

# Memorandum

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To: Public Record for the Effluent Guidelines Program Plan for 2004/2005  
DCN 548, Section 3.0  
EPA Docket Number OW-2003-0074 ([www.epa.gov/edockets/](http://www.epa.gov/edockets/))

Date: December 23, 2003

Re: Description and Results of EPA Methodology to Synthesize Screening Level Results for the Effluent Guidelines Program Plan for 2004/2005

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## I. Overview

The purpose of this memorandum is to describe the methodology EPA used to synthesize screening level data used for the Clean Water Act (CWA) preliminary Effluent Guidelines Program Plan for 2004/2005.<sup>1</sup> This memorandum will also describe the outcome of this synthesis and how EPA intends to conduct further study of toxic and non-conventional pollution from industrial point sources in order to support the final Effluent Guidelines Program Plan for 2004/2005.<sup>2</sup>

EPA is using four major factors to determine whether to identify, under CWA §304(m), existing effluent guidelines for possible revision. These four factors are:

- **Factor 1:** Consideration of the extent to which the pollutants discharged by an industrial category may cause adverse impacts (including potential risks) to human health or the environment.

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<sup>1</sup>This preliminary Plan was signed by EPA's Assistant Administrator for Water on December 23, 2003. It is expected to be published in the Federal Register on December 31, 2003, or January 2, 2004.

<sup>2</sup>In order to assess potential adverse affects to human health or the environment, EPA is prioritizing the review of industrial point sources based on discharges of toxic and non-conventional pollutants. In the event that EPA selects an industry for the development or revision of effluent limitations guidelines, EPA would also evaluate whether to develop or revise limitations for conventional pollutants.

- **Factor 2:** Identification of an applicable and demonstrated technology, process change, or pollution prevention alternative that can effectively reduce the pollutants discharged by the industrial category and thereby substantially reduce any potential risk to human health or the environment associated with those pollutants.
- **Factor 3:** Evaluation of the cost, performance, and affordability of the technology, process change, or pollution prevention measures identified using the second factor.
- **Factor 4:** Evaluation of implementation and efficiency considerations. Under this factor, EPA would consider whether existing effluent guidelines could be revised, for example, to eliminate inefficiencies or impediments to technological innovation, or to promote innovative approaches such as within-plant trading. This factor might also prompt EPA to decide not to revise effluent guidelines for an industrial category where the pollutant source is already being addressed by another regulatory program, such as EPA's stormwater requirements, or by non-regulatory programs that may more effectively address the problem.

For industry categories not regulated by effluent guidelines, EPA considered whether: (1) the industrial category is the currently the subject of an effluent guidelines rulemaking; (2) EPA recently established or revised effluent guidelines for the industrial category, or reviewed the industrial category in an effluent guidelines rulemaking; (3) other parts of the CWA more appropriately and effectively regulate the industrial category (*e.g.*, National Pollutant Discharge Elimination System (NPDES) permit limits set by best professional judgment (BPJ)); (4) direct discharges from the industrial category are subject to the CWA NPDES permitting requirements; (5) the industry is entirely or nearly completely composed of indirect dischargers; and (6) point sources within the industrial category discharge trivial amounts of toxic or non-conventional pollutants. EPA also evaluated whether industrial operations not currently regulated by existing effluent guidelines should be addressed as a potential new subcategory under an existing point source category rather than as a new industrial category. EPA compared the processes, operations, wastewaters, and pollutants addressed by each existing point source category to the processes, operations, wastewaters, and pollutants of the potential new subcategory (see Step 3).

EPA is dividing the analyses supporting the Effluent Guidelines Program Plan for 2004/2005 into two parts: Screening Level Analysis and Detailed Analysis. This memorandum summarizes the steps EPA took to complete the screening level analysis and the steps EPA plans to take to complete the detailed analysis prior to publication of the final Effluent Guidelines Program Plan for 2004/2005. EPA solicited comments on this basic approach in the draft *Strategy for National Clean Water Industrial Regulations* (“draft *Strategy*”).<sup>3</sup> Modifications to EPA's effluent guidelines planning process since the publication of the draft *Strategy* are summarized in a separate memo to the record (DCN 670, Section 1.2).

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<sup>3</sup>U.S. EPA, “Draft Strategy for National Clean Water Industrial Regulations,” EPA-821-R-02-025, <http://epa.gov/guide/strategy/>, November 2002.

## II. Description of the Screening Level Analysis

CWA Section 304(m)(1)(A) requires EPA to establish a schedule for the annual review and revision of all existing effluent guidelines. Additionally, CWA Section 304(m)(1)(B) requires EPA to identify categories of point sources discharging toxic or non-conventional pollutants for which EPA has not published effluent guidelines. Accordingly, the first step in the screening level analysis is to estimate the adverse impacts and potential hazard and/or risk to human health and/or the environment from all industrial point source categories with existing effluent guidelines (*i.e.*, the CWA Section 304(m)(1)(A) annual review) and any other industry categories discharging toxic or non-conventional pollutants (*i.e.*, the Section 304(m)(1)(B) review). EPA used readily available information for this evaluation. This analysis included information from EPA databases (*e.g.*, Permit Compliance System (PCS), Toxics Release Inventory (TRI)) to evaluate adverse impacts and potential risk to human health or the environment (Factor 1) and information from public outreach, including industry categories recommended by stakeholders for regulatory development or regulatory revision, to evaluate implementation and efficiency considerations (Factor 4). Public commenters also identified industry sectors for EPA to evaluate under Factor 1.

EPA was unsuccessful in its attempt to obtain the information needed to perform meaningful screening-level analyses of Factor 2 (Technology Innovation and Process Changes) and Factor 3 (Technology Cost, Performance, and Affordability) for all industrial categories of point sources discharging toxic or non-conventional pollutants. A meaningful collection and review of Factor 2 data proved more resource-intensive than anticipated for a screening-level review of all industries. Data sources are widely scattered and often lack sufficient detail and process specificity to be useful at a screening level for all industries. Rather, EPA performed some Factor 2 analyses on a small subset of industries identified as among the highest in terms of amount of toxic or non-conventional pollutants discharged. This analysis is explained in more detail in Section II.F.

Similarly, EPA could not identify a suitable Factor 3 screening level tool which would, by itself, identify industries for further study. EPA could not produce an economic analysis of all industry categories with existing effluent guidelines with the resources and time available as this universe of facilities is too numerous, broad, and complex. EPA will conduct a Factor 3 analysis as part of its further review of Group I industries (see Section III.A for a discussion of Group I industries).

### A. Screening Level Analysis - Step 1

Each industrial point source category is evaluated separately. After identifying and considering a number of sources of data, EPA relied primarily on data reported to the TRI and PCS to estimate the pounds of pollutants discharged by industry categories. EPA estimated the hazard of the discharged pounds of pollutants by calculating hazard scores using pollutant-specific toxic weighting factors (TWFs). These TWFs reflect both aquatic life and human health effects. Multiplying the pounds of pollutants discharged by their TWFs results in an estimate of

toxic-weighted pound equivalents (TWPE). Relative risk scores reflecting chronic human health impacts were also estimated using the Risk-Screening Environmental Indicators (RSEI) model. For the current preliminary Plan, EPA primarily relied on the rankings based on hazard (*i.e.*, estimates of TWPE discharged by category) rather than RSEI relative risk scores (see Tables 1 and 2). EPA found that the questions about the fate and transport modeling and exposure pathways used to estimate risk were too involved and unworkable for the current preliminary Plan. EPA will continue to extend its analyses to include RSEI relative risk scores in future Plans. EPA may try to use RSEI relative risk scores for the Group I categories identified below.

As outlined in Section 2.1 of the public record, EPA used the same TWFs traditionally used in the Effluent Guidelines Program to quantify the relative toxicity of pollutant discharges. EPA assigns toxicity based on both aquatic life effects and human health effects and additively combines them in one pollutant-specific TWF. EPA's hazard analysis used these toxic weights because EPA believes they are sufficient to estimate hazard in a screening exercise and they are used in the cost-effectiveness methodology EPA's Engineering and Analysis Division (EAD) employs to develop effluent limitation guidelines.

As part of this first step, EPA evaluated the adverse impacts and potential risk to human health or the environment by industries currently regulated by existing effluent guidelines and industries not currently regulated by existing effluent guidelines. Section 2.1 of the public record for the Effluent Guidelines Program Plan for 2004/2005 (EPA Docket Number OW-2003-0074) contains detailed information on how EPA compiled data from the various EPA databases to support the Factor 1 screening analyses. In particular, the document titled: "Factor 1 Analysis: Human Health and Environmental Impacts, Status of Screening Level Review Phase," (DCN 545, Section 2.1) contains a summary of all the Factor 1 analyses.

This first step produced separate lists of industries ranked by their hazard or potential risk to human health or the environment: one list for industry categories regulated by effluent guidelines and another list for industry categories not regulated by effluent guidelines. See Tables 1 and 2 for the listings of industries and the TWPE associated with their toxic or non-conventional pollutant discharges reported to TRI or PCS.

In creating Table 2, EPA aggregated industrial pollutant discharges identified at the four digit Standard Industrial Classification (SIC) code level to the two digit SIC code level (*e.g.*, discharges listed in Table 2 for Food and Kindred Products (SIC code 20) includes all pollutant discharges from industry sectors who are not regulated by effluent guidelines and have SIC codes starting with "20"). These results are presented in the top part of Table 2. EPA used this grouping process to screen industrial sectors not regulated by effluent guidelines that also have non-trivial discharges of toxic and non-conventional pollution. The crosswalk method for identifying SIC codes regulated by existing effluent guidelines is documented in the record (Section 2.1). EPA was unable to identify coherent groupings of industry sectors through this grouping process and was not able to use the two-digit SIC-code data in Table 2 to identify industrial sectors not regulated by effluent guidelines. EPA was able to use stakeholder comments to attempt to identify industry sectors that are not regulated by effluent guidelines.

The lower part of Table 2 lists those industry sectors identified by stakeholders, along with available data on toxic and non-conventional discharges. EPA solicits comment on other approaches to industrial sectors not regulated by effluent guidelines.

## B. Screening Level Analysis - Step 2

As outlined in the preliminary Effluent Guidelines Program Plan for 2004/2005, EPA applied a series of tests to eliminate certain industrial categories from further consideration for the 2004/2005 Plan. These tests are described below.

- **Rulemaking Underway:** The first test was whether rulemaking is already underway for an industrial category identified by the screening level process. If a rulemaking is already underway, concerns identified during the screening process would be shared with the EPA rulemaking team, and the industrial category would be excluded from further consideration under the current planning cycle. Table 3 lists the outcome of this test, which eliminated the following industries from further consideration in the Effluent Guidelines Program Plan for 2004/2005.
- **Recent Effluent Guidelines Rulemaking:** The second test applied to the screening level lists was whether effluent guidelines were recently established or revised but not yet been fully implemented, or whether they have been reviewed in a rulemaking context, but EPA decided to withdraw the proposal or select the “no action” option. In general, EPA removed an industrial point source category from further consideration during the current review cycle if EPA established, revised, or reviewed the category’s effluent guidelines after February 4, 1997 (*i.e.*, within seven years prior to February 4, 2004, the expected publication of the final Effluent Guidelines Program Plan for 2004/2005).

A seven-year time frame takes into account the lag time between promulgation and when effluent guidelines are implemented by pretreatment control authorities and NPDES permitting authorities. In addition, there are unlikely to be dramatic changes in an industrial category during the first seven years after promulgation of a new or revised guideline.

However, EPA would continue to list the subcategory for further consideration within the seven-year time frame in cases such as the following:

- EPA is aware of the growth of a new segment within a source category;
- New concerns are identified for previously unevaluated pollutants (*e.g.*, polybrominated diphenyl ethers, perfluorooctanoic acid, endocrine disruptors);

- The toxicity determination for pollutants were recently revised such that the revised pollutant toxicity significantly affects the industrial point source category ranking and hazard or risk estimate associated with the discharge of toxic and non-conventional pollutants.

In its screening level analyses, EPA determined that none of the above criteria apply to the effluent guidelines EPA established, revised, or reviewed since February 4, 1997.

The test for recently established, revised, or reviewed effluent guidelines eliminated 12 industries from further consideration in the Effluent Guidelines Program Plan for 2004/2005, as shown in Table 4.

- **Voluntary Effluent Reductions:** A third test EPA considered is whether the point source category has demonstrated continual improvement through voluntary effluent reductions. In comments on the *draft Strategy* stakeholders suggested that voluntary efforts should be encouraged and rewarded, especially where those voluntary reductions have been widely adopted within an industry and have led to significant reductions in pollutant discharges.<sup>4</sup> EPA agrees that voluntary significant reductions of toxic and non-conventional pollution widely adopted by facilities in a category should be a factor in determining whether to revise a set of existing effluent guidelines or develop new effluent guidelines.

EPA did not use this test to eliminate any point source categories from further consideration in the Effluent Guidelines Program Plan for 2004/2005. While many industries are managing pollution prevention programs and voluntary effluent reductions, EPA was unable to describe or quantify the measure that would eliminate point source categories from further consideration. Voluntary effluent reductions are industry specific and are not generally comparable to other industry sectors.

However, to the extent that voluntary reductions are reflected in PCS or TRI data, EPA's evaluation did account for these reductions. EPA will solicit comments on different measures that would allow us to use this test in future Effluent Guidelines Program planning processes (including planning conducted under section 304(g) of the CWA).

- **Non-Effluent Guidelines Controls:** A fourth test EPA considered is specific to point sources discharging toxic or non-conventional pollutants for which EPA has not published effluent guidelines. For these industrial point sources, EPA evaluated whether the industrial point sources are regulated by the CWA. For those industrial point sources regulated by the CWA, EPA also evaluated whether other CWA controls take precedence over effluent guidelines. This test eliminated the following point source discharges from

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<sup>4</sup>A summary of the comments on the draft *Strategy* can be found in Section 1.2 of the public record for this Plan.

further consideration in the Effluent Guidelines Program Plan for 2004/2005: (1) Discharges from Publicly Owned Treatment Works (POTWs) (CWA Section 301(b)(1)(B)); (2) Municipal Stormwater Runoff (CWA Section 402(p)(3)(B) and 402(p)(6)); and (3) Discharges from Groundwater Remediation (point sources for which EPA has not yet established effluent guidelines).

Commenters identified discharges from groundwater remediation operations as a potential candidate for identification in the current Plan. Direct discharges from Superfund sites,<sup>5</sup> whether made onsite or offsite, are subject to NPDES permitting requirement.<sup>6,7</sup> These requirements can include discharge limitations (both technology and water quality based), certain monitoring requirements, and best management practices. EPA has determined that these point source discharges are too varied in nature to be controlled by a single set of national technology-based effluent guidelines. In particular, these point sources vary by: (1) groundwater contaminants (*e.g.*, metals, dense non-aqueous phase liquids, light non-aqueous phase liquids, radioactive contaminants); (2) treatment technologies (*e.g.*, air stripping, granular activated carbon, chemical/ultra-violet oxidation, aerobic biological reactors, chemical precipitation);<sup>8</sup> and (3) types of facilities causing groundwater contamination (*e.g.*, wood treatment facilities, metal finishing and electroplating facilities, drum recycling facilities, mine sites, mineral processing facilities, radium processing facilities). Moreover, the duration and volume of these direct discharges are significantly varied due to the differences in aquifer characteristics and the magnitude, fate, and transport of contaminants in the many varied aquifers and vadose zones. Currently at Superfund sites, permit writers determine BAT and BCT on a case- by-case BPJ. Once the technology is selected, the numerical effluent discharge limits are derived by applying the levels of performance of the treatment technology to the wastewater discharge. The permit must also contain more stringent effluent limitations when necessary to meet the State's water quality standards. EPA finds that the current site specific BPJ approach is more workable and flexible within the

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<sup>5</sup>The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980.

<sup>6</sup>U.S. EPA, "CERCLA Compliance with Other Laws Manual: Interim Final," EPA/540/G-89/006, [www.epa.gov/superfund/resources/remedy/pdf/540g-88003-s.pdf](http://www.epa.gov/superfund/resources/remedy/pdf/540g-88003-s.pdf), August 1988.

<sup>7</sup>U.S. EPA, "Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," EPA/540/G-88/003, OSWER Directive 9283.1-2, [www.epa.gov/superfund/resources/remedy/pdf/540g-89006-s.pdf](http://www.epa.gov/superfund/resources/remedy/pdf/540g-89006-s.pdf), December 1988.

<sup>8</sup>For a description of some these technologies see the following document: U.S. EPA, "Presumptive Response Strategy and Ex-situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites: Final Guidance," EPA 540/R-96/023, OSWER Directive 9283.1-12, [www.epa.gov/superfund/resources/gwguide/](http://www.epa.gov/superfund/resources/gwguide/), October 1996.

context of a Superfund cleanup than a single set of national effluent guidelines. Consequently, EPA is not identifying these extremely highly variable point source discharges in the current preliminary Plan because they are not amenable to a national categorical effluent guideline rulemaking and setting BPJ discharge limits within the context of a Superfund clean-up is more appropriate.

Commenters also identified discharges from ocean going vessels (cruise ships, ballast and bilge water) as a possible candidate for an effluent guidelines rulemaking. However, discharges of ballast water from vessels are not subject to CWA permitting requirements. See 68 FR 53165 (Sept. 9, 2003). Under EPA's regulations at 40 CFR 122.3(a), discharges from properly functioning marine engines (*i.e.*, bilge water), laundry, shower, and galley sink wastes, and other discharges incidental to the normal operation of a vessel do not require NPDES permit authorization unless the vessel is operating in a capacity other than as a means of transportation. Finally, discharges of sewage from vessels, are regulated under CWA section 312. None of these discharges requires NPDES permits under section 402 and, therefore, none are subject to BAT limitations or NSPS. Although EPA is currently considering a citizen petition seeking detailed consideration of cruise ship discharges and, if necessary, rulemaking to regulate such discharges, EPA has not yet decided whether (and if so, which) cruise ship discharges should be regulated under NPDES permits. In addition, recently-enacted, free standing legislation -- not the CWA -- imposes discharge limitations on black water (*i.e.*, sewage) and gray water (*i.e.*, laundry, shower, and galley sink wastes) for cruise ships operating in certain Alaskan waters.

- **304(g) Planning:** A fifth test EPA considered is whether the industry is entirely or nearly completely composed of indirect dischargers. EPA evaluates effluent guidelines for indirect dischargers as part of the Effluent Guidelines Program Plan when industrial categories discharging toxic or non-conventional pollutants are composed of direct and indirect dischargers. EPA reviews pretreatment standards (see sections 307(b) and 307(c) of the CWA) under a separate planning process, Section 304(g) of the CWA, for industrial categories that are entirely or nearly completely composed of indirect dischargers. This test eliminated the following industries from further consideration in the Effluent Guidelines Program Plan for 2004/2005: (1) Dental Facilities; (2) Food Service Establishments (SIC 581); (3) Gasoline Service Stations; (4) Independent & Stand-Alone Laboratories; (5) Industrial Container and Drum Cleaning (SIC 7699); (6) Printing & Publishing; and (7) Hospitals (40 CFR 460). As previously stated, EPA recently reviewed Industrial Laundries and did not promulgate effluent guidelines. EPA will consider these industrial point sources for future planning under CWA Section 304(g). Additionally, EPA will consider Industrial Container and Drum Cleaning as a potential new subcategory under Transportation Equipment Cleaning (40 CFR 442) in any future 304(g) pretreatment standards planning.
- **Best Professional Judgment (BPJ) Permit Support:** A sixth test EPA considered is whether the vast majority of the estimated hazards are limited to only one or a few



facilities. In such cases, EPA's specific support to permit writers may be more appropriate than a national effluent guideline. Specific permit-based support may more efficiently focus the Agency's time and resources and may result in better environmental results in a shorter time period than a national effluent guidelines rulemaking.

This test eliminated the following industries from further consideration in the Effluent Guidelines Program Plan for 2004/2005: (1) Pulp & Paper Phase III (Subparts A and D of Part 430) (a potential revision to an existing effluent guideline); and (2) Drinking Water Supply & Treatment (an industrial category for which EPA has not yet established effluent guidelines).

EPA proposed effluent guidelines revisions on Dec. 17, 1993 (58 FR 44078) for the dissolving kraft (Subpart A) and dissolving sulfite (Subpart D) subcategories of the pulp and paper point source category (Part 430). In the final Effluent Guidelines Program Plan for 2002/2003, EPA indicated its intention to take final action on this proposal by September 2004 (67 FR 55013). However, the Agency is proposing and taking comment on an alternative approach. EPA proposes to provide site-specific permit support to state permit writers as they develop NPDES permits for the four affected facilities in these two subcategories. EPA would support NPDES permit writers as they develop effluent limitations that reflect a determination of BAT based on BPJ, or, if necessary, more stringent limitations to ensure compliance with state water quality standards. Consequently, EPA is no longer developing effluent guidelines for affected facilities in these two subcategories.

In the Drinking Water Supply & Treatment industrial sector, EPA determined that one facility, the Washington Aqueduct Water Treatment Plant, Washington, D.C. (NPDES Permit Number: DC0000019), accounts for 99 percent of the total estimated discharge from the 16 major facilities that reported to PCS in 2000. Moreover, the Washington Aqueduct accounted for virtually all estimated discharge of iron which comprised 73 percent of the total TWPE released by the 16 major facilities that reported to PCS in 2000. On March 14, 2003, EPA re-issued this permit and established, among other controls, technology-based effluent limits for Total Suspended Solids (TSS), iron, aluminum, and chlorine. EPA estimates that continued EPA site-specific NPDES permit support for developing effluent limitations based upon the BPJ to permit writers would be equally effective and potentially result in reduced pollutant loadings in a shorter time period. During the next Effluent Guidelines Program planning cycle, EPA will continue gathering data on this industry sector to address issues such as the geographic extent of discharges from this industry sector.

### C. Screening Level Analysis - Step 3

EPA also evaluated whether industrial operations not currently regulated by existing effluent guidelines should be addressed as a potential new subcategory under an existing point source category rather than as a new industrial category. EPA compared the processes,

operations, wastewaters, and pollutants addressed by each existing point source category to the processes, operations, wastewaters, and pollutants of the potential new subcategory. If these processes, operations, wastewaters, and pollutants were sufficiently similar, EPA included those similar industrial operations not currently regulated by existing effluent guidelines in the Agency's review of existing effluent guidelines.

A previous example where EPA addressed industrial operations not currently regulated by existing effluent guidelines by establishing a new subcategory under an existing category is the agricultural refilling establishments subcategory (Subpart E) that EPA added to the Pesticide Chemicals point source category (40 CFR 455) (November 6, 1996; 61 FR 57518). Prior to the November 1996 revisions to Part 455, the BPT limitations in Part 455 did not cover refilling establishments and their industrial operations (*e.g.*, refilling of minibulks). This was due to the fact that these industrial operations did not begin until the late 1980s (*i.e.*, after the original BPT limitations were first established in 1978). Based on a survey of the pesticide chemicals industry, 98% of the existing refilling establishments achieve zero discharge.<sup>9</sup> EPA proposed and finalized a BPT limitation of zero discharge for process wastewater pollutants from refilling establishments.

As a result of this step, EPA evaluated Petroleum Bulk Stations and Terminals (SIC 5171) as a potential new subcategory under Petroleum Refining (40 CFR 419) and Chemical Formulating, Packaging and Repackaging (including Adhesives and Sealants) operations as a potential new subcategory under Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR 414). As noted in Table 4, railroad line maintenance facilities and shipbuilding dry dock facilities were recently reviewed as part of the Metal Products & Machinery (MP&M) rulemaking and were not considered as part of the preliminary Effluent Guidelines Program Plan for 2004/2005. EPA will consider these industrial point sources (not currently regulated under MP&M) as potential new MP&M subcategories for future planning under CWA Section 304(m)(1)(A).

#### D. Screening Level Analysis - Step 4

As previously detailed in Steps 2 and 3, EPA eliminated a number of industrial point source categories from further consideration in this preliminary Plan. These eliminations allowed EPA to focus additional analyses on those remaining industries with the highest discharges of toxic and non-conventional pollution. EPA separately evaluated the hazard and potential risk for: (1) the remaining industry categories currently regulated by existing effluent guidelines; and (2) industries not currently regulated by existing effluent guidelines. EPA evaluated hazard using TRI and PCS data and the RSEI relative risk scores using TRI data in the RSEI model for the all industry categories (*i.e.*, categories that are and are not currently regulated by existing effluent

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<sup>9</sup>U.S. EPA, "Development Document for Best Available Technology, Pretreatment Technology, and New Source Performance Technology for the Pesticide Formulating, Packaging, and Repackaging Industry: Final," EPA 821-R-96-019, Page 2-12, September 1996.

guidelines). EPA was not able to estimate potential risk using PCS data as there is currently no link between PCS data and the RSEI model input. EPA may explore this option in future biennial Effluent Guidelines Program Plans.

EPA developed separate hazard rankings from PCS and TRI data. As presented in Tables 1 and 2, EPA generated two lists; one list for industries currently regulated by existing effluent guidelines and another list for industries not currently regulated by existing effluent guidelines. For industries currently regulated by existing effluent guidelines (see Table 1), EPA identified those industries that cumulatively compose 95% of the sum total TWPE (*i.e.*, hazard) of those industries currently regulated by existing effluent guidelines that were not already eliminated under a previous step (as estimated by PCS and/or TRI data). EPA used TWPE as a measure of the hazard associated with pollutant discharges. These ranking results of industrial point source categories regulated by existing effluent guidelines are detailed in Table 5.

As shown in Table 2, EPA also attempted to screen the list of industries currently not regulated by existing effluent guidelines. EPA employed a very broad definition of "industry" to develop this particular table: industrial groupings identified by two-digit SIC. Each of the industrial groupings represented by two-digit SIC codes is comprised of several or, in some cases, more than a dozen subsets of industrial operations represented by four-digit SIC codes. For example, within SIC code "20," Food & Kindred Products, there are more than 50 four-digit industrial groupings.

EPA did not identify industries at the two-digit SIC code level due to the wide variety of industrial processes, operations, wastewaters, and discharged pollutants encompassed within any single two-digit SIC code industrial grouping. For the purposes of developing effluent limitations guidelines and standards under CWA sections 304 and 306, EPA has tended to use four-digit SIC Codes (*i.e.*, subparts of the larger two-digit groupings) because of similar processes, operations, wastewaters, and discharged pollutants. EPA believes it is reasonable to perform its analysis under CWA section 304(m)(1)(B) by using the same type of industrial groupings that it would employ when developing any resulting effluent limitations guidelines and standards. EPA believes that this is consistent with Congressional intent. Out of the 26 "categories of sources" identified by Congress in CWA Section 306, at least twenty of these "categories of sources" consist of five or fewer four-digit SIC codes.

EPA nevertheless performed a basic screen in order to evaluate whether EPA might be overlooking one or more four-digit SIC code industrial groupings for which EPA has not promulgated BAT or NSPS. For each two-digit SIC code industrial grouping, EPA summed the toxic and non-conventional pollutant discharges (measured in terms of TWPE) reported in PCS or TRI for the four-digit SIC code industrial operations that EPA believes are not already regulated by existing effluent guidelines. For example, when examining the Food & Kindred Products two-digit SIC code (SIC code 20), EPA did not include toxic and non-conventional pollutant discharges associated with the following SIC codes 2011, 2013, and 2077 because these industrial operations are already regulated by the Meat Products effluent guidelines (40 CFR 432).

While Table 2 indicates that toxic discharges are associated with two-digit industrial groupings (e.g., SIC Code, 97, National Security & International Affairs), EPA is unable to determine based on the present record what particular industrial operations within each two-digit grouping are responsible for the toxic discharges or, once such operations are identified, whether they are currently addressed by an existing set of effluent guidelines (in which case the total hazard score would be adjusted downward accordingly). In this and subsequent section 304(m) planning processes, EPA will continue analyzing the industries in Table 2 with high reported discharges to determine if they contain coherent groupings of facilities that are not currently regulated by effluent guidelines and should be regulated. EPA will also explore other approaches for identifying industry categories not regulated by effluent guidelines. At the present time, however, the information contained in Table 2 is insufficient to assist EPA in identifying one or more categories of industrial point sources under CWA Section 304(m)(1)(B).

#### E. Screening Level Analysis - Step 5

EPA also conducted a series of public outreach activities to solicit suggestions and information for the Effluent Guidelines Program Plan for 2004/2005. Section 2.3 of the public record for the Effluent Guidelines Program Plan for 2004/2005 contains detailed information on these activities (e.g., see “Factor 4 Analysis: Implementation and Efficiency Considerations, Status of Screening Level Review Phase,” DCN 547, Section 2.3). These outreach activities produced several lists of industries that potentially warrant additional EPA analysis for the Effluent Guidelines Program Plan for 2004/2005. See Table 6 for a list of industries identified during this public outreach.

EPA then considered the estimated hazard or potential risk (as estimated by PCS and TRI) of industries on this list. EPA attempted to locate regional or local sources of data for industries that do not report toxic or non-conventional pollutant discharges in PCS or TRI (e.g., oil and gas extraction industry) to supplement PCS and TRI data. For example, EPA was able to identify concentrations of typical parameters (e.g., TDS) from coalbed methane extraction operations based on an on-going study with EPA’s Denver Office (Region 8). Additionally, EPA was able to identify typical parameters from airport de-icing operations based on the *Preliminary Data Summary Airport Deicing Operations*.<sup>10</sup>

EPA also evaluated potential efficiency and implementation aspects of existing effluent guidelines in order to consider ways to eliminate inefficiencies or impediments to implementing existing effluent guidelines.

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<sup>10</sup>U.S. EPA, “Preliminary Data Summary Airport Deicing Operations,” EPA-821-R-00-016; Table 8-2, <http://www.epa.gov/ost/guide/airport/index.html>, August 2000.

## F. Screening Level Analysis - Step 6

After completing Steps 1 through 5, EPA created two lists: one list of industries not currently regulated by existing effluent guidelines and another list of industries currently regulated by existing effluent guidelines.

### 1. Step 6A: Industry Categories Not Regulated by an Existing Set of Effluent Guidelines

As outlined in the preliminary Effluent Guidelines Program Plan for 2004/2005, EPA considered whether point sources in industry categories not currently regulated by a set of effluent guidelines discharge non-trivial amounts of toxic or non-conventional pollutants to waters of the U.S. (either directly or indirectly). Such consideration is continuously influenced by new information and changing conditions. Therefore, while EPA might judge in 2004, based on information available at the time, that there are trivial toxic and non-conventional pollutant discharges from direct discharging point sources in an industrial category, or that additional investigation is needed in order to make such a determination, changes in the industry or the availability of new information might justify a different decision in subsequent Effluent Guidelines Program Plans. Two direct discharging industrial categories -- (1) drinking water supply and treatment; and (2) airports -- compose the majority of all toxic and non-conventional pollution direct discharges from industries (identified at the four digit SIC code level) without effluent guidelines for which EPA has quantitative data from PCS and TRI.

As noted under Step 2 above, over 99% of the toxic and non-conventional pollutant discharges (as measured in TWPEs) from the drinking water supply and treatment industry sector are accounted for by one facility. EPA believes that continued site-specific permit support for developing effluent limits based on BPJ is the most effective way to reduce pollutant loadings from this industrial sector in the shortest time frame. Consequently, EPA is not identifying this industrial category for the current Effluent Guidelines Program Plan for 2004/2005. EPA will evaluate this industrial category in more detail in future Effluent Guidelines Program Plans.

As described in Step 5 above, in August 2000 EPA made estimates of typical parameters of toxic and non-conventional pollutant discharges from airport de-icing operations. The summary of the EPA questionnaire and sampling data, industry self-monitoring data, and PCS data, for airports with potentially significant deicing/anti-icing operations is listed in the *Preliminary Data Summary Airport Deicing Operations* (DCN 660, Section 3.23). Limited PCS data was available on this industry as EPA could only identify two facilities in the year 2000 with monitoring data (see Table 2). However, these estimates may not be representative of current discharges of toxic and non-conventional pollutants due to better control and management of airport de-icing fluids, product substitution of less toxic de-icing fluids, and additional changes that airports have recently made in response to the Storm Water Phase I regulations (60 FR 50804; September 20, 1995) and water quality-based permitting requirements. In response to the Storm Water Phase I regulations, airport facilities are developing Storm Water Pollution Prevention Plans in order to reduce pollutant discharges.

Some airport facilities are also responding to more stringent controls based on water quality-based permitting requirements.<sup>11</sup> EPA is also investigating discharges of aqueous film forming foam associated with fire fighting training exercises at airport facilities and available pollution prevention controls for these potential releases (DCN 676, Section 3.23). Without more current estimates of toxic and non-conventional pollutant discharges, EPA is unable to determine whether this industry has trivial discharges of toxic or non-conventional pollutants. Consequently, EPA is not identifying this industrial category for the current Effluent Guidelines Program Plan for 2004/2005. EPA will evaluate this industrial category in more detail in future Effluent Guidelines Program Plans.

As further described in Section 2.1 of the public record, EPA did not have sufficient information on any of the industries without effluent guidelines to determine whether the discharges from these categories are trivial or non-trivial. EPA solicits comment in the preliminary Effluent Guidelines Program Plan for 2004/2005 on the appropriate factors and measures EPA should consider in determining whether discharges are trivial.

## 2. Step 6B: Industry Categories Regulated by an Existing Set of Effluent Guidelines

For the remaining industries already regulated by a set of effluent guidelines, EPA conducted more detailed Factor 1 analyses and also considered, to the extent feasible, some aspects of the Factors 2 and 3. EPA looked more closely at the industries that compose a vast majority (*e.g.*, > 95%) of the hazard (*see* Table 5). EPA examined: (1) the pollutants driving the hazard or risk estimates; (2) the geographic distribution of facilities in the industry; (3) any discharge trends within the industry; and (4) possible links between industrial point source discharges and impaired waterbodies identified by EPA, States, and Tribal governments under CWA section 303(d). EPA also performed limited quality assurance checks on the data used to develop hazard or risk estimates (*e.g.*, verifying data reported to TRI and the Permit Compliance System) to determine if any of the hazard or risk estimates relied on incorrect or suspect data. To the extent possible, EPA also considered the efficiency of existing treatment and any applicable and demonstrated technology, process change, or pollution prevention alternatives that could effectively reduce the pollutants remaining in the industrial category's wastewaters. In particular, EPA tried to answer the following questions:

- What are the raw pollutant loadings in process wastewaters prior to on-site treatment?
- What percentage of pollutants discharged is already controlled through existing treatment in place?

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<sup>11</sup>For example, see “Impacts of Deicing Fluids on Elijahs and Gunpowder Creeks Boone County, Kentucky,” Kentucky Department for Environmental Protection, Division of Water, Frankfort, Kentucky, [epa.gov/owow/tmdl/examples/organics/ky\\_elijahgunpowder.pdf](http://epa.gov/owow/tmdl/examples/organics/ky_elijahgunpowder.pdf).

- What percentage of the raw pollutant loadings pass through on-site treatment and/or POTW treatment into surface waters?
- What pollutants are discharged? What is the hazard or risk associated with these pollutants?
- What are the trends in pollutant discharges to surface water over time?
- How many facilities in these industrial point source categories discharge the same pollutant (or class of pollutants) that is causing the impairment of the receiving waterbody.<sup>12</sup> For example, if a “major” facility<sup>13</sup> discharges copper or a “minor” facility is likely to discharge copper, and the facility is located on a waterbody that is impaired for copper, the facility was "matched" to that water body.

EPA had to address a number of data gaps and limitations in attempting to complete a number of the analyses supporting this preliminary Plan. These data gaps and limitations are discussed below.

#### Reported Discharges in PCS and TRI Do Not Represent a National Estimate of Pollutant Discharges

The reported discharges in PCS and TRI do not represent a national estimate of pollutant discharges for a variety of reasons. First, facilities may not be required to report pollutant discharges to TRI or PCS. TRI is limited to a select number of SIC codes and facilities are only required to report if they have 10 or more employees and exceed certain activity-based production and use thresholds. The PCS universe of facilities does not include most indirect dischargers. Additionally, EPA was only able to use PCS to estimate pollutant discharges from major direct dischargers (approximately 3,500 industrial dischargers). EPA does not require States to include data for other dischargers (*e.g.*, minor and indirect discharges) in PCS, so little information is available about industries with many minor and indirect dischargers.

Secondly, although other pollutants may be discharged by a facility, PCS only records monitoring data as required in the NPDES permit and the TRI database only includes those

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<sup>12</sup>Under section 303(d)(1) of the CWA, states, territories, and authorized tribes must identify waterbodies for which technology-based controls under the Act and other required controls are not sufficient to implement applicable water quality standards (*i.e.*, are impaired), and prioritize such waterbodies for TMDL establishment.

<sup>13</sup>A major facility is any NPDES facility or activity classified as such by the Regional Administrator, or, in the case of approved State Programs, the Regional Administrator in conjunction with the State Director. Major industrial facilities are determined based on specific ratings criteria developed by EPA and the approved State Programs.

parameters that facilities are required to report. In order to further explore the use of TRI data, EPA compared TRI-reported discharges to pollutant loadings as estimated from EPA wastewater sampling conducted for the recent revisions to the Iron and Steel effluent guidelines (40 CFR 420). This limited check found that TRI-reported discharges at the EPA-sampled facilities were less than half of the estimated discharges from EPA's wastewater sampling (DCN 636, Section 2.1.1). This comparison is provided to highlight the differences between reported discharges (either from TRI or PCS) and EPA wastewater sampling data. It is not intended to suggest facility under-reporting to EPA or the permitting authorities.

In order to facilitate further decision-making for the final Plan, EPA scaled reported discharges in PCS and TRI to national estimates for different industries. These scaled estimates will help EPA identify options for controlling discharges of toxic and non-conventional pollutants. A summary of these analyses are presented in a separate memorandum to the record (DCN 632, Section 3.0). It should be noted that all estimates of toxic and non-conventional pollutant discharges (*e.g.*, PCS and TRI reported discharges) in this memo (DCN 548, Section 3.0) are based on reported data and are not scaled to a national estimate unless stated otherwise. EPA relied on these unscaled estimates of toxic and non-conventional pollutant discharges for its initial screening analyses. EPA may consider using scaled pollutant discharges in future initial screening analyses if reported pollutant discharges are unavailable or insufficient for identification purposes.

#### Excluding Pollutant Discharges from Non-Production Events

EPA also performed limited quality assurance checks on the data used for screening (*e.g.*, by calling facilities to verify data reported to TRI and PCS). As different industries became more important in the analysis, their data were scrutinized, to the extent possible, to determine if any of the hazard estimates were due to non-production events (*e.g.*, oil spills) or to incorrect or suspect data. For example, most of the TRI toxic discharges reported in year 2000 for the Steam Electric point source category (40 CFR 423) were related to a non-production event (oil spill) at one facility.<sup>14</sup> This facility reported to TRI a release of 9,500 pounds of polycyclic aromatic compounds (PACs) in 2000. Removing these toxic pound discharges from the Steam Electric TRI total significantly reduced the estimated TRI toxic pound discharges associated with normal operations.

#### Data Gaps and Limitations in Estimating Toxicity and Impairments

Other issues also affected EPA's initial check on its screening-level analyses. For example, EPA's effort to estimate the hazard posed by discharges from industry categories was limited by the lack of TWFs for certain chemicals. EPA's effort to match facility discharges to

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<sup>14</sup>On April 7, an 111,000-gallon oil spill occurred at the Potomac Electric Power Company (Pepeco) pipeline at the Swanson Creek, see: [epa.gov/reg3hwmd/super/MD/swanson-pepeco/pad.htm](http://epa.gov/reg3hwmd/super/MD/swanson-pepeco/pad.htm).



impaired waters was limited by data gaps in industry monitoring/reporting of discharges and in the ambient monitoring used by States to develop their lists of impaired waters. Further, when EPA did match a facility discharge to an impaired waterbody, the Agency could not determine whether the discharge is an insignificant or significant contributor to the water quality problem. EPA is exploring ways to expand its impairments analyses in future planning cycles (see DCN 557, Section 2.1.3).

Because of these data gaps, EPA did not place a great deal of weight in its screening analyses on the *exact* rank of an industrial category in terms of pollutant discharges reported to TRI or PCS. Rather, EPA focused on the group of industrial categories that account for over 95% of the reported discharges and then considered each industrial category in terms of other factors as discussed in detail below. EPA believes that it is reasonable to address these data gaps and limitations on an on-going basis when identifying industry categories for further detailed study and possible inclusion in a final Effluent Guidelines Program Plan. As described in Section III below, EPA will continue to address data gaps and limitations as it completes this plan and in future planning cycles.

### **III. Results of Screening Level Analysis**

Among industries not regulated by effluent guidelines, EPA identified no effluent guidelines rulemaking candidates for this preliminary Plan (see discussion of screening Step 6, above). Consequently, EPA is not planning to start an effluent guidelines rulemaking for any industry not regulated by effluent guidelines. The complete analysis for industries not regulated under an existing point source category is available in the public record for this preliminary Plan, and the results and rationales are reflected in Table VIII-1 of the preliminary Plan.

For industries already regulated by effluent guidelines, EPA was able to complete only its screening level analyses and was unable to complete more detailed analyses in time for publication of the preliminary Plan. Therefore, EPA identified no industrial categories as candidates for effluent guidelines revisions for this preliminary Plan. However, EPA was able to sort the industries of greatest interest based on the results of the screening level analyses into the following two groupings:

**Group I:** (1) Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF); and (2) Petroleum Refining.

**Group II:** (1) Inorganic Chemicals; and (2) Nonferrous Metals Manufacturing.

EPA intends to use these groupings to set its priorities for additional analyses supporting the final Effluent Guidelines Program Plan for 2004/2005. Specifically, we intend to complete a detailed review of the Group I industries to support the final Effluent Guidelines Program Plan for 2004/2005. After considering all available data, EPA may decide to identify one or both of these industries in the final Effluent Guidelines Program Plan for 2004/2005 for effluent

guidelines revisions. A summary of the anticipated tasks for the Group I detailed reviews are presented in the record (see Sections 3.4, 3.5, 3.6, and 3.17).

The Agency does not have enough information in the current effluent guidelines planning cycle to determine whether there is a hazard or risk warranting a detailed review of Group II industries. To the extent possible in the limited time remaining in this planning cycle, EPA will continue to address data gaps and uncertainties affecting EPA's estimates of the potential risks and hazards posed by Group II industries. However, EPA does not anticipate completing its review of Group II industries in this planning cycle. EPA expects to complete its review of Group II industries for the Effluent Guidelines Program Plan for 2006/2007. Consequently, EPA does not anticipate selecting any of the Group II industries for revision of the applicable effluent guidelines for the final Effluent Guidelines Program Plan for 2004/2005.

EPA constructed these groups by considering the discharge estimates of toxic and non-conventional pollution (*i.e.*, Factor 1 analyses). EPA also considered the results of the limited Factors 2 and 3 analyses and the extensive Factor 4 analysis. Additionally, EPA had significant questions about information and data gaps for some industrial categories (*e.g.*, why did Timber Products Processing (Part 429) rank second in TRI and 29<sup>th</sup> in PCS in terms of TWPE discharged). These groupings reflect EPA's assessment of the strength of the data and information used to estimate the discharges of toxic and non-conventional pollution. Consequently, the groups are not strictly based on the *exact* rank order of toxic and non-conventional pollution discharges. Rather, EPA used its best professional judgment of all quantitative and qualitative information collected, compiled, and analyzed to sort industrial categories into the different groupings.

EPA will also continue to collect information on industry categories other than Group I and Group II industries (see sections III.C and III.D of this memorandum). EPA will prioritize its work based on which industries have the highest estimated hazard or risk. EPA does not anticipate completing this additional work prior to the release of the final Effluent Guidelines Program Plan for 2004/2005. As the Agency does not have enough information at this time to determine whether there is a hazard or risk warranting a revision to the effluent guidelines for these industries, EPA does not anticipate identifying any of these industries for revision of the applicable effluent guidelines for the final Effluent Guidelines Program Plan for 2004/2005.

The following sections outline some of the key considerations specific to several industrial point source categories with the largest reported discharges of toxic and non-conventional pollution to waters of the United States and POTWs (Group I and II industries). More detailed rationales for other industrial categories are in sections III.C and III.D of this memorandum. As EPA gathers additional information, EPA's prioritization of these industries may change. See Table 7 for a listing of industries identified for further data collection. EPA anticipates completing a number tasks for the Group II industrial categories and all other non-Group I industrial categories identified by Factor 1 in the screening level analysis. These anticipated tasks are presented in the record (DCN 669, Section 3.0).

## A. Group I Industries

This section describes those industries categorized as Group I due to their relatively high hazard scores, possible opportunity for increased pollutant control, and potential new subcategories. Details on the analyses conducted to date for these industries can be found in Section 3 of the public record.

### Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (Part 414)

This industry ranks first in terms of toxic and non-conventional pollutant discharges based on TRI data and second based on PCS data after screening out other industries (see Step 6B ranking in Table 1). Of the 1,581 facilities classified as OCPSF manufacturing facilities, PCS location data are sufficient to index 578 facilities to their receiving waterbodies. Of these facilities, 205 (35%) are discharging pollutants (*e.g.*, priority organics, nutrients, metals) identified as causing water quality impairments to their receiving streams. EPA has information that suggests there may be demonstrated pollution prevention measures and advanced wastewater technologies to treat toxic pollutants and nutrients and reduce wastewater flow beyond the level of performance identified as Best Available Technology Economically Achievable (BAT) in the most recent effluent guidelines revisions (November 5, 1987; 52 FR 42568). In addition, we identified a possible new subcategory, chemical formulating, packaging, and repackaging (including adhesives and sealants) operations (CFPR), which is not currently regulated by technology-based effluent guidelines.

Some stakeholders have encouraged EPA to consider revising these effluent guidelines. During outreach efforts, these stakeholders asserted that the structure and scope of Part 414 presents a number of permitting and enforcement challenges: (1) difficulties encountered in correctly calculating and establishing mass-based limits; (2) problems in obtaining the data necessary to determine compliance with mass-based limits; (3) deficiencies in permits and control mechanisms that have hindered enforcement actions against non-compliant facilities; and (4) challenges encountered in determining the correct Standard Industrial Classification (SIC) codes to apply to facilities, which in turn makes it difficult for permit writers to identify the applicable effluent guidelines requirements. Therefore, these stakeholders recommend reevaluating these guidelines to consider more general coverage that is not tied to SIC codes. They also recommend switching from mass-based limits to concentration-based limits because of difficulties in implementing and enforcing mass-based limits.

In comments on the draft *Strategy* one commenter submitted an Agency document which identified CFPR operations as an unregulated subcategory for which effluent guidelines should potentially be developed (see DCN 585, Section 1.2). Based on the Factor 1 screening analysis, it appears that the vast majority of discharges of toxic and non-conventional pollutants from this industrial sub-sector are accounted for by a few facilities, and these comprise only a small part of the pollutant discharges associated with the OCPSF point source category. We will review CFPR operations (not currently regulated by effluent guidelines) as part of our review of the OCPSF

point source category due to potential similarities in operations performed, wastewaters generated, and available pollution prevention and treatment options.

### Petroleum Refining (Part 419)

This industry ranks high based on TRI data in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). A large number of petroleum refineries report discharges of toxic pollutants (e.g., priority organics, metals). EPA has information suggesting that there may be pollution prevention alternatives opportunities for this industry (e.g., via product substitution), and that treatment technologies (e.g., membrane separation, novel adsorption) may exist to better prevent stormwater contamination and to control effluent discharges from this industrial category. We have identified a number of facilities using pollution prevention measures (e.g., product substitution) and advanced wastewater technologies (e.g., membrane separation, novel adsorption) to treat toxic pollutants and reduce wastewater flow beyond the level of performance identified as Best Available Technology Economically Achievable (BAT) in the most recent effluent guidelines revisions (October 18, 1982; 47 FR 46446).

During outreach efforts, some stakeholders suggested a need to revise these effluent guidelines. Their suggestions included expanding the list of regulated pollutants to include: (1) priority pollutants; (2) metals, especially selenium; (3) nutrients (ammonia); (4) biochemical oxygen demand (BOD); and (5) chemical oxygen demand (COD). These stakeholders also suggested a review of Best Practicable Technology (BPT), Best Available Technology (BAT), and Best Conventional Pollutant Control Technology (BCT) for accuracy and relevance because the current effluent guidelines were promulgated in 1982. Some stakeholders asserted that the effluent guidelines for this category are outdated relative to the current state of the industry, and should be a high priority for revision. These stakeholders argue that not only have the technologies changed significantly since the guidelines were first issued in 1982, but many refineries have two to four times the production than was used when the effluents guidelines were first issued and can probably achieve greater pollutant reductions than they are presently required to achieve. For industries with production based limitations and standards, such as this one, a significant change in production may suggest a need to review the effluent guidelines.

Some stakeholders also identified concerns regarding discharges from petroleum bulk stations and terminals (PBST) facilities. While the reported discharges of toxic and non-conventional pollutants for this industry appear to be low, and comprise only a small part of the pollutant discharges associated with this point source category, we will review petroleum bulk stations and terminals (PBST) (not currently regulated by effluent guidelines) as part of our review of the Petroleum Refining point source category (Part 419) due to potential similarities in operations performed, wastewaters generated, and available pollution prevention and treatment options.

EPA also identified that this oil and grease, along with other parameters (e.g., metals, PAHs, TOC), is used by permitting authorities for controlling PBST wastewater discharges in

individual and general NPDES permits (see Section 3.05). As part of our review of this industry, we will consider whether EPA's approved analytical methods for oil and grease adequately quantify petroleum refining and PBST pollutant discharges (DCN 549, Section 3.05).

## **B. Group II Industries**

This section describes those industries categorized as Group II. Details on the analyses conducted to date for these industries can be found in Section 3 of the public record.

### Inorganic Chemicals (Part 415)

This industry ranked high in terms of toxic and non-conventional pollutant discharges among all industrial point source categories investigated in the screening level analyses. EPA identified this industry as a lower priority than the Organic Chemicals, Plastics and Synthetic Fibers and Petroleum Refining industries based on the following:

- *Only a few facilities account for the reported toxic releases.* For the Inorganic Chemicals Manufacturing Point Source Category, 12 facilities in the 2000 TRI database account for approximately 90 percent of the reported releases of toxic-weighted pound equivalents (TWPE) to waters of the United States.
- *The reported toxic releases are dominated by dioxin.* Dioxin and dioxin-like compounds represent approximately 70 percent of the TWPE reported releases to surface waters and three facilities discharge approximately 80 percent of those TWPE. The majority of reported dioxin discharges are from chlor-alkali facilities (SIC 2812).
- *Use of industry-specific dioxin toxic weighting factors.* Using the best available information, EPA is using different toxic weighting factors for the different dioxin congeners. Further information, data, and analysis may also affect EPA's estimate of the toxicity associated with these dioxin discharges.
- *Low-level mercury discharges reported in PCS account for a substantial part of the TWPE for this industry.* Excluding one facility, the average mercury discharge is at a very low concentration, raising issues about the treatability of these discharges.

During outreach efforts, some stakeholders suggested that the Inorganic Chemical effluent guidelines (Part 415) should be reevaluated to determine whether the "no discharge" requirement is reasonable. Stakeholders stated that there have been substantial changes to this industrial point source category since the effluent guidelines were promulgated in 1982. In particular, stakeholders suggested revising the effluent guidelines with respect to chlor-alkali and nitrous oxide manufacturing. The majority of reported dioxin discharges are from chlor-alkali facilities (SIC 2812). Stakeholders also suggested revising the potassium manufacturing subcategory to address interpretation issues for new sources as to what constitutes process wastewater.

## Nonferrous Metals Manufacturing (Part 421)

This industry ranked high in terms of toxic and non-conventional pollutant discharges among all industrial point source categories investigated in the screening level analyses. The existing effluent guidelines use SIC codes to determine applicability but in some cases a single SIC code covers facilities not only in this industrial point source category, but also in other categories. Consequently, EPA intends to conduct further review of the discharges reported in TRI and PCS for this category to ensure that EPA is not double-counting pollutants among two or more categories. This review has already lowered the estimated toxic and non-conventional pollutant discharges attributed to this category and may do so further. We also note that nonferrous metals manufacturing facilities tend to have efficient metals removal from existing treatment-in-place (most metals removals are approximately 99% efficient based on 2000 TRI data).

### **C. Other Industries Identified by Factor 1 and/or Factor 4 and Reviewed for the Preliminary Effluent Guidelines Program Plan for 2004/2005**

For the following industries (listed alphabetically), EPA identified relatively high estimates of potential hazard or risk. However, EPA also identified numerous data gaps and issues that may affect the Agency's estimate of the hazard or risk posed by discharges from these industries. EPA will continue to investigate the pollutant discharges from these industries but will prioritize its work to address the Group I and II industries. EPA does not have enough information in the current effluent guidelines planning cycle to determine whether there is a hazard or risk warranting an effluent guidelines rulemaking for the following industries. EPA does not anticipate completing this additional work prior to the release of the final Effluent Guidelines Program Plan for 2004/2005. Therefore, EPA does not anticipate identifying any of these industries as effluent guidelines rulemaking candidates for the final Effluent Guidelines Program Plan for 2004/2005. EPA will continue investigating the pollutant discharges from these industries.

## Fertilizer Manufacturing (Part 418)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). During the outreach effort, some stakeholders suggested that these effluent guidelines are outdated and do not seem to be sufficiently stringent. During previous outreach efforts, stakeholders in Oklahoma noted concerns related to ammonia discharges in this industry. EPA evaluated facilities corresponding to a broad range of SIC codes related to fertilizer manufacturing in order to better identify facilities that perform fertilizer manufacturing operations. Some industrial operations list their primary SIC code as something other than fertilizer manufacturing even though they also perform fertilizer manufacturing operations and are regulated by Part 418. However, because of the broad range of SIC codes evaluated, we believe that the toxic and non-conventional pollutant discharges estimated for this point source

category includes pollutant discharges that are largely generated by other manufacturing processes (*i.e.*, we may be overestimating the pollutant discharges associated with this point source category). We will continue investigating the pollutant discharges from this industry.

#### Ore Mining & Dressing (Part 440)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). The current effluent guidelines may be outdated and not represent the best available technology (BAT) (reclamation and containment). Almost all mine sites are also regulated by the Multi Sector General Permit (MSGP).<sup>15,16</sup> There are about 100 active hard rock mines, geographically concentrated in the western states and Alaska. The MSGP establishes benchmark monitoring for pollutants including: TSS, pH, hardness, arsenic, beryllium, cadmium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, zinc, uranium. The data from this sampling is now becoming available due to the 2000 MSGP requirements. Preliminary MSGP data indicate high concentrations of metals in active and inactive mine site runoff. The volumes of discharge can be significant due to the large land area covered by the mine sites. Constituents include toxic pollutants such as arsenic, copper, mercury and selenium as well as pH problems.

The MSGP includes very general benchmark values for sampling; general requirements to develop a stormwater pollution prevention plan, and does not establish numeric limits or stormwater containment/treatment requirements. Currently, EPA Regions are evaluating whether states are adequately addressing mine site runoff. We will continue to investigate the toxic pollutant loadings of this industry.

During previous outreach efforts, some stakeholders suggested revising the effluent guidelines because they believe available treatment technology has advanced beyond the basis considered during development of the effluent guidelines as promulgated in 1988. In addition, the effluent guidelines could be revised to include discharges from waste rock and overburden piles. Issues not addressed by the effluent guidelines include closure/financial assurance plans, remediation, and a definition of active vs. inactive mines. A commenter suggested revising the hard rock mining effluent guidelines, and recommended consideration of the recommendations

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<sup>15</sup>On October 30, 2000, EPA published the MSGP for Industrial Activities, Sector G for Metal Mining (Ore Dressing and Mining) (65 FR 64746).

<sup>16</sup>Mine sites not regulated by the MSGP include: (1) sites with their stormwater discharges regulated by an individual permit; and (2) sites without any discharge of stormwater. A facility has the option of obtaining an individual permit for stormwater discharges instead of requesting coverage under the MSGP, however, in practice this is seldom done. Most all mines sites have a discharge of stormwater (*e.g.*, stormwater discharges from haul roads, process areas, equipment storage areas, mine waste rock).

of U.S. EPA's Hardrock Mining Framework<sup>17</sup>, which include water budgets and closure plans. In comments on the proposed Effluent Guidelines Program Plan for 2002/2003, this category was identified by another commenter who asserted that the ore mining and dressing industry has significant water quality impacts in the regions in which it is prevalent. Additionally, these industries may contaminate groundwater and, through infiltration and inflow, adversely affect POTW operations.<sup>18</sup> The commenter requested that EPA reverse its decision to exclude seepage from waste dumps from the Part 440 applicability definition of “mine drainage,” and contended that EPA has the data and resources to regulate seepage from waste dumps.<sup>19</sup> The Agency also received comments during the 1998 effluent guidelines planning cycle recommending revisions to these effluent guidelines. Specifically, commenters suggested that EPA could conduct a “focused” rulemaking, to address discharges from waste rock piles, overburden piles and other sources of water pollution at mine sites which are not currently covered by part 440 (September 4, 1998; 63 FR 47285).

We do not currently have enough information to determine whether there is a hazard or risk warranting an effluent guidelines rulemaking for this industry. We will work with stakeholders to better quantify this hazard or risk.

#### Phosphate Manufacturing (Part 422)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). We evaluated facilities corresponding to a broad range of SIC codes related to phosphate manufacturing in order to better identify facilities that perform phosphate manufacturing operations. Some industrial operations list their primary SIC code as something other than phosphate manufacturing even though they also perform phosphate manufacturing operations and are regulated by Part 422. However, because of the broad range of SIC codes evaluated, we believe that the toxic and non-conventional pollutant discharges estimated for this point source category includes pollutant discharges that are largely generated by other manufacturing

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<sup>17</sup>U.S. EPA, “National Hardrock Mining Framework,” [http://cfpub.epa.gov/npdes/indpermitting/mining.cfm?program\\_id=14](http://cfpub.epa.gov/npdes/indpermitting/mining.cfm?program_id=14), September 1997.

<sup>18</sup>U.S. EPA, “EPA Issues Draft Discharge Permits and Proposed Variances for Three Silver Valley Wastewater Treatment Plants,” Environmental Fact Sheet, [www.epa.gov/r10earth/water.htm](http://www.epa.gov/r10earth/water.htm), August 2002.

<sup>19</sup>Table G-4 of the MSGP listed what wastewaters from mining activities are covered by Part 440 and what wastewaters are to be covered by the industrial MSGP. In response to litigation from the National Mining Association, EPA revised its interpretation of applicability for wastewaters from hard rock mining operations. Under the revised interpretation, runoff from waste rock and overburden piles is not subject to the effluent guidelines unless it naturally drains (or is intentionally diverted) to a point source and combines with “mine drainage” that is otherwise subject to the effluent guidelines (October 30, 2000; 65 FR 64774).



processes (*i.e.*, we may be overestimating the pollutant discharges associated with this point source category). We will continue investigating the pollutant discharges from this industry.

### Pulp & Paper (Phase II) (Part 430)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (*see* Table 1). The TRI hazard results of this category are driven by PACs and dioxin and dioxin-related compounds. The origin and specific compounds of PACs in the discharges of Phase II pulp mills warrants further investigation.

In the final Effluent Guidelines Program Plan for 2002/2003 published in August 2002, EPA announced it was not planning to take final action on its 1993 proposal to revise effluent guidelines for eight subcategories of the pulp, paper, and paperboard industry (Subparts C and F through L), referred to as Phase II. EPA concluded that more stringent conventional pollutant limitations for these subcategories would not pass the Best Conventional Pollutant Control Technology “cost-reasonableness” test. Nor did EPA identify a need to promulgate national categorical best management practices for these subcategories. EPA does not have any new information to change its position.

During previous outreach efforts, some stakeholders raised concerns about discharges into smaller water bodies and difficulties with establishing whole effluent toxicity limits. Additional concerns include discharge of dyes and dioxin from bleaching at secondary fiber mills since the stormwater regulations may not be sufficiently protective. During the current outreach cycle, some stakeholders supported the Phase II rule, due to concerns for the number of pollutants discharged by the chemical, mechanical, and fiber de-inking subcategories.

Stakeholders also requested effluent guidelines for color. EPA previously investigated whether effluent guidelines are the appropriate tools for controlling color. Specifically, EPA proposed BAT limitations and PSES for color for the Bleached Papergrade Kraft and Soda subcategory (Subpart B) in this industrial point source category (40 CFR 430). Commenters on the proposed rule asserted that EPA should not establish effluent limitations guidelines and standards for color because it is a concern more appropriately addressed in individual permits based on applicable water quality standards. In the final effluent guidelines, EPA agreed with this comment (April 15, 1998; 63 FR 18504). EPA stated, “The potential for significant aesthetic or aquatic impacts from color discharges is driven by highly site-specific conditions and is best dealt with on a case-by-case basis through individual NPDES permits or, when appropriate, through local limits.” See 63 FR 18538. The Agency has not changed its position on this issue and will not evaluate setting technology-based limitations or standards for color for the current and future Effluent Guidelines Program Plans.

EPA’s Office of Research and Development, National Risk Management Research Laboratory and Office of Water, Engineering and Analysis Division, recently conducted a study of five de-ink secondary fiber mills. EPA sampled effluents from five mills that make tissue and

toweling from a variety of wastepaper grades. Three of the sampled mills bleached with sodium hypochlorite, and two mills bleached without chlorine-containing compounds. Dioxins and furans were found in all bleaching wastewaters and thus were not exclusively related to bleaching chemistry. However, they were not detected above the analytical method minimum level in any mill's final (treated) effluent.

We do not currently have enough information to determine whether or not there is a hazard or risk warranting an effluent guidelines rulemaking for this industry. We will work with stakeholders to better quantify this hazard or risk.

### Steam Electric (Part 423)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). The PCS TWPE estimated for this category is significantly affected by chlorine discharges. These chlorine discharges are typically at low concentrations in high volumes of wastewater, primarily non-contact cooling water. Process additives in use in the steam electric power generation point source category have changed over time. Starting in the early 1990s, some power plants began converting from the use of chlorinated compounds to brominated compounds. However, many of these plants report only total residual oxidant (TRO) as part of their NPDES permit requirements. EPA will attempt to identify the amount and type of brominated compounds discharged from this industry and the associated toxicity as compared to chlorine compound discharges. Additionally, we will investigate whether there is available and affordable technology (either pollution prevention or end-of-pipe) to treat and reduce the toxicity of the high volumes of wastewater discharges associated with this industry (e.g., non-contact cooling). Typically, end-of-pipe treatment costs increase for large volumes of wastewater and may make end-of-pipe technology options uneconomical.

During previous outreach efforts, some permitting authorities identified concerns with discharges from this point source category. They noted applicability concerns for cogeneration units, concerns over toxic pollutants in coal pile runoff (including heavy metals), and concerns about the growing use of POTW effluent as cooling water. In addition, stakeholders suggested revising the effluent guidelines to expand the scope, citing exempt facilities that they believe should not be exempt and many newer facilities that are not covered. Permits for these exempt and new operations must rely on BPJ. EPA estimates that 83 new electric generators will begin operation between 2001 and 2020.<sup>20</sup>

During the current outreach process, some stakeholders asserted that these guidelines are old [last revisions were published on November 19, 1982 (47 FR 52304)] and do not adequately represent the industry. They identified a number of concerns about the effectiveness of the

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<sup>20</sup>U.S. EPA, "Economic Analysis of the Final Regulations Addressing Cooling Water Intake Structures for New Facilities," EPA-821-R-01-035, November 2001.

current guidelines: (1) there are existing problems with temperature at cooling outfalls, and with mercury and arsenic at ash pond outfalls; (2) analytical methods for priority pollutants are much improved since the 1970s (when the guidelines were being developed); (3) there have been changes in the additives in use, for which there are no current technology-based controls (*e.g.*, some operators are substituting bromine compounds for chlorine compounds and these effluent guidelines do not control bromine compounds); (4) the footnotes in the existing regulation are in error; and (5) most plants that have been built in the last decade are combined cycle plants, which are not reflected well (or not covered) by the current guidelines.

We do not currently have enough information to determine whether or not there is a hazard or risk warranting an effluent guidelines rulemaking for this industry. We will work with stakeholders to better quantify this hazard or risk. We will continue investigating the pollutant discharges from this industry, and will also attempt to examine whether revisions to the effluent guidelines or can be addressed through guidance to NPDES permit writers.

#### Textile Manufacturing (Part 410)

This industry ranks high in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (*see* Table 1). The PCS hazard results of this category are driven by total residual chlorine and total sulfide. EPA will further investigate the origin of the pollutants in the discharges of textile mills.

During current outreach efforts, Georgia and Alabama suggested the need to develop and promulgate a measurable limit for color and for copper. In the context of the rulemaking for Pulp & Paper (40 CFR 430), EPA decided not to set technology-based limitations or standards for color. We would probably decide to not regulate color for this industrial point source category as well.

We do not currently have enough information to determine whether or not there is a hazard or risk warranting an effluent guidelines rulemaking for this industry. We will work with stakeholders to better quantify this hazard or risk.

#### Timber Products Processing (Part 429)

This industry ranks high in the TRI data but not in the PCS data in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (*see* Table 1). This category covers wood preserving (which we estimate to be the major source of toxic releases), sawmills, and "manufactured wood products" such as plywood, oriented strand board, and particle board. The effluent guidelines for several Timber Products subcategories are zero discharge of "process wastewater." Noncontact cooling water, material storage yard runoff, and boiler blowdown are explicitly excluded from the definition of process wastewater. State permitting authorities (Washington) suggest revising these guidelines to include effluent limitations for stormwater discharges from associated log yards

EPA recently proposed National Emission Standards for Hazardous Air Pollutants (NESHAPs) for the Plywood and Composite Wood Products industrial category (40 CFR Part 63, Subpart DDDD) based on the use of wet air pollution control (January 9, 2003; 68 FR 1276). Industry has requested that EPA amend the effluent guidelines in 40 CFR part 429 which require no discharge of process wastewater pollutants, to allow discharge of wastewaters from air pollution control devices (APCD) operation and maintenance. Industry suggests that effluent limitations for these wastewaters be developed by permit writers on a case-by-case basis using BPJ. We are considering whether to revise Part 429 to address wastewaters associated with the APCD operation and maintenance.

As noted above, we estimate that wood preserving is the major source of toxic releases reported by this industrial category. Wood preservers have voluntarily agreed to cancel certain chromated copper arsenate (CCA) wood preservative products and terminate certain uses of other CCA products (68 FR 17366; April 9, 2003). These changes, when fully implemented, may affect the toxicity of discharged process wastewater. We will continue investigating the pollutant discharges from this industry and whether the voluntary changes significantly reduce the toxicity of the wastewater discharges. We will also attempt to examine whether these questions require revisions to the effluent guidelines or can be addressed through guidance to NPDES permit writers.

**D. Other Industries Only Identified by Factor 4 and Reviewed for the Preliminary Effluent Guidelines Program Plan for 2004/2005**

EPA identified the following industries (listed alphabetically) based on information from public outreach. EPA evaluated implementation and efficiency considerations (Factor 4) and stakeholder concerns about potential risks to human health and the environment based on available data about discharges from these industries. Based on available data, these industries do not rank high in the discharge of toxic and non-conventional pollutants (as weighted by TWPE). Therefore, EPA does not anticipate identifying any of these industries as effluent guidelines rulemaking candidates for the final Effluent Guidelines Program Plan for 2004/2005. EPA will continue investigating the issues raised during outreach efforts and the pollutant discharges from these industries but will prioritize its efforts to first address the industries with higher estimated hazards or risks to human health and the environment.

Canned and Preserved Fruits and Vegetable Processing (Part 407)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses ([see](#) Table 1). During previous outreach, some stakeholders expressed concerned concern due to the direct discharges of nutrients and conventional pollutants (*e.g.*, BOD<sub>5</sub>). Stakeholders also believe the guideline is out of date relative to available technology.

### Canned and Preserved Seafood Processing (Part 408)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). This point source category had been identified by some States (*e.g.*, Alabama, Florida, and Louisiana) during outreach for previous Effluent Guidelines Program Plans and during the current planning cycle. These states believe that the guidelines are out of date relative to current control technology. In general, these stakeholders are concerned with the direct discharges of nutrients and conventional pollutants (*e.g.*, BOD<sub>5</sub> and fecal coliform).

Additionally, one stakeholder identified seafood processing facilities as a significant source of pollution in Alaska, where in some cases, the discharges cause severe localized impacts and impairments (*e.g.*, Akutan Harbor, AK, TMDLs for dissolved oxygen and residue). Current requirements for these Alaskan processors prohibit the discharge of residues in excess of one-half inch in any dimension. Some facilities are recovering all of their settleable solids as a secondary product (*e.g.*, fish meal for aquaculture facilities). We may investigate other treatment technologies that can reduce environmental impacts from this industry. We may also investigate whether trading of some conventional pollutants may be a better alternative to technology-based effluent guidelines for this industry.

### Coal Mining (Part 434)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). This category was also identified in comments to the proposed Effluent Guidelines Program Plan for 2002/2003. The commenter was concerned about the relaxation of limits permitted by rainfall exemptions, as well as the poor functioning of settlement basins - the primary control for mine drainage - during rainfall events. EPA revised the Coal Mining effluent guidelines in January of 2002; however, the revised rule did not reassess the effluent limitations for precipitation events. Coal mining was also identified by some permitting authorities during previous and current outreach efforts. In addition, West Virginia mentioned specific concerns related to the discharge of manganese.

### Coil Coating (Part 465)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). Stakeholders note that the industry has changed since the effluent guidelines were promulgated in 1983. The industry may be using different solvents than those assessed during the development of the existing guidelines. Stakeholders are also concerned about the costs associated with monitoring requirements for pollutants that are no longer in use by the industry. Additionally, applicability issues have been identified by some permitting authorities with questions arising for facilities that perform coil coating operations and other operations regulated by other effluent guidelines (*e.g.*, Part 467 - Aluminum Forming).

### Dairy Products Processing (Part 405)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). During outreach for previous Effluent Guidelines Program Plans, this point source category was identified as a concern due to the direct discharges of nutrients and conventional pollutants (e.g., BOD<sub>5</sub> and fecal coliform).

### Electrical & Electronic Components (Part 469)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). During current outreach efforts, some stakeholders asserted that these guidelines need to be revised due to significant changes in the industry since the guidelines were promulgated. They also suggested that the semiconductor manufacturing portion of this industry be investigated because there have been major changes in the industry. There are two new circumstances in this portion of the industry that raise concerns: 1) the industry is moving from aluminum to the more toxic copper to build internal components; and 2) the industry is increasingly using new process operations, one of which is chemical-mechanical planarization, which generates more or different pollution than the processes considered during the development of the existing standards.

### Metal Molding & Casting (Part 464)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses (see Table 1). During previous outreach, some permitting authorities identified concerns about discharges from this point source category. They identified fastener manufacturing, job shop galvanizers, and jewelry manufacturing as processes of concern and phenol as a pollutant of concern. More recently, a stakeholder from Michigan Department of Environmental Quality commented on the draft *Strategy*, asserting that the effluent guidelines should be re-evaluated to address the discrepancy of metals limits between this category and those in the Metal Finishing effluent guidelines. The effluent standards for the Metal Molding and Casting category are production based, and when the appropriate values are applied and calculations performed to convert these standards into equivalent concentration limits, the resulting discharge limits for metals are orders of magnitude lower than the Metal Finishing standards. These stakeholders believe this difference suggests there is a problem either with the Metal Finishing standards (which have been recently reviewed in the MP&M development) or the Metal Molding and Casting standards.

During the current outreach process some permitting authorities reported difficulties with these effluent guidelines, noting that they are out of date with respect to available technology, specifically cyanide discharges from the quenching process. They also identified concerns with implementing the guidelines for the aluminum die casters subcategory: (1) the applicability

language is confusing and incomplete: only part of the casting process is covered; and (2) the problems meeting the limits they receive using the formulas provided in the guidelines, specifically for total phenols and oil and grease. Expanding on this last item, stakeholders explain that the building block method for determining allowances, when applied to small facilities, results in a low limit on total phenols. Stakeholders assert that it is difficult to find technology to meet these low limits, resulting in a number of facilities being unable to meet a limit that was neither reasonable nor necessary to protect the POTW.

Some stakeholders note that the resulting noncompliance forces Control Authorities to choose between escalating enforcement actions for a relatively minor infraction or ignoring the violation if they are convinced that all reasonable efforts have been made to meet the limits. Possible solutions to the problem could include: (1) using production as a limiting factor to provide relief to smaller facilities; and (2) allowing Control Authorities to apply concentration-based standards, similar to the approach used in Porcelain Enameling (40 CFR 466). Stakeholders also assert that EPA should remove the phenol limits from these pretreatment standards as they assert that these phenol pollutant loads do not pass through POTWs. We will attempt to examine whether these assertions are founded and whether EPA should respond through revisions to the effluent guidelines or through development of guidance to NPDES permit writers.

Additionally, this industrial sector is participating in EPA's Sector Strategies Program (SSP). This program seeks industry-wide environmental gains through innovative actions taken with a number of manufacturing and service sectors. In September 2003, SSP released the final version of the Environmental Management System (EMS) Implementation Guide for this point source category. The Guide provides detailed information to die casting facilities interested in implementing an EMS and incorporates lessons learned and examples drawn from the experience of companies that participated in an EMS pilot project. We will continue to evaluate the performance of the SSP in reducing toxic and non-conventional pollution.

#### Mineral Mining & Processing (Part 436)

This industry ranks low in terms of toxic and non-conventional pollutant discharges among industrial point source categories investigated in the screening level analyses ([see](#) Table 1). EPA promulgated effluent guidelines for the Mineral Mining and Processing point source category under 40 CFR 436 in 1975. During previous outreach efforts, some stakeholders specifically suggested the need for more complete effluent guidelines, including the addition of Total Suspended Solids (TSS) limits, and were concerned that the existing guidelines are inconsistently applied. We will attempt to examine whether these assertions are founded and whether EPA should respond through revisions to the effluent guidelines or through development of guidance to NPDES permit writers.

## Oil and Gas Extraction (including Coalbed Methane Extraction) (Part 435)

EPA established BAT limitations and NSPS for non-aqueous drilling fluids were revised within the Offshore (Subcategory A) and Coastal (Subcategory D) subcategories within the Oil and Gas Extraction point source category (see Table 4). These effluent guidelines revisions did not consider any other wastestreams (e.g., produced waters, drilling cuttings associated with aqueous drilling fluids) in these subcategories. The oil and gas extraction industry (SIC 1311) does not report discharges to TRI.<sup>21</sup> Additionally, there is very little information in PCS about discharges from these point sources as most are regulated under general permits. At the current time, we are unable to estimate pollutant loadings from this industrial point source category using TRI or PCS. We will attempt to better quantify discharges from these facilities in future Effluent Guidelines Program Plans. We will also evaluate the success of a new trading program involving produced water discharges (see below) to determine whether the effluent guidelines for this industry should be revised in future Effluent Guidelines Program Plans.

EPA Headquarters is working with EPA Region 6 to propose a new water quality trading program as part of the Western Gulf of Mexico (GOM) NPDES Permit (GMG290000) for new and increased discharges of produced water to the hypoxic zone of the northern GOM. The Produced Water Trading Program will utilize market mechanisms, rather than the traditional regulatory means, to promote more effective treatment. In turn, the potential effects of discharges from new sources to the hypoxic zone will be eliminated. Offshore oil and gas operators under this program will be given the freedom to determine the most cost effective method to offset new loadings to the hypoxic zone, whether it involves additional treatment, operational changes, better management of existing systems, or other means. Under the trading program operators of new wells and wells with increases in the discharge volume will have the option of reducing the pollutants discharged from existing wells under their control or working with other operators to obtain a reduction of loading from other existing wells. All operators involved will report the new limits resulting from the trade on the discharge monitoring reports for the corresponding platforms. EPA has also developed a new database to facilitate reporting of produced water trades. The Produced Water Trading Database is being set up to give operators the ability to electronically report trades and the corresponding new limitations at any time, rather than on an annual basis under the Discharge Monitoring Report.

We also evaluated the discharges of produced water from coalbed methane operations. The principal environmental problem associated with production of coalbed methane is disposal of large quantities of produced water (i.e., billions of gallons per year). The major pollutant of concern is total dissolved solids (TDS) and the sodium adsorption ratio (SAR). CBM discharges

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<sup>21</sup>EPA identified that oil and gas extraction is believed to conduct significant management activities that involve EPCRA section 313 chemicals. In its proposed rule (June 27, 1996; 61 FR 33592), EPA deferred action on this industry group “because of questions regarding how particular facilities should be identified.” EPA further stated that, “EPA will be addressing these issues in the future.”



can adversely impact aquatic and benthic communities, erode soil and, in some cases, cause irreversible soil damage limiting future agricultural and livestock uses of the water and watershed.

During previous outreach efforts, some stakeholders suggested revising the oil and gas effluent guidelines (40 CFR 435) to address issues arising from the coalbed methane extraction procedure. Several states are affected by these activities, including Wyoming, Colorado, New Mexico, Alabama, Montana, and Utah. The stakeholders that support the development of guidelines for this subcategory include: State of Wyoming, the Clean Water Action Network, and the Wyoming Outdoors Council.

In their comments on the proposed Effluent Guidelines Program Plan for 2002/2003, this category was identified by an environmental group asserting that the coalbed methane development industry has had significant water quality impacts in the regions in which it is prevalent. The commenter stated that while EPA has taken some initial actions, EPA needs to develop national effluent guidelines that cover this discharge subcategory. During current outreach efforts, permitting authorities identified concerns that pollutants discharged during coal bed methane extraction have no water quality criteria or standards, and recommend that new guidelines be developed for this subcategory.

EPA Region 8 is developing a guidance document for their permitting responsibilities on Indian lands. This guidance will be available for State permitting authorities to consider using in their permitting efforts. EPA believes that at this time the best approach to controlling toxic and non-conventional pollutant discharges is through use of this guidance document. This approach will allow EPA to gather additional data on this industry in order to better assess the hazards and risks associated with these discharges. The guidance document might also result in pollutant reductions in the near term as compared to pollutant reductions that may occur at the end of an effluent guideline rulemaking which typically take three to five years.

Finally, we note that recent court actions confirm that CBM water is a pollutant subject to regulation under the CWA.<sup>22</sup> Given the ongoing effort to develop guidance to address these produced waters, we will reassess this industry, as appropriate, for future Effluent Guidelines Program Plans.

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<sup>22</sup>In August 2002, the Federal District Court in Montana granted summary judgment that CBM produced water is not a pollutant within the meaning of the CWA (*Fidelity Exploration Co. v. Northern Plains Resource Council*). In April 2003, the 9th Circuit Court of Appeals reversed this decision and re-affirmed that, "unaltered groundwater produced in association with methane gas extraction, and discharged into the river, is a pollutant within the meaning of the CWA." In October 2003, the U.S. Supreme court declined to review the decision by the Court of Appeals. This action lets stand the decision of the 9th Circuit Court of Appeals (*i.e.*, "The plain language of the CWA requires the conclusion that CBM water is a pollutant subject to regulation under the CWA.").

**Table 1:** Toxic-Weighted Pound Equivalents Discharges by Industries Regulated by Existing Effluent Guidelines

40 CFR Part	Point Source Category	PCS Reported Toxic-Weighted Pound Equivalents	TRI Reported Toxic-Weighted Pound Equivalents	PCS Reported		TRI Reported	
				Step 1 Rankings	Step 6B Rankings	Step 1 Rankings	Step 6B Rankings
405	Dairy products processing	4	5,829	47	33	37	27
406	Grain mills manufacturing	471	8,610	42	31	35	25
407	Canned and preserved fruits and vegetable processi	2,905	17,649	38	28	29	20
408	Canned and preserved seafood	18,961	20	26	17	49	37
409	Sugar processing	15,501	284	28	18	43	32
410	Textile mills	296,601	84,754	11	7	19	12
411	Cement manufacturing	15,113	10,827	29	19	33	23
412	Concentrated animal feeding operations (CAFO)	N/A	N/A	N/C	N/C	N/C	N/C
413	Electroplating	15,967	41,380	27	N/C	23	N/C
414	Organic chemicals, plastics and synthetic fibers	2,251,114	31,598,863	4	2	1	1
415	Inorganic chemicals manufacturing	853,568	630,218	7	4	12	7
417	Soaps and detergents manufacturing	164	362	44	32	42	31
418	Fertilizer manufacturing	113,776	61,273	17	10	20	13
419	Petroleum refining	197,490	2,394,632	14	8	4	3
420	Iron and steel manufacturing	2,051,270	1,685,493	5	N/C	6	N/C
421	Nonferrous metals manufacturing	434,925	978,450	9	5	8	6
422	Phosphate manufacturing	1,098,008	255	6	3	44	33
423	Steam electric power generation	8,734,590	1,854,204	1	1	5	4
424	Ferroalloy manufacturing	8,830	22,131	31	21	27	18
425	Leather tanning and finishing	5,486	28,670	36	26	24	16
426	Glass manufacturing	0	1,875	48	34	38	28
427	Asbestos manufacturing	N/A	6	N/C	N/C	51	38
428	Rubber manufacturing	8,748	166,343	32	22	14	8
429	Timber products processing	960	5,546,567	40	29	2	2
430	Pulp, paper and paperboard (Phase III)	5,120,869	319,244	2	N/C	13	N/C
430	Pulp, paper and paperboard (Phase I)	4,217,679	3,575,766	3	N/C	3	N/C
430	Pulp, paper and paperboard (Phase II)	67,796	1,336,418	19	12	7	5
432	Meat products processing	19,404	16,783	25	N/C	30	N/C
433	Metal finishing	445,785	842,890	8	N/C	11	N/C
434	Coal mining	1,385	22,472	39	N/C	26	N/C
435	Oil and gas extraction	267	8	43	N/C	50	N/C
436	Mineral mining and processing	29,402	0	22	15	52	39
437	Centralized waste treatment	N/A	N/A	N/C	N/C	N/C	N/C
438	Metal products and machinery	197,082	45	15	N/C	47	N/C
439	Pharmaceutical manufacturing	19,825	105,119	24	N/C	17	N/C
440	Ore mining and dressing	383,560	52,627	10	6	21	14
442	Transportation equipment cleaning	N/A	N/A	N/C	N/C	N/C	N/C
443	Paving and roofing materials (tars and asphalt)	710	27	41	30	48	36
444	Waste combustors	201,429	874,852	12	N/C	9	N/C
445	Landfills	201,429	874,852	12	N/C	9	N/C
446	Paint formulating	N/A	916	N/C	N/C	39	29
447	Ink formulating	N/A	51	N/C	N/C	45	34
450	Construction and development	N/A	N/A	N/C	N/C	N/C	N/C
451	Aquatic animal production industry	16	N/A	45	N/C	N/C	N/C
454	Gum and wood chemicals	42,455	50	21	14	46	35
455	Pesticide chemicals	178,977	13,281	16	9	31	21
457	Explosives	5,550	381	35	25	41	30
458	Carbon black manufacturing	N/A	N/A	N/C	N/C	N/C	N/C
459	Photographic	0	N/A	48	35	N/C	N/C
460	Hospital	5	724	46	N/C	40	N/C
461	Battery manufacturing	0	8,047	48	35	36	26
463	Plastic molding and forming	3,698	106,189	37	27	15	9
464	Metal molding and casting	5,833	45,182	33	23	22	15
465	Coil coating	N/A	11,764	N/C	N/C	32	22
466	Porcelain enameling	54,077	92,174	20	13	18	11
467	Aluminum forming	103,624	25,035	18	11	25	17
468	Copper forming	5,556	22,071	34	24	28	19
469	Electrical and electronic components	23,714	9,800	23	16	34	24
471	Nonferrous metals forming and metal powders	15,095	105,540	30	20	16	10

**Note:** "N/A" means not available and "N/C" means not calculated. EPA may not have calculated a rank due to lack of PCS or TRI data (e.g., coil coating). EPA may also have been unable to identify the pollutant loadings for the various subcategories within a point source category. This is important when trying to identify subcategories or wastewater discharges from industrial operations not subject to any exclusions identified in Step 2.

**Note:** The TWPE estimates for both Waste Combustors (Part 444) and Landfills (Part 445) are the same as EPA used the same SIC code (Refuse Systems (4953)) to estimate loadings for both categories. EPA will refine these TWPE estimates for the final record by using the facilities identified in these rulemaking records.

**Table 2: Toxic-Weighted Pound Equivalents Discharges by Industries Not Regulated by Existing Effluent Guidelines**

SIC Code	Industrial Sector	PCS Reported Toxic-Weighted Pound Equivalents	TRI Reported Toxic-Weighted Pound Equivalents	PCS Reported		TRI Reported	
				Step 1 Rankings	Step 6B Rankings	Step 1 Rankings	Step 6B Rankings
<b>Two-Digit SIC Code Data</b>							
9	Fishing, Hunting, & Trapping	266	N/A	N/C	N/C	N/C	N/C
16	Heavy Construction, Except Building	0	N/A	N/C	N/C	N/C	N/C
20	Food & Kindred Products	25,890	24,500	N/C	N/C	N/C	N/C
21	Tobacco Products	N/A	6,131	N/C	N/C	N/C	N/C
23	Apparel & Other Textile Products	N/A	53	N/C	N/C	N/C	N/C
24	Lumber & Wood Products	2,885	14,656	N/C	N/C	N/C	N/C
25	Furniture & Fixtures	N/A	2	N/C	N/C	N/C	N/C
26	Paper & Allied Products	990	1,622	N/C	N/C	N/C	N/C
27	Printing & Publishing	2,247	280	N/C	N/C	N/C	N/C
28	Chemical & Allied Products	35,444	164,662	N/C	N/C	N/C	N/C
29	Petroleum & Coal Products	29	5,698	N/C	N/C	N/C	N/C
30	Rubber and miscellaneous plastics products	N/A	0	N/C	N/C	N/C	N/C
32	Stone, Clay, & Glass Products	5,683	5,561	N/C	N/C	N/C	N/C
34	Fabricated metal products	N/A	0	N/C	N/C	N/C	N/C
39	Misc. Manuf. Industries	N/A	0	N/C	N/C	N/C	N/C
40	Railroad Transportation	11,701	N/A	N/C	N/C	N/C	N/C
42	Trucking & Warehousing	5,212	N/A	N/C	N/C	N/C	N/C
44	Water Transportation	N/A	N/A	N/C	N/C	N/C	N/C
46	Pipelines, Except Natural Gas	347	N/A	N/C	N/C	N/C	N/C
47	Transportation Services	7	N/A	N/C	N/C	N/C	N/C
49	Electric, Gas, & Sanitary Services	91,622	17,957	N/C	N/C	N/C	N/C
50	Wholesale Trade- Durable Goods	0	287	N/C	N/C	N/C	N/C
51	Wholesale Trade- Nondurable Goods	945	275	N/C	N/C	N/C	N/C
65	Real Estate	109	N/A	N/C	N/C	N/C	N/C
67	Holding & Other Investment Offices	N/A	0	N/C	N/C	N/C	N/C
73	Business Services	N/A	88,810	N/C	N/C	N/C	N/C
82	Educational Services	6,892	N/A	N/C	N/C	N/C	N/C
87	Engineering & Management Services	1,265	124,717	N/C	N/C	N/C	N/C
89	Services, Not Elsewhere Classified	N/A	566	N/C	N/C	N/C	N/C
91	Executive, Legislative, & General	3	36,734	N/C	N/C	N/C	N/C
92	Justice, Public Order, & Safety	546	N/A	N/C	N/C	N/C	N/C
95	Environmental Quality & Housing	1,307	18,458	N/C	N/C	N/C	N/C
96	Administration of Economic Programs	4,163	N/A	N/C	N/C	N/C	N/C
97	National Security & International Affairs	109,122	3,647	N/C	N/C	N/C	N/C
99	Non classifiable Establishments	29,591	1	N/C	N/C	N/C	N/C
<b>Industry Sectors Identified by Stakeholders</b>							
45	Airport Industrial Discharges	466	N/A	3	2	N/C	N/C
0273	Aquatic Animal Production	16	N/A	4	N/C	N/C	N/C
15	Storm Water Discharges from Construction and Development	N/A	N/A	N/C	N/C	N/C	N/C
8021	Dental Facilities	N/A	N/A	N/C	N/C	N/C	N/C
4941	Drinking Water Supply and Treatment	611,324	7	1	1	2	1
581	Food Service Establishments	N/A	N/A	N/C	N/C	N/C	N/C
4959	Groundwater Remediation	N/A	N/A	N/C	N/C	N/C	N/C
8071	Independent & Stand Alone Laboratories	N/A	N/A	N/C	N/C	N/C	N/C
7218	Industrial Laundries	N/A	N/A	N/C	N/C	N/C	N/C
4481	Ocean Going Vessels	N/A	N/A	N/C	N/C	N/C	N/C
27	Printing & Publishing	2,247	280	2	N/C	1	N/C
9223	Prisons	N/A	N/A	N/C	N/C	N/C	N/C
N/A	Municipal Storm Water Runoff	N/A	N/A	N/C	N/C	N/C	N/C
4952	Wastewater Treatment and Sewerage Systems	N/A	N/A	N/C	N/C	N/C	N/C

Note: "N/A" means not available and "N/C" means not calculated. EPA may not have calculated a rank due to lack of PCS or TRI data (e.g., tobacco products).

**Table 3:** Industries with On-Going Effluent Guidelines Rulemakings

CFR Part†	Title (EPA Website)	Currently Regulated by Effluent Guidelines?		Proposal Date (FR Citation)	Final Action Date
432	Meat and Poultry Products (www.epa.gov/guide/mpp/)	Yes	Red Meat, Renderers	February 25, 2002 (67 FR 8582)	February 26, 2004
		No	Poultry		
450	Construction and Development (www.epa.gov/guide/construction/)	No		June 24, 2002 (67 FR 42644)	March 31, 2004
451	Aquatic Animal Production (www.epa.gov/guide/aquaculture/)	No		September 12, 2002 (67 FR 57872)	June 30, 2004

†Note: EPA has proposed to add Parts 450 and 451 to Title 40 of the Code of Federal Regulations. EPA has proposed to change the title of 40 CFR 432 from “Meat Products” to “Meat and Poultry Products.”

<b>Table 4: Effluent Guidelines Recently Established, Revised, or Reviewed</b>			
<b>CFR Part†</b>	<b>Title</b>	<b>Promulgation Date (FR Citation)</b>	<b>Subparts Established/Revised/Reviewed‡</b>
438	Metal Products & Machinery	May 13, 2003 (68 FR 25686)	<p>The following subpart was established within this new point source category:</p> <p>Subpart A: Oily Waste</p> <p>The following industry sectors were reviewed:</p> <p>Railroad Line Maintenance Facilities (no effluent guidelines)</p> <p>Shipbuilding Dry Docks (no effluent guidelines)</p> <p>Metal Finishing (Part 433)</p> <p>Electroplating (Part 413)</p>
412	Concentrated Animal Feeding Operations	February 12, 2003 (68 FR 7176)	<p>The following subpart was revised: Subpart A: Horses and Sheep</p> <p>The following subpart was reviewed: Subpart B: Ducks</p> <p>The following subparts were established: Subpart C: Dairy Cows and Cattle Other Than Veal Calves Subpart D: Swine, Poultry, and Veal Calves</p> <p>Note: Subparts C and D were previously included in Subpart A</p>

**Table 4: Effluent Guidelines Recently Established, Revised, or Reviewed**

CFR Part†	Title	Promulgation Date (FR Citation)	Subparts Established/Revised/Reviewed‡
420	Iron & Steel	October 17, 2002 (67 FR 64216)	<p>The following subpart was established within this existing point source category:</p> <p>Subpart M: Other Operations</p> <p>The following subparts were revised within this existing point source category:</p> <p>Subpart A: Cokemaking Subpart B: Sintering Subpart C: Ironmaking Subpart D: Steelmaking</p> <p>The following subparts were reviewed within this existing point source category:</p> <p>Subpart E: Vacuum Degassing Subpart F: Continuous Casting Subpart G: Hot Forming Subpart H: Salt Bath Descaling Subpart I: Acid Pickling Subpart J: Cold Forming Subpart K: Alkaline Cleaning Subpart L: Hot Coating</p>
434	Coal Mining	January 23, 2002 (67 FR 3370)	<p>The following subparts were established within this existing point source category:</p> <p>Subpart G: Coal Remining Subpart H: Western Alkaline Coal Mining</p>
435	Oil and Gas Extraction	January 22, 2001 (66 FR 6850)	<p>BAT limitations and NSPS for non-aqueous drilling fluids were revised within the following subcategories within this existing point source category:</p> <p>Subpart A: Offshore Subpart D: Coastal</p>

**Table 4: Effluent Guidelines Recently Established, Revised, or Reviewed**

CFR Part†	Title	Promulgation Date (FR Citation)	Subparts Established/Revised/Reviewed‡
437	Centralized Waste Treatment	December 22, 2000 (65 FR 81242)	<p>The following subparts were established within this new point source category:</p> <p>Subpart A: Metals Treatment and Recovery</p> <p>Subpart B: Oils Treatment and Recovery</p> <p>Subpart C: Organics Treatment and Recovery</p> <p>Subpart D: Multiple Wastestreams</p>
442	Transportation Equipment Cleaning	August 14, 2000 (65 FR 49666)	<p>The following subparts were established within this new point source category:</p> <p>Subpart A: Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos</p> <p>Subpart B: Rail Tank Cars Transporting Chemical and Petroleum Cargos</p> <p>Subpart C: Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos</p> <p>Subpart D: Tanks Transporting Food Grade Cargos</p>
444	Waste Combustors	January 27, 2000 (65 FR 4360)	<p>The following subpart was established within this new point source category:</p> <p>Subpart A: Commercial Hazardous Waste Combustor</p>
445	Landfills	January 19, 2000 (65 FR 3007)	<p>The following subparts were established within this new point source category:</p> <p>Subpart A: RCRA Subtitle C Hazardous Waste Landfill</p> <p>Subpart B: RCRA Subtitle D Non-Hazardous Waste Landfill</p>

<b>Table 4: Effluent Guidelines Recently Established, Revised, or Reviewed</b>			
<b>CFR Part†</b>	<b>Title</b>	<b>Promulgation Date (FR Citation)</b>	<b>Subparts Established/Revised/Reviewed‡</b>
441	Industrial Laundries	August 18, 1999 (64 FR 45072)	The following point source category was reviewed:  Facilities that launder industrial textile items from off site as a business activity.
439	Pharmaceutical Manufacturing	September 21, 1998 (63 FR 50388)	The following subparts were revised within this existing point source category:  Subpart A: Fermentation Products Subpart B: Extraction Products Subpart C: Chemical Synthesis Subpart D: Mixing/Compounding and Formulation
430	Pulp, Paper, and Paperboard	April 15, 1998 (63 FR 18504)	The following subparts were revised within this existing point source category:  Subpart B: Bleached Papergrade Kraft and Soda Subpart E: Papergrade Sulfite

†**Note:** EPA proposed to amend title 40, chapter I of the Code of Federal Regulations by adding part 441 (Industrial Laundries Point Source Category) (see December 17, 1997; 62 FR 66181). EPA withdrew this proposal on August 18, 1999 (64 FR 45072). Consequently, 40 CFR 441 is reserved.

‡**Note:** For the purpose of this memo: “Established” means that EPA created a new point source category or created a new subpart within an existing point source category. “Revised” means that EPA revised the effluent guidelines (this does not include minor technical corrections such as those established by direct final rules or minor changes to recently revised effluent guidelines) for an existing subpart within an existing point source category. “Reviewed” means that EPA reviewed the industry sector as part of an effluent guidelines rulemaking (*i.e.*, published an effluent guidelines proposal) but did not establish or revise effluent guidelines for that industry sector (*i.e.*, withdrew the proposal or selected the “no action” option). In the case of oil and gas extraction (40 CFR 435), this seven year exclusion test does not apply to wastestreams (*e.g.*, produced waters) in the Offshore and Coastal subcategories, which EPA did not evaluate in the course of promulgating revised effluent guidelines in January 2001 for this industry sector.



**Table 5:** Categories with Existing Effluent Guidelines Identified in Step 4

40 CFR Part	Point Source Category	PCS Reported TWPE	TRI Reported TWPE	PCS Rank†	TRI Rank†
415	Inorganic chemicals manufacturing	853,568	630,218	4	7
421	Nonferrous metals manufacturing	434,925	978,450	5	6
440	Ore mining and dressing	383,560	52,627	6	14
414	Organic chemicals, plastics and synthetic fibers	2,251,114	31,598,863	2	1
419	Petroleum refining	197,490	2,394,632	8	3
422	Phosphate manufacturing	1,098,008	255	3	33
430	Pulp, paper and paperboard (Phase II)	67,796	1,336,418	12	5
423	Steam electric power generation	8,734,590	1,854,204	1	4
410	Textile mills	296,601	84,754	7	12
429	Timber Products Processing	960	5,546,567	29	2

†**Note:** These rankings exclude those industrial point source categories and their associated discharges of toxic and non-conventional pollutants that were previously eliminated under Step 2. EPA identified industries through both PCS and TRI estimated discharges.

**Table 6: Industries Identified During Public Outreach**

Industry	Comments on Federal Register Notices		Comments on Previous 304(m) Plans	Draft <i>Strategy</i> Outreach	
	Comments on Draft <i>Strategy</i>	Comments on proposed 2002/2003 304(m) Plan		Permitting Authorities	AMSA and/or ASWIPCA
<b>25 Suggested Categories with Existing Effluent Guidelines</b>					
Canned and Preserved Fruits and Vegetable Processing			✓		
Canned and Preserved Seafood			✓	✓	✓
Coal Mining		✓	✓		✓
Coil Coating				✓	
Dairy Products Processing			✓		
Electrical and Electronic Components				✓	
Electroplating	✓				
Fertilizer Manufacturing			✓	✓	
Hospitals	✓	✓		✓	
Inorganic Chemical Manufacturing				✓	
Meat Products			✓	✓	✓
Metal Finishing	✓		✓	✓	✓
Metal Molding and Casting	✓		✓	✓	✓
Metal Products and Machinery				✓	
Mineral Mining and Processing			✓		

**Table 6: Industries Identified During Public Outreach**

Industry	Comments on Federal Register Notices		Comments on Previous 304(m) Plans	Draft <i>Strategy</i> Outreach	
	Comments on Draft <i>Strategy</i>	Comments on proposed 2002/2003 304(m) Plan		Permitting Authorities	AMSA and/or ASWIPCA
Oil and Gas Extraction (including coal bed methane as new potential subcategory)		✓	✓	✓	
Ore Mining and Dressing (hard rock mining)		✓	✓	✓	
Organic Chemicals, Plastics, & Synthetic Fibers (including CFPR operations as a new potential subcategory)	✓			✓	
Petroleum Refining (including petroleum bulk stations and terminals as a new potential subcategory)			✓	✓	✓
Pulp, Paper, and Paperboard			✓	✓	
Steam Electric			✓	✓	
Textile Mills			✓	✓	
Timber Products Processing				✓	
Transportation Equipment Cleaning (including industrial container & drum cleaning as a new potential subcategory)	✓				
<b>13 Suggested Industry Sectors Without Effluent Guidelines</b>					
Airport Industrial Discharges			✓		
Aquatic Animal Production			✓	✓	
Storm Water Discharges from Construction and Development					✓

Table 6: Industries Identified During Public Outreach					
Industry	Comments on Federal Register Notices		Comments on Previous 304(m) Plans	Draft <i>Strategy</i> Outreach	
	Comments on Draft <i>Strategy</i>	Comments on proposed 2002/2003 304(m) Plan		Permitting Authorities	AMSA and/or ASWIPCA
Dental Facilities	✓	✓		✓	
Drinking Water Supply & Treatment			✓		
Food Service Establishments (SIC 581)	✓				
Discharges from Groundwater Remediation				✓	
Independent and Stand-Alone Laboratories	✓				
Ocean Going Vessels (cruise ships, ballast and bilge water)		✓	✓		
Printing and Publishing	✓				
Prisons				✓	
Municipal Storm Water Runoff			✓	✓	✓
Wastewater Treatment and Sewerage Systems			✓		

**Note:** Association of Metropolitan Sewerage Agencies (AMSA), Association of State and Interstate Water Pollution Control Administrators (ASWIPCA)

**Table 7: Industries Identified For Further Data Collection**

No.	Factor Identifying Industry for Additional Data Collection		Industry	CFR Part
	Factor 1	Factor 4		
1		X	Canned and Preserved Fruits and Vegetable Processing	407
2		X	Canned and Preserved Seafood Processing	408
3		X	Coal Mining	434
4		X	Coil Coating	465
5		X	Dairy Products Processing	405
6		X	Electrical and Electronic Components	469
7	X		Fertilizer Manufacturing	418
8	X	X	Inorganic Chemical Manufacturing	415
9		X	Metal Molding and Casting	464
10		X	Mineral Mining and Processing	436
11	X		Nonferrous Metals Manufacturing	421
12		X	Oil and Gas Extraction (including coal bed methane development as a potential new subcategory) †	435
13	X	X	Ore Mining and Dressing	440
14	X	X	Organic Chemicals, Plastics, & Synthetic Fibers (including CFPR operations as a potential new subcategory)	414
15	X	X	Petroleum Refining (including petroleum bulk stations and terminals as a potential new subcategory)	419
16	X		Phosphate Manufacturing	422
17	X	X	Pulp, Paper, and Paperboard (Phase II)	430
18	X	X	Steam Electric	423
19	X		Textile Mills	410
20	X	X	Timber Products Processing	429

† Note: The oil and gas extraction industry (SIC 1311) does not report discharges to TRI and there is very little information in PCS about discharges from these point sources. EPA was able to make order of magnitude estimates of toxic and non-conventional pollutant discharges from coalbed methane extraction operations based on an on-going study with EPA's Denver Office (Region 8).