to install and maintain wastewater treatment due to the larger treatment system necessary.

The difference in treatment technology selected for the rail and truck subcategories is primarily due to the economic characteristics of the rail facilities as compared to the chemical facilities. EPA's economic assessment of the industry found that there was a significant difference in the economic characteristics of the two subcategories. This resulted in the preliminary conclusion that the Rail/Chemical facilities were not able to absorb the cost of installing high levels of treatment without incurring significant economic impacts. The economic impacts associated with this option is described in Section X of this notice.

Due to time constraints, the Agency has not had time to conduct an analysis of the cost and effectiveness of applying flow reduction and oil/water separation only to indirect dischargers in the truck chemical subcategory. However, the Agency intends to conduct such an analysis prior to promulgating the final rule. If it turns out that this technology is nearly as effective at removing toxic pollutants for facilities in the truck chemical subcategory as the currently proposed technology but at considerably lower cost, the Agency will consider basing the limits in the final rule on the alternate technology, or some technology closer to it. The Agency requests comment on this issue, as well as any data relating to the effectiveness of flow reduction and oil/water separation only for indirect dischargers in the truck chemical industry.

EPA conducted a pass-through analysis on the pollutants proposed to be regulated under BPT and BAT for Rail/Chemical facilities to determine if the Agency should establish pretreatment standards for any pollutant. (The pass-through analysis is not applicable to conventional parameters such as BOD5 and TSS.) Several pollutants were determined to pass-through a POTW and are therefore proposed for PSES regulation in the Rail/Chemical Subcategory.

e. Barge/Chemical & Petroleum Subcategory. In the Agency's survey of the industry, EPA identified only one facility discharging to a POTW in this subcategory. Therefore, EPA does not propose to establish PSES limitations for the Barge/Chemical & Petroleum Subcategory. EPA did, however, evaluate technologies for PSNS, as described in section VIII.B.6

f. Truck/Food, Rail/Food, and Barge/Food Subcategories. In the Agency's engineering assessment of pretreatment of wastewaters for the Truck/Food, Rail/Food, and Barge/Food Subcategories, EPA considered the types and concentrations of pollutants found in raw wastewaters in this subcategory. As expected, food grade facilities did not discharge significant quantities of toxic pollutants to POTWs. In addition, conventional pollutants present in the wastewater were found at concentrations that are amenable to treatment at a POTW. As a result, EPA is proposing not to establish pretreatment standards for any of the Food Subcategories.

g. Truck/Petroleum and Rail/Petroleum Subcategories. In the Agency's engineering assessment of the best available technology for pretreatment of wastewaters from the Truck/Petroleum and Rail/Petroleum Subcategories, EPA considered two options comprised of technologies currently used by facilities in these subcategories.

- Option I—Flow Reduction, Equalization, Oil/Water Separation, and Chemical Precipitation.
- Option II—Flow Reduction, Equalization, Oil/Water Separation, and Activated Carbon Adsorption Followed by Total Wastewater Recycle/Reuse.

Approximately 47 percent of Truck/Petroleum Subcategory facilities and 100 percent of Rail/Petroleum Subcategory facilities received credit in EPA's costing model for existing oil/water separation. No Truck/Petroleum Subcategory or Rail/Petroleum Subcategory facilities received credit for existing equalization or activated carbon adsorption. Total recycle/reuse of TEC wastewater following treatment using activated carbon is practiced by an estimated seven petroleum subcategory facilities. (An additional estimated 22 petroleum facilities practice 100 percent recycle/reuse of TEC wastewater following treatment by technologies different than Option II.)

Due to the similarity of cargos cleaned at Rail/Petroleum and Truck/Petroleum facilities, EPA considered wastewater from Truck/Petroleum facilities to be similar to that from Rail/Petroleum facilities. In evaluating these subcatogories for potential regulation, EPA conducted wastewater characterization sampling at one Truck/Petroleum facility and combined this data with data transferred from the CWT effluent guideline to evaluate wastewater characteristics for the subcategory, as described in section VII of this notice.

EPA estimates that there are 38 facilities in the Truck/Petroleum and Rail/Petroleum subcategories. EPA estimates that these facilities discharge a total of 28 pound equivalents to the nation's waterways, or less than one pound equivalent per facility. Additionally, EPA estimates that the total cost to the industry to implement PSES would be greater than $600,000 annually. The estimated costs to control the discharge of these small amounts of pound equivalents were not considered to be reasonable. Based on this analysis, EPA preliminarily concluded that there is no need to develop nationally applicable regulations for these subcategories due to the low levels of pollutants discharged by facilities in this subcategory.

Based on these factors, EPA proposes not to establish pretreatment standards for the Truck/Petroleum or Rail/Petroleum Subcategories. EPA recognizes that limited data were collected which characterizes the pollutants present in wastewater from these facilities. As a result, the Agency solicits data which can either substantiate or refute its tentative conclusions regarding raw wastewater from Truck/Petroleum and Rail/Petroleum Subcategories, and also any data which characterizes pollutants present in wastewaters from these facilities.

h. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories. In the Agency's engineering assessment of the best available technology for pretreatment of wastewaters from the Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories, EPA considered one option comprised of technologies currently used by facilities in these subcategories.

- Option I—Flow Reduction and Gravity Separation. EPA selected these technologies as Option I because they remove 69 percent or greater of metals present in Truck/Hopper Subcategory, Rail/Hopper Subcategory and Barge/Hopper Subcategory wastewaters.

Approximately 84 percent of Truck Hopper Subcategory facilities, 100 percent of Rail Hopper Subcategory facilities, and 100 percent of Barge

Hopper Subcategory facilities received credit for existing gravity separation.

EPA conducted wastewater characterization sampling at one Barge/Hopper facility. The Agency did not conduct sampling at any Rail/Hopper or Truck/Hopper facilities. The Agency believes that wastewater from all Hopper facilities are similar because the same types of cargos are hauled by each of the three segments.

EPA estimates that there are 42 indirect discharging hopper facilities. EPA estimates that these facilities discharge a total of 3.5 pound equivalents to the nation's waterways, or less than one pound equivalent per facility. Additionally, EPA estimates that the total cost to the industry to implement PSES would be greater than $350,000 annually. The estimated costs to control the discharge of these small amounts of pound equivalents were not considered to be reasonable.

EPA is not proposing to establish BAT limits for any priority pollutant in the hopper subcategories. EPA did, however, look at the levels of pollutants in raw wastewaters and concluded that none were present at levels that are expected to cause inhibition of the receiving POTW.

Based on these factors, EPA proposes not to establish pretreatment standards for the Truck/Hopper, Rail/Hopper, or Barge/Hopper Subcategories. EPA recognizes that limited data were collected which characterizes the pollutants present in wastewater from these facilities. As a result, the Agency solicits data which can either substantiate or refute its tentative conclusions regarding raw wastewater from hopper facilities, and also any data which characterizes pollutants present in wastewaters from these facilities.

6. PSNS Technology Options Considered and Selected

a. Introduction. Section 307 of the Act requires EPA to promulgate pretreatment standards for new sources (PSNS). New indirect discharging facilities, like new direct discharging facilities, have the opportunity to incorporate the best available demonstrated technologies including: process changes, in-facility controls, and end-of-pipe treatment technologies.

The general approach followed by EPA for developing PSNS options was to evaluate the best demonstrated processes for control of priority toxic and nonconventional pollutants. Specifically, EPA evaluated the technologies used as the basis for PSES. The Agency considered the PSES options as a starting point when developing PSNS options because the technologies used to control pollutants at existing facilities are fully applicable to new facilities. With respect to good heel removal and management practices, water conservation, and end-of-pipe wastewater treatment technologies, EPA has not identified any technologies or combinations of technologies that are demonstrated for new sources that are different from those used as the basis for the PSES options. Therefore, EPA has analyzed the same set of control technologies in selecting PSNS as were analyzed for PSES.

b. Truck/Chemical Subcategory. In today's rule, EPA proposes to establish pretreatment standards for new sources in the Truck/Chemical Subcategory equivalent to the PSES standards. In developing PSNS limits, EPA considered whether there are technologies that achieve greater removals than proposed for PSES which would be appropriate for PSNS. In this subcategory, EPA identified no technology that can achieve greater removals than PSES. Therefore, EPA is proposing pretreatment standards for those pollutants which the Agency has determined to pass through a POTW equal to PSES.

c. Rail/Chemical Subcategory. EPA evaluated PSES Options II and III as more stringent levels of control that may be appropriate for new indirect sources. The cost implications anticipated for new sources are not as severe as those projected for existing sources. By utilizing good heel removal and management practices which prevent pollutants from entering waste streams, and good water conservation practices in the design of new facilities, treatment unit size can be substantially reduced and treatment efficiencies improved. As a result, costs of achieving PSES Option II and III can be significantly reduced at new facilities. All of the technologies considered have been demonstrated at an existing zero discharge rail/chemical facility. EPA anticipates no barrier to entry for new sources employing these technologies at lower cost.

Therefore, EPA is proposing PSNS for those pollutants which the Agency has determined to pass through a POTW based on PSES Option III. EPA is soliciting comment on whether or not it is appropriate to establish PSNS based on a more stringent regulatory control option than PSES.

d. Barge/Chemical & Petroleum Subcategory. Although the Agency is not proposing to establish PSES for the Barge/Chemical & Petroleum Subcategory, EPA did evaluate best available technologies for PSNS.

- Option I—Flow Reduction, Oil/Water Separation, Dissolved Air Flotation, and In-Line Filter Press. All Barge/Chemical & Petroleum Subcategory facilities received credit in EPA's costing model for existing oil/water separation and dissolved air flotation. No Barge/Chemical & Petroleum Subcategory facilities received credit for existing in-line filter press treatment. (In-line filter press treatment was characterized at a direct discharging Barge/Chemical & Petroleum Subcategory facility.)
- Option II—Flow Reduction, Oil/Water Separation, Dissolved Air Flotation, In-Line Filter Press, Biological Treatment, and Sludge Dewatering. Option II is equivalent to Option I with the addition of biological treatment for biological decomposition of organic constituents. No Barge/Chemical & Petroleum Subcategory facilities received credit for existing biological treatment or sludge dewatering. (Biological treatment was characterized at two direct discharging Barge/Chemical & Petroleum Subcategory facilities.)
- Option III—Flow Reduction, Oil/Water Separation, Dissolved Air Flotation, In-Line Filter Press, Biological Treatment, Reverse Osmosis, and Sludge Dewatering. Option III is equivalent to Option II with the addition of reverse osmosis for wastewater polishing following biological treatment. No Barge/Chemical & Petroleum Subcategory facilities received credit for existing reverse osmosis treatment. (Reverse osmosis treatment was characterized at a direct discharging Barge/Chemical & Petroleum Subcategory facility.)

Option I removed 55 percent or greater of organic pollutants and 61 percent or greater of metals, Option II removed 82 percent or greater of organic pollutants and 82 percent or greater of metals, and Option III removed 99 percent or greater of organic pollutants and 89 percent or greater of metals present in Barge/Chemical & Petroleum wastewater.

EPA is not proposing to establish PSNS based on Option III because reverse osmosis was not considered to be the best demonstrated technology due to the small incremental removals achieved by this option, the lack of additional water quality benefits potentially achieved by this option, the potential issue of disposing the liquid concentrate created by treatment, and the high level of pollutant control achieved by the proposed BAT option.

EPA is proposing to establish PSNS based on Option II because of the removals achieved through this option.

The raw wastewater in this subcategory contains significant amounts of decomposable organic materials. These materials may not be treated as efficiently as the proposed technology option in a conventional POTW because a POTW may not be acclimated to this particular wastewater stream. In this instance, pretreatment based on biological treatment may be appropriate because the pollutant parameters that pass through, or which may be present at levels that cause interference, will receive additional treatment not achieved by the POTW. While EPA considers this to be the best treatment available that does not impose a significant barrier to entry, EPA is soliciting comment on the technology selected as the basis for regulation. Several pollutants were determined to pass-through a POTW and are therefore proposed for PSNS regulation in the Barge/Chemical & Petroleum Subcategory.

EPA has also considered establishing PSNS based on Option I. EPA believes that organic loadings in raw wastewater at barge chemical facilities may be present at levels which are amenable to biological treatment at POTW. However, EPA may not have sufficient data to support this assumption because EPA identified only one barge chemical facility currently discharging to a POTW. EPA solicits comments and data which would support or refute the assumption that a POTW may accept effluent, without causing pass-through or interference, treated by Option I that has not been treated biologically, as is proposed in Option II.

e. Truck/Food, Rail/Food, and Barge/Food Subcategories. EPA has not identified any more stringent treatment technology option which it considered to represent PSNS level of control applicable to Food Subcategory facilities in this industry. In addition, conventional pollutants present in the wastewater were found at concentrations that are amenable to treatment at a POTW. As a result, EPA is proposing not to establish PSNS for any of the Food Subcategories.

f. Truck/Petroleum and Rail/Petroleum Subcategories. Based on the PSES analysis, EPA preliminarily concluded that there is no need to develop nationally applicable regulations for these subcategories due to the low levels of pollutants discharged by facilities in this subcategory.

EPA proposes not to establish PSNS for the Truck/Petroleum or Rail/Petroleum Subcategories.

g. Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories. Based on the PSES analysis, EPA preliminarily concluded that there is no need to develop nationally applicable regulations for these subcategories due to the low levels of pollutants discharged by facilities in this subcategory.

EPA proposes not to establish PSNS for the Truck/Hopper, Rail/Hopper, and Barge/Hopper Subcategories.

C. Development of Effluent Limitations

EPA based the proposed effluent limitations and standards in today's notice on widely-recognized statistical procedures for calculating long-term averages and variability factors. The following presents a summary of the statistical methodology used in the calculation of effluent limitations.

Effluent limitations for each subcategory are based on a combination of subcategory-specific regulatory flows, long-term average effluent values, and variability factors that account for variation in day-to-day treatment performance within a treatment plant. The long-term averages are average effluent concentrations that have been achieved by well-operated treatment systems using the processes described in the above section (Technology Options Considered for Basis of Regulation). The variability factors are values that represent the ratio of a large value that would be expected to occur only rarely to the long-term average. The purpose of the variability factor is to allow for normal variation in effluent concentrations. A facility that designs and operates its treatment system to achieve a long-term average on a consistent basis should be able to comply with the daily and monthly limitations in the course of normal operations.

The variability factors and long term averages were developed from a data base composed of individual measurements on treated effluent based on EPA sampling data. EPA sampling data reflects the performance of a system over a three to five day period, although not necessarily over consecutive days.

The long-term average concentration of a pollutant for a treatment system was calculated based on either an arithmetic mean or the expected value of the distribution of the samples, depending on the number of total samples and the number of detected samples for that pollutant at that facility. A delta-lognormal distributional assumption was used for all subcategories except the Truck/Chemical subcategory where the arithmetic mean was used. The pollutant long-term average concentration for a treatment technology was the median of the long-term averages from the sampled treatment systems within the subcategory using the proposed treatment technology.

EPA calculated variability factors by fitting a statistical distribution to the sampling data. The distribution was based on an assumption that the furthest excursion from the long term average (LTA) that a well operated plant using the proposed technology option could be expected to make on a daily basis was a point below which 99 percent of the data for that facility falls, under the assumed distribution. 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 of the distribution of the daily values. The pollutant variability factor for a treatment technology was the mean of the pollutant variability factors from the facilities with that technology.

There were several instances where variability factors could not be calculated directly from the TEC database because there were not at least two effluent values measured above the minimum detection level for a specific pollutant. In these cases, the sample size of the data is too small to allow distributional assumptions to be made. Therefore, in order to assume a variability factor for a pollutant, the Agency transferred variability factors from other pollutants that exhibit similar treatability characteristics within the treatment system.

In order to do this, pollutants were grouped on the basis of their chemical structure and published data on relative treatability. The median pollutant variability factor for all pollutants within a group at that sampling episode was used to create a group-level variability factor. When group-level variability factors were not able to be calculated, groups that were similar were collected into analytical method fractions and the median group-level variability factor was calculated to create a fraction-level variability factor. Group-level variability factors were used when available, and fraction-level variability factors were used if group-level variability factors could not be calculated. For the sampling episodes in the Truck/Chemical Subcategory, there were not enough data to calculate variability factors at any level and therefore variability factors were transferred from similar treatment technologies sampled in the Rail/Chemical Subcategory.

Limitations were based on actual concentrations of pollutants measured in wastewaters treated by the proposed

technologies where such data were available. Actual measured value data was available for pollutant parameters in all subcategories with the exception of pollutants regulated for direct dischargers in the Truck/Chemical and Rail/Chemical Subcategories. Due to the small number of direct discharging facilities identified by EPA, all of EPA's sampling was conducted at indirect discharging facilities in these subcategories. In the case of BPT regulation for conventional, priority, and non-conventional pollutants, EPA concluded that establishing limits based on indirect discharging treatment systems was not appropriate because indirect discharging treatment systems are generally not operated for optimal control of pollutants which are amenable to treatment in a POTW. In other words, treatment systems at indirect discharging facilities generally do not require biological treatment to control organic pollutants because a POTW will control these pollutants. Therefore, in establishing limits for direct discharging facilities, EPA is proposing to establish BPT limitations based on the treatment performance demonstrated during the sampling of two direct discharging Barge/Chemical & Petroleum facilities that utilized biological treatment systems.

For this industry, EPA is proposing to establish mass-based rather than concentration based limits. The limits are specified as grams per tank cleaned. EPA envisions that permit writers would use these limits, in combination with data on annual number of tanks cleaned and annual facility wastewater flow, to calculate facility-specific concentration based limits for wastewater flows leaving the treatment plant, and then incorporate these limits into the permit. EPA is proposing this approach because it is concerned that if it proposed concentration based limits directly, facilities might be able to comply with these limits be increasing their water usage rather than installing and properly operating appropriate treatment, thereby diluting rather than removing pollutants of concern. EPA is soliciting comment on the appropriateness of this approach and the burden on the permitting and pretreatment authorities. Based on comments received, EPA may decide to convert the mass based limits in the proposed regulation to concentration based limits for the final rule.

The daily maximum limitation is calculated as the product of the pollutant long-term average concentration, the subcategory-specific regulatory flow, and the variability factor. The monthly maximum limitation is also calculated as the product of the pollutant long-term average, the subcategory-specific regulatory flow, and the variability factor, but the variability factor is based on the 95 percentile of the distribution of daily pollutant concentrations instead of the 99th percentile.

By accounting for these reasonable excursions above the LTA, EPA's use of variability factors results in standards that are generally well above the actual LTAs. Thus if a facility operates its treatment system to meet the relevant LTA, EPA expects the plant to be able to meet the standards. Variability factors assure that normal fluctuations in a facility's treatment are accounted for in the limitations.

The proposed limitations, as presented in today's notice, are provided as daily maximums and monthly averages for conventional pollutants. Monitoring was assumed to occur four times per month for conventional pollutants. Monitoring was assumed to occur once per month for all priority and nonconventional pollutants. This has the result that the daily maximums and monthly averages for priority and nonconventional pollutants are the same.

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 assess costs and to determine variability of the treatment system.

Monitoring four times per month for conventional and classical pollutants is proposed to ensure that facility TEC processes and wastewater treatment systems are consistently and continuously operated to achieve the associated pollutant long term averages. Monitoring once per month for toxic pollutants is proposed to provide economic relief to regulated facilities while ensuring that facility TEC processes and wastewater treatment systems are designed and operated to control the discharge of toxic pollutants.

EPA is proposing to establish effluent limitations for existing facilities and new sources discharging wastewater directly to surface waters in the following subcategories: Truck/Chemical, Rail/Chemical, Barge/Chemical & Petroleum, Truck/Food, Rail/Food and Barge/Food Subcategories.

EPA is proposing to establish BPT, BCT, BAT and NSPS limitations for the Truck/Chemical Subcategory. EPA is proposing limitations for BOD_5 , TSS, Oil and Grease, Chromium, Zinc, COD, Bis (2-ethylhexyl) pthalate, di-N-octyl phthalate, N-Dodecane, N-Hexadecane, Styrene, and 1,2-dichlorobenzene. For the Rail/Chemical Subcategory, EPA is proposing to establish BPT, BCT, BAT and NSPS limitations. EPA is proposing to regulate BOD_5, TSS, Oil and Grease, COD, N-Dodecane, N-Hexadecane, N-Tetradecane, Anthracene, Pyrene, Fluoranthene, and Phenanthrene. For the Barge/Chemical & Petroleum Subcategory, EPA is proposing to establish BPT, BCT, BAT and NSPS limitations. EPA is proposing to regulate BOD_5, TSS, Oil and Grease, COD, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, 1-Methylphenanthrene, Bis (2-ethylhexyl) Phthalate, Di-N-Octyl Phthalate, N-Decane, N-Docesane, N-Dodecane, N-Eicosane, N-Octadecane, N-Tetracosane, N-Tetradecane, P-Cymene, and Pyrene.

Additionally, EPA is proposing to establish BPT, BCT, and NSPS limitations for the Truck/Food, Rail/Food, and Barge/Food Subcategories for BOD_5, TSS, Oil and Grease.

The analytical method for Oil and Grease and Total Petroleum Hydrocarbons (TPH) is currently being revised to allow for the use of normal hexane in place of freon 113, a chlorofluorocarbon (CFC). Method 1664 (Hexane Extractable Material) will replace the current Oil and Grease Method 413.1 found in 40 CFR 136. In anticipation of promulgation of method 1664, data collected by EPA in support of the TECI effluent guideline utilized method 1664. Therefore, all effluent limitations proposed for Oil and Grease and TPH in this effluent guideline are to be measured by Method 1664.

Regulated facilities can meet the proposed limitations through the use of any combination of physical, chemical or biological treatment, or implementation of pollution prevention strategies (good heel removal and water conservation). Additional information on the development of effluent limitations and the technology options considered for regulation is included in Section VIII.A and VIII.B of this proposed rule.

EPA based its decision to select specific pollutants to establish effluent limitations on a rigorous evaluation of available sampling data. This evaluation included factors such as the concentration and frequency of detection of the pollutants in the industry raw wastewater, the relative toxicity of pollutants as defined by their toxic weighting factors, the treatability of the pollutants in the modeled treatment systems, and the potential of the pollutants to pass through or interfere with POTW operations. Particular attention has been given to priority pollutants which have been

detected at treatable levels. Due to the inherent variability of TEC wastewater, EPA does not have sufficient analytical data to establish effluent limitations for each specific pollutant which may be present in the industry wastewater on any given day. EPA has therefore attempted to select several pollutants which have been detected frequently at sampled facilities, which are a possible indicator of the presence of similar pollutants, and whose control through some combination of physical, chemical and biological treatment will be indicative of a well-operated treatment system capable of removing a wide range of pollutants.

EPA determined the regulatory flows to be used in the calculation of mass based limits from information provided in the Detailed Questionnaire. EPA analyzed the average wastewater flow generated per tank on a facility by facility basis by dividing the annual wastewater volume by the number of tanks cleaned at that facility. The regulatory flow for each subcategory was then determined by taking the median of the average flow per tank values of each facility in the subcategory. Because each facility in the TEC database represents a statistical population of facilities, EPA used the bootstrap method to account for the facility survey weights in order to determine the median subcategory flow. A more detailed explanation of the bootstrap method and the calculation of regulatory flow can be found in the ''Statistical Support Document of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category''.

The pollutants for which limits are proposed include volatile organics, semi-volatile organics, metals, and classical pollutants. EPA does not propose to establish effluent limitations for any pesticides or herbicides for two reasons. One, the cost associated with monitoring for these parameters is very high; and two, EPA's sampling data that has shown that the discharge concentrations of pesticides and herbicides are generally treated by the proposed technology options. EPA also does not propose to establish effluent limitations for dioxins/furans, although 2,3,7,8 TCDD and 2,3,7,8-TCDF were detected in samples collected at several barge and rail facilities. Based on an evaluation of the sampling data from facilities where dioxins were detected, EPA has determined that the detection of 2,3,7,8 TCDD and 2,3,7,8-TCDF were isolated, site-specific instances, and as a general rule dioxins should not be detected in wastewaters from this segment of the industry. Therefore, effluent limitations for dioxins are not proposed for inclusion in this regulation.

Although the wastewater treatment systems sampled by EPA to establish effluent limitations are not designed specifically for metals control, EPA believes that establishing numeric limitations for metals based on these technologies is still appropriate. Based on an evaluation of TECI wastewater characterization and treatment performance data, EPA has concluded that metals present in TECI wastewater are predominantly associated with solids as opposed to being in solution. Since the modeled treatment systems used to establish effluent limitations are designed for solids removal, EPA believes that incidental removals of metals will occur, and therefore effluent limitations for certain metals are justified.

Finally, EPA conducted a pass-through analysis on the pollutants proposed to be regulated under BPT and BAT to determine if the Agency should establish pretreatment standards for any pollutant. (The pass-through analysis is not applicable to conventional parameters such as BOD_5 and TSS.) EPA is proposing pretreatment standards for those pollutants which the Agency has determined to pass through a POTW.

EPA is proposing to establish pretreatment standards for existing facilities and new sources discharging wastewater to POTWs in the following subcategories: Truck/Chemical and Rail/Chemical Subcategories. Additionally, EPA is proposing to establish pretreatment standards for new sources discharging wastewater to POTWs in the Barge/Chemical & Petroleum Subcategory.

Based on the pass-through analysis, EPA is proposing to set PSES and PSNS standards in the Truck/Chemical Subcategory for Chromium, Zinc, COD, Bis (2-ethylhexyl) pthalate, di-N-octyl phthalate, N-Dodecane, N-Hexadecane, Styrene, and 1,2-dichlorobenzene. Based on the pass-through analysis, EPA is proposing to set PSES and PSNS standards in the Rail/Chemical Subcategory for SGT–HEM, COD, N-Hexadecane, N-Tetradecane, and Fluoranthene. Based on the pass-through analysis, EPA is proposing to set PSNS standards in the Barge/Chemical & Petroleum Subcategory for SGT-HEM, COD, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, 1-Methylphenanthrene, Bis (2-ethylhexyl) Phthalate, Di-N-Octyl Phthalate, N-Decane, N-Docesane, N-Dodecane, N-Eicosane, N-Octadecane, N-Tetracosane, N-Tetradecane, P-Cymene, and Pyrene.

EPA solicits comments on the appropriateness of the pollutants selected for regulation, including the decision to establish effluent limitations for metals using modeled treatment systems not specifically designed for metals control. The Agency also solicits data which will support or refute the ability of TEC facilities to meet the proposed effluent limitations using the modeled treatment systems.

IX. Costs and Pollutant Reductions Achieved by Regulatory Alternatives

A. Methodology for Estimating Costs

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, and sampling episodes. Cost estimates for each regulatory option are summarized in Section X of today's notice, and in more detail in the Technical Development Document.

EPA developed industry-wide costs and loads based on 176 facility responses to the Detailed Questionnaire. The statistical methodology for this selection is further explained in the Statistical Support Document. EPA calculated costs and loads for questionnaire recipients and then modeled the national population by using statistically calculated survey weights.

EPA evaluated each of the 176 Detailed Questionnaire recipients to determine if the facility would be subject to the proposed limitations and standards and would therefore incur costs as a result of the proposed regulation. Eighty-three facilities were not modeled to incur costs because:

- 34 facilities were located at industrial sites subject to other Clean Water Act final or proposed categorical standards and thus would not be subject to the limitations and standards under the proposed approach for this guideline.
- 49 facilities indicated that they were zero or alternative dischargers (i.e., did not discharge their TEC generated wastewaters either directly or indirectly to a surface water).

Each of the 93 Detailed Questionnaire recipients, plus four direct discharging facilities which did not receive the questionnaire, were assessed to determine TEC operations, wastewater characteristics, daily flow rates (process flow rates), operating schedules, tank cleaning production (i.e., number of tanks cleaned), and wastewater treatment technologies currently in place at the site.

Facilities that did not have the proposed technology option already in-place were projected to incur costs as a result of compliance with this guideline. A facility which did not have the technology in-place was costed for installing and maintaining the technology.

A computer cost model based on vendor quotes and validated through Questionnaire responses was used to estimate compliance costs for each of the technology options after taking into account treatment in place and wastewater flow rates for each facility. The computer cost model was programmed with technology-specific modules which calculated the costs for various combinations of technologies as required by the technology options and the facilities' wastewater characteristics. The model calculated the following costs for each facility:

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

Additional cost factors were developed and applied to the capital costs in order to account for site work, interface piping, general contracting, engineering, 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 and monitoring costs.

The capital costs (equipment, retrofit and permit modification) were amortized over 16 years and added to the O&M costs (equipment and monitoring) to calculate the total annual costs incurred by each facility as a result of complying with this guideline. The costs associated with each of the 97 facilities in the cost analysis were then modeled to represent the national population by using statistically calculated survey weights.

For many low-flow facilities, EPA concluded that contract hauling wastewater for off-site treatment was the most cost effective option. Where applicable, EPA calculated costs for hauling wastewater to a Centralized Waste Treatment facility for treatment in lieu of installing additional treatment on-site.

All cost models, cost factors, and cost assumptions are presented in detail in the Technical Development Document. The Agency solicits comments on the cost models and the assumptions used to project the cost of compliance to the industry as a result of today's proposed regulation.

B. Methodology for Estimating Pollutant Reductions

The proposed BPT, BCT, BAT, and PSES limitations will control the discharge of conventional, priority toxic, and nonconventional pollutants from TEC facilities. The Agency developed estimates of the post-compliance long-term average (LTA) production normalized mass loadings of pollutants that would be discharged from TEC facilities within each subcategory. These estimates were calculated using the long-term average effluent concentrations of specific pollutants achieved after implementation of the proposed BPT, BCT, BAT, and PSES technology bases in conjunction with the subcategory-specific regulatory flow per tank cleaned. Long-term average effluent concentrations were statistically derived using treatment performance data collected during EPA's sampling program. Development of these long-term average effluent concentrations is discussed in more detail in Section VIII of this preamble and in the Statistical Support Document. The subcategory-specific regulatory flows were statistically derived based on facility flow data provided in response to the 1994 TEC industry Detailed Questionnaire. The Statistical Support Document also discusses development of subcategory-specific regulatory flows.

BPT, BCT, BAT, and PSES pollutant reductions were first estimated on a site-specific basis for affected facilities that responded to the Detailed Questionnaire and for four additional affected facilities identified from responses to the Screener Questionnaire. Site-specific pollutant reductions were calculated as the difference between the site-specific baseline pollutant loadings (i.e., estimated pollutant loadings currently discharged) and the site-specific post-compliance pollutant loadings (i.e., estimated pollutant loadings discharged after implementation of the regulation). The site-specific pollutant reductions were then multiplied by statistically derived survey weighting (scaling) factors and summed to represent pollutant reductions for the entire TEC industry.

Baseline pollutant loadings (in mass per day) represent the pollutant loading currently discharged by TEC facilities after accounting for removal of pollutants in untreated wastewater by treatment technologies currently in place. To estimate the site-specific baseline pollutant loadings, EPA estimated the untreated pollutant loadings generated by TEC facilities based on data collected during EPA's TEC industry sampling program. For each facility sampled, data on the facility production (i.e., number of tanks cleaned per day), cargo types cleaned, TEC wastewater flow rate, operating hours per day, and operating days per year were collected. These data were then used in conjunction with the analytical data to calculate average untreated pollutant loadings per tank cleaned for each TEC industry subcategory. Although some facilities provided self-monitoring data in response to the Detailed Questionnaire, these data were not useable for the following reasons: (1) Respondents provided different types of data for a nonstandard set of pollutants, (2) the data represented samples collected at a variety of treatment system influent and effluent points, (3) the data were provided as an average estimated by the facility over one or more sampling days, and/or (4) analytical QA/QC data were not provided.

EPA calculated the site-specific untreated pollutant loadings (in mass per day) by multiplying the subcategory-specific untreated pollutant loadings per tank cleaned estimates by the number of tanks cleaned at each facility. For facilities with production in multiple subcategories, estimated pollutant loadings from each subcategory were summed to estimate the site-specific untreated pollutant loadings. Additionally, for some facilities, loadings of pollutants in incidental waste streams loadings (such as bilge and ballast water) were estimated from other EPA program sampling data and other sources. These incidental stream pollutant loadings were also summed to estimate the site-specific untreated pollutant loadings.

The site-specific untreated pollutant loadings were converted to untreated wastewater pollutant concentrations by dividing by the facility daily wastewater discharge flow rate (including TEC wastewater and commingled non-TEC wastewater streams not easily segregated) provided in responses to the Detailed Questionnaire. For each site, the untreated pollutant wastewater concentrations were then compared to the long-term average effluent concentrations achieved by the treatment technologies currently in place (if any). The lower of these concentrations represents the site-specific baseline effluent concentration. The site-specific baseline effluent concentrations were then multiplied by the facility daily wastewater discharge

flow rate (described above) to determine the site-specific baseline pollutant loadings.

Post-compliance pollutant loadings (in mass per day) represent the estimated pollutant loadings that will be discharged after implementation of the regulation. For each site, the baseline pollutant effluent concentrations (described above) were compared to the long-term average effluent concentrations achieved by the technology bases for BPT, BCT, BAT, or PSES. The lower of these concentrations represents the site-specific post-compliance effluent concentrations. The site-specific post-compliance pollutant effluent concentrations were then multiplied by the facility daily wastewater discharge flow rate to determine the site-specific post-compliance pollutant loadings.

Finally, pollutant reductions were calculated at each facility as the difference between the baseline pollutant loadings and the post-compliance pollutant loadings. The pollutant reductions were then multiplied by statistically derived survey weights and summed to represent pollutant reductions for the entire TEC point source category.

X. Economic Analysis

A. Introduction

This section describes the costs, economic impacts, and benefits associated with today's proposal. The economic analysis uses the engineering cost estimates (described in Section IX.A.) to analyze the economic impacts of various technology options. EPA's economic assessment is summarized here; details are available in the ''Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category,'' hereinafter referred to as the EA, which is included in the rulemaking record. The EA estimates the economic impacts of compliance costs on facilities, firms, employment, domestic and international markets, inflation, distribution, environmental justice, and transportation equipment cleaning customers. EPA also prepared an Initial Regulatory Flexibility Analysis (IRFA) under the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), which estimates the impacts of the proposal on small entities (details in the EA). In addition, a cost-effectiveness analysis of all technology options for eleven subcategories is presented in the ''Cost-Effectiveness Analysis of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Point Source Category,'' hereinafter referred to as the CE document.

B. Economic Impact Methodology

1. Introduction

The TECI is a service industry with modest capital assets in comparison to manufacturing industries. Many of the businesses in this industry are single, stand alone facilities in which the facility, business entity, and firm are the same. There are some multi-facility firms or business entities that own several tank cleaning facilities; a small number of firms own a relatively large number of facilities. The TECI provides a service that is a ''derived demand'' for overall transportation services. As the demand for transportation services in general increases, the demand correspondingly increases for transportation equipment cleaning services.

The EA consists of eight major components: (1) an assessment of the number of facilities that could be affected by this rule; (2) an estimate of the annual aggregate cost for these facilities to comply with the rule using facility-level capital and operating and maintenance (O&M) costs; (3) an evaluation, using a discounted cash flow (DCF) model, to analyze compliance cost impacts on each TECI facility's cash flow (closure analysis); (4) an evaluation, using a financial model, of compliance costs impacts on the financial health of facilities in the industry (financial stress analysis); (5) an evaluation of secondary impacts such as those on employment, markets, inflation, distribution, environmental justice and transportation equipment cleaning customers; (6) an assessment of the potential for impact on new sources (barrier-to-entry); (7) an analysis of the effects of compliance costs on small entities; and (8) a cost-benefit analysis.

All costs reported in this notice are expressed in 1997 dollars, with the exception of cost-effectiveness results, which, by convention, are reported in 1981 dollars. The primary source of data for the economic analysis is the ''1994 Detailed Questionnaire for the Transportation Equipment Cleaning Industry, Part B—Financial and Economic Information,'' hereinafter referred to as the Detailed Questionnaire (the section 308 survey conducted in April 1995; see Section V.C.). Other sources include the Bureau of the Census, industry trade journals, preliminary surveys of the industry, and the ''U.S. Environmental Protection Agency Tank and Container Cleaning Screener Questionnaire.'' All costs were inflated to 1997 dollars using the *Engineering News Record* Construction Cost Index.

2. Methodology Overview

Central to the EA is the cost annualization model, which uses facility-specific capital, operating and maintenance (O&M), and monitoring costs data described in Section IX.A, to determine the total annualized compliance costs. The total annual costs described in Section IX.A (and in the Technical Development Document) are an approximation of the costs of the proposed rule. The refinements to annualization described below provide a more accurate basis for estimating financial impacts to each facility. This model uses these costs and facility specific costs of capital (discount rate), or if not available, the industry average costs of capital, over a 16-year analytic time frame to generate the annual cost of compliance for each technology. EPA chose the 16-year time frame for analysis based on the depreciable life for equipment of this type, 15 years according Internal Revenue Service (IRS) rules, plus approximately one year for purchasing and installing the equipment. The model generates the annualized cost for each option for each facility in the survey, which is then used in the facility impact analyses, discussed below. The annualized compliance costs for each facility are totaled at the national level to provide aggregate annualized costs for each technology option.

For each facility in the transportation equipment cleaning industry, EPA estimated the present value of baseline cash flow using three forecasting methods. EPA used three different scenarios to help address the uncertainty associated with predicting future income streams. The forecasts are based on the three years of financial data provided by each facility in the Detailed Questionnaire, assuming no-real-growth. One forecasting method uses 1994 cash flow as the best predictor of future cash flow. The second method uses the average of 1992, 1993, and 1994 cash flow as the expected cash flow for each year over the sixteen year project life. The third method uses the variation between 1992, 1993, and 1994 cash flow to mimic business cycle fluctuations in cash flow for the period (see EA, Appendix C for details on cash flow forecasting methods).

EPA then calculated the present value of the stream of each facility's post-tax

compliance costs (including the initial capital purchase and each year's operating and maintenance costs) over the sixteen year project life using each of the three forecasting methods. The present value of compliance costs is adjusted downward by a cost pass through factor that is calculated from EPA's TECI market model (see the EA, Appendix B). The market model for the TECI, which quantifies the impact of the proposed effluent guideline on equilibrium price and quantity in each TECI subcategory of the proposed rule, shows that the facilities in the regulated subcategories will be able to pass some portion of the compliance costs of the proposed rule through to their customers. The market model calculates the percentage that can be passed through for each subcategory. The adjusted present value of compliance costs represents the estimated change in facility cash flow caused by the proposed regulation.

For each of the subcategories in this industry, the estimated change in the present value of cash flow is subtracted from the projected present value of baseline facility cash flow to estimate the present value of post compliance cash flow. If the present value of post compliance cash flow is negative under two of the three forecasting methods, EPA considers the facility likely to close (i.e., liquidate) as a result of the regulation.

In the firm financial stress analysis, EPA uses the annualized costs to estimate changes to the balance sheets and income statements for each firm. This analysis estimates changes in financial information of each firm such as earnings, assets, liabilities, and working capital at the firm level (accounting for multiple facilities, where applicable). These postcompliance financial figures are used in a computerized model of financial health on a firm-by-firm basis. The model uses an equation known as Altman's Z″, which was developed using empirical data to characterize the financial health of firms, specifically for service industries such as the TECI. This model calculates one value, using financial data from the Detailed Questionnaire, that can be compared to index numbers that define ''good'' financial health, ''indeterminate'' financial health, and ''poor'' financial health. All firms whose Altman's Z″ value changes such that the firm goes from a ''good'' or ''indeterminate'' baseline category to a ''poor'' postcompliance category are classified as likely to have significant difficulties raising the capital needed to comply with the proposed rule, which can indicate the likelihood of firm bankruptcy, or loss of financial independence. To complement the Altman Z″ financial analysis, EPA uses two financial ratios: the current ratio (compares current assets to current liabilities) and the times interest earned ratio (compares annual interest obligations to annual cash flow). In most of the firm analyses, the current ratio and the time interest earned ratio tend to verify the Altman Z″ results.

In the employment analysis, EPA uses input-output analysis and market analysis. Using input-output analysis, EPA conducts a national-level analysis for estimating employment changes (gains and losses) throughout the U.S. economy in all non-TECI sectors of the economy. In this analysis, EPA uses both compliance costs and employment losses driven by facility closures to determine a range of possible gross and net (losses minus gains) impacts at the national level. Using market analysis, EPA's estimates market-determined production losses to derive an estimate of direct, net employment losses in the transportation equipment cleaning industry alone. Market analysis is undertaken to determine losses within the transportation equipment cleaning industry alone; while closure losses can be considered the immediate impact of the proposed rule on the industry, production-driven losses might be greater or less than closure losses over time, as equilibrium in the market is attained. Furthermore, closure losses do not account for the fact that some portion of production might transfer wholly or in part to operating pollution control equipment, thus accounting for some employment gains within the industry.

EPA investigates secondary impacts qualitatively and quantitatively. These impacts include impacts on international markets, impacts on substitutes for transportation equipment cleaning services, impacts on inflation, distributional impacts, and impacts on environmental justice. EPA also investigates the impact of the rule on domestic markets. The rule will affect domestic markets to the extent that zero discharge or excluded facilities have a competitive advantage over affected facilities.

EPA also looks at impacts on customers. The Agency analyzed the increase in prices that could be anticipated on a postcompliance basis. For the long term price equilibrium, the Agency determined the change in the number of tanks that would be cleaned. The analysis indicates a very modest decrease in the number of tanks cleaned. In many instances, this will probably occur as a slight decrease in the frequency of tank cleanings. In other cases, some customers could decide to buy ''dedicated'' tanks which would need infrequent or no cleaning.

Another key analysis EPA performs is an analysis to determine impacts on new sources, which is primarily a ''barrier-to-entry'' analysis to determine whether the costs of the PSNS or NSPS would prevent a new source from entering the market. This analysis looks at whether new transportation equipment cleaning facilities would be at a competitive disadvantage compared to existing sources. Market effects and barrier-to-entry results associated with zero discharge and small facility exclusion (if any) also are qualitatively investigated.

The EA also includes a cost-benefit analysis. This analysis looks at the social costs of the regulation measured as the pretax costs of compliance plus government administrative costs plus the costs of administering unemployment benefits (if any). Total social costs are compared to total social benefits in the analysis. See Section XI of this notice for a discussion of the benefit analysis.

EPA solicits comment on the methodologies described above. In particular, the Agency requests comment on the assumptions used in the analyses. Details of the methodologies and assumptions are available in the EA and the CE documents.

C. Summary of Costs and Economic Impacts

1. Number of Facilities Incurring Costs

EPA estimated that there are 1,239 facilities in the TEC industry not regulated under other effluent guidelines. Of these, 547 facilities are considered zero or alternative discharging facilities and are not expected to incur costs to comply with the TEC effluent guideline. EPA estimates that there are approximately 692 discharging facilities which may incur costs to comply with this proposal and upon which EPA conducted its analysis. Not all of these facilities are expected to incur costs because EPA is proposing not to regulate certain subcategories. Of the 1,239 facilities, 437 facilities meet the definition of small businesses. Of the 692 discharging facilities, 184 facilities meet the definition of small businesses. EPA used the Small Business Administration's (SBA) definition of small for the SIC codes that cover the TECI to develop a small business definition proposal. About 40 percent of the TECI facilities

have an SIC code that uses $5 million in annual revenue as the criterion for a small business.

2. Total Costs and Impacts of the Proposed Rule

a. Introduction.

The capital investment costs for all facilities total about $66 million. Total annualized costs of the proposed regulation for all facilities are estimated to be about $23.1 million, which includes about $5 million of annualized capital costs and $18 million in annual operation and maintenance costs.

The total annual costs are estimated using the capital investment, annual operation and maintenance costs, and monitoring costs. Capital costs are annualized by spreading them over the life of the project (much like a home mortgage). These annualized capital costs are then added to the annual operation and maintenance costs and to the monitoring costs. The result is the total annualized costs for each technology option.

Table 5 summarizes the total annualized costs for direct and indirect discharger requirements. Table 6 presents additional detail on the costs for direct dischargers, and Table 7 presents a similar level of detail for indirect dischargers.

TABLE 5.—COSTS OF PROPOSED TEC RULE

Rule	Posttax annualized costs ($1997 thousand)
PSES	$21,470
BPT/BAT	1,630
Total	23,100

Note: Totals may not sum due to rounding.

TABLE 6.—COSTS OF IMPLEMENTING BPT, BCT, AND BAT

[In thousands of 1997 Posttax dollars]

Subcategory	Total capital investment	Total annualized costs
Truck/Chemical	$144	$80
Rail/Chemical	122	40
Barge/Chemical & Petroleum	3,400	1,500
Truck/Food	0	0
Rail/Food	0	0
Barge/Food	0	0

TABLE 7.—COSTS OF IMPLEMENTING PSES

[In thousands of 1997 Posttax dollars]

Subcategory	Total capital investment	Total annualized costs
Truck/Chemical	$57,700	$20,200
Rail/Chemical	$4,700	$1,300

When final guidelines are promulgated, a facility is free to use any combination of wastewater treatment technologies and pollution prevention strategies at the facility so long as the numerical discharge limits are achieved. In some cases, a facility might choose flow reduction or some combination of capital investment or additional operation and maintenance expenditures may be required. In its cost estimates, EPA has assumed that all of the facilities in the Truck/Chemical and Rail/Chemical Subcategories and most in the Barge/Chemical & Petroleum Subcategories will need to make capital improvements or perhaps modify operation and maintenance practices. For the Food subcategories, all existing facilities which responded to the screener survey questionnaire indicated that they currently have in place the technology that the Agency has identified as the basis for limitations. Therefore, the Agency believes that they will incur no costs to comply. (See Section VIII.B)

b. Impacts From PSES. EPA estimates that the total compliance costs for PSES will be approximately $21.5 million per year. These costs include compliance with PSES for the Truck/Chemical and Rail/Chemical Subcategories. Total annual compliance costs for the Truck/Chemical Subcategory are based on technology Option II; for Rail/Chemical, on technology Option I.

EPA estimates that the proposed technology options would result in no facility closures. However, EPA predicts that the proposed PSES may cause some financial stress on 29 facilities and could affect the capability of these facilities to raise capital needed to purchase and install pollution control equipment. All of these facilities are in the Truck/Chemical Subcategory and most are in-house facilities. This impact does not mean that these facilities will close; all of these facilities are economically viable and are thus considered likely to be of interest to other firms for acquisition and operation. They may also be successful at improving their financial health and become attractive to lenders in the future.

Within non-TEC industries, EPA's economic analysis indicates that some industries that provide materials and equipment to the TEC industry may experience revenue increases as a result of the proposed regulation. However, some of these industries could incur revenue losses. EPA's economic analysis indicates that the proposed regulation would result in net losses of about 300 to 500 jobs in these industries (i.e., non-TEC industries). These impacts were estimated using the input-output methodology. Details of this analysis are available in the EA.

Within the TEC industry itself, EPA determined that many financially healthy facilities might actually experience gains in production (and thus gains in output and employment). Financially healthy facilities in the local market area might expand to take over

a portion of production from a facility having financial difficulties. In addition, some employment gains are anticipated for installation and operation of wastewater treatment facilities.

EPA determined that most facility financial stress will result in a maximum change in a community's unemployment rate of no more than 0.5 percent. Because the methodology assumes that all of the community impacts would occur in one State, the more probable impact is considerably lower. Thus, the community impact from the transportation equipment cleaning industry regulation is estimated to be negligible. EPA solicits comments on whether this approach is overly conservative.

EPA expects the proposed rule to have a minimal impact on international markets. Domestic markets might initially be slightly affected by the rule, because tank cleaning facilities will absorb a portion of the compliance costs and will pass a portion of the costs through to their customers. For the portion of compliance costs passed through to cleaning facilities' customers, EPA's market model estimates that prices will increase from about 2.1 percent to about 5.7 percent. Output, or the number of tanks cleaned, will decrease from about 0.1 percent to about 1.1 percent. Because tank cleaning is an essential service and is a very small part of total transportation services costs, customers may not be as sensitive to tank cleaning prices as they are to larger cost elements. Customers may accept marginally higher tank cleaning prices if the whole industry is subject to higher costs. An individual facility would have difficulty independently increasing prices in the absence of industry wide price increases.

EPA expects the proposed rule to have minimal impacts on inflation, insignificant distributional effects, and no major impacts on environmental justice.

EPA also investigated the likelihood that customers might use methods other than installing additional on-site wastewater treatment in order to comply with the proposed regulations. Substitution possibilities, of operating on-site facilities or purchasing dedicated tanks, are associated with potential negative impacts on customers that might deter them from choosing these potential substitutes. On-site tank cleaning capabilities require capital investment, operation and maintenance, and monitoring costs. The decision to build an on-site tank cleaning capability is more likely determined by non-pricing factors such as environmental liability, tank cleaning quality control, and internal management controls.

EPA's analysis does not indicate that transportation service companies (i.e., TEC customers) would likely decide to build a tank cleaning facility as a result of EPA's proposal. Further, because of the high initial costs to install equipment on-site ($1.0 million to $2.0 million for a tank cleaning facility) and the small increase in price of transportation equipment cleaning services discussed earlier, on-site transportation equipment cleaning could require years before any cost savings might be realized. Also, EPA's market model provides a means for estimating price increases and reductions in quantity demanded for transportation equipment cleaning services at the higher price. This analysis shows a very small decrease in the number of tanks cleaned as a result of the proposed rule, from about 0.1 percent to about 1.1 percent of baseline production across the subcategories. Given the disincentives towards substitutes indicated above, EPA does not expect the proposed rule to cause many customers to substitute on-site facilities for transportation equipment cleaning services or to substitute dedicated tanks. The small reduction in production is more likely to occur from customers delaying cleaning (rather than cleaning tanks after delivery of every load) or dropping certain services such as handling toxic wastes heels. This decline in production is negligible compared to the approximate 10 to 20 percent per year revenue growth for the industry between 1992 and 1994, according to data in the Detailed Questionnaire.

c. Impacts From BPT, BCT, BAT. As described in Section VIII.B of today's notice, EPA is proposing effluent limitations based on BPT, BCT, and BAT for the Truck/Chemical, Rail/Chemical, and Barge/Chemical & Petroleum Subcategories. The proposed limitations are the same for all levels of direct discharge requirements. The summary of costs and economic impacts is presented here for all levels. For BPT and BCT, additional information on cost and removal comparisons is presented in the Technical Development Document.

EPA estimates that the total annual compliance costs for BPT, BCT, and BAT will be $1.6 million. This estimate includes BPT, BCT, and BAT costs for the Truck/Chemical, Rail/Chemical, and Barge/Chemical & Petroleum Subcategories. For the Food Subcategories, although EPA is proposing effluent limitations based on BPT and BCT, EPA projects no compliance costs because all facilities identified by EPA were determined to already have the proposed treatment technology in place. (See Section VIII.B). EPA based its analysis on Option II for the Truck/Chemical Subcategory, Option I for the Rail/Chemical Subcategory, and Option I for the Barge/Chemical & Petroleum Subcategory. EPA based its analysis for the Truck Food, Rail Food, and Barge Food Subcategories on Option II.

As explained in Section X.b.1, EPA used economic and financial data obtained through the Detailed Questionnaire to evaluate economic impacts that would occur as a result of compliance with today's proposal. Certain segments of the TEC industry, especially in the Truck/Chemical and Rail/Chemical Subcategories, consist mainly of facilities discharging to a POTW. Due to the limited number of direct discharging facilities identified by EPA in these subcategories, EPA did not obtain detailed economic information from direct discharging facilities in the Truck/Chemical or Rail/Chemical Subcategories. EPA is, however, aware of at least three Truck/Chemical facilities and one Rail/Chemical facility that are discharging wastewater directly to surface waters.

For the economic analysis in these subcategories, EPA relied on the economic data collected for the indirect discharging Truck/Chemical facilities and the indirect discharging Rail/Chemical facilities. EPA assumed that the economic profile of direct discharging facilities is similar to that of indirect discharging facilities. EPA believes this is a reasonable approach because the Agency does not believe there is any correlation between annual revenue or facility employment and the method that a facility chooses to discharge its wastewater. Rather, the decision on whether to discharge wastewater directly or indirectly is determined by such considerations as cost, proximity to a POTW, permitting requirements, and wastewater treatment technology options.

EPA therefore assumed that the direct discharging Truck/Chemical and Rail/Chemical facilities were similar to indirect discharging facilities in terms of annual revenue, facility employment, and the number of tanks cleaned. Information on each of these indices was provided to EPA by the four direct discharging facilities in the Screener Questionnaire. EPA then identified facilities in the Detailed Questionnaire database which were similar to each of the direct dischargers in terms of revenue, employment, and tanks cleaned. EPA then simulated the

financial and economic profile for the direct discharging facilities based on data provided by similar indirect discharging facilities in the same subcategory. Based on this analysis, EPA determined that implementation of BPT would result in no facility closures, and thus no revenue losses or employment losses are expected to occur. The Agency solicits data and comment on the assumptions used for the economic achievability analysis for the Truck/Chemical and Rail/Chemical Subcategories.

For the Barge/Chemical & Petroleum Subcategory, EPA estimated total annualized compliance costs for the 14 facilities based on responses to the Detailed Questionnaire. EPA has projected no facility closures, employment losses or revenue losses for these facilities.

In addition to the costs of the effluent guideline discussed in this section, the Barge/Chemical & Petroleum Subcategory may be subject to incremental costs under new Clean Air Act regulations. For these facilities, EPA has reviewed the economic analysis prepared for the 1995 Clean Air Act (CAA) regulation (National Emission Standards for Shipbuilding and Ship Repair, 60 FR 64336). EPA identified only one Tank Barge and Petroleum facility that overlaps with the facilities covered by this CAA regulation. In the economic analysis for today's proposal, EPA includes a sensitivity analysis and assumed that all Tank Barge and Petroleum facilities that indicate that they perform repair, painting, or related activities will be subject to the CAA regulation. EPA's sensitivity analysis of the CAA incremental costs suggests little or no change in economic impacts for the Barge/Chemical & Petroleum facilities. EPA solicits comment on the relevance of CAA costs to comply with this proposal. EPA also solicits data on the magnitude of these costs and on the number of facilities affected by today's proposal which are in ozone non-attainment areas.

d. Impacts From PSNS. As described in Section VIII.B, EPA is proposing PSNS equivalent to PSES for the Truck/Chemical and Barge/Chemical & Petroleum Subcategories. For the Rail/Chemical Subcategory, EPA is proposing PSNS based on a more stringent technology control option than proposed for PSES. For Truck/Chemical, Option II was selected, for Rail/Chemical Option III was selected, and for Barge/Chemical & Petroleum, Option II was selected.

EPA assesses impacts on new indirect sources by determining whether the proposed rule would result in barrier-to-entry into the market. EPA has determined that overall impacts from the proposed TECI effluent guidelines on new sources would not be any more severe than those on existing sources. Generally, the costs faced by new sources will be the same as, or less than, those faced by existing sources. It is typically less expensive to incorporate pollution control equipment into the design at a new plant than it is to retrofit the same pollution control equipment in an existing plant; no demolition is required, and space constraints, which can add to costs if specifically designed equipment must be ordered, are not an issue in new construction.

For the Truck/Chemical Subcategory, average facility assets are over $2.8 million. In its economic analysis, EPA determined that the average facility compliance capital costs for this subcategory would be $0.2 million. The ratio of average facility compliance capital costs to average facility assets would be approximately seven percent. EPA concluded that the capital costs to comply with the standards are modest in comparison to total facility costs and would not pose a barrier-to-entry.

For the Rail/Chemical Subcategory, responses to the Detailed Questionnaire indicate that the average facility assets total about $6.4 million. For this subcategory, average facility compliance capital costs total about $0.1 million, or about two percent of average facility assets. EPA concluded that the average annual incremental facility costs are low in comparison to average facility assets and that PSNS would therefore not pose a barrier-to-entry.

EPA also examined whether there would be barrier-to-entry for new sources. EPA investigated facilities in the Detailed Questionnaire that indicated they were new or relatively new at the time of the survey. Over a three year period (1992, 1993, 1994), according to the Detailed Questionnaire, about 60 facilities began transportation equipment cleaning operations, although it is not absolutely clear from the data whether these facilities were actually new dischargers or were existing dischargers acquired in that year by a different firm. Over the 3-year period, this amounts to about 20 new sources a year, or about three percent of the number of existing facilities. EPA believes that new sources are replacing production from closing facilities that exist in the market and are also adding modest additional tank cleaning capacity in the TECI.

EPA concludes that new small facilities will not experience a barrier-to-entry to the transportation equipment cleaning industry.

e. Impacts From NSPS. As described in Section VIII.B, EPA is proposing NSPS equivalent to BPT, BCT, and BAT for the Truck/Chemical and Barge/Chemical & Petroleum Subcategories. For the Rail/Chemical Subcategory, EPA is proposing NSPS based on a more stringent technology control option than proposed for existing sources. EPA assesses impacts on new direct sources by determining whether the proposed rule would result in barrier-to-entry into the market.

For the Barge/Chemical & Petroleum Subcategory, the average facility assets for a barge chemical cleaning facility are about $2.1 million. The average compliance capital cost for the proposed regulation for a barge chemical cleaning facility is about $0.2 million or about 11 percent of average facility assets. This is a relatively small amount of average capital assets. This percentage is expected to be lower for new facilities, because they can include pollution control equipment in the design of new facilities.

In an analysis of the Detailed Questionnaire, EPA determined that about 20 new tank cleaning businesses were established per year during 1992, 1993, and 1994 timeframe. Although EPA has not determined the number of new facilities that are direct dischargers, the Agency assumes that the number of new direct discharging facilities is small. EPA concludes this, because the number of existing direct dischargers is small (based on screener data).

Similar to PSNS, EPA concludes that no barrier-to-entry exists for new direct discharge sources to construct, operate, and maintain these technologies.

3. Economic Impacts of Accepted and Rejected Options

The options selected as the basis for regulation are associated with no facility closures; 29 indirect discharge facilities are projected to experience some financial stress (but not close) and thus possibly lose their financial independence. A net direct total of no FTEs would be lost in the transportation equipment cleaning industry (direct, production-driven losses) with these options, and other secondary impacts (effects on trade, inflation, and customers) would be negligible.

As discussed in section VIII, EPA considered several technology options for each subcategory. A summary of costs and impacts for all BPT, BCT, BAT, NSPS, PSES, and PSNS options are shown in Table 8.

TABLE 8.—SUMMARY OF IMPACTS FOR PROPOSED BPT, BAT, NSPS, PSES, AND PSNS OPTIONS

Subcategory	Option	Posttax annualized costs ($ 1997 thousands)	Facility closures	Financial stress	Employment losses
Truck/Chemical (Direct)	Option I	$78	0	0	0
	Option II (Proposed for BPT, BCT, BAT, NSPS).	78	0	0	0
Truck/Chemical (Indirect)	Option I	13,200	0	22	0
	Option II (Proposed for PSES, PSNS)	20,206	0	29	0
Rail/Chemical (Direct)	Option I (Proposed for BPT, BCT, BAT)	39	0	0	0
	Option II	74	0	0	0
	Option III (Proposed for NSPS)	89	0	0	0
Rail/Chemical (Indirect)	Option I (Proposed for PSES)	1,262	0	0	0
	Option II	1,953	6	0	421
	Option III (Proposed for PSNS)	2,630	6	0	421
Barge/Chemical & Petroleum (Direct)	Option I (Proposed for BPT, BCT, BAT, NSPS).	1,508	0	0	0
	Option II	1,774	0	0	0
Barge/Chemical & Petroleum (Indirect)	Option I	122	0	0	0
	Option II (Proposed for PSNS)	187	0	0	0
	Option III	215	0	0	0
Truck/Food (Direct)	Option I.				
	Option II (Proposed for BPT, BCT, BAT, NSPS).				
Truck/Food (Indirect)	Option I	3,236	0	17	0
	Option II	8,022	8	17	153
Rail/Food (Direct)	Option I.				
	Option II (Proposed for BPT, BCT, BAT, NSPS).				
Rail/Food (Indirect)	Option I	2,098	0	0	0
	Option II	6,218	0	0	0
Barge/Food (Direct)	Option I.				
	Option II (Proposed for BPT, BCT, BAT, NSPS).				
Barge/Food (Indirect)	Option I	19	0	0	0
	Option II	41	0	0	0
Truck/Hopper (Indirect)	Option I	334	5	0	38
Rail/Hopper (Indirect)	Option I	16	0	0	0
Barge/Hopper (Direct)	Option I	411	0	0	0
Barge/Hopper (Indirect)	Option I	21	0	0	0
Truck/Petroleum (Indirect)	Option I	536	0	0	0
Rail/Petroleum (Indirect)	Option I	87	0	0	0

4. Small Business Analysis

EPA estimated that there are 1,239 TEC facilities not regulated by other CWA effluent guidelines. Of these, 437 facilities meet the definition of small businesses. There are 692 TEC discharging facilities which may incur costs to comply with today's proposal. Of these, 184 facilities meet the definition of ''small'' under the Small Business Administration's (SBA) definition of $5 million in annual revenue for many of the SIC codes that cover the TECI. The 184 small facilities are about 27 percent of the discharging facilities in the industry. Not all of these facilities will be affected by today's proposal because EPA is not proposing effluent limitations for all subcategories.

EPA's small business analysis satisfies the requirements of an Initial Regulatory Flexibility Analysis (as required by the Regulatory Flexibility Act; see section XIII.B of today's notice) and also documents the Agency's findings of economic achievability for the small business segment of the regulated community. The small business analysis, in its entirety, is in Chapter VI of the EA.

A key aspect of the small business analysis was an attempt to identify a means to minimize economic impacts for small businesses. Among the Agency's considerations was an exclusion for small facilities, where the exclusion could be based on criteria such as the number of tanks cleaned, gallons of wastewater generated per day, employment, or annual revenues. EPA evaluated alternative levels for each of these criteria as potential bases for excluding small businesses. For each potential exclusion, EPA considered the projected economic impacts, both in absolute terms and in relative terms (i.e., whether the impacts were higher, proportionately, for the small businesses). The economic impacts that EPA considered for small facilities include those described in section X.B.2, such as closures, and other impacts, such as a comparison of compliance cost to annual revenues. EPA projects no facility closures among small businesses. EPA projects that 14 small businesses will experience financial stress.

For the preliminary comparison of costs to revenues, EPA relied on a conservative set of assumptions such as zero cost pass through. EPA relied on these results to determine whether there might be any potential need to prepare an IRFA. Subsequently, EPA also compared cost to revenue using other assumptions from the market model described in X.B.2. All of these results are presented in the IRFA. Using both sets of assumptions related to cost pass through, EPA estimates that either 75 or 50 small businesses would incur costs

exceeding one percent of revenues, and either 64 or 17 small businesses would incur costs exceeding three percent of revenues.

Small facilities are not concentrated in any one market area and the competitive advantages, if those facilities were excluded, might be limited. EPA's analysis shows that there is a very slight increase in tank cleaning prices as a result of the proposed rule. For example, the price per tank cleaned in the Truck/Chemical Subcategory would be expected to increase from $279 per tank cleaned to $295 per tank cleaned, a 5.7 percent increase. Based on an industry-wide market analysis that includes zero discharge facilities, with this increase in tank cleaning prices, the number of tanks cleaned in the Truck/Chemical Subcategory would decrease from about 770,000 tanks cleaned to about 762,000 tanks cleaned, a 1.1 percent decrease in the number of tanks cleaned. Because tank cleaning is an essential service and is a very small component of transportation services, customers do not appear to be as sensitive to price changes as they would be to a service which is a larger component of overall transportation services; therefore, dischargers subject to the proposed rule would be able to compete with zero discharge facilities. The analysis suggests that an exclusion from the rule may provide small businesses with a modest comparative cost and price advantage over facilities subject to the regulation. However, that comparative cost advantage may be slight; overall price changes are projected to be modest and small facilities may not have the market power of larger facilities.

The analysis of potential small business exclusions also includes a comparison of economic impacts and pollutant loadings; this type of comparison is especially helpful for identifying regulatory alternatives that would provide economic relief without removing a significant portion of the pollutant loading or other benefit of the rule. This analysis shows that small facilities contribute a proportional amount of the pollutant loads discharged into surface waters.

EPA evaluated more than 20 potential small business exclusions, but has not identified an exclusion consistent with the CWA that minimizes the economic impacts while still preserving the benefits of the proposed rule. Hence, no small business exclusion is incorporated into today's proposal. EPA solicits comments on a small business exclusion that would minimize the impacts on those 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.

D. Cost-Benefit Analysis

Table 9 presents a comparison of the costs and benefits of the proposed transportation equipment cleaning industry regulation. The proposed options are expected to have a total annual social cost of $37.5 million in 1997 dollars, which includes a $36.9 million in pretax compliance costs, $0.6 million in administrative costs, and almost zero costs for administering unemployment benefits. Annual benefits are expected to range from $2.7 million to $9.3 million in 1997 dollars, which includes $1.8 million to $6.2 million for recreational benefits and $0.9 million to $3.1 million associated with nonuse values benefits. The derivation of annual benefits is discussed in Section XI.

TABLE 9.—SUMMARY OF THE COST-BENEFIT ANALYSIS

Category	Costs and benefits ($ 1997 millions)
Costs	
Compliance Costs	$36.9
Administrative Costs	0.6
Administrative Costs of Unemployment	0.0–0.006
Total Social Costs	37.5
Benefits	
Human Health Benefits	
Recreational Benefits:	
Truck/Chemical	1.6–5.6
Barge/Chemical & Petroleum	0.2–0.6
Nonuse Benefits	0.9–3.1
Total Monetized Benefits	2.7–9.3

There are a number of additional use and nonuse benefits associated with the proposed standards that could not be monetized. The monetized recreational benefits were estimated only for fishing by recreational anglers, although there are other categories of recreational and other use benefits that could not be monetized. Examples of these additional benefits include: reduced noncancer health effects, enhanced water-dependent recreation other than fishing, reduced POTW operating and maintenance costs, and reduced administrative costs at the local level to develop and defend individually derived local limits for transportation equipment cleaning facilities. There are also nonmonetized benefits that are nonuse values, such as benefits to wildlife, threatened or endangered species, and biodiversity benefits. Rather than attempt the difficult task of enumerating, quantifying, and monetizing these nonuse benefits, EPA calculated nonuse benefits as 50 percent of the use value for recreational fishing. This value of 50 percent is a reasonable approximation of the total nonuse value for a population compared to the total use value for that population. This approximation should be applied to the total use value for the affected population; in this case, all of the direct uses of the affected reaches (including fishing, hiking, and boating). However,

since this approximation was only applied to recreational fishing benefits for recreational anglers, it does not take into account non-use values for non-anglers or for the uses other than fishing by anglers. Therefore, EPA has estimated only a portion of the nonuse benefits for the proposed standards.

E. Cost-Effectiveness Analysis

In addition to the foregoing analyses, EPA has conducted cost-effectiveness analyses for the multiple options considered for each of the subcategories in the transportation equipment cleaning industry. The methodologies, details, and results of these analyses are presented in the report ''Cost Effectiveness Analysis for Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Industry Point Source Category,'' which is included in the rulemaking record. The CE analysis evaluates the relative efficiency of technology options in removing toxic pollutants. The costs evaluated include the pretax direct compliance costs, such as capital expenditures and O&M costs, which are annualized and compared to incremental and total pollutant removals.

Cost-effectiveness results are expressed in terms of the incremental and average costs per ''pound equivalent'' (PE) removed. PE is a measure that addresses differences in the toxicity of pollutants removed. Total PEs are derived by taking the number of pounds of a pollutant removed and multiplying this number by a toxic weighting factor (TWF). EPA calculates TWFs for priority pollutants and some additional nonconventional pollutants using ambient water quality criteria and toxicity values. The TWFs are then standardized by relating them to a particular pollutant, in this case, copper. PEs are calculated only for pollutants for which TWFs have been estimated, thus they do not reflect potential toxicity for some nonconventional pollutants and any conventional pollutants. EPA calculates incremental cost-effectiveness as the ratio of the incremental annual costs to the incremental PE removed under each option, compared to the previous option. Average cost-effectiveness is calculated for each option as the ratio of total costs to total PE removed. In the case of pretreatment standards, EPA does not include pollutant removals if those pollutants could be removed at the POTW, but only includes the removal of pollutants that would pass through the POTW. EPA reports annual costs for all cost-effectiveness analyses in 1981 dollars, to enable limited comparisons of the cost-effectiveness among regulated industries.

EPA calculated cost-effectiveness ratios for the technology options for each of the five regulated subcategories. Detailed results are presented in the CE document. EPA estimates that the incremental cost-effectiveness of the proposed options for direct dischargers is about $108 per PE removed; for indirect dischargers, the incremental cost effectiveness is about $185 per PE removed.

XI. Water Quality Impacts of Proposed Regulations

A. Characterization of Pollutants

EPA evaluated the environmental benefits of controlling the discharges of toxic pollutants from facilities in three subcategories of the Transportation Equipment Cleaning industry to surface waters and POTWs. The detailed assessment can be found in the ''Environmental Assessment of Proposed Effluent Limitations Guidelines and Standards for the Transportation Equipment Cleaning Category''. EPA's evaluation was done in a national analysis of direct and indirect discharges. Discharges of these pollutants into freshwater and estuarine ecosystems may alter aquatic habitats, adversely affect aquatic biota, and adversely impact human health through the consumption of contaminated fish and water. Furthermore, EPA evaluated whether these pollutants being discharged to POTWs by TEC facilities may interfere with POTW operations in terms of inhibition of activated sludge or biological treatment, and evaluated whether they may cause contamination of sludges, thereby limiting available methods of disposal. Many of these pollutants have at least one toxic effect (human health carcinogen or systemic toxicant or aquatic toxicant). In addition, many of these pollutants bioaccumulate in aquatic organisms and persist in the environment.

The Agency's analysis focused on the effects of toxic pollutants and did not evaluate the effects of three conventional pollutants and five nonconventional pollutants including total suspended solids (TSS), five-day biochemical oxygen demand (BOD_5 chemical oxygen demand (COD), oil and grease (measured as hexane extractable material), total dissolved solids (TDS), total organic carbon (TOC), and total phenolic compounds. Although the Agency did not monetize the benefits associated with reductions of these non-toxic parameters, discharges of these parameters can have adverse effects on human health and the environment. For example, habitat degradation can result from increased suspended particulate matter that reduces light penetration, and thus primary productivity, or from accumulation of sludge particles that alter benthic spawning grounds and feeding habitats. Oil and grease, including animal fats and vegetable oils, can have lethal effects on fish by coating gill surfaces and causing asphyxia, by depleting oxygen levels due to excessive biological oxygen demand, or by reducing stream aeration because of surface film. Oil and grease can also have detrimental effects on water fowl by destroying the buoyancy and insulation of their feathers. High COD and BOD_5 levels can deplete oxygen levels, which can result in mortality or other adverse effects on fish. High TOC levels may interfere with water quality by causing taste and odor problems and mortality in fish. The environmental and human health benefits associated with reducing the discharge of these parameters are generally associated with wastewater discharged directly to surface waters. The majority of facilities in the TEC industry discharge to POTWs, which have the ability to treat and control many of these parameters before they reach surface waters.

B. Truck/Chemical Subcategory

1. Indirect Dischargers

EPA evaluated the potential effect on aquatic life and human health impacts of a representative sample of 40 indirect wastewater dischargers of the 288 facilities in the Truck/Chemical indirect subcategory to receiving waters at current levels of treatment and at proposed pretreatment levels. These 40 modeled facilities discharge 80 modeled pollutants in wastewater to 35 POTWs, which then discharge to 35 receiving streams. EPA predicted steady-state in-stream pollutant concentrations after complete immediate mixing with no loss from the system, and compared these levels to EPA-published water quality criteria. For those chemicals for which EPA has not published water quality criteria, concentrations were compared to documented toxic effect levels (i.e., lowest reported or estimated toxic concentration). Nationwide criteria guidance were used as the most representative value. In addition, the potential benefits to human health were evaluated by estimating the potential reduction of carcinogenic risk and systemic effects from consuming contaminated fish and drinking water. Risks were also estimated for recreational and subsistence anglers and their families as well as the general

population. Model results were then extrapolated to the national level.

At the national level, 288 facilities discharge wastewater to 264 POTWs, which then discharge into 264 receiving streams. Current loadings (in pounds) of the 80 pollutants evaluated for water quality impacts are reduced 80 percent by the proposed pretreatment regulatory option. EPA projects that in-stream concentrations of one pollutant will exceed human health criteria (for both water and organisms) in 14 receiving streams at current discharge levels. The proposed pretreatment regulatory option eliminates excursions of human health criteria in all 14 streams. EPA also projects 49 receiving streams with in-stream concentrations for one pollutant projected to exceed chronic aquatic life criteria or toxic effect levels at current discharge levels. At the proposed pretreatment, 37 of the 49 streams still show excursions for one pollutant. The remaining 12 streams will no longer have excursions of either kind under the proposed pretreatment. Estimates of the increase in value of recreational fishing to anglers as a result of this improvement range from $ 1.6 to 5.7 million annually (1997 dollars). In addition, the nonuse value (e.g. option, existence, and bequest value) of the improvement is estimated to range from $ 0.8 to $2.9 million (1997 dollars).

The excess annual cancer cases at current pollutant loadings are projected to be much less than 0.5 from the ingestion of contaminated fish and drinking water by all populations evaluated for both the results from the representative sample and those extrapolated to the national level. A monetary value of this benefit to society is, therefore, not projected. The risk to develop systemic toxicant effects (non-cancer adverse health effects such as reproductive toxicity) are projected for 14,173 subsistence anglers in 39 receiving streams for one pollutant at current discharge levels. The risk to develop systemic toxicant effects are projected at the proposed pretreatment for 3,492 subsistence anglers fishing in 16 receiving streams for the same pollutant, reducing the exposed population by 75 percent. Monetary values for the reduction of systemic toxic effects cannot currently be estimated.

2. POTWs

EPA also evaluated the potential adverse impacts on POTW operations (inhibition of microbial activity during biological treatment) and contamination of sewage sludge at the 35 modeled POTWs that receive wastewater from the Truck/Chemical Subcategory. Inhibition of POTW operations (impairment of microbial activity) is estimated by comparing predicted POTW influent concentrations to available inhibition levels. Inhibition values were obtained from *Guidance Manual for Preventing Interference at POTWs* (U.S. EPA, 1987) and *CERCLA Site Discharges to POTWs: Guidance Manual* (U.S. EPA, 1990). Potential contamination of sewage sludge (concentrations of pollutants above the levels permitted for land application) was estimated by comparing projected pollutant concentrations in POTW sewage sludge to available EPA criteria. The *Standards for the Use or Disposal of Sewage Sludge* (40 CFR Part 503) contain limits on the concentrations of pollutants in sewage sludge that is used or disposed. For the purpose of this analysis, contamination is defined as the concentration of a pollutant in sewage sludge at or above the limits presented in 40 CFR Part 503. Model results were then extrapolated to the national level, which included 264 POTWs.

EPA evaluated pollutants for potential POTW operation inhibition and potential sewage sludge contamination. At current discharge levels, EPA projects no inhibition or sludge contamination problems at any of the POTWs at current loadings. Therefore, no further analysis of these types of impacts was performed.

C. Rail/Chemical Subcategory

1. Indirect Dischargers

EPA evaluated the potential effect on aquatic life and human health of a representative sample of 12 indirect wastewater dischargers of the 38 facilities in the Rail/Chemical Subcategory to receiving waters at current levels of treatment and at proposed pretreatment levels. These 12 modeled facilities discharge 103 modeled pollutants in wastewater to 11 POTWs, which discharge to 11 receiving streams. EPA predicted steady-state in-stream pollutant concentrations after complete immediate mixing with no loss from the system, and compared these levels to EPA-published water quality criteria. For those chemicals for which EPA has not published water quality criteria, concentrations were compared to documented toxic effect levels (i.e., lowest reported or estimated toxic concentration). Nationwide criteria guidance were used as the most representative value. In addition, the potential benefits to human health were evaluated by estimating the potential reduction of carcinogenic risk and systemic effects from consuming contaminated fish and drinking water. Risks were also estimated for recreational and subsistence anglers and their families as well as the general population. Model results were then extrapolated to the national level.

At the national level, 38 facilities discharge wastewater to 37 POTWs, which then discharge into 37 receiving streams. Current loadings (in pounds) of the 103 pollutants evaluated for water quality impacts are reduced 46 percent by the proposed pretreatment regulatory option. EPA projects that in-stream pollutant concentrations will exceed human health criteria (for both water and organisms) in 16 receiving streams at both current and proposed pretreatment discharge levels. Since the proposed pretreatment is not expected to eliminate all occurrences of pollutant concentrations in excess of human health criteria at any of the receiving streams, no increase in value of recreational fishing to anglers is projected as a result of this pretreatment. EPA projects eight receiving streams with in-stream concentrations of four pollutants to exceed chronic aquatic life criteria or toxic effect levels at current discharge levels. Proposed pretreatment discharge levels will reduce projected excursions to three pollutants in six receiving streams. There are expected to be excursions of acute aquatic life criteria or toxic effects levels by one pollutant in six receiving streams. All of these excursions will be eliminated by the proposed pretreatment option.

The excess annual cancer cases at current pollutant loadings are projected to be much less than 0.5 from the ingestion of contaminated fish and drinking water by all populations evaluated for both the results from the representative sample and those extrapolated to the national level. Monetary value of this benefit to society is, therefore, not projected. No systemic toxicant effects (non-cancer adverse health effects such as reproductive toxicity) are projected for anglers fishing the receiving streams at current discharge levels. Therefore, no further analysis of these types of impacts was performed.

2. POTWs

EPA also evaluated the potential adverse impacts on POTW operations (inhibition of microbial activity during biological treatment) and contamination of sewage sludge at the 11 modeled POTWs that receive wastewater from the rail chemical indirect subcategory. Model results were then extrapolated to the national level, which included 37 POTWs.

EPA evaluated pollutants for potential POTW operation inhibition and potential sewage sludge contamination through wastewater modeling. At current discharge levels, the EPA model projects inhibition problems at 21 of the POTWs, caused by four pollutants. At the proposed pretreatment regulatory option, EPA projects continued inhibition problems at 13 POTWs. Inhibition was prevented at eight POTWs; however, the EPA is currently unable to monetize these benefits. The Agency projects sewage sludge contamination at none of the POTWs at current loadings. Therefore, no further analysis of these types of impacts was performed.

The POTW inhibition values used in this analysis are not, in general, regulatory values. EPA based these values upon engineering and health estimates contained in guidance or guidelines published by EPA and other sources. EPA used these values to determine whether the pollutants interfere with POTW operations. The pretreatment standards proposed today are not based on these values; rather, they are based on the performance of the selected technology basis for each standard. However, the values used in this analysis help indicate the potential benefits for POTW operations that may result from the compliance with proposed pretreatment discharge levels.

D. Barge/Chemical and Petroleum Subcategory

1. Direct Dischargers

EPA evaluated the potential effect on aquatic life and human health of a representative sample of six direct wastewater dischargers of the 14 facilities in the Barge/Chemical & Petroleum Subcategory to receiving waters at current levels of treatment and at proposed pretreatment levels. These six modeled facilities discharge 60 modeled pollutants to six receiving streams. EPA predicted steady-state in-stream pollutant concentrations after complete immediate mixing with no loss from the system, and compared these levels to EPA-published water quality criteria. For those chemicals for which EPA has not published water quality criteria, concentrations were compared to documented toxic effect levels (i.e., lowest reported or estimated toxic concentration). Nationwide criteria guidance were used as the most representative value. In addition, the potential benefits to human health were evaluated by estimating the potential reduction of carcinogenic risk and systemic effects from consuming contaminated fish and drinking water. Risks were also estimated for recreational and subsistence anglers and their families as well as the general population. Model results were then extrapolated to the national level.

At the national level, 14 facilities discharge wastewater directly to 14 receiving streams. Current loadings (in pounds) of the 60 pollutants evaluated for water quality impacts are reduced 95 percent by the proposed BAT regulatory option. EPA projects that in-stream concentrations of two pollutants will exceed human health criteria (for both water and organisms) in six receiving streams at current discharge levels. The proposed BAT regulatory option eliminates excursions of human health criteria in three of these streams. Estimates of the increase in value of recreational fishing to anglers as a result of this improvement range from $169,000 to $604,000 annually (1997 dollars). In addition, the nonuse value (e.g. option, existence, and bequest value) of the improvement is estimated to range from $84,500 to $302,000 (1997 dollars).

The excess annual cancer cases at current pollutant loadings are projected to be much less than 0.5 from the ingestion of contaminated fish and drinking water by all populations evaluated for both the results from the representative sample and those extrapolated to the national level. A monetary value of this benefit to society is, therefore, not projected. No systemic toxicant effects (non-cancer adverse health effects such as reproductive toxicity) are projected for anglers fishing the 14 receiving streams at current discharge levels. Therefore, no further analysis of these types of impacts was performed.

2. Indirect Dischargers

EPA evaluated the potential effect on aquatic life and human health of a single indirect wastewater discharger (there was only one facility which received the Detailed Questionnaire, although several additional facilities were identified in the Screen Questionnaire) to receiving waters at current levels of treatment and at proposed pretreatment levels. This facility discharges 60 modeled pollutants in wastewater to a POTW, which discharges to a receiving stream. EPA predicted steady-state in-stream pollutant concentrations after complete immediate mixing with no loss from the system, and compared these levels to EPA-published water quality criteria. For those chemicals for which EPA has not published water quality criteria, concentrations were compared to documented toxic effect levels (i.e., lowest reported or estimated toxic concentration). Nationwide criteria guidance were used as the most representative value. In addition, the potential benefits to human health were evaluated by estimating the potential reduction of carcinogenic risk and systemic effects from consuming contaminated fish and drinking water. Risks were also estimated for recreational and subsistence anglers and their families as well as the general population. Model results were then extrapolated to the national level.

EPA projects that in-stream concentrations of none of the pollutants will exceed human health criteria (for both water and organisms) at current discharge levels. EPA also projects that no receiving streams will show in-stream concentrations exceeding chronic aquatic life criteria or toxic effect levels at current discharge levels. No carcinogenic effects or systemic toxicant effects (non-cancer adverse health effects such as reproductive toxicity) are projected for drinking water or ingesting fish taken from the single receiving stream at current discharge levels. Therefore, no further analysis of these types of impacts was performed.

3. POTWs

EPA also evaluated the potential adverse impacts on POTW operations (inhibition of microbial activity during biological treatment) and contamination of sewage sludge at the one POTW that receives wastewater from the barge chemical indirect subcategory. Inhibition of POTW operations (impairment of microbial activity) is estimated by comparing predicted POTW influent concentrations to available inhibition levels. Model results were not extrapolated to the national level, which included only the single POTW.

EPA evaluated pollutants for potential POTW operation inhibition and potential sewage sludge contamination. At current discharge levels, EPA projects no inhibition or sludge contamination problems at this POTW. Therefore, no further analysis of these types of impacts was performed.

XII. Non-Water Quality Impacts of Proposed Regulations

As required by sections 304(b) and 306 of the Clean Water Act, EPA has considered the non-water quality environmental impacts associated with the treatment technology options for the transportation equipment cleaning industry. Non-water quality impacts are impacts of the proposed rule on the environment that are not directly associated with wastewater. Non-water

quality impacts include changes in energy consumption, air emissions, and solid waste generation of oil and sludge. In addition to these non-water quality impacts, EPA examined the impacts of the proposed rule on noise pollution, and water and chemical use. Based on these analyses, EPA finds the relatively small increase in non-water quality impacts resulting from the proposed rule to be acceptable.

A. Energy Impacts

Energy impacts resulting from the proposed regulatory options include energy requirements to operate wastewater treatment equipment such as aerators, pumps, and mixers. However, flow reduction technologies (a component of the regulatory options) reduce energy requirements by reducing the number of operating hours per day and/or operating days per year for wastewater treatment equipment currently operated by the TEC industry. For some regulatory options, energy savings resulting from flow reduction exceed requirements for operation of additional wastewater treatment equipment, resulting in a net energy savings for these options.

EPA estimates a net increase in electricity use of approximately 6 million kilowatt hours annually for the TEC industry as a result of the proposed rule. According to the U.S. Department of Commerce, the total U.S. industrial electrical energy purchase in 1990 was approximately 756 billion kilowatt hours. EPA's proposed options would increase U.S. industrial electrical energy purchase by 0.0008 percent. Therefore, the Agency concludes that the effluent pollutant reduction benefits from the proposed technology options exceed the potential adverse effects from the estimated increase in energy consumption.

B. Air Emission Impacts

TEC facilities generate wastewater containing significant concentrations of volatile and semivolatile organic pollutants, some of which are also on the list of Hazardous Air Pollutants (HAPs) in Title 3 of the Clean Air Act Amendments of 1990. These waste streams pass through treatment units open to the atmosphere, which may result in the volatilization of organic pollutants from the wastewater.

Emissions from TEC facilities also occur when tanks are opened and cleaned, with cleaning typically performed using hot water or cleaning solutions. Prior to cleaning, tanks may be opened with vapors vented through the tank hatch and air vents in a process called gas freeing. At some facilities, tanks used to transport gases or volatile material are filled to capacity with water to displace vapors to the atmosphere or a combustion device. Some facilities also perform open steaming of tanks.

Other sources of emissions at TEC facilities include heated cleaning solution storage tanks as well as emissions from TEC wastewater as it falls onto the cleaning bay floor, flows to floor drains and collection sumps, and conveys to wastewater treatment.

In order to quantify the impact of the proposed regulation on air emissions, EPA performed a model analysis to estimate the amount of organic pollutants emitted to the air. EPA estimates the increase of air emissions at TEC facilities as a result of the proposed wastewater treatment technology to be approximately 153,000 kilograms per year of organic pollutants (volatile and semivolatile organics), which represents approximately 35 percent of the total organic pollutant wastewater load. EPA's estimate of air emissions reflects the increase in emissions at TEC facilities, and does not account for baseline air emissions that are currently being released to the atmosphere at the POTW.

EPA's model analysis was performed based on the most stringent regulatory options considered for each subcategory in order to create a ''worst case scenario'' (i.e., the more treatment technologies used, the more chance of volatilization of compounds to the air). For some subcategories, EPA is not proposing the most stringent regulatory option; therefore, for these subcategories, air emission impacts are overestimated. In addition, to the extent that facilities currently operate treatment in place, the results overestimate air emission impacts from the regulatory options. Additional details concerning EPA's model analysis to estimate air emission impacts are included in ''Estimated Air Emission Impacts of TEC Industry Regulatory Options'' in the rulemaking record.

Based on the sources of air emissions in the TEC industry and limited data concerning air pollutant emissions from TEC operations provided in response to the 1994 Detailed Questionnaire (most facilities did not provide air pollutant emissions estimates), EPA estimates that the incremental air emissions resulting from the proposed regulatory options are a small percentage of air emissions generated by TEC operations. For these reasons, air emission impacts of the regulatory options are acceptable.

C. Solid Waste Impacts

Solid waste impacts resulting from the proposed regulatory options include additional solid wastes generated by wastewater treatment technologies. These solid wastes include wastewater treatment residuals, including sludge, waste oil, spent activated carbon, and spent organo-clay.

Regulations pursuant to the Resource Conservation and Recovery Act (RCRA), require companies/facilities which generate waste (including waste generated from the cleaning of the interiors of tanks) to determine if they generate a hazardous waste (the applicable regulations are found in 40 CFR part 261). This determination is made by answering two questions: (1) Is the material a listed hazardous waste; or (2) is the material hazardous because it exhibits one of the four hazardous waste characteristics (ignitability, corrosivity, reactivity or toxicity). If the material is determined to be a hazardous waste, the waste must be managed according to the regulations found in 40 CFR parts 262–265, 268, 270, 271 and 124.

1. Wastewater Treatment Sludge

Wastewater treatment sludge is generated in two forms: dewatered sludge (or filter cake) generated by a filter press and/or wet sludge generated by treatment units such as oil/water separators, chemical precipitation/clarification, coagulation/clarification, dissolved air flotation, and biological treatment. Many facilities that currently operate wastewater treatment systems do not dewater wastewater treatment sludge. Storage, transportation, and disposal of greater volumes of un-dewatered sludge that would be generated after implementing the TEC industry regulatory options is less cost-effective than dewatering sludge on site and disposing of the greatly reduced volume of resulting filter cake. However, in estimating costs for today's proposal, EPA has included the costs for TEC facilities to install sludge dewatering equipment to handle increases in sludge generation. For these reasons, EPA estimates net decreases in the volume of wet sludge generated by the industry and net increases in the volume of dry sludge generated by the industry.

EPA estimates that the proposed rule will result in a decrease in wet sludge generation of approximately 17 million gallons per year, which represents an estimated 90 percent decrease from current wet sludge generation. In addition, EPA estimates that the proposed rule will result in an increase in dewatered sludge generation of approximately 33 thousand cubic yards per year, which represents an estimated 170 percent increase from current dewatered sludge generation.

Compliance cost estimates for the TEC industry regulatory options are based on disposal of wastewater treatment sludge in nonhazardous waste landfills. EPA sampling of sludge using the Toxicity Characteristic Leaching Procedure (TCLP) test verified the sludge as non-hazardous. Such landfills are subject to RCRA Subtitle D standards found in 40 CFR parts 257 or 258.

The Agency concludes that the effluent benefits and the reductions in wet sludge generation from the proposed technology options exceed the potential adverse effects from the estimated increase in wastewater treatment sludge generation.

2. Waste Oil

EPA estimates that compliance with the proposed regulation will result in an increase in waste oil generation at TEC sites based on removal of oil from wastewater via oil/water separation. EPA estimates that this increase in waste oil generation will be approximately 1.5 million gallons per year, which represents an estimated 122 percent increase from current waste oil generation. EPA assumes, based on responses to the detailed questionnaire, that waste oil disposal will be via oil reclamation or fuels blending on or off site. Therefore, the Agency does not estimate any adverse effects from increased waste oil generation.

3. Spent Activated Carbon

Spent activated carbon is generated by the following regulatory options:

- Truck/Chemical Subcategory—BPT Option II.
- Truck/Chemical Subcategory—PSES Option II.
- Rail/Chemical Subcategory—BPT Option III.
- Rail/Chemical Subcategory—PSES Option III.
- Truck/Petroleum Subcategory—PSES Option II.
- Rail/Petroleum Subcategory—PSES Option II.

Treatment of TEC wastewater via these technology options will generate 8,470 tons annually of spent activated carbon. EPA assumes that the spent activated carbon will be sent off site for regeneration rather than disposed of as a waste. Possible air emissions during regeneration are minimal. Therefore, the Agency does not estimate any adverse effects from activated carbon treatment technologies.

4. Spent Organo-Clay

Spent organo-clay is generated by the following options:

- Rail/Chemical Subcategory—BPT Option III.
- Rail/Chemical Subcategory—PSES Option III.

Treatment of TEC wastewater via these technology options will generate 118 tons annually of spent organo-clay. EPA assumes that the spent organo-clay will be disposed as a non-hazardous waste. The Agency concludes that the effluent benefits from the proposed technology options exceed any potential adverse effects from the generation and disposal of spent organo-clay.

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

A. Summary of Public Participation

During all phases of developing the proposed rule, EPA sought to maintain communications with the regulated community and other interested parties. The Agency met with representatives from the industry, the National Tank Truck Carriers (NTTC), the Railway Progress Institute, and the National Shipyard Association (formerly the American Waterways Shipyard Conference). In addition, NTTC and the National Shipyard Association set up the earliest site visits for EPA staff at TECI facilities. All three trade associations provided comments and suggestions on the industry screener and detailed questionnaires prior to distribution to the industry. EPA also attended six NTTC conferences in between 1994 and 1997 to provide information on the progress of the rule to the industry, to provide assistance to the industry in completing the detailed questionnaire, and to obtain information related to industry trends.

Because most (approximately 95 percent) of the facilities in the TECI are indirect dischargers, the Agency has made a concerted effort to consult with State and local entities that will be responsible for implementing the regulation. EPA has spoken with pretreatment coordinators from around the nation and discussed the technology options with these pretreatment coordinators.

In addition, on May 8, 1997, EPA sponsored a public meeting, where the Agency presented information about the content and the status of the proposed regulation. The meeting was announced in the **Federal Register**, and agendas and meeting materials were distributed at the meeting. The public meeting also gave interested parties an opportunity to provide information, data, and ideas on key issues to the Agency. EPA's intent in conducting the public meeting was to elicit input that would improve the quality of the proposed regulation. At the public meeting the Agency clarified that the public meeting would not replace the notice and comment process, nor would the meeting become a mechanism for a negotiated rulemaking. While EPA promised to accept information and data at the meeting and make good faith efforts to review all information and address all issues discussed at the meeting, EPA could not commit to fully assessing and incorporating all comments into the proposal. EPA will assess all comments and data received at the public meeting prior to promulgation.

B. Regulatory Flexibility Act and 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 conduct an initial regulatory flexibility analysis (IRFA) describing the impact of the proposed rule on small entities. 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 substantial number of small entities. Accordingly, EPA prepared an IRFA pursuant to section 603(b) of the RFA addressing:

- The need for, objectives of, and legal basis for the rule;
- A description of, and where feasible, an estimate of the number of small entities to which the rule would apply;
- The projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities that would be subject to the requirements and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule;
- A description of any significant regulatory alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of the CWA, the analysis discusses significant alternatives such as—

(1) Establishing differing compliance or reporting requirements or timetables that take into account the resources available to small entities;

(2) Clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;

(3) The use of performance rather than design standards; and

(4) An exclusion from coverage of the rule, or any part thereof, for such small entities.

The IRFA is presented in Chapter VI of the EA and summarized in Section X.C.4 of this notice. EPA's analysis indicates that no small businesses would close as a result of the proposed effluent guideline. Using two sets of assumptions related to the ability of a business to pass the additional costs to customers, EPA projects that either 75 or 50 small businesses would incur costs exceeding one percent of revenues and 64 or 17 small businesses would incur costs exceeding three percent of revenues. Based on the data presented in the IRFA, EPA now believes that the proposal, if promulgated, may not have a significant economic impact on a substantial number of small entities. Consequently, there is a possibility, after evaluation of comments and data received in response to today's proposal, that the Agency may not be required to prepare a final regulatory flexibility analysis.

Nonetheless, EPA convened a Small Business Advocacy Review (SBAR) Panel on July 17, 1997, in compliance with the RFA, as amended by SBREFA. The Panel was comprised of representatives from three federal agencies: EPA, the Small Business Administration, and the Office of Management and Budget. The Panel reviewed materials EPA prepared in connection with the IRFA, and collected the advice and recommendations of small entity representatives. For this proposed rule, the small entity representatives included trade association officials from the National Tank Truck Carriers, Railway Progress Institute, Short Line Railroad Association, National Shipyard Association, The Association of Container Reconditioners and National Oil Recovery Association. The Panel prepared a report (available in the public docket for this rulemaking) that summarizes its outreach to small entities and the comments submitted by the small entity representatives. The Panel's report also presents their findings on issues related to the elements of an IRFA and recommendations regarding the rulemaking.

In addition to the activities discussed in XIII.A, EPA and the other members of the Panel sought to gather small business advice and recommendations by meeting and consulting with the small entity representatives listed above. On July 2, 1997, EPA convened a meeting for the small entity representatives to describe EPA's regulatory process and alternative technology options for the TEC effluent guideline. While the Panel was in session, they met with the small entity representatives, provided more than 200 pages of analysis results and background information to the small entity representatives, and carefully reviewed the written comments submitted by the small entity representatives.

Some of the key issues discussed by the Panel and the small entity representatives were potential exclusions for small businesses. EPA, through extensive analysis and documentation for the Panel members and the small entity representatives, supported this effort to identify regulatory alternatives that would minimize the economic impacts on small businesses while preserving the environmental benefits associated with the treatment technologies. EPA evaluated alternative breakpoints in four variables (flow, employment, annual revenue, and number of tanks cleaned) to determine possible exclusions for small entities. For numerous potential exclusion scenarios, EPA provided comparisons of financial characteristics, economic impacts, and pollutant loadings. The Agency also provided background information on the engineering models, compliance cost calculations, pollutant loadings estimations, financial models, and economic impact methodologies. Thus, EPA provided to the Panel and the small entity representatives a thorough description of the data and techniques, thereby facilitating the Panel's task to prepare and submit recommendations to EPA's Administrator.

Throughout this notice the Agency has discussed issues raised by the Panel and the small entity representatives, and has attempted to address the recommendations made to EPA's Administrator. Specifically, as recommended by the Panel, EPA has solicited data and comment on the following: the population of affected facilities; the cost models and assumptions; alternative treatment technologies not considered by EPA; the subcategorization approach, and specifically on an alternative regulatory approach that would establish a separate subcategory for any facility which accepts tanks containing pesticide-containing cargos; the cost-effectiveness of removing non-pesticide chemicals, and information on the impacts to receiving streams and POTWs by non-pesticide pollutants; approaches for minimizing the regulatory impacts for small facilities; pollutant loads associated with IBC cleaning wastewater; the economic methodologies and assumptions; and the burdens associated with compliance of the Clean Air Act for barge facilities.

Additionally, as recommended by the Panel, EPA has included a clear discussion on the following: the monitoring frequency used in determining limits and associated costs of compliance; a discussion of the costs, impacts, and the technology options considered for proposal; and the reasons for the apparent discrepancy in the levels of treatment technology proposed for the Truck/Chemical Subcategory and the Rail/Chemical Subcategory. Additionally, EPA has clearly described its intention for coverage for those facilities potentially affected by more than one Clean Water Act effluent guideline, and has documented all cost models, costing assumptions, and cost projections in the Technical Development Document and the regulatory record.

There are several instances where the Agency has re-evaluated earlier thinking based on comments received from the Panel and the small entity representatives. At times, the Panel produced supporting data which was used to re-evaluate certain aspects of what EPA intended to propose. For example, after small entity representatives provided the Agency with additional information on the cleaning of IBCs, the Agency decided not to include facilities which clean IBCs within the scope of this proposed rule. In other instances, where the Agency has received comments from a Panel member or a small entity representative, but has not received data that would support changing the scope of the proposal or requirements contained therein, EPA has identified these areas of concern in today's notice and has solicited comment from the regulated community, permit writers, POTW operators and other stakeholders.

C. Executive Order 12866 (OMB Review)

Under Executive Order 12866, (58 FR 51735 (October 4, 1993)) the Agency must determine whether the regulatory action is ''significant'' and therefore subject to 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; or

(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 rule 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.

D. Unfunded Mandates Reform Act (UMRA)

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. 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 with the final rule an explanation 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 this proposed rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local or tribal governments, in the aggregate, or the private sector in any one year. The total cost of the rule is not expected to exceed $23 million (1997$) in any given year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments and thus this rule is not subject to the requirement of section 203 of UMRA. EPA recognizes that small governments may own or operate POTWs that will need to enter into pretreatment agreements with the indirect dischargers of the TEC industry that would be subject to this proposed rule. However, the costs of this are expected to be minimal. Additionally, the additional requirements of today's proposal are not unique because POTWs must enter into pretreatment agreements for all significant industrial users and all industrial facilities regulated under categorical standards of the Clean Water Act.

E. Paperwork Reduction Act

The proposed transportation equipment cleaning effluent guidelines and pretreatment standards contain no information collection activities and, therefore, no information collection request will be submitted to OMB for review under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

F. National Technology Transfer and Advancement Act

Under section 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 standard 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, an explanation of the reasons for not using such standards.

EPA is not proposing any new analytical test methods as part of today's proposed effluent limitations guidelines and standards. The Agency does not believe that this proposed rule addresses any technical standards subject to the NTAA. A commenter who disagrees with this conclusion should indicate how the notice is subject the Act and identify any potentially applicable voluntary consensus standards.

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 TEC process wastewater containing residual and dilute quantities of petroleum and non-petroleum oils is significantly different than an uncontrolled spill of pure petroleum or non-petroleum oil products.

EPA has grouped facilities which clean transportation equipment that carry vegetable oils or animal fats as cargos into separate subcategories (food) from those facilities that clean equipment that had carried petroleum products for the following reasons.

First, food grade and petroleum facilities operate different tank interior cleaning processes and unique water use practices. Food grade cleaning processes are typically performed using computer operated and controlled dedicated stainless steel washing systems which regulate flow rate, pressure, temperature, and cleaning sequence duration. Final water rinses

are performed using fresh rather than recycled water. In contrast, petroleum facilities comprise approximately 70 percent of all facilities that practice 100 percent recycle/reuse of TEC process wastewater to TEC processes. In addition, 43 percent of food grade facilities use chemical cleaning solutions such as caustic or detergent as compared to only four percent of petroleum facilities.

Second, food grade and petroleum facilities generate TEC wastewater with different characteristics. Both petroleum and non-petroleum oils are comprised of hydrocarbon mixtures. However, petroleum oils contain alkanes, cycloalkanes, and aromatic hydrocarbons of which many are included in EPA's list of priority pollutants. In contrast, vegetable oils and animal fats contain esters of glycerol and fatty acids which are not included in EPA's list of priority pollutants and are relatively non-toxic in dilute concentrations. In addition, food grade facilities generate from 4 to 14 times more wastewater per tank cleaning on average than petroleum facilities. These differences in cargo composition, together with differences in cleaning processes and water use, result in the generation of TEC wastewater which differs significantly in volume, pollutants generated, and pollutant concentration.

In spite of the relatively high toxicity of TEC wastewater generated by petroleum facilities as compared to food grade facilities, less than one percent of the tanks cleaned in the TECI are petroleum tanks cleaned by direct dischargers. Additionally, less than one percent of wastewater generated by the TECI is generated by direct dischargers cleaning petroleum tanks. Because very few pounds of toxic pollutants are being discharged by facilities in the Truck/Petroleum and Rail/Petroleum Subcategories, EPA preliminarily concluded that no nationally applicable limitations should be established for these subcategories.

H. 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 likely to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns environmental health or safety risk that the Agency has reason to believe may have a disproportionate effect on children. If a 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, ''Protection of Children from Environmental Health Risks and Safety Risks'' because this is not an ''economically significant'' regulatory action as defined by E.O. 12866, and because it does not involve decisions on environmental health or safety risks that may disproportionately affect children.

XIV. Regulatory Implementation

A. Applicability

Today's proposal represents EPA's best judgment at this time as to the appropriate technology-based effluent limits for the TEC industry. These effluent limitations and standards, however, may change based on comments received on this proposal, and subsequent data submitted by commentors or developed by the Agency. Therefore, while the information provided in the Technical Development Documents may provide useful information and guidance to permit writers in determining best professional judgment permit limits for TEC facilities, 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 are set forth at 40 CFR 122.41(m) and (n).

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. Moreover, 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 toxic, conventional and non-conventional pollutants.

1. Fundamentally Different Factors Variances

EPA may develop 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 limitation or standards applicable to the individual facility. Such a modification is known as a ''fundamentally different factors'' (FDF) variance.

Early on, EPA, by regulation, provided for FDF modifications from BPT effluent limitations, BAT limitations for priority toxic and non-conventional pollutants and BCT limitation for conventional pollutants for direct dischargers. For indirect dischargers, EPA provided for FDF modifications from pretreatment standards for existing facilities. FDF variances for priority toxic 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 standard. 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 (e.g., 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 EPA in developing the nationally applicable effluent guidelines. The regulation also lists four other factors (e.g., 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.

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 EPA in establishing the applicable guidelines. The pretreatment regulation incorporate a similar requirement at 40 CFR 403.13(h)(9).

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 modification of a permit be made. 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 modifications 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 dischargers. 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.

The following discussion provides a description of the existing removal credit regulations. However, EPA is considering proposing a rule which would expand the universe of pollutants for which removal credits may be authorized. Under EPA's existing 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)). Thus, given compliance with the requirements of EPA's removal credit regulations,[2] 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, iron, lead, mercury, molybdenum, nickel, selenium and zinc. Given compliance with Section 403.7, removal credits may be available for the following organic pollutants (depending on the method of use or disposal) if the POTW uses or disposes of its sewage sludge: benzene, 1,1-dichloroethane, 1,2-dibromoethane, ethylbenzene, methylene chloride, toluene, tetrachloroethene, 1,1,1-trichloroethane, 1,1,2-trichloroethane and trans-1,2-dichloroethene.

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) and 405 of the CWA, EPA may authorize removal credits only when EPA determines that, if removal credits are authorized, that the increased discharges of a pollutant to POTWs resulting from removal credits will not affect POTW sewage sludge use or disposal adversely. As discussed in the preamble to amendments to Part 403 regulations (58 FR 9382–9383), 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 (1) for which EPA have established a numerical pollutant limit in Part 503; or (2) which EPA has determined will not threaten human health and the environment when used or disposed in sewage sludge. The pollutants described in paragraphs (1)–(3) above include all

[2] Under § 403.7, a POTW is authorized to give removal credits only under certain conditions. These include applying for, and obtaining, approval from the Regional Administrator (or Director of a State NPDES program with an approved pretreatment program), a showing of consistent pollutant removal and an approved pretreatment program. *See* 40 CFR 403.7(a)(3)(i), (ii), and (iii).

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 is considering a proposal amending 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. These changes would provide POTWs and their industrial users with additional opportunities to use removal credits to efficiently allocate treatment.

The proposal would address 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 to NPDES Permits and Monitoring Requirements

Effluent limitations 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 issued by EPA or authorized States under Section 402 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 may elect to establish technology-based permit 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 on covered pollutants) the permitting authority must apply those limitations.

Working in conjunction with the effluent limitations are the monitoring conditions set out in a NPDES 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 ensure compliance. Authority to address internal waste streams is provided in 40 CFR 122.44(i)(1)(iii) and 122.45(h). Permit writers may establish additional internal monitoring points to the extent consistent with EPA's regulations.

Another important component of the monitoring requirements established by the permitting authority is the frequency at which monitoring is required. In costing the various technology options for the TEC industry, EPA assumed monthly monitoring for toxic priority and nonconventional pollutants and weekly monitoring for conventional pollutants. For this reason, the proposed daily and monthly limitations for toxic priority and nonconventional pollutants are the same. These monitoring frequencies may be lower than those generally imposed by some permitting authorities, but EPA believes these reduced frequencies are appropriate due to the relative costs of monitoring when compared to the estimated costs of complying with the proposed limitations. This issue was also discussed by the Small Business Advocacy Panel. In the Panel report, EPA indicated its intention to issue guidance to local permitting authorities recommending that they use the reduced monitoring frequencies when issuing permits to facilities in this industry and explaining the rationale for the recommended frequencies.

E. Best Management Practices (BMPs)

Section 304(e) of the Act authorizes the Administrator to prescribe ''best management practices'' (BMPs). EPA may develop BMPs that apply to all industrial sites or to a designated industrial category and may offer guidance to permit authorities in establishing management practices required by unique circumstances at a given plant. Dikes, curbs, and other control measures are being used at some TEC sites to contain leaks and spills as part of good ''housekeeping'' practices. However, on a facility-by-facility basis a permit writer may choose to incorporate BMPs into the permit.

XV. 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.

To ensure that EPA can read, understand and therefore properly respond to comments, the Agency would prefer that commenters cite, where possible the paragraph(s) or sections in the notice or supporting documents to which each comment refers. Commenters should use a separate paragraph for each issue discussed. Please submit an original and two 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. Comments and data will also be accepted on disks in WordPerfect format or ASCII file format.

Comments may also be filed electronically to ''Tinger.John@epamail.epa.gov''. Electronic comments must be submitted as an ASCII or Wordperfect file avoiding the use of special characters and any form of encryption. Electronic comments must be identified by the docket number W–97–25 and may be filed online at many Federal Depository Libraries. No confidential business information (CBI) should be sent via e-mail.

B. Specific Data and Comment Solicitations

EPA has solicited comments and data on many individual topics throughout this preamble. The Agency incorporates

each and every such solicitation here, and reiterates its interest in receiving data and comments on the issues addressed by those solicitations. In addition, EPA particularly requests comments and data on the following issues:

1. EPA is soliciting comment and data on the pollutant loads associated with IBC cleaning wastewater, and on the initial decision not to include IBC wastewater within the scope of this guideline. (Refer to Section III)

2. EPA is soliciting comment from any industrial site which has the potential to be covered by TEC and MP&M but is uncertain as to their appropriate classification. EPA is also soliciting comment from permitting authorities as to whether the approach outlined above will result in easier, or more difficult, implementation of the TEC and MP&M regulations, and on alternative applicability approaches. (Refer to Section III)

3. The Agency solicits comment and sources of data which may provide additional information on the population of affected facilities. (Refer to Section V)

4. EPA solicits comment on the appropriateness of the proposed subcategorization approach which addresses the complexities inherent in this industry, and on other subcategorization approaches which may be appropriate. (Refer to Sections III and VI)

5. The Agency solicits comment from permitting authorities and affected facilities on implementation and applicability issues surrounding the proposed subcategorization approach. (Refer to Sections III and VI)

6. EPA solicits comment on the difficulty of defining petroleum and chemical products from a regulatory standpoint. (Refer to Sections III and VI)

7. The Agency is soliciting comment and data on the preliminary conclusion that the Truck/Chemical and Truck/Petroleum Subcategories; and Rail/Chemical and Rail/Petroleum Subcategories, should not be combined. (Refer to Sections III and VI)

8. EPA is soliciting comment and data on an alternative subcategorization approach that would combine the petroleum and chemical subcategories. (Refer to Sections III and VI)

9. The Agency solicits comment on an alternative regulatory approach that would establish a subcategory for any facility which accepts tanks containing pesticide-containing cargos for cleaning, and on the cost-effectiveness of removing non-pesticide chemicals, and information on the impacts to receiving streams and POTWs by these pollutants. (Refer to Section VI)

10. EPA solicits comment on the hierarchy of applicability that EPA is proposing as the basis for subcategorization. (Refer to Section VI)

11. The Agency solicits comment on alternative treatment technologies not considered by EPA which may attain similar treatment removal efficiencies but that may be less expensive to install and operate. (Refer to Section VIII.B)

12. The Agency solicits data which can either substantiate or refute its tentative conclusions regarding raw wastewater from Truck/Petroleum and Rail/Petroleum Subcategories, and also any data which characterizes pollutants present in wastewaters from these facilities. EPA solicits data and comments which may support or refute the Agency's conclusion that wastewater generated in the petroleum subcategories does not contain significant toxic loadings. (Refer to Sections III and VIII.B)

13. The Agency solicits data which can either substantiate or refute its tentative conclusions regarding raw wastewater from hopper facilities, and also any data which characterizes pollutants present in wastewaters from these facilities. EPA solicits comments on the appropriateness of not regulating hopper facilities. EPA also solicits data on pollutant levels in wastewater from hopper facilities. (Refer to Sections III and VIII.B)

14. The Agency solicits comment on the cost and effectiveness of flow reduction and oil/water separation as an option for indirect dischargers in the Truck/Chemical Subcategory.

15. For PSNS in the Barge/Chemical & Petroleum Subcategory, EPA is soliciting comment on the technology selected as the basis for regulation. Specifically, EPA solicits comments and data which would support or refute the assumption that a POTW may accept effluent, without causing pass-through or interference, that has not been treated biologically.(Refer to Section VIII.B)

16. EPA solicits comments on the appropriateness of the pollutants selected for regulation, including the decision to establish effluent limitations for metals using modeled treatment systems not specifically designed for metals control. The Agency also solicits data which will support or refute the ability of TEC facilities to meet the proposed effluent limitations using the modeled treatment systems. (Refer to Section VIII.C)

17. The Agency solicits comments on the cost models and the assumptions used to project the cost of compliance to the industry as a result of today's proposed regulation. (Refer to Section IX)

18. EPA solicits comment on the economic methodologies described in today's proposal. In particular, the Agency requests comment on the assumptions used in the analyses. (Refer to Section X)

19. The Agency solicits information available that could be useful to determining an approach for minimizing the regulatory impacts for small facilities. (Refer to Sections III, X, and XIII.A)

20. EPA solicits comments on changes in the economic/financial condition of facilities in the Barge/Chemical & Petroleum Subcategory affected by the Clean Air Act National Emission Standards for Ship Building and Ship Repair (Surface Coating) promulgated in 1995. (Refer to Section X.C)

XVI. Guidelines for Comment Submission of Analytical Data

EPA requests that commentors to today's proposed rule submit analytical, flow, and production data to supplement data collected by the Agency during the regulatory development process. To ensure that commentor data may be effectively evaluated by the Agency, EPA has developed the following guidelines for submission of data.

A. Types of Data Requested

EPA requests paired influent and effluent treatment data for each of the technologies identified in the technology options, as well as any additional technologies applicable to the treatment of TEC waste waters. This includes end-of-pipe treatment technologies, heel management practices, and water conservation technologies. Submission of effluent data only is not sufficient for full analysis; the corresponding influent data must be provided.

For submissions of paired influent and effluent treatment data, a minimum of four days of data are required for EPA to assess variability. Submissions of paired influent and effluent treatment data should include: a process diagram of the treatment system; treatment chemical addition rates; sampling point locations; sample collection dates; influent and effluent flow rates for each treatment unit during the sampling period; sludge or waste oil generation rates; a brief discussion of the treatment technology sampled; and a list of unit operations contributing to the sampled wastestream. EPA requests data for systems that are treating only process waste water. Systems treating non-process waste water (e.g., sanitary waste

water or non-contact cooling water) will not be evaluated by EPA. If available, information on capital cost, annual (operation and maintenance) cost, and treatment capacity should be included for each treatment unit within the system.

B. Analytes Requested

EPA considered for regulation under the TEC category 330 metal, organic, conventional, and other nonconventional pollutant parameters detected in TEC process wastewater. Based on analytical data collected by the Agency, 180 pollutant parameters were identified as TEC ''pollutants of concern''. Complete lists of pollutant parameters considered for regulation and pollutants of concern (as well as the criteria used to identify each of these pollutant parameters) are available in the Technical Development Document for this proposal. The Agency requests analytical data for any of the pollutants of concern and for any other pollutant parameters which commentors believe are of concern in the TEC industry. Commentors should use these methods or equivalent methods for analyses, and should document the method used for all data submissions.

C. Quality Assurance/ Quality Control (QA/QC) Requirements

Today's proposed regulations were based on analytical data collected by EPA using rigorous QA/QC checks. These QA/QC checks include procedures specified in each of the analytical methods, as well as procedures used for the TEC sampling program in accordance with EPA sampling and analysis protocols. The Agency requests that submissions of analytical data include documentation that QA/QC procedures similar to those listed below were observed.

EPA followed the QA/QC procedures specified in the analytical methods listed in Table 10. These QA/QC procedures include sample preservation and the use of method blanks, matrix spikes, matrix spike duplicates, laboratory duplicate samples, and Q standard checks (e.g., continuing calibration blanks). EPA requests that sites provide detection limits for all non-detected pollutants. EPA also requests that composite samples be collected for all flowing waste water streams (except for analyses requiring grab samples, such as oil and grease), sites collect and analyze 10% field duplicate samples to assess sampling variability, and sites provide data for equipment blanks for volatile organic pollutants when automatic compositors are used to collect samples.

TABLE 10.—EPA ANALYTICAL METHODS FOR USE WITH TEC

Parameter	EPA method	Sample type
Metals	1620	Composite/Grab.
Volatile Organics	1624C	Grab.
Semivolatile Organics	1625C	Composite/Grab.
pH	150.1	Composite/Grab.
Total Dissolved Solids (TDS)	160.1	Composite/Grab.
Total Suspended Solids (TSS)	160.2	Composite/Grab.
Chloride, Fluoride, and Sulfate	300.0, 325.2 or 325.3, 340.2, and 375.4	Composite/Grab.
Cyanide, Total	335.3	Grab.
Nitrogen, Ammonia	350.2	Composite/Grab.
Phosphorus, Total	365.4	Composite/Grab.
Chemical Oxygen Demand	410.1 or 410.2	Composite/Grab.
Hexavalent Chromium	218.4	Composite/Grab.
Biochemical Oxygen Demand	405.1	Composite/Grab.
Total Organic Carbon	415.1	Composite/Grab.
Dioxins and Furans	1613A	Composite/Grab.
Organo-Halide Pesticides	1656	Composite/Grab.
Organo-Phosphorus Pesticides	1657	Composite/Grab.
Phenolics, Total Recoverable	420.1 or 420.2	Composite/Grab.
Phenoxy-Acid Herbicides	1658	Composite/Grab.
Oil and Grease and Total Petroleum Hydrocarbons (Hexane Extractable Materials and Silica Gel Treated Hexane Extractable Materials).	1664	Grab.

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

AGENCY—The U.S. Environmental Protection Agency.

BAT—The best available technology economically achievable, as described in Sec. 304(b)(2) of the CWA.

BCT—The best conventional pollutant control technology, as described in Sec. 304(b)(4) of the CWA.

BOD_5—Five Day Biochemical Oxygen Demand. A measure of biochemical decomposition of organic matter in a water sample. It is determined by measuring the dissolved oxygen consumed by microorganisms to oxidize the organic matter in a water sample under standard laboratory conditions of five days and 70° C, see Method 405.1. BOD_5 is not related to the oxygen requirements in chemical combustion.

BMP—Best Management Practice—Section 304(e) of the CWA gives the Administrator the authority to publish regulations to control plant site runoff, spills, or leaks, sludge or waste disposal, and drainage from raw material storage.

BPT—The best practicable control technology currently available, as described in Sec. 304(b)(1) of the CWA.

CARGO—Any chemical, material, or substance transported in a tank truck, closed-top hopper truck, intermodal tank container, rail tank car, closed-top hopper rail car, inland tank barge, closed-top inland hopper barge, ocean/sea tanker, or a similar tank that comes in direct contact with the chemical, material, or substance. A cargo may also be referred to as a commodity.

CLOSED-TOP HOPPER BARGE—A self-or non-self-propelled vessel constructed or adapted primarily to carry dry commodities or cargos in bulk through inland rivers and waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. Closed-top inland hopper barges are not designed to carry liquid commodities or cargos and are typically used to transport corn, wheat, soy beans, oats, soy meal, animal pellets, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. The basic types of tops on closed-top inland hopper barges are telescoping rolls, steel lift covers, and fiberglass lift covers.

CLOSED-TOP HOPPER RAIL CAR—A completely enclosed storage vessel pulled by a locomotive that is used to transport dry bulk commodities or cargos over railway access lines. Closed-top hopper rail cars are not designed or contracted to carry liquid commodities or cargos and are typically used to transport grain, soybeans, soy meal, soda

ash, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. Closed-top hopper rail cars are typically divided into three compartments, carry the same commodity or cargo in each compartment, and are generally top loaded and bottom unloaded. The hatch covers on closed-top hopper rail cars are typically longitudinal hatch covers or round manhole covers.

CLOSED-TOP HOPPER TRUCK—A motor-driven vehicle with a completely enclosed storage vessel used to transport dry bulk commodities or cargos over roads and highways. Closed-top hopper trucks are not designed or constructed to carry liquid commodities or cargos and are typically used to transport grain, soybeans, soy meal, soda ash, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. Closed-top hopper trucks are typically divided into three compartments, carry the same commodity or cargo in each compartment, and are generally top loaded and bottom unloaded. The hatch covers used on closed-top hopper trucks are typically longitudinal hatch covers or round manhole covers. Closed-top hopper trucks are also commonly referred to as dry bulk hoppers.

COD—Chemical oxygen demand—A bulk parameter that measures the oxygen-consuming capacity of refractory organic and inorganic matter present in water or wastewater. COD is expressed as the amount of oxygen consumed from a chemical oxidant in a specific test, see Method 410.1.

COMMODITY—Any chemical, material, or substance transported in a tank truck, closed-top hopper truck, intermediate bulk container, rail tank car, closed-top hopper rail car, inland tank barge, closed-top inland hopper barge, ocean/sea tanker, or similar tank that comes in direct contact with the chemical, material, or substance. A commodity may also be referred to as a cargo.

CONSIGNEE—Customer or agent to whom commodities or cargos are delivered.

CONVENTIONAL POLLUTANTS—The pollutants identified in Sec. 304(a)(4) of the CWA and the regulations thereunder (biochemical oxygen demand (BOD_5), total suspended solids (TSS), oil and grease, fecal coliform, and pH).

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

CWT—Centralized Waste Treaters Effluent Guideline.

DIRECT DISCHARGE—A facility that conveys or may convey untreated or facility-treated process wastewater or nonprocess wastewater directly into waters of the United States, such as rivers, lakes, or oceans. (See United States Surface Waters definition.)

DISCHARGE—The conveyance of wastewater: (1) to United States surface waters such as rivers, lakes, and oceans, or (2) to a publicly-owned, privately-owned, federally-owned, combined, or other treatment works.

DRUM—A metal or plastic cylindrical container with either an open-head or a tight-head (also known as bung-type top) used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. Drums typically range in capacity from 30 to 55 gallons.

EFFLUENT—Wastewater discharges.

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).)

FACILITY-SPECIFIC LONG-TERM AVERAGE—Either an arithmetic average or the expected value of the distribution of daily samples, depending on the number of total samples and the number of detected samples for that pollutant at that facility.

FACILITY-SPECIFIC MONTHLY VARIABILITY FACTOR—The ratio of the estimated 95th percentile of the distribution of the monthly pollutant concentration values divided by the expected value of the distribution of monthly values.

FACILITY-SPECIFIC VARIABILITY FACTOR—The ratio of the estimated 99th percentile of the distribution of the daily pollutant concentration values divided by the expected value of the distribution of daily values.

FDF—FUNDAMENTALLY DIFFERENT FACTOR—Section 301(n) of the Water Quality Act of 1987. This section authorizes 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 at 40 CFR 403.13.

FOOD GRADE CARGO—Food grade cargos include edible and non-edible food products. Specific examples of food grade products include but are not limited to: alcoholic beverages, animal by-products, animal fats, animal oils, caramel, caramel coloring, chocolate, corn syrup and other corn products, dairy products, dietary supplements, eggs, flavorings, food preservatives, food products that are not suitable for human consumption, fruit juices, honey, lard, molasses, non-alcoholic beverages, salt, sugars, sweeteners, tallow, vegetable oils, vinegar, and water.

FRACTION-LEVEL VARIABILITY FACTOR—The median of group-level variability factors for the groups within each fraction.

GROUP-LEVEL VARIABILITY FACTOR—The median of all calculable pollutant variability factors for the pollutants within each group.

HEEL—Any material remaining in a tank or container following unloading, delivery, or discharge of the transported cargo. Heels may also be referred to as container residue, residual materials or residuals.

HEXANE EXTRACTABLE MATERIAL (HEM)—A method-defined parameter that measures the presence of relatively nonvolatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases, and related materials that are extractable in the solvent n-hexane. The analytical method for Oil and Grease is currently being revised to allow for the use of normal hexane in place of freon 113, a chlorofluorocarbon (CFC). Method 1664 (Hexane Extractable Material) will replace the current Oil and Grease Method 413.1 found in 40 CFR 136.

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

INLAND TANK BARGE—A self-or non-self-propelled vessel constructed or adapted primarily to carry commodities or cargos in bulk in cargo spaces (or tanks) through rivers and inland waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. The commodities or cargos transported are in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

INTERMEDIATE BULK CONTAINER (IBC OR TOTE)—A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the tank interior. Intermediate bulk containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. IBCs are portable containers with 450 liters (119 gallons) to 3000 liters (793 gallons) capacity. IBCs are also commonly referred to as totes or tote bins.

INTERMODAL TANK CONTAINER—A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the tank interior. Intermodal tank containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. Containers larger than 3000 liters capacity are considered intermodal tank containers. Containers smaller than 3000 liters capacity are considered IBCs.

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.

MONTHLY AVERAGE 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.

NEW SOURCE—''New source'' is defined at 40 CFR 122.2 and 122.29(b).

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

NON-DETECT VALUE—A concentration-based measurement reported below the sample specific detection limit that can reliably be measured by the analytical method for the pollutant.

NONPROCESS WASTEWATER—Wastewater that is not generated from industrial processes or that does not come into contact with process wastewater. Nonprocess wastewater includes, but is not limited to, wastewater generated from restrooms, cafeterias, and showers.

NPDES—The National Pollutant Discharge Elimination System authorized under Sec. 402 of the CWA. NPDES requires permits for discharge of pollutants from any point source into waters of the United States.

NSPS—New Source Performance Standards.

OCEAN/SEA TANKER—A self-or non-self-propelled vessel constructed or adapted to transport commodities or cargos in bulk in cargo spaces (or tanks) through oceans and seas, where the commodity or cargo carried comes in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

OCPSF—Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Effluent Guideline, see 40 CFR part 414.

OFF SITE—''Off site'' means outside the bounds of the facility.

OIL AND GREASE—A method-defined parameter that measures the presence of relatively nonvolatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases, and related materials that are extractable in Freon 113 (1,1,2-tricholoro-1,2,2-trifluoroethane). The analytical method for Oil and Grease and Total Petroleum Hydrocarbons (TPH) is currently being revised to allow for the use of normal hexane in place of freon 113, a chlorofluorocarbon (CFC). Method 1664 (Hexane Extractable Material) will replace the current Oil and Grease Method 413.1 found in 40 CFR part 136. In anticipation of promulgation of method 1664, data collected by EPA in support of the TECI effluent guideline utilized method 1664. Therefore, all effluent limitations proposed for Oil and Grease and TPH in this effluent guideline are to be measured by Method 1664.

ON SITE—''On-site'' means within the bounds of the facility.

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

PETROLEUM CARGO—Petroleum cargos include the products of the fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other refining processes. For purposes of this rule, petroleum cargos also include products obtained from the refining or processing of natural gas and coal. For purposes of this rule, specific examples of petroleum products include but are not limited to: asphalt; benzene; coal tar; crude oil; cutting oil; ethyl benzene; diesel fuel; fuel additives; fuel oils; gasoline; greases; heavy, medium, and light oils; hydraulic fluids, jet fuel; kerosene; liquid petroleum gases (LPG) including butane and propane; lubrication oils; mineral spirits; naphtha; olefin, paraffin, and other waxes; tall oil; tar; toluene; xylene; and waste oil.

POLLUTANTS EFFECTIVELY REMOVED—Non-pesticide/herbicide pollutants that meet the following criteria are considered effectively removed: detected two or more times in the subcategory influent, an average subcategory influent concentration greater than or equal to five times their analytical method detection limit, and a removal rate of 50 percent or greater by the treatment technology option. Pesticide/herbicide pollutants that meet the following criteria are considered effectively removed: detected in the subcategory influent one or more times at a concentration above the analytical method detection limit, and a removal rate of greater than zero by the treatment technology option. All pollutants effectively removed were used in the environmental assessment and cost effectiveness analyses.

POTW—Publicly-owned treatment works, as defined at 40 CFR 403.3(o).

PRERINSE—Within a TEC cleaning process, a rinse, typically with hot or cold water, performed at the beginning of the cleaning sequence to remove residual material from the tank interior.

PRESOLVE WASH—Use of diesel, kerosene, gasoline, or any other type of fuel or solvent as a tank interior cleaning solution.

PRETREATMENT STANDARD—A regulation that establishes industrial wastewater effluent quality required for discharge to a POTW. (CWA Section 307(b).)

PRIORITY POLLUTANTS—The pollutants designated by EPA as priority in 40 CFR part 423, Appendix A.

PROCESS WASTEWATER—''Process wastewater'' is defined at 40 CFR 122.2.

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) and (c) of the CWA.

RAIL TANK CAR—A completely enclosed storage vessel pulled by a locomotive that is used to transport liquid, solid, or gaseous commodities or cargos over railway access lines. A rail tank car storage vessel may have one or more storage compartments and the stored commodities or cargos come in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

RCRA—Resource Conservation and Recovery Act (Pub. L. 94–580) of 1976, as amended.

SIC—STANDARD INDUSTRIAL CLASSIFICATION—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.

SILICA GEL TREATED HEXANE EXTRACTABLE MATERIAL (SGT–HEM)—A method-defined parameter that measures the presence of mineral oils that are extractable in the solvent n-hexane and not adsorbed by silica gel. The analytical method for Total Petroleum Hydrocarbons (TPH) and Oil and Grease is currently being revised to allow for the use of normal hexane in place of freon 113, a chlorofluorocarbon (CFC). Method 1664 (Hexane Extractable Material) will replace the current Oil and Grease Method 413.1 found in 40 CFR part 136. In anticipation of promulgation of method 1664, data collected by EPA in support of the TECI effluent guideline utilized method 1664. Therefore, all effluent limitations proposed for Oil and Grease and TPH in this effluent guideline are to be measured by Method 1664.

SOURCE REDUCTION—Any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal. Source reduction can include equipment or technology modifications, process or procedure modifications, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

TANK—A generic term used to describe any closed container used to transport commodities or cargos. The commodities or cargos transported come in direct contact with the container interior, which is cleaned by TEC facilities. Examples of containers which are considered tanks include but are not limited to: tank trucks, closed-top hopper trucks, intermodal tank containers, rail tank cars, closed-top hopper rail cars, inland tank barges, closed-top inland hopper barges, ocean/sea tankers, and similar tanks (excluding drums and intermediate bulk containers). Containers used to transport pre-packaged materials are not considered tanks, nor are 55-gallon drums or pails.

TANK TRUCK—A motor-driven vehicle with a completely enclosed storage vessel used to transport liquid, solid or gaseous materials over roads and highways. The storage vessel or tank may be detachable, as with tank trailers, or permanently attached. The commodities or cargos transported come in direct contact with the tank interior. A tank truck may have one or more storage compartments. There are no maximum or minimum vessel or tank volumes. Tank trucks are also commonly referred to as cargo tanks or tankers.

TEC industry—Transportation Equipment Cleaning Industry.

TOTES OR TOTE BINS—A completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the vessel interior. Totes may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. There are no maximum or minimum values for tote volumes, although larger containers are generally considered to be intermodal tank containers. Totes or tote bins are also referred to as intermediate bulk containers or IBCs. Fifty-five gallon drums and pails are not considered totes or tote bins.

TPH—Total Petroleum Hydrocarbons. A method-defined parameter that measures the presence of mineral oils that are extractable in Freon 113 (1,1,2-tricholoro-1,2,2-trifluoroethane) and not adsorbed by silica gel. The analytical method for TPH and Oil and Grease is currently being revised to allow for the use of normal hexane in place of freon 113, a chlorofluorocarbon (CFC). Method 1664 (Hexane Extractable Material) will replace the current Oil and Grease Method 413.1 found in 40 CFR 136. In anticipation of promulgation of method 1664, data collected by EPA in support of the TECI effluent guideline utilized method 1664. Therefore, all effluent limitations proposed

for Oil and Grease and TPH in this effluent guideline are to be measured by Method 1664.

TSS—TOTAL SUSPENDED SOLIDS—A measure of the amount of particulate matter that is suspended in a water sample. The measure is obtained by filtering a water sample of known volume. The particulate material retained on the filter is then dried and weighed, see Method 160.2.

TWF—Toxic Weighting Factor.

UNITED STATES SURFACE WATERS—Waters including, but not limited to, oceans and all interstate and intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds.

VARIABILITY FACTOR—The daily variability factor is the ratio of the estimated 99th percentile of the distribution of daily values divided by the expected value, median or mean, of the distribution of the daily data. The monthly variability factor is the estimated 95th percentile of the distribution of the monthly averages of the data divided by the expected value of the monthly averages.

VOLATILE ORGANIC COMPOUNDS (VOCs)—Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. See 40 CFR 51.100 for additional detail and exclusions

WATERS OF THE UNITED STATES—The same meaning set forth in 40 CFR 122.2.

ZERO DISCHARGE FACILITY—Facilities that do not discharge pollutants to waters of the United States or to a POTW. Also included in this definition are discharge of pollutants by way of evaporation, deep-well injection, off-site transfer to a treatment facility, and land application.

List of Subjects in 40 CFR Part 442

Environmental protection, Barge cleaning, Rail tank cleaning, Tank cleaning, Transportation equipment cleaning, Waste treatment and disposal, Water pollution control.

Dated: May 15, 1998.

Carol M. Browner,

Administrator.

Accordingly, 40 CFR Part 442 is proposed to be added as follows:

PART 442—TRANSPORTATION EQUIPMENT CLEANING POINT SOURCE CATEGORY

General Provisions

Sec.
442.1 Specialized definitions.
442.2 Applicability.

Subpart A—Truck/Chemical Subcategory

442.10 Applicability; description of the Truck/Chemical Subcategory.
442.11 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
442.14 New source performance standards (NSPS).
442.15 Pretreatment standards for existing sources (PSES).
442.16 Pretreatment standards for new sources (PSNS).

Subpart B—Rail/Chemical Subcategory

442.20 Applicability; description of the Rail/Chemical Subcategory.
442.21 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
442.24 New source performance standards (NSPS).
442.25 Pretreatment standards for existing sources (PSES).
442.26 Pretreatment standards for new sources (PSNS).

Subpart C—Barge/Chemical & Petroleum Subcategory

442.30 Applicability; description of the Barge/Chemical & Petroleum Subcategory.
442.31 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.32 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
442.34 New source performance standards (NSPS).
442.35 Pretreatment standards for existing sources (PSES).
442.36 Pretreatment standards for new sources (PSNS).

Subpart D—Truck/Food Subcategory

442.40 Applicability; description of the Truck/Food Subcategory.
442.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]
442.44 New source performance standards (NSPS).
442.45 Pretreatment standards for existing sources (PSES).
442.46 Pretreatment standards for new sources (PSNS).

Subpart E—Rail/Food Subcategory

442.50 Applicability; description of the Rail/Food Subcategory.
442.51 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.52 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]
442.54 New source performance standards (NSPS).
442.55 Pretreatment standards for existing sources (PSES).
442.56 Pretreatment standards for new sources (PSNS).

Subpart F—Barge/Food Subcategory

442.60 Applicability; description of the Barge/Food Subcategory.
442.61 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
442.62 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
442.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]
442.64 New source performance standards (NSPS).
442.65 Pretreatment standards for existing sources (PSES).
442.66 Pretreatment standards for new sources (PSNS).

Tables to Part 442

Table 1 to Part 442.—Truck/Chemical Subcategory: BPT, BCT, BAT, and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters
Table 2 to Part 442.—Truck/Chemical Subcategory: PSES and PSNS Proposed Mass Based Limitations for Discharges to POTWs

Table 3 to Part 442.—Rail/Chemical Subcategory: BPT, BCT, BAT, and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters
Table 4 to Part 442.—Rail/Chemical Subcategory: PSES and PSNS Proposed Mass Based Limitations for Discharges to POTWs
Table 5 to Part 442.—Barge/Chemical & Petroleum Subcategory: BPT, BCT, BAT, and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters
Table 6 to Part 442.—Barge/Chemical & Petroleum Subcategory: PSES and PSNS Proposed Mass Based Limitations for Discharges to POTWs
Table 7 to Part 442.—Truck/Food Subcategory: BPT, BCT and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters
Table 8 to Part 442.—Rail/Food Subcategory: BPT, BCT and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters
Table 9 to Part 442.—Barge/Food Subcategory: BPT, BCT and NSPS Proposed Mass Based Limitations for Discharges to Surface Waters

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

General Provisions

§ 442.1 Specialized definitions.

In addition to the definitions set forth in 40 CFR 401.11 and 403.3, the following definitions apply to this part:

(a) *Chemical cargos* are defined to include but are not limited to the following cargos: latex, rubber, plastics, plasticizers, resins, soaps, detergents, surfactants, agricultural chemicals and pesticides, hazardous waste, organic chemicals including: alcohols, aldehydes, formaldehydes, phenols, peroxides, organic salts, amines, amides, other nitrogen compounds, other aromatic compounds, aliphatic organic chemicals, glycols, glycerines, and organic polymers; refractory organic compounds including: ketones, nitriles, organo-metallic compounds containing chromium, cadmium, mercury, copper, zinc; and inorganic chemicals including: aluminum sulfate, ammonia, ammonium nitrate, ammonium sulfate, and bleach. Cargos which are not considered to be food-grade, petroleum, or dry bulk goods are considered to be chemical cargos.

(b) *Closed-top hopper* is a completely enclosed storage vessel used to transport dry bulk commodities or cargos. Closed-top hoppers are not designed or constructed to carry liquid commodities or cargos and are typically used to transport grain, soybeans, soy meal, soda ash, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The commodities or cargos transported come in direct contact with the hopper interior. Closed-top hoppers include truck, rail, and barge vessels.

(c) *Drums* are metal or plastic cylindrical containers with either an open-head or a tight-head (also known as bung-type top) used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. Drums typically range in capacity from 30 to 55 gallons.

(d) *Food grade cargos* are defined to include edible and non-edible food products. Specific examples of food grade products include but are not limited to: alcoholic beverages, animal by-products, animal fats, animal oils, caramel, caramel coloring, chocolate, corn syrup and other corn products, dairy products, dietary supplements, eggs, flavorings, food preservatives, food products that are not suitable for human consumption, fruit juices, honey, lard, molasses, non-alcoholic beverages, sweeteners, tallow, vegetable oils, vinegar, and water.

(e) *Inland tank barge* is a self- or non-self-propelled vessel constructed or adapted primarily to carry liquid, solid or gaseous commodities or cargos in bulk in cargo spaces (or tanks) through rivers and inland waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. The commodities or cargos transported are in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

(f) *Intermediate bulk container* (''IBC'' or ''Tote'') is a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the tank interior. IBCs may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. IBCs are portable containers with 450 liters (119 gallons) to 3000 liters (793 gallons) capacity. IBCs are also commonly referred to as totes or tote bins.

(g) *Intermodal tank container* is a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the tank interior. Intermodal tank containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. Containers larger than 3000 liters capacity are considered intermodal tank containers. Containers smaller than 3000 liters capacity are considered IBCs.

(h) *Ocean/sea tanker* is a self- or non-self-propelled vessel constructed or adapted to transport liquid, solid or gaseous commodities or cargos in bulk in cargo spaces (or tanks) through oceans and seas, where the commodity or cargo carried comes in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

(i) *Petroleum cargos* are defined to include the products of the fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other refining processes. For purposes of this rule, petroleum cargos also include products obtained from the refining or processing of natural gas and coal. For purposes of this rule, specific examples of petroleum products include but are not limited to: asphalt; benzene; coal tar; crude oil; cutting oil; ethyl benzene; diesel fuel; fuel additives; fuel oils; gasoline; greases; heavy, medium, and light oils; hydraulic fluids, jet fuel; kerosene; liquid petroleum gases (LPG) including butane and propane; lubrication oils; mineral spirits; naphtha; olefin, paraffin, and other waxes; tall oil; tar; toluene; xylene; and waste oil.

(j) *Rail tank car* is a completely enclosed storage vessel pulled by a locomotive that is used to transport liquid, solid, or gaseous commodities or cargos over railway access lines. A rail tank car storage vessel may have one or more storage compartments and the stored commodities or cargos come in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes.

(k) *Tank truck* is a motor-driven vehicle with a completely enclosed storage vessel used to transport liquid, solid or gaseous materials over roads and highways. The storage vessel or tank may be detachable, as with tank trailers, or permanently attached. The commodities or cargos transported come in direct contact with the tank interior. A tank truck may have one or more storage compartments. There are no maximum or minimum vessel or tank volumes. Tank trucks are also commonly referred to as cargo tanks or tankers.

(l) *Transportation equipment cleaning (TEC) process wastewater* is identified to include all wastewaters associated with cleaning the interiors of tanks including, but not limited to: tank trucks; rail tank cars; intermodal tank containers; inland tank barges; and ocean/sea tankers used to transport commodities or cargos that come into direct contact with the tank or container interior. TEC process wastewaters include wastewater generated from washing vehicle exteriors, equipment and floor washings, and TEC contaminated wasetwater.

§ 442.2 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, the provisions of this part apply to wastewater discharges of transportation equipment cleaning process wastewater. Facilities that do not engage in cleaning the interiors of tanks are not subject to the provisions of this part.

(b) The provisions of this part do not apply to wastewater discharges from transportation equipment cleaning operations located at industrial facilities regulated under other Clean Water Act effluent guidelines, provided that the facility cleans only tanks containing cargos or commodities generated or used on-site or by a facility under the same corporate structure.

(c) The provisions of this part do not apply to wastewater discharges from cleaning the interiors of drums or intermediate bulk containers.

Subpart A—Truck/Chemical Subcategory

§ 442.10 Applicability; description of the Truck/Chemical Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC process wastewater discharged from facilities that clean tank trucks and intermodal tank containers where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos.

§ 442.11 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 Table 1 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease and pH listed in Table 1 of this part.

§ 442.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the 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 listed in Table 1 of this part.

§ 442.14 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the effluent limitations listed in Table 1 of this part.

§ 442.15 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards listed in Table 2 of this part.

§ 442.16 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards listed in Table 2 of this part.

Subpart B—Rail/Chemical Subcategory

§ 442.20 Applicability; description of the Rail/Chemical Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC wastewater discharged from facilities that clean rail tank cars where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical cargos.

§ 442.21 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 Table 3 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease, and pH listed in Table 3 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations listed in Table 3 of this part.

§ 442.24 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the effluent limitations listed in Table 3 of this part.

§ 442.25 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards listed in Table 4 of this part.

§ 442.26 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards listed in Table 4 of this part.

Subpart C—Barge/Chemical & Petroleum Subcategory

§ 442.30 Applicability; description of the Barge/Chemical & Petroleum Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC wastewater discharged from facilities that clean tank barges or ocean/sea tankers where 10 percent or more of the total tanks cleaned at that facility in an average year contained chemical and/or petroleum cargos.

§ 442.31 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 Table 5 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease, and pH listed in Table 5 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations listed in Table 5 of this part.

§ 442.34 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the effluent limitations listed in Table 5 of this part.

§ 442.35 Pretreatment standards for existing sources (PSES).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Barge/Chemical & Petroleum facilities.

§ 442.36 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards listed in Table 6 of this part.

Subpart D—Truck/Food Subcategory

§ 442.40 Applicability; description of the Truck/Food Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC wastewater discharged from facilities that clean tank trucks and intermodal tank containers where 10 percent or more of the total tanks cleaned at that facility in an average year contain food grade cargos. The provisions of this part do not apply to those facilities subject to the provisions established in § 442.10 for the Truck/Chemical Subcategory.

§ 442.41 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 Table 7 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease, and pH listed in Table 9 of this part.

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

§ 442.44 New source performance standards (NSPS).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, and pH listed in Table 7 of this part.

§ 442.45 Pretreatment standards for existing sources (PSES).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Truck/Food facilities.

§ 442.46 Pretreatment standards for new sources (PSNS).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Truck/Food facilities.

Subpart E—Rail/Food Subcategory

§ 442.50 Applicability; description of the Rail/Food Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC wastewater discharged from facilities that clean rail tank cars where 10 percent or more of the total tanks cleaned at that facility in an average year contain food grade cargos. The provisions of this part do not apply to those facilities subject to the provisions established in § 442.20 for the Rail/Chemical Subcategory.

§ 442.51 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 Table 8 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease, and pH listed in Table 8 of this part.

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

§ 442.54 New source performance standards (NSPS).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, and pH listed in Table 8 of this part.

§ 442.55 Pretreatment standards for existing sources (PSES).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Rail/Food facilities.

§ 442.56 Pretreatment standards for new sources (PSNS).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Rail/Food facilities.

Subpart F—Barge/Food Subcategory

§ 442.60 Applicability; description of the Barge/Food Subcategory.

Except as provided in § 442.2, the provisions of this subpart apply to TEC wastewater discharged from facilities that clean barges and ocean/sea tankers where 10 percent or more of the total tanks cleaned at that facility in an average year contain food grade cargos. The provisions of this part do not apply to those facilities subject to the provisions established in § 442.30 for the Barge/Chemical & Petroleum Subcategory.

§ 442.61 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 Table 9 of this part.

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

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, Oil and Grease, and pH listed in Table 9 of this part.

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

§ 442.64 New source performance standards (NSPS).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source must achieve the effluent limitations for BOD_5, TSS, and pH listed in Table 9 of this part.

§ 442.65 Pretreatment standards for existing sources (PSES).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Barge/Food facilities.

§ 442.66 Pretreatment standards for new sources (PSNS).

Any existing source subject to this subpart that introduces pollutants into a publicly-owned treatment works must comply with 40 CFR part 403. There are no additional pretreatment requirements established for Barge/Food facilities.

Tables to Part 442

TABLE 1 TO PART 442.—TRUCK/CHEMICAL SUBCATEGORY: BPT, BCT, BAT, AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/monthly average	Daily maximum	Monthly average
BOD_5	145	67.6	145	67.6	N/A	145	67.6
TSS	281	115	281	115	N/A	281	115
Oil and Grease (HEM)	25.3	16.1	25.3	16.1	N/A	25.3	16.1
Chromium	0.16	0.16	N/A	N/A	0.16	0.16	0.16
Zinc	0.09	0.09	N/A	N/A	0.09	0.09	0.09
COD	3760	3760	N/A	N/A	3760	3760	3760
Bis (2-ethylhexyl) pthalate	0.12	0.12	N/A	N/A	0.12	0.12	0.12
di-N-octyl phthalate	0.12	0.12	N/A	N/A	0.12	0.12	0.12
N-Dodecane	0.12	0.12	N/A	N/A	0.12	0.12	0.12
N-Hexadecane	0.12	0.12	N/A	N/A	0.12	0.12	0.12
Styrene	0.20	0.20	N/A	N/A	0.20	0.20	0.20
1,2-dichlorobenzene	0.12	0.12	N/A	N/A	0.12	0.12	0.12

TABLE 2 TO PART 442.—TRUCK/CHEMICAL SUBCATEGORY: PSES AND PSNS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO POTWS

[Grams/tank]

Pollutant or pollutant property	PSES		PSNS	
	Daily maximum	Monthly average	Daily maximum	Monthly average
Chromium	0.20	0.20	0.20	0.20
Zinc	0.12	0.12	0.12	0.12
COD	3760	3760	3760	3760
Bis (2-ethylhexyl) pthalate	0.23	0.23	0.23	0.23
di—N-octyl phthalate	0.15	0.15	0.15	0.15
N-Dodecane	0.19	0.19	0.19	0.19
N-Hexadecane	0.19	0.19	0.19	0.19
Styrene	0.40	0.40	0.40	0.40
1,2-dichlorobenzene	0.15	0.15	0.15	0.15

TABLE 3 TO PART 442.—RAIL/CHEMICAL SUBCATEGORY: BPT, BCT, BAT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/monthly average	Daily maximum	Monthly average
BOD_5	3,840	1,790	3,840	1,790	N/A	3,840	1,790
TSS	338	141	338	141	N/A	338	141
Oil and Grease (HEM)	470	286	470	286	N/A	130	83
COD	42,200	42,200	N/A	N/A	42,200	42,200	42,200
N-Dodecane	0.63	0.63	N/A	N/A	0.63	0.43	0.43
N-Hexadecane	0.43	0.43	N/A	N/A	0.43	0.43	0.43

TABLE 3 TO PART 442.—RAIL/CHEMICAL SUBCATEGORY: BPT, BCT, BAT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS—Continued

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/monthly average	Daily maximum	Monthly average
N-Tetradecane	0.43	0.43	N/A	N/A	0.43	0.43	0.43
Anthracene	2.20	2.20	N/A	N/A	2.20	2.20	2.20
Pyrene	0.68	0.68	N/A	N/A	0.68	0.68	0.68
Fluoranthene	0.74	0.74	N/A	N/A	0.74	0.74	0.74
Phenanthrene	1.96	1.96	N/A	N/A	1.96	1.96	1.96

TABLE 4 TO PART 442.—RAIL/CHEMICAL SUBCATEGORY: PSES AND PSNS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO POTWS

[Grams/tank]

Pollutant or pollutant property	PSES		PSNS	
	Daily maximum	Monthly average	Daily maximum	Monthly average
Total Petroleum Hydrocarbons (SGT–HEM)	942	942	207	207
COD	42,200	42,200	42,200	42,200
N-Hexadecane	2.56	2.56	2.56	2.56
N-Tetradecane	3.98	3.98	0.66	0.66
Fluoranthene	0.60	0.60	0.60	0.60

TABLE 5 TO PART 442.—BARGE/CHEMICAL & PETROLEUM SUBCATEGORY: BPT, BCT, BAT, AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/monthly average	Daily maximum	Monthly average
BOD_5	18,300	8,600	18,300	8,600	N/A	18,300	8,600
TSS	9,540	6,090	9,540	6,090	N/A	9,540	6,090
Oil and Grease (HEM)	658	294	658	294	N/A	658	294
COD	74,300	74,300	N/A	N/A	74,300	74,300	74,300
Cadmium	0.19	0.19	N/A	N/A	0.19	0.19	0.19
Chromium	1.82	1.82	N/A	N/A	1.82	1.82	1.82
Copper	2.17	2.17	N/A	N/A	2.17	2.17	2.17
Lead	1.93	1.93	N/A	N/A	1.93	1.93	1.93
Nickel	15.3	15.3	N/A	N/A	15.3	15.3	15.3
Zinc	153	153	N/A	N/A	153	153	153
1-Methylphenanthrene	2.04	2.04	N/A	N/A	2.04	2.04	2.04
Bis (2-ethylhexyl) Phthalate	1.88	1.88	N/A	N/A	1.88	1.88	1.88
Di-N-Octyl Phthalate	2.68	2.68	N/A	N/A	2.68	2.68	2.68
N-Decane	5.96	5.96	N/A	N/A	5.96	5.96	5.96
N-Docosane	3.02	3.02	N/A	N/A	3.02	3.02	3.02
N-Dodecane	16.7	16.7	N/A	N/A	16.7	16.7	16.7
N-Eicosane	6.67	6.67	N/A	N/A	6.67	6.67	6.67
N-Octadecane	7.45	7.45	N/A	N/A	7.45	7.45	7.45
N-Tetracosane	2.19	2.19	N/A	N/A	2.19	2.19	2.19
N-Tetradecane	7.30	7.30	N/A	N/A	7.30	7.30	7.30
P-Cymene	0.29	0.29	N/A	N/A	0.29	0.29	0.29
Pyrene	1.20	1.20	N/A	N/A	1.20	1.20	1.20

TABLE 6 TO PART 442.—BARGE/CHEMICAL & PETROLEUM SUBCATEGORY: PSES AND PSNS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO POTWS

[Grams/tank]

Pollutant or pollutant property	PSES		PSNS	
	Daily maximum	Monthly average	Daily maximum	Monthly average
Total Petroleum Hydrocarbons (SGT–HEM)	N/A	N/A	347	347
COD	N/A	N/A	74,300	74,300
Cadmium	N/A	N/A	0.51	0.51
Chromium	N/A	N/A	0.61	0.61
Copper	N/A	N/A	79.9	79.9
Lead	N/A	N/A	5.04	5.04
Nickel	N/A	N/A	39.1	39.1
Zinc	N/A	N/A	241	241
1-Methylphenanthrene	N/A	N/A	9.70	9.70
Bis (2-ethylhexyl) Phthalate	N/A	N/A	2.05	2.05
Di-N-Octyl Phthalate	N/A	N/A	7.69	7.69
N-Decane	N/A	N/A	7.26	7.26
N-Docesane	N/A	N/A	3.67	3.67
N-Dodecane	N/A	N/A	20.3	20.3
N-Eicosane	N/A	N/A	8.13	8.13
N-Octadecane	N/A	N/A	9.07	9.07
N-Tetracosane	N/A	N/A	5.51	5.51
N-Tetradecane	N/A	N/A	8.90	8.90
P-Cymene	N/A	N/A	2.21	2.21
Pyrene	N/A	N/A	2.94	2.94

TABLE 7 TO PART 442.—TRUCK/FOOD SUBCATEGORY: BPT, BCT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/ monthly average	Daily maximum	Monthly average
BOD_5	166	72.4	166	72.4	N/A	166	72.4
TSS	673	256	673	256	N/A	673	256
Oil and Grease (HEM)	60.4	26.3	60.4	26.3	N/A	60.4	26.3

TABLE 8 TO PART 442.—RAIL/FOOD SUBCATEGORY: BPT, BCT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/ monthly average	Daily maximum	Monthly average
BOD_5	945	412	945	412	N/A	945	412
TSS	3,830	1,460	3,830	1,460	N/A	3,830	1,460
Oil and Grease (HEM)	344	150	344	150	N/A	344	150

TABLE 9 TO PART 442.—BARGE/FOOD SUBCATEGORY: BPT, BCT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/ monthly average	Daily maximum	Monthly average
BOD_5	945	412	945	412	N/A	945	412
TSS	3,830	1,460	3,830	1,460	N/A	3,830	1,460

TABLE 9 TO PART 442.—BARGE/FOOD SUBCATEGORY: BPT, BCT AND NSPS PROPOSED MASS BASED LIMITATIONS FOR DISCHARGES TO SURFACE WATERS—Continued

[Grams/tank]

Pollutant or pollutant property	BPT		BCT		BAT	NSPS	
	Daily maximum	Monthly average	Daily maximum	Monthly average	Daily maximum/ monthly average	Daily maximum	Monthly average
Oil and Grease (HEM)	344	150	344	150	N/A	344	150

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