



# Factor 4 Analysis: Implementation and Efficiency Considerations

Status of Screening Level Review Phase

## **U.S. Environmental Protection Agency**

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### **EXECUTIVE SUMMARY**

In November 2002, the Environmental Protection Agency (EPA) announced the draft *Strategy for National Clean Water Industrial Regulations*. This draft *Strategy* outlines a process that EPA proposed to use to develop biennial Effluent Guidelines Program Plans. It is being implemented by EPA's Engineering and Analysis Division (EAD) for the first time in support of the development of the **Effluent Guidelines Program Plan for 2004/2005**. (In this document, analyses prepared to support the 2004/2005 Plan as described as part of the current planning cycle. Future planning cycles will support future biennial Plans.)

In the draft *Strategy*, EPA identified four major factors – based on section 304(b) – that the Agency would examine, in the course of its annual review, to determine whether it would be necessary and appropriate to revise an existing set of effluent guidelines, or whether to develop a new set of effluent guidelines for a newly identified industrial category. This report documents the efforts made and discusses the status of screening level analysis for Factor 4, Implementation and Efficiency.

Factor 4 considers ways to eliminate inefficiencies or impediments to implementing existing effluent guidelines, ways to promote innovative approaches to pollution control, and alternative controls to reduce pollutant discharges, including non-regulatory programs. Information for this analysis was gathered through outreach to a variety of stakeholders and from observations provided by expert staff in EPA regions and headquarters, all of whose contributions are documented in this report.

EPA and an Agency workgroup supporting the development of the **Effluent Guidelines Program Plan for 2004/2005** have identified a variety of tools and resources which provide information that EAD considered in the current planning cycle. A preliminary summary of these results are discussed below. This report discusses the tools and resources EPA used in Section 2.0 of this report. Other tools and resources, identified through a variety of means, are discussed

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here in preliminary terms. These are described in Sections 3.0, 4.0, and 5.0 of this report. While they were not available for the screening level review of the current planning cycle, they may prove useful during the detailed investigation phase of this cycle and in future planning cycles.

As a result of the Factor 4 screening level analysis, EAD identified two lists of industry categories for possible consideration in the detailed investigation phase: (1) industry categories without effluent guidelines recommended by stakeholders and/or EPA regional and headquarters staff for regulatory development, and (2) industry categories already covered by effluent guidelines recommended by stakeholders and/or EPA regional and headquarters staff for regulatory revision. These recommendations are listed below.

#### **13 Suggested Categories Without Effluent Guidelines**

Airport Industrial Discharges	Independent and Stand-Alone Laboratories
Aquatic Animal Production	Municipal Storm water Runoff
Construction and Development (storm water discharges)	Ocean Going Vessels (cruise ships, ballast and bilge water)
Dental Facilities	Printing and Publishing
Drinking Water Supply and Treatment	Prisons
Food Service Establishments	Wastewater Treatment & Sewerage Systems
Groundwater Remediation Discharges	

#### **24 Suggested Categories with Existing Effluent Guidelines**

Canned and Preserved Fruits and Vegetables Processing	Metal Products & Machinery
Canned and Preserved Seafood	Mineral Mining and Processing
Coal Mining	Oil and Gas Extraction: coal bed methane
Coil Coating	Ore Mining and Dressing (hard rock mining)
Dairy Products Processing	Organic Chemicals, Plastics, & Synthetic Fibers, including chemical formulators, and adhesives and sealants
Electrical and Electronic Components	Petroleum Refining, including petroleum bulk stations and terminals
Electroplating	Pulp, Paper, and Paperboard (Phases 1, 2, and 3)
Fertilizer Manufacturing	Steam Electric Power Generation
Hospitals	Textile Mills
Inorganic Chemical Manufacturing	Timber Products Processing
Meat (and Poultry) Products	Transportation Equipment Cleaning: industrial container & drum cleaning
Metal Finishing	
Metal Molding and Casting	

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Some of these categories may not fall within the scope of section 304(m) of the Clean Water Act, and others may already be in the process of development or revision by EAD. Those determinations are made during the next step of the planning process. For a discussion of how EPA integrated these results with those of the other factor analyses, see the memorandum titled “Description and Results of EPA Methodology to Synthesize Screening Level Results for the CWA 304(m) Effluent Guidelines Program Plan for 2004/2005” (DCN 00548).

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### **1.0 INTRODUCTION**

This report presents the status of the screening level review phase for Factor 4 of the draft *Strategy*. (A more in-depth analysis of Factor 4 will take place once a subset of candidate industries has been identified upon completion of the screening level review phase.) This factor considers implementation and efficiency issues concerning existing effluent limitations guidelines and new source performance standards (abbreviated in this document as “effluent guidelines”).

It considers industry categories or pollutants specifically identified by stakeholders and through observations provided by staff in EPA regions and headquarters as potentially causing water quality problems or impeding the efficiency of publicly owned treatment works (POTWs). Other reasons for the nomination of categories or pollutants include industry changes that render existing effluent guidelines inappropriate or inadequate; and inefficiencies or impediments to regulatory implementation, compliance/enforcement, or technological innovation.

Factor 4 also includes efforts to determine 1) whether a pollutant source is already being addressed by another regulatory program, such as Total Maximum Daily Loads (TMDLs), 2) the availability and appropriateness of other, non-regulatory initiatives, such as programs to voluntarily reduce pollutant loadings, and 3) whether alternatives to regulatory action, such as water quality trading, may be appropriate means to address concerns identified under Factor 1 (Human Health and Environmental Impacts).

In short, this aspect of Factor 4 attempts to identify whether effluent guidelines development or revision is the most appropriate tool to reduce risk, and to identify what other tools may be more efficient to achieve clean water goals. This Factor will be addressed both during the screening level review phase (documented here) and in the detailed investigation phase later in the process.

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EPA's Engineering and Analysis Division (EAD) organized its preliminary data collection, review, and analysis for Factor 4 into four areas: 1) stakeholder input and observations from expert staff in EPA Regions and headquarters, 2) information on voluntary load reductions, 3) other EPA Offices' rankings and lists for multi-media concerns, and 4) potential alternative approaches. This report discusses each of these data sources and their use in the Factor 4 preliminary analysis.

EAD was able to utilize the information described in Section 2.0 of this report for the current planning cycle (preparing for the **Effluent Guidelines Program Plan for 2004/2005**). The tools, information, and programs described in Sections 3.0, 4.0, and 5.0 were not sufficiently developed or adapted to the planning process to be useful in the screening phase of the current planning cycle. EAD may use them in the detailed investigation phase of the current cycle, and they may be considered in the screening phase in future planning cycles.



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### **2.0 SUGGESTIONS FOR IMPROVING IMPLEMENTATION AND EFFICIENCY**

EPA's planning process for the effluent guidelines program has historically included the consideration of information provided by stakeholders and from observations provided by staff in EPA regions and headquarters both through the formal comment process and through informal channels. In this section of the report, EAD discusses the input it has received pertinent to Factor 4 through both formal and informal mechanisms.

The formal process always includes the comment period for previous Effluent Guidelines Program Plans (discussed in Sections 2.3 and 2.4). In the current planning cycle, EPA also considered comments on the draft *Strategy* (discussed in Section 2.2).

These formal dialogues are complemented by informal discussions with EPA headquarters staff, EPA Regional staff, and State staff charged with the task of implementing effluent guidelines. Traditional sources of this information include managers and staff in the Office of Wastewater Management (OWM), permit writers for the National Pollutant Discharge Elimination System (NPDES), pretreatment coordinators, and coordinators for the Total Maximum Daily Load (TMDL) program in the Regions (discussed in Section 2.5).

The informal dialogue also engages in ongoing contact with associations such as the Association of Metropolitan Sewerage Agencies (AMSA) and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) (discussed in Section 2.6).

During the detailed investigation phase of the planning process, EAD intends to contact stakeholders and staff in EPA's Regions and headquarters for additional information and data to support their recommendations.

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### **2.1 Summary of Suggested Industry Categories**

The following two tables summarize the recommendations from stakeholders and EPA Regions and headquarters that are discussed in this section. Table 1 below lists the 13 discharge categories without effluent guidelines that stakeholders and/or EPA Regions recommended EPA consider for new guidelines. Table 2 lists the 24 existing effluent guidelines that stakeholders and/or EPA Regions recommended EPA consider revising. It is worth noting that there are several discharge categories which were recommended by more than one group, and that many of the reasons for their recommendations are similar. For purposes of clarity and documentation, these explanations have been maintained in separate sections of this chapter, and the appropriate sections are identified in the tables.

In both tables, each column refers to a separate group of sources, organized by the process through which they provided their suggestions. The first column reflects comments received from stakeholders on the draft *Strategy*, announced in November 2002. The second column indicates suggestions received from stakeholders on the Effluent Guidelines Program Plan for 2002/2003, proposed in June 2002. The “Previous Suggestions” column reflects comments received from stakeholders and EPA Regions during planning efforts conducted in 1999 and 2001.

The final two columns reflect information received during the initial implementation of the draft *Strategy*. The column titled “Permitting Authorities” indicates suggestions received during the past year from permit writers, pretreatment coordinators, and coordinators for the Total Maximum Daily Load (TMDL) program in EPA Regions. The final column reflects recent suggestions received from members of the Association of Metropolitan Sewerage Agencies (AMSA) and the Association of State and Interstate Water Pollution Control Authorities (ASIWPCA).

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<b>Table 1: 13 Suggested Categories Without Effluent Guidelines</b>					
<b>Industry</b>	<b>Formal Comment Process</b>		<b>Previous Suggestions (Sec. 2.4)</b>	<b>Draft <i>Strategy</i> Outreach</b>	
	<b>Comments on Draft <i>Strategy</i> (Sec. 2.2)</b>	<b>Comments on 2002/2003 Plan (Sec. 2.3)</b>		<b>Permitting Authorities (Sec. 2.5)</b>	<b>AMSA &amp; ASIWPCA (Sec. 2.6)</b>
Airport Industrial Discharges			✓		
Aquatic Animal Production			✓	✓	
Construction and Development (storm water discharges)					✓
Dental Facilities	✓	✓		✓	
Drinking Water Supply and Treatment			✓		
Food Service Establishments	✓				
Groundwater Remediation Discharges				✓	
Independent and Stand-Alone Laboratories	✓				
Municipal Storm Water Runoff			✓	✓	✓
Ocean Going Vessels (cruise ships, ballast and bilge water)		✓	✓		
Printing and Publishing	✓				
Prisons			✓	✓	
Wastewater Treatment and Sewerage Systems (POTWs and municipal treatment plants)			✓		

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<b>Table 2: 24 Suggested Categories with Existing Effluent Guidelines</b>					
<b>Industry</b>	<b>Formal Comment Process</b>		<b>Previous Suggestions (Sec. 2.4)</b>	<b>Draft <i>Strategy</i> Outreach</b>	
	<b>Comments on Draft <i>Strategy</i> (Sec. 2.2)</b>	<b>Comments on 2002/2003 Plan (Sec. 2.3)</b>		<b>Permitting Authorities (Sec. 2.5)</b>	<b>AMSA &amp; ASIWPCA (Sec. 2.6)</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 (& Related Health Care Facilities)	✓	✓		✓	
Inorganic Chemical Manufacturing				✓	
Meat (and Poultry) Products			✓	✓	✓
Metal Finishing	✓		✓	✓	✓
Metal Molding and Casting	✓		✓	✓	✓
Metal Products and Machinery				✓	
Mineral Mining and Processing			✓		
Oil and Gas Extraction (specifically coal bed methane development as new subcategory)		✓	✓	✓	
Ore Mining and Dressing (hard rock mining)		✓	✓	✓	
Organic Chemicals, Plastics, & Synthetic Fibers				✓	

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<b>Table 2: 24 Suggested Categories with Existing Effluent Guidelines</b>					
<b>Industry</b>	Formal Comment Process		Previous Suggestions (Sec. 2.4)	Draft <i>Strategy</i> Outreach	
	Comments on Draft <i>Strategy</i> (Sec. 2.2)	Comments on 2002/2003 Plan (Sec. 2.3)		Permitting Authorities (Sec. 2.5)	AMSA & ASIWPCA (Sec. 2.6)
Organic Chemicals, Plastics, & Synthetic Fibers: chemical formulators, including adhesives and sealants, as new subcategory	✓			✓	
Petroleum Refining			✓	✓	✓
Petroleum Refining: petroleum bulk stations and terminals as new subcategory			✓		
Pulp, Paper, and Paperboard (Phases 1, 2, and 3)			✓	✓	
Steam Electric Power Generation			✓	✓	
Textile Mills			✓	✓	
Timber Products Processing				✓	
Transportation Equipment Cleaning (specifically industrial container & drum cleaning)	✓				

Note that several of the discharge categories listed here may have been recently addressed by effluent guidelines or are being addressed in effluent guidelines currently being revised or developed. This is noted in the discussions presented in the following sections, and was taken into consideration during the ranking process that follows the screening level review. (This is documented in the memo “Description and Results of EPA Methodology to Synthesize Screening Level Results for the CWA 304(m) Effluent Guidelines Program Plan for 2004/2005” (DCN 00548).)

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### **2.2 Comments on Draft Strategy for National Clean Water Industrial Regulations**

In November 2002, EPA published a notice announcing the draft *Strategy for National Clean Water Industrial Regulations*, which outlines a process that EPA proposed to use to develop biennial Effluent Guidelines Program Plans. The comment period on the draft *Strategy* ended on February 27, 2003, and EPA received comments from 26 commenters. A summary of those comments can be found in “Comments on the Draft Strategy for National Clean Water Industrial Regulations” (DCN 00585). The comments themselves are available for review in EPA docket OW-2002-0020, available on-line at EPA’s EDOCKET under e-docket numbers 0036 through 0069. The internet address for the EDOCKET home page is [cascade.epa.gov/RightSite/dk\\_public\\_home.htm](http://cascade.epa.gov/RightSite/dk_public_home.htm).

Most of the comments came from municipal wastewater agencies or treatment authorities (10), and industry trade associations (7). EPA also received four comments from state or city environmental departments, four comments from individual companies, and one comment from an environmental group. The discussion below summarizes the comments as they pertain to stakeholder input, Factor 4 in general, and discharge categories for which revisions to existing guidelines or development of new guidelines were recommended.

#### **2.2.1 Stakeholder Input**

In total, twelve commenters specifically mentioned stakeholder involvement with the planning process. Nine of these commenters generally endorse the stakeholder involvement described in the draft *Strategy*. Three others agree with the *Strategy*, but also provide suggestions for ways EPA may more effectively involve stakeholders: 1) work with control authorities at the local level as a supplement/alternative to regulations; 2) form a broad-based panel of stakeholders to work more closely with EPA (2 commenters), and 3) develop data gathering tools. None of the commenters disagree with this aspect of the *Strategy*.

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### **2.2.2 Factor 4: Implementation and Efficiency**

Seven commenters addressed factor 4 specifically. Two of these commenters support this factor, both in its consideration of other EPA programs and in its inclusion of stakeholder input. Another four commenters agree with this factor in general, but suggest that EPA expand it to: 1) also seek information on emerging technologies from ORD, OECA, and Regions; 2) also consult with Commerce, Patent Office, and wastewater treatment manufacturers to identify emerging technologies; 3) also consider whether permit writers have been requesting modifications to existing effluent guidelines and whether those changes require revision of the existing effluent guidelines. The seventh commenter contends that this factor is not allowed under the CWA.

### **2.2.3 Discharge Categories Without Effluent Guidelines**

Five commenters made specific recommendations regarding categories which do not have effluent guidelines. Four of these commenters identify four specific discharge categories that could warrant development of new effluent guidelines under Section 304(m). These are listed below. Additional comments on unregulated categories are discussed at the end of this list.

*Dental facilities:* Several stakeholders asserted that discharges from dental facilities are a significant source of mercury to sewage treatment systems. Stakeholders state that strategies for reducing mercury discharges from dental facilities can involve both source reduction through Best Management Practices, and the use of effective and affordable devices known as “separators” to remove mercury from dental wastewater. One stakeholder recommends that effluent guidelines for dental facilities would need to include pollution prevention and source reduction, and believes that EPA’s proposed criteria would allow for such a strategy. Another stakeholder notes that there are water quality standards for mercury, requirements to develop local limits that consider water quality standards, and resultant non-detect limits. They state that the most efficient approach is probably a ban on mercury in products rather than tracking it down and regulating it up the pipe. Two stakeholders asserts that traditional pretreatment standards for dental facilities will pose an undue burden on Control Authorities for several reasons: 1) very low volume flows, 2) high

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number of facilities, and 3) often located in professional buildings with no distinct sewer lateral or sampling location for their discharge. These stakeholders encourage EPA to consider voluntary programs as a way to reduce these discharges.

*Food service establishments:* A stakeholder asserts that grease from food service establishments interfere with collection systems by reducing the capacity of sewers and causing overflows. The stakeholder notes that, historically, effluent guidelines have addressed toxic pollutants and that grease itself is not toxic. However, the stakeholder notes that EPA recognizes the seriousness of Sanitary Sewer Overflows (SSOs) and Combined Sewer Overflows (CSOs) and urges EPA to consider effluent guidelines that would reduce these events. The stakeholder recommends the development of Best Management Practices and sizing and cleaning and maintenance criteria, engaging cities and health departments already experienced in addressing this problem.

*Independent and Stand-Alone Laboratories:* A stakeholder asserted that several discharge categories listed in Plaintiff's Exhibit G, entitled "Effluent Guidelines Categories" (submitted to the federal district court in NRDC v. Reilly, 89-2980). After reviewing the lists included in this document, EAD concluded that the laboratories category was one of the four listed in that Exhibit which had not yet been addressed. Another stakeholder asserted that significant discharges of mercury come from laboratories.

*Printing and publishing:* A stakeholder asserted that several discharge categories listed in Plaintiff's Exhibit G, entitled "Effluent Guidelines Categories" (submitted to the federal district court in NRDC v. Reilly, 89-2980). After reviewing the lists included in this document, EAD concluded that printing and publishing was one of the four discharge categories in that Exhibit which had not yet been addressed.

One of the four commenters suggested that the 304(m) Team review a list of specific discharge categories that by 1988 had been identified by EPA or its stakeholders to identify those that to date had not yet been addressed. After a review of the referenced Plaintiff's Exhibit G (submitted to the federal district court in NRDC v. Reilly, 89-2980), EAD identified five items



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from this list that meet that criteria. Of these, only two discharge categories have not yet been addressed – the laboratories point source category, and the printing and publishing point source category. Both of these are included in the list above.

Of the remaining three unregulated items identified in Exhibit G, two are considered part of a currently unregulated subcategory of existing effluent guidelines for Organic Chemicals, Plastics, and Synthetic Fibers – chemical formulators, including adhesives and sealants. This subcategory is listed in section 2.1.4 below. The fifth item on the list of Exhibit G is drum reconditioning, which is part of the Industrial Container and Drum Cleaning subcategory of the Transportation Equipment Cleaning category. This unregulated subcategory is also listed in section 2.1.4 below.

One of these commenters also argues that effluent guidelines should be developed for all point sources that discharge more than trivial amounts of toxic or nonconventional pollutants. The fifth commenter reminds EPA that a finding of the “significant amounts” of toxic pollutants is a mandated prerequisite for identifying new categories.

#### **2.2.4 Discharge Categories with Existing Effluent Guidelines**

Four commenters made specific recommendations on revising existing effluent guidelines. Two commenters identify five specific categories:

*Electroplating (40 CFR 413):* A stakeholder asserts that, if the Metal Products and Machinery effluent guidelines will only address direct discharging facilities in the Oily Waste subcategory, EPA should revise the Electroplating effluent guidelines, and consolidate it with Metal Finishing effluent guidelines. In addition, the stakeholder recommends that cyanide sampling should be performed after mixing with the metal bearing waste stream (this reduces the burden on Control Authorities in sampling two locations); and stand-alone iron phosphate operations should be excluded from regulation.

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*Hospitals (40 CFR 460):* Stakeholders identified hospitals and related health care facilities for discharges of mercury. One stakeholder asserted that significant discharges of mercury come from hospitals and related health care facilities, but noted that for many hospitals, a pollution prevention strategy that emphasizes product testing, substitution and source reduction can effectively and substantially reduce mercury discharges. This stakeholder recommends that revised effluent guidelines for hospitals and related health care facilities would need to include pollution prevention and source reduction, and believes that EPA's proposed criteria would allow for such a strategy.

*Metal Finishing (40 CFR 433):* A stakeholder asserts that, if the Metal Products and Machinery effluent guidelines will only address direct discharging facilities in the Oily Waste subcategory, EPA should revise the Metal Finishing effluent guidelines, and consolidate it with Electroplating effluent guidelines. In addition, the stakeholder recommends that cyanide sampling should be performed after mixing with the metal bearing waste stream (this reduces the burden on Control Authorities in sampling two locations); and stand-alone iron phosphate operations should be excluded from regulation. The stakeholder also asserts that the effluent guidelines should be re-evaluated to address the discrepancy of metals limits between this category and those in the Metal Molding and Casting 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 into equivalent concentration limits, the resulting discharge limits for metals are orders of magnitude lower than the Metal Finishing standards. This 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.

*Metal Molding and Casting (40 CFR 464):* A stakeholder asserts 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 into equivalent concentration limits, the resulting discharge limits for metals are orders of magnitude lower than the Metal Finishing standards. This suggests

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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.

*Organic Chemicals, Plastics, and Synthetic Fibers, 40 CFR 414 – Chemical formulators as a new subcategory:* A stakeholder asserted that several discharge categories listed in Plaintiff’s Exhibit G, entitled “Effluent Guidelines Categories” (submitted to the federal district court in NRDC v. Reilly, 89-2980). After reviewing the lists included in this document, EAD concluded that chemical formulators, which includes the adhesives and sealants subcategory also listed in Exhibit G, is an unregulated subcategory under the existing guidelines for Organic Chemicals, Plastics, and Synthetic Fibers.

*Transportation Equipment Cleaning (40 CFR 442):* A stakeholder asserted that several discharge categories listed in Plaintiff’s Exhibit G, entitled “Effluent Guidelines Categories” (submitted to the federal district court in NRDC v. Reilly, 89-2980). After reviewing the lists included in this document, EAD concluded that drum reconditioning, part of the Industrial Container and Drum Cleaning subcategory of Transportation Equipment Cleaning, is one of the four listed in that Exhibit which had not yet been addressed.

The third commenter suggested that EPA revise all effluent guidelines where the technologies they require are no longer Best Available Technology (BAT) for existing sources or Best Conventional Pollutant Control Technology (BCT) for new sources. The fourth commenter warns EPA that no revisions to effluent guidelines will prove cost effective.

#### **2.2.5 Pollutants of Concern**

EPA received comments on the following pollutants of concern:

*Bioengineered Products* - A stakeholder asserted that EPA’s top priority should be reducing bioengineered products, which are among the pollutants most likely to cause environmental or public health risks.

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*Carcinogens* - A stakeholder asserted that EPA's top priority should be reducing carcinogens, which are among the pollutants most likely to cause environmental or public health risks.

*Endocrine Disruptors* - A stakeholder asserted that EPA's top priority should be reducing endocrine disruptors, which are among the pollutants most likely to cause environmental or public health risks. Another commenter recommended that EPA should evaluate the best way to control newer pollutants such as endocrine disruptors, warning that setting limits and issuing permits to large dischargers will not effectively control these newer pollutants.

*Pharmaceutical Residues* - A stakeholder asserted that EPA's top priority should be reducing pharmaceutical residues, which are among the pollutants most likely to cause environmental or public health risks.

#### **2.2.6 Evaluation of POTW performance**

Three commenters specifically suggested that EPA update its interference/pass-through analyses ("The Fate of Priority Pollutants in Publicly Owned Treatment Works", 1982, referred to informally as the "50 POTW Study"), though it wasn't a topic for which we solicited comments. Commenters state that the technological improvements at POTWs have resulted in substantially better removals of pollutants generated by industrial processes. (This comment was also received in response to the proposed Effluent Guidelines Program Plan for 2002/2003.)

In addition, during a recent rulemaking effort EPA received a related comment, common to guidelines rulemakings. The commenter asserted:

"...publicly owned treatment works (POTWs) do not believe that additional effluent guidelines are needed due to the maturity of the national pretreatment program. We acknowledge that there might be handful of very small POTWs that are experiencing problems (political or otherwise), but generating a rule of this magnitude for the entire nation is not the solution to these problems. This is especially true when you consider that categorically regulated industry sectors have high rates of compliance, and environmentally derived local limits must, by law, provide adequate

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protection against pass-through and interference, and ensure the high quality of effluents and residual biosolids.”

Commenters also assert that expenditures on building and improving POTWs have had dramatic effects in reducing the levels of pollutants that treatment works discharge to waters of the U.S. Therefore, commenters assert that the pollution needed to justify pretreatment standards do not exist.

Analytical methods are now capable of measuring lower levels of pollutants. To understand the impact of technological and measurement improvements, EPA intends to collect recent data from POTWs with respect to pollutant removal rates, efficiency of the removals, types of pollutants removed, and conditions leading to interferences in POTW treatment operations. Because of time constraints, this evaluation will not occur during the current planning cycle, but will be considered for use in future planning cycles.

### **2.3 Comments on the Proposed Effluent Guidelines Program Plan for 2002/2003**

In June 2002, EPA proposed its Effluent Guidelines Program Plan for 2002/2003. Recognizing that this Plan was likely to be the last to be published under the terms of a Consent Decree, the Agency included in the proposal a solicitation for comments on the future of the Effluent Guidelines program, including recommendations on discharge categories for which new or revised effluent guidelines should be considered. A summary of those comments can be found in the EPA brief “Recommendations from Commenters on the Effluent Guidelines Program Plan for 2002/2003” (DCN 00215). During the detailed investigation phase of this planning cycle, EAD intends to contact commenters to obtain data and information to support these suggestions.

#### **2.3.1 Discharge Categories Without Effluent Guidelines**

EPA received suggestions that effluent guidelines be developed for the following discharge categories that do not have existing guidelines:

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*Dental Facilities:* The commenter asserted that dental facilities are a source of at least 13 percent of mercury discharged to treatment works under their authority. The commenter further asserts and provides supporting documentation that dental facilities are a major nationwide source of mercury discharges to sewage treatment systems, and that cost effective control technologies are readily available.

*Ocean Going Vessels/Cruise Ships:* The commenter asserted that the cruise ships industry has made significant adverse impacts on water quality. These impacts are caused by their discharge of large volumes of wastewater and graywater, and by the discharge of significant hazardous wastes from onboard printing, photo processing, and dry cleaning operations. The commenter urges EPA to expedite development of effluent limitations mandated by Title XIV of the Labor, Health and Human Services Appropriations Act (H.R. 4577/106th Congress, 'Certain Alaskan Cruise Ship Operations') and apply these limits to cruise ship discharges in all U.S. waters. (Note: EPA's Office of Wetlands, Oceans, and Watersheds is currently taking the lead on evaluation of these discharges.)

#### **2.3.2 Discharge Categories With Existing Effluent Guidelines**

EPA received suggestions to revise the effluent guidelines already in place for the following discharge categories:

*Coal Mining (40 CFR 434):* The commenter asserts that the effluent guidelines for the coal mining point source category require revision because rainfall exemptions for coal mining in the current effluent guidelines allow for relaxation of limits as soon as it rains. Furthermore, the commenter states that settlement basins used as primary control for mine drainage do not work very well when it rains. (Note: EAD recently revised these effluent guidelines, with revisions promulgated in January of 2002; however, the revised rule did not reassess the effluent limitations for precipitation events.)

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*Hospitals (40 CFR 460):* The commenter asserts that hospitals and related health care facilities are significant sources of mercury. The commenter further asserts and provides supporting data and documentation that significant potential exists for development of cost-effective pollution prevention strategies, as well as economically feasible treatment options. The commenter also recommends group permitting and self-certification for small facilities, and pooling of information on mercury-containing products to facilitate product substitution or special handling to eliminate mercury discharges.

*Oil and Gas Extraction (40 CFR 435):* The commenter asserted that coalbed methane development industry has had significant water quality impacts in the regions in which it is prevalent. The commenter states that while EPA Region 8 has taken action, EPA needs to develop national effluent guidelines that cover this discharge subcategory. (Note: EAD is supporting Region 8 work in evaluating discharges from this industry.)

*Ore Mining and Dressing (Hard Rock Mining) (40 CFR 440):* The commenter asserts that the ore mining and dressing industry has significant water quality impacts in the regions in which it is prevalent. The commenter requests that EPA reverse its decision to exclude seepage from waste dumps from the Part 440 applicability definition of ‘mine drainage,’ and contends that EPA has the data and resources to regulate seepage from waste dumps.

#### **2.3.3 Pollutants of Concern**

EPA received comments on the following pollutants of concern:

*Persistent, Bioaccumulative, and Toxic (PBT) Compounds* - Commenters request that EPA’s new *Strategy* focus its efforts particularly on sectors that are known sources of PBT compounds, particularly mercury and lead.

*Nutrients and Pathogens* - The commenter requests that EPA require wastewater treatment plants use biological nutrient removal as best available technology and develop pollutant limitations for

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nutrients, bacteria, and viruses for publicly owned treatment works (POTWs). The commenter notes that States will soon be required to adopt nutrient and bacteria criteria, and effluent guidelines should keep pace with these policy decisions. While regulating discharges from publicly owned treatment works (POTWs) is not within the jurisdiction of the effluent guidelines program, EAD intends to consider these pollutants and their treatment, if appropriate, when it evaluates wastewater treatment for industry categories.

#### **2.4 Previous Effluent Guidelines Planning Suggestions**

EPA's planning process for the effluent guidelines program has historically included the consideration of information provided by stakeholders and observations of staff in EPA headquarters and Regions both through the formal comment process and through informal channels. In the fall of 1999 and again in the spring of 2001, EAD requested suggestions from headquarters, regional, and state staff charged with the task of implementing effluent guidelines to follow up on concerns and to gather recommendations regarding which effluent guidelines the Agency might develop or revise. The industry categories which were identified through this process are listed below. See the EPA brief "Previous Recommendations for the Effluent Guidelines Planning Process" (DCN 00214) for more information.

##### **2.4.1 Discharge Categories Without Effluent Guidelines**

EPA received suggestions that effluent guidelines be developed for the following discharge categories that do not have existing guidelines:

*Airport Industrial Discharges:* Responders suggested that new effluent guidelines be developed to address airport deicing activities as a way to level the playing field between airports. Effluent guidelines were also seen as a means to ease the burden on permit writers, for whom modeling oxygen demand for each airport is very time consuming. (Note: EAD completed a study on this discharge category in 1999. At that time, the industry was initiating activities to reduce the



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toxicity of deicing fluids, and many airports were still in the process of upgrading their strategies for managing deicing runoff to meet their permit requirements for the year 2000.)

*Aquatic Animal Production (Aquaculture):* Responders to EPA's queries identified nutrients (including ammonia), medicinals, and formaldehyde as pollutants of concern. (Note: EAD is developing new effluent guidelines for this discharge category, with a proposal published in September of 2002 and final effluent guidelines due in June of 2004.)

*Drinking Water Supply and Treatment:* Responders noted the need for minimum technology-based effluent guidelines, especially for TDS, TSS, pH, and for chemicals used by these facilities. Concerns were also raised for disposal of treatment sludges and backwash waters, especially when those discharges are sent to surface water reaches already impaired for sediment.

*Municipal Storm Water Runoff:* Responders identified oil and grease, pesticides, pathogens, metals, and sediment as requiring limitations. The concern is that storm water regulators cannot use water quality based effluent limits, and need technology-based guidelines to supplement reliance on best management practices. Two responders recommended defining the standard as "reducing pollutants to the maximum extent possible." (Note: EAD is currently developing effluent guidelines for storm water discharges from construction sites, with a proposal published in June 2002, and final guidelines due in March 2004.)

*Ocean Going Vessels/Ballast and Bilge Water:* Responders identified oil and grease, metals, and invasive species as pollutants of concern discharged in the ballast and bilge water of ocean-going vessels.

*Prisons (Penitentiaries):* Responders identified prisons as a source of problems for food processing discharges, including copper.

*Wastewater Treatment and Sewerage Systems:* Responders cited the need for new effluent guidelines for publicly owned treatment works (POTWs) and for municipal treatment plants that

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would set technology-based controls for nutrients, including ammonia, nitrate-nitrite, and phosphorus. Metals were also identified as a concern. Responders recommended either improved secondary treatment or tertiary treatment requirements. At issue is EPA's legal authority to promulgate effluent guidelines, as well as ongoing efforts within EPA's municipal program. (Note: Some of these suggestions appear to be more appropriately addressed by programs with jurisdiction for direct discharges from POTWs. EAD intends to consider these pollutants, however, as part of its evaluation of potential revisions to categorical pretreatment regulations.)

#### **2.4.2 Discharge Categories With Existing Effluent Guidelines**

EPA received suggestions to revise the effluent guidelines already in place for the following discharge categories:

*Coal Mining (40 CFR 434):* Although responders recommended coal mining for revised effluent guidelines development, no specific concerns were noted. (Note: EAD revised these effluent guidelines in January, 2002.)

*Fertilizer Manufacturing (40 CFR 418):* Responders noted concerns for ammonia discharges from this point source category.

*Food Processing including Canned and Preserved Fruits and Vegetables Processing (40 CFR 407), Canned and Preserved Seafood (40 CFR 408), and Dairy Products Processing (40 CFR 405):* In general, responders were concerned with the discharge of nutrients, as well as overloading publicly owned treatment works (POTWs) and small streams (for direct dischargers) with conventional pollutants such as BOD. Responders identified several specific industries as having such characteristics, including seafood processing, dairies, cheese manufacturing, and vegetables processing. Other issues identified include a concern for copper in relation to dairies, and non-approved pretreatment processes in relation to juice manufacturing as an example. One

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respondent identified the “food protein technologies” industry as a subcategory without effluent guidelines which potentially need them.

*Meat (and Poultry) Products (40 CFR 432):* Responders mentioned the need to revise these effluent guidelines to address concerns for nutrients, specifically the need for limits for nitrogen and ammonia. Additional concerns raised were publicly owned treatment works (POTWs) overloaded by conventional pollutant discharges from this industry and unregulated discharges of copper. (Note: EAD is already in the process of revising these effluent guideline. EPA published a proposal in February, 2002; and final effluent guidelines are due in December, 2003.)

*Metal Finishing (40 CFR 433):* Responders suggested that the effluent guidelines be revised to remove phosphates of mild steel from the scope, and identified activities of concern, including fastener manufacturing, job shop galvanizers, and jewelry manufacturing.

*Metal Molding and Casting (40 CFR 464):* Specific activities of concern identified by responders include fastener manufacturing, job shop galvanizers, and jewelry manufacturing. Phenol was identified as a pollutant of concern.

*Mineral Mining and Processing (40 CFR 436):* Responders suggested the need for more complete effluent guidelines, including the addition of TSS limits, and were concerned that the existing guidelines are inconsistently applied.

*Oil and Gas (40 CFR 435) – coal bed methane as a new subcategory:* Responders suggested revising the oil and gas effluent guidelines to address issues arising from the coalbed methane extraction procedure. Although the bulk of the discharge from this activity is water, responders identified concerns for depleting aquifers, erosion, sedimentation, barium concentrations exceeded, salinization of land, adverse impact on farmers through plugging of soils which decreases infiltration, and the loss of the water’s return to groundwater. Several states are affected by these activities, including Wyoming, Colorado, New Mexico, Alabama, Montana, and Utah. (Note: EAD is currently supporting EPA staff in Region 8 to evaluate discharges from this industry.)

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*Ore Mining and Dressing (Hard Rock Mining) (40 CFR 440):* Responders suggested revising the effluent guidelines because 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, spent ore, and leach material. Issues not addressed by the effluent guidelines include closure/financial assurance plans, remediation, and a definition of active vs. inactive mines. A commenter in Region 8 suggested revising the hard rock mining effluent guidelines, and recommended consideration of the recommendations of EPA's National Mining Team, which include water budgets and closure plans.

*Petroleum Refining (40 CFR 419):* Responders identified the need to revise these effluent guidelines to expand the list of regulated pollutants to include: (1) priority pollutants for consistency with the Organic Chemicals, Plastics, and Synthetic Fibers effluent guidelines; (2) metals, especially selenium; and (3) nutrients (ammonia), biological oxygen demand (BOD), and chemical oxygen demand (COD). Stakeholders suggested a review of Best Practicable Technology (BPT), Best Available Technology (BAT), and Best Conventional Pollutant Control Technology (BCT) for accuracy and relevance as the current effluent guidelines were promulgated in 1982.

*Petroleum Refining (40 CFR 419) – Petroleum Bulk Stations and Terminals as a new subcategory:* Responders identified concerns that due to the absence of effluent guidelines for this subcategory, permit writers must depend on best professional judgment (BPJ). This raises consistency issues, as well as resource issues, given the number of facilities in this sector for which permits must be developed. Discharges may be primarily from collected storm water.

*Pulp, Paper, and Paperboard (40 CFR 430):* Responders raised concerns about discharges into smaller water bodies and difficulties with establishing whole effluent toxicity limits (Phases 1, 2, and 3 subcategories). Additional concerns include discharge of dyes and dioxin from bleaching at secondary mills (Phase 2 subcategories include secondary fiber mills but not secondary pulp mills) and problems regulating chip mills (covered by none of the phases) since the storm water

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regulations are not stringent enough. (Note: EAD is currently working to complete Phase 3 of these effluent guidelines; however, this rule will not address secondary pulp mills or chip mills.)

*Steam Electric Power Generation (40 CFR 423):* Responders noted applicability concerns for cogeneration units, concerns over toxic pollutants in coal pile runoff (including mercury and selenium), and concerns about the growing use of publicly owned treatment works (POTW) effluent as cooling water. In addition, responders suggested revising the effluent guidelines to expand the scope, citing exempt facilities that should not be exempt and many newer facilities that are not covered. Permits for these exempt and new operations must rely on BPJ. About 1,300 new power plants are expected, and such changes could ease the permit writing process.

*Textile Mills (40 CFR 410):* A respondent identified concerns for industrial sludge disposal.

#### **2.5 Consultations with Permitting Authorities**

In our public meetings and other interactions, a recurring recommendation is that the Agency start the planning process by consulting with people who are responsible for implementing the effluent guidelines. This includes management and staff in the Office of Wastewater Management (OWM) in headquarters. It includes EPA regional and State permit writers for the National Pollutant Discharge Elimination System (NPDES), pretreatment coordinators, and coordinators for the Total Maximum Daily Load (TMDL) program.

These EPA staff are experts in the issues and problems associated with both the quality of our nation's waters and with the tools available to address these problems. See "Gathering EPA Experts' Input for the Effluent Guidelines Program Plan for 2004/2005" brief (DCN 00581) for more detailed background and the written responses from EPA experts both in Headquarters and the Regions.

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EAD intends that these EPA experts will play a vital role in identifying possibilities for increasing efficiency of existing effluent guidelines as well as identifying specific categories for consideration in the 304(m) planning process. As part of our continuing effort to engage these experts in our planning process, EAD attends the regular monthly meetings of permit writers and regional pretreatment coordinators. For the current planning cycle, we informed attendees about the planning process and requested their suggestions. They supplied us with the following feedback either during the teleconferences, through email, in telephone calls, or in responses to a questionnaire we jointly developed.

##### **2.5.1 Discharge Categories Without Effluent Guidelines**

EPA received suggestions that effluent guidelines be developed for the following discharge categories that do not have existing guidelines:

*Aquatic Animal Production (Aquaculture):* EPA experts recommend that effluent guidelines be developed for this category to address water quality concerns and permitting issues. (Note: EAD is developing new effluent guidelines for this discharge category, with a proposal published in September of 2002 and final effluent guidelines due in June of 2004.)

*Dental Facilities:* EPA experts recommend developing effluent guidelines for dental facilities to address discharges of mercury from dental amalgam to publicly owned treatment works (POTWs). EPA experts assert that studies by POTWs identified dental facilities as the largest commercial contributors of mercury to their systems, and that therefore dental offices need a nationally consistent categorical standard. Based on the toxicity and persistence of mercury, it appears that this sector is at least contributing to pass through of this pollutant, and thus to fish consumption advisories around the U.S. Amalgam separators have proven very effective at removing this mercury, with the American Dental Association's comparison study showing all units testing achieving removal rates of greater than 95%. EPA experts note that a major issue would be the large number of small facilities and potential impact on the POTWs and other Control Authorities.

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Finally, EPA experts assert that extensive attempts to encourage voluntary actions by dentists have not worked, yielding highly inconsistent results.

*Groundwater Remediation Discharges:* EPA experts raised concerns for handling polychlorinated biphenyls (PCBs) and perchlorate during the remediation process.

*Municipal Storm Water Runoff:* EPA experts identified a gap in the Agency's storm water controls and suggested developing new guidelines to define Maximum Extent Practical (MEP) determinations for BPJs (Best Professional Judgement) for municipal storm water controls. (Note: EAD is currently developing effluent guidelines for storm water discharges from construction sites, with a proposal published in June 2002, and final guidelines due in March 2004.)

*Prisons:* EPA experts identified prisons as a source of problems for the publicly owned treatment works (POTWs) to which they discharge. Prisons wastewater discharge typically comes from a mixture of domestic and industrial wastewater, stemming from operations including food preparation, industrial laundries, medical/dental clinics, and prison industries. Problems at POTWs are related to blockage, trash handling, and toxics. In addition, EPA Region 3 has an ongoing multi-media initiative to address some of the common environmental problems found at these prisons, including overloaded sewage treatment plants and inadequate sampling, analysis, equipment, maintenance, and training at those plants. (For more information, see "An Investigation and Analysis of the Environmental Problems at Prisons" (DCN 00533).

#### **2.5.2 Discharge Categories With Existing Effluent Guidelines**

EPA received the following suggestions to revise the effluent guidelines already in place for the following discharge categories:

*Canned and Preserved Fruits and Vegetables Processing (40 CFR 407):* State permitting authorities (Washington) suggest updating these guidelines for both direct and indirect dischargers.

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Direct dischargers are performing well below the limits, and permitting authorities have found it difficult to address that gap effectively and lower discharges. In addition, permitting authorities suggest that revising these guidelines could address dissolved oxygen problems, since there are no water quality criteria for BOD (biological oxygen demand) and no equitable way to determine the farfield impacts of BOD.

*Canned and Preserved Seafood (40 CFR 408):* EPA experts identify concerns for the discharge of conventional pollutants biochemical oxygen demand (BOD) and pathogens, especially fecal coliform during seafood processing. State permitting authorities (Washington) note that the guidelines are out of date (originally promulgated in 1974) and need to be updated.

*Coil Coating (and Canmaking Subcategory) (40 CFR 465):* EPA experts note that the industry has changed since the effluent guidelines were promulgated in 1983. The industry is using completely different solvents than those assessed during the development of the existing guidelines. EPA experts are also concerned about the costs associated with monitoring requirements for pollutants that are no longer in use by the industry. In addition, applicability issues have been identified by EPA experts in two Regions (2 and 5), and stakeholders in the States (Alabama and Tennessee), with questions arising for facilities with multiple processes which also perform coil coating, most recently aluminum forming facilities.

*Electrical and Electronic Components (40 CFR 469):* EPA experts suggest that these guidelines need to be revised due to significant changes since the guidelines were promulgated. EPA experts also suggest that the semiconductor manufacturing portion of this industry be looked at 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 (CMP), which generates more or different pollution than the processes considered during the development of the existing standards.



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*Fertilizer Manufacturing (40 CFR 418):* EPA experts note that these effluent guidelines are very old and do not seem to be at all stringent.

*Hospitals (40 CFR 460):* EPA experts identify concerns for hospitals because they and related health care facilities discharge chemicals like mercury and silver, and do so without pretreatment standards or other controls. Based on the toxicity and persistence of mercury, it appears that this sector may be contributing to pass through of this pollutant, and thus to fish consumption advisories around the U.S. EPA experts note that boiler chemicals also pose problems.

*Inorganic Chemicals (40 CFR 415):* EPA experts suggest that these guidelines need to be reevaluated to determine whether the “no discharge” requirement is reasonable. They also note that there have been substantial changes to this discharge category since the effluent guidelines were promulgated in 1982. They express concerns for the chlor-alkali and nitrous oxide manufacturing subcategories. EPA experts also suggest revising the potassium manufacturing subcategory of this industry to address interpretation issues for new sources as to what constitutes process wastewater.

*Meat (and Poultry) Products (40 CFR 432):* EPA experts identify concerns for discharges from poultry processing, especially BOD, ammonia, and TSS. (Note: EAD is already in the process of revising these effluent guidelines. EPA published a proposal in February, 2002; and final effluent guidelines are due in December, 2003.)

*Metal Finishing (40 CFR 433):* EPA experts suggest revising these guidelines to address unresolved applicability issues. This includes clarifying several important distinctions: 1) between phosphate coating and phosphate cleaning, 2) between acid etching and acid cleaning, and 3) between metal finishing guidelines and other guidelines – including Iron and Steel Manufacturing, Electroplating, and Nonferrous Metals Manufacturing – especially when multiple guidelines address facilities performing essentially the same operation. EPA experts note that, due to these questions, the guidelines have been applied inconsistently from region to region. They also note that, since this is the single largest category of industrial users in the pretreatment program, it is

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very important that these issues be resolved. In addition, EPA experts identify applicability requirements relative to core activities. Specifically, the structure of these guidelines present ongoing challenges in determining whether a facility performs core activities or only ancillary activities, creating technical and resource issues to resolve. EPA experts also recommend that EPA consider expanding the list of core operations. Finally, they also note difficulties encountered in determining whether new processes at existing electroplating job shops are subject to the metal finishing guideline: when do existing operations constitute a new source? EPA experts note that guidance or another form of clarification of these issues may be an alternative to revising the guidelines.

*Metal Molding and Casting (Foundries) (40 CFR 464):* EPA experts have found cyanide to be an issue when molten slag is allowed to come into contact with the quench water in the quenching process. EPA experts 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; 2) the need to allow additional fundamentally different factors (FDF) determinations; and 3) the problems meeting the limits they receive using the formulas provided in the guidelines, specifically for total phenols and for oil and grease. Expanding on this last item, EPA experts explain that the building block method for determining allowances, when applied to small facilities, results in a low limit on total phenols. EPA experts 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 publicly owned treatment works (POTW). Although protecting POTWs is not one of the 304(m) evaluation criteria, EPA experts 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). EPA experts also asserted that EPA removed the phenol limits from the pretreatment standards of the Organic Chemicals, Plastics, and Synthetic Fibers effluent guidelines (40 CFR 414) after finding that phenol did not pass through POTWs.

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*Metal Products and Machinery (40 CFR 438):* EPA experts identified missile and rocket producers' wastewaters as contributing radioactivity, which is difficult to address at low levels. These difficulties are illustrated by recent (ground water) problems with perchlorate.

*Oil and Gas Extraction (40 CFR 435) – Coal bed methane as a new subcategory:* EPA experts identify a problem with coalbed methane extraction, where discharged pollutants have no water quality criteria or standards, and recommend that new guidelines be developed for this subcategory.

*Ore Mining and Dressing (Hard Rock Mining) (40 CFR 440):* EPA experts note that runoff from waste rock and overburden piles are not covered by the guidelines, and are currently considered industrial storm water. Many mine sites are covered only by the multi-sector general permit. Preliminary data from benchmark monitoring in Region 9 reveals significant volumes of water as runoff, and high concentrations of metals in both active and inactive mine site runoff that are violating water quality standards. (There are about 100 active hard rock mines, geographically concentrated in the western states and Alaska.) The metals include arsenic, copper, mercury, and selenium; acidity (pH) is also a problem. Also, the current guidelines do not represent the best technology, and numerous mine sites have installed what may be considered BAT (reclamation and containment).

*Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR 414):* EPA experts assert that the structure and limited scope of these guidelines present a number of permitting and enforcement challenges: 1) difficulties encountered by publicly owned treatment works (POTWs) and OCPSF facilities in correctly calculating and establishing flow-based limits; 2) problems obtaining the data necessary to determine compliance with flow-based limits – deficiencies in permits and control mechanisms have hindered enforcement actions against non-compliant facilities; 3) challenges encountered in determining the correct Standard Industrial Classification (SIC) codes to apply to facilities. Therefore, EPA experts recommend reevaluating these guidelines to consider more general coverage, not tied to SIC codes. They also recommend

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switching from mass-based limits to concentration-based limits due to difficulties in implementing and enforcing mass-based limits.

*Organic Chemicals, Plastics, and Synthetic Fibers, 40 CFR 414 – Chemical formulators as a new subcategory:* In addition to concerns identified for the existing Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) effluent guidelines (discussed above), EPA experts recommend that EPA consider the Chemical Formulators, including Adhesives and Sealants, as a new subcategory to these guidelines, since the discharges from chemical formulators are similar to those of OCPSF but not as yet regulated.

*Petroleum Refining (40 CFR 419):* EPA experts assert that this category is very outdated relative to the current state of the industry, and should be a high priority for revision. They 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 throughput than was used when the permits were first issued and can easily meet the limits. State permitting authorities (Washington) note that since refineries are performing well below limits derived from the guidelines, they have found it difficult to address that gap effectively and lower discharges. In addition, the guidelines have been the subject of controversy and litigation over the past seven years.

*Pulp, Paper, and Paperboard (40 CFR 430):* EPA experts and their stakeholders request a measurable ELG for color (Phase 1, 2, and 3 subcategories). EPA experts also support the Phase 2 rule, due to concerns for the number of pollutants discharged by the chemical mechanical and fiber deinking subcategories.

*Steam Electric Power Generation (40 CFR 423):* EPA experts assert that these guidelines are very old (first promulgated in 1982) and do not represent the industry well. They identified a number of concerns about the effectiveness of the current guidelines: 1) there are existing problems with temperature at cooling outfalls, and with mercury and arsenic at ash pond outfalls, 2) due to improvements in analytical methods, non-detects of priority pollutants in the 1970's (when the guidelines were being developed) are now quite different from non-detects now; 3)

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there have been changes in the additives in use, for which there are no current limits; 4) the footnotes in that regulation are in error; and 5) most plants that have been built in the last decade are combined cycle plants, which the guidelines do not reflect well, and may not actually cover.

*Textile Mills (40 CFR 410):* EPA experts request considering the development and promulgation of a measurable limit for color and for copper.

*Timber Products Processing (40 CFR 429):* State permitting authorities (Washington) suggest revising these guidelines to include effluent limits for storm water discharges from associated log yards.

#### **2.5.3 NPDES Permit Review Process**

The National Pollutant Discharge Elimination System (NPDES) requires that facilities obtain permits for specific discharges to surface waters. Both the EPA Office of Inspector General and the EPA Office of Wastewater Management have conducted reviews of the permits issued under the NPDES program for quality control purposes. EAD intends to review both results of those reviews and the permits that were part of the review process, to evaluate them for information relevant to its Factor 4 analysis. Although this review was not possible in time for the current planning cycle, it will be considered as appropriate in future planning cycles.

In addition, EPA recently issued its “Permitting for Environmental Results Strategy” (DCN 00486). EPA intends to work closely with OWM to identify concerns identified through this planning process to assist in prioritizing permitting efforts for the greatest environmental benefits.

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### **2.6 Other Governmental Bodies**

EAD wants to learn from the expertise of stakeholders in other governmental agencies, and to include their recommendations in the planning process. Although these stakeholders have not commented to date on either EPA's draft *Strategy* or on previous Effluent Guidelines Program Plans, EAD intends to seek recommendations from these stakeholders when the **Effluent Guidelines Program Plan for 2004/2005** is proposed. For more information, see the brief titled "FACAs for State and Local Governments" (DCN 00587).

#### **2.6.1 AMSA and ASIWPCA**

EAD has a long-standing relationship with two water pollution control associations: Association of Metropolitan Sewerage Agencies (AMSA) and the Association of State and Interstate Water Pollution Control Authorities (ASIWPCA). EAD attends the conferences sponsored regularly by both groups, both to share information about the planning process and to engage members in productive dialogue about it. Both of these associations routinely comment on proposed effluent guidelines.

EAD met with representatives of both of these organizations when the draft *Strategy* was announced to inform them of the issues discussed in the draft *Strategy* and to solicit their recommendations.

**AMSA:** Representatives from AMSA provided comments on both the Effluent Guidelines Program Plan for 2002/2003 and on the draft *Strategy*. These comments are discussed elsewhere in this document, but can be viewed in Office of Water docket W-01-12. An EAD representative attended the technical roundtable session AMSA held during their 2003 policy forum this spring. During that roundtable, several recommendations were made, including the following specific suggestion:

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*Metal Finishing (40 CFR 433):* These effluent guidelines affect more facilities than any other. Because the limits are concentration-based, it discourages water efficiency.

***ASIWPCA:*** In a teleconference on June 5, 2003, EAD discussed the planning process with members of ASIWPCA and representatives from six states: Alabama, California, Delaware, Florida, Louisiana, and West Virginia. For more information, see the brief titled “Teleconference with ASIWPCA and States: Meeting Synopsis” (DCN 00586). During that teleconference, EAD listed of the discharge categories without effluent guidelines identified by other stakeholders as possibly warranting effluent guidelines. In response, ASIWPCA stakeholders made the following points:

*Construction and Development Storm Water Discharges:* Effluent guidelines developed for this category may benefit from information gained in developing mining regulations. Best Available Technologies (BATs) developed to address acid-base accounting may be transferable to BMPs. (Note: EAD is currently developing effluent guidelines for storm water discharges from construction sites, with a proposal published in June 2002, and final guidelines due in March 2004.)

*Dental Facilities:* Stakeholders reminded EAD that effluent guidelines for this category would be resource intensive to implement, given the large number of small operations.

*Municipal Storm Water Runoff:* Stakeholders noted that storm water is currently addressed by best management practices (BMPs), and Total Maximum Daily Loads (TMDLs). There are also issues with runoff scouring river banks in areas with increased development – the sediment washed into the water along with the metals and other components of the soil is part of the problem, may require creative approaches to minimize scouring. Problems generated by precipitation-based runoff include specific concerns for iron, manganese, aluminum, and soil contributions. (Note: EAD is currently developing effluent guidelines for storm water discharges from construction sites, with a proposal published in June 2002, and final guidelines due in March 2004.)

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EAD also listed the discharge categories with existing effluent guidelines identified by other stakeholders as possibly warranting revision. In response, ASIWPCA stakeholders made several points.

First, a number of existing guidelines do not regulate pollutants now understood to cause problems, including:

- *Canned and Preserved Seafood* (40 CFR 408) specifically, and other food processing categories in general, discharge nutrients and fecal coliform for which there are no limits.
- *Coal Mining* (40 CFR 434) operations discharge manganese which is generating problems.
- Industries which discharge nutrients do not have limits for nitrates/nitrites, and adding these could be a means to address nutrient concerns such as the Gulf of Mexico Hypoxia.

Second, ASIWPCA stakeholders identified several effluent guidelines that are out of date relative to available technology:

- *Canned and Preserved Seafood* (40 CFR 408) The ELG for this industry currently only requires screening of the effluent. The available technology has advanced well beyond this level.
- *Meat Products* (40 CFR 432)
- *Metal Molding and Casting* (40 CFR 464)
- *Petroleum Refining* (40 CFR 419)

EAD anticipates that these organizations will provide data for the detailed investigation phase, and EAD intends to continue seeking the input of these key stakeholder groups.

#### **2.6.2 FACAs for State and Local Governments**

Executive Order 13132 *Federalism* requires that EPA communicate with elected state and local officials. EPA's Office of State and Local Relations oversees communications with several groups under the Federal Advisory Committee Act (FACA). At proposal of the **Effluent Guidelines Program Plan for 2004/2005**, EAD intends to contact these groups to alert them to



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the planning process and invite them to participate in the process of developing the **Plan**. Their recommendations will be considered in the current planning process as well as future cycles of the process.

One of these groups is referred to as the “Big 7 (Plus) Associations” and includes the following members:

- Council of State Governments
- Environmental Council of the States
- International City/County Management Association
- National Association of Counties
- National Association of Towns and Townships
- National Conference of Black Mayors
- National Conference of State Legislatures
- National Governors’ Association
- National League of Cities
- U.S. Conference of Mayors
- Western Governors’ Association

Another group EAD intends to notify is the State and Local Advisory Group, composed of 28 members. More information on these groups is available in the brief, “FACAs for State and Local Governments,” August 20, 2003.

#### **2.6.3 Federally Recognized Indian Tribes**

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* requires EPA to work with Indian Tribal Governments to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. At proposal of the **Effluent Guidelines Program Plan for 2004/2005**, EAD intends to contact these governments to alert them to the planning process and invite them to participate in the process of developing the final **Plan**, as well as participating in future planning cycles.

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### **2.7 Future Information Gathering Efforts**

Although outreach is completed for the current planning cycle, there are ways to improve our effectiveness in future cycles. As a way to identify current or emerging issues, EAD intends to continue attending the regular meetings and conferences held by stakeholders and EPA experts to hear about the issues they are confronting. In addition, the Office of Enforcement and Compliance Assurance (OECA) has been working on implementing a pilot project for their new problem identification process. Through the pilot process, OECA has been testing a new process for nominating and evaluating significant environmental and/or compliance problems. EAD intends to consider the results of this pilot project for possible applications to future planning cycles of the 304(m) planning process.

In addition to improving ways to identify issues, EAD intends to continue its efforts to incorporate voluntary loading reductions into its planning cycle analyses. EAD is partnering with other parts of the Agency that are leading voluntary initiatives to reduce pollutant discharges. EPA can incorporate information generated by these programs about industry progress in voluntarily reducing pollutant loadings into future planning cycles. (See section **3.0 Voluntary Load Reductions** for a discussion of potential approaches EPA has considered.) These EPA initiatives are the National Environmental Performance Track program, the Design for the Environment program, and the Resource Conservation Challenge program. Each of these initiatives are discussed in section **5.0 Potential Alternative Approaches**.

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### **3.0 VOLUNTARY LOAD REDUCTIONS**

Factor 4 includes consideration of voluntary loading reductions. This subject is discussed in this section, but due to the amount of information required, EAD was unable to consider such reductions during the screening phase of this initial planning cycle. However, EAD may be able to consider voluntary loading reductions during the subsequent detailed investigation phase.

One of the participants in the Effluent Guidelines Planning Workshop held in April 2001 (see Section 2.4: Previous Effluent Guidelines Suggestions) suggested that EPA consider creating an incentive to encourage dischargers to reduce pollutant loadings on their own. This participant suggested that EPA give lower priority for regulation to dischargers that demonstrate continual improvement through voluntary effluent reductions.

EPA agrees 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. EPA may choose not to revise an existing effluent guidelines or develop new effluent guidelines for a discharge category that has demonstrated that significant progress is being made through voluntary industry effort to reduce risk to human health and the environment. EPA would consider voluntary load reductions by industry in both its screening level review phase and the detailed investigation phase. (Even with significant loading reductions, EAD would also evaluate potential risk from ongoing pollutant discharges to water.)

EPA has not yet developed a method to identify and evaluate voluntary loading reductions. This section discusses the data sources and approaches EAD may consider to develop such a method. As part of this method, EAD would consider decreases in water loadings of pollutants relative to possible increases in release of these same pollutants to other environmental media, for example volatilization to air or land disposal of sludge. The method would also include evaluation of loading reductions relative to changes in production levels. However, given the amount of information it will require, this analysis is likely to occur during the detailed investigation phase.

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### **3.1 Suggestions from Stakeholders**

The November 2002 announcement of the draft *Strategy* described EPA's consideration of an incentive for discharge categories to reduce pollutant loadings through voluntary programs. (See <http://epa.gov/guide/strategy/>) Specifically, EPA proposed that source categories that have accomplished voluntary pollutant discharge reductions should be considered a lower priority for new or revised effluent guidelines.

The Notice discussed EPA's consideration of whether to indicate a quantitative voluntary reduction goal that source categories seeking a deferral of consideration for new or revised effluent guidelines should try to achieve. For example, EPA discussed a goal, previously suggested by a stakeholder, of a 10 percent reduction in total load, or in toxic-equivalent load over a five-year period (the standard permit term). The Agency requested comment on this entire issue and invited comment on whether a different general goal, such as a 25 percent reduction in total or toxic equivalent load, would be more appropriate.

Sixteen commenters on the draft *Strategy* specifically addressed this topic. Nine of the sixteen support the consideration of voluntary efforts, especially where there has been significant effort and/or significant reductions in discharges. Only two of these nine commenters addressed the quantitative goal EPA should use. One commenter agrees that the 10% goal is a good starting point, while the other commenter stated that the reduction goal should be no lower than 80%, which is closer to the typical effluent guidelines loading reductions (90% to 99%). Four other commenters expressed concerns with the mechanics of evaluating loading reductions. Their suggestions and concerns include 1) offering an effective incentive (i.e. a tax credit); 2) addressing caution industry feels toward voluntary efforts; 3) measuring and verifying loading reductions; 4) coordinating with the National Watershed Trading Policy; and 5) reviewing National Metal Finishing Strategic Goals Program components (specific reductions on a specific time line). The three remaining commenters disagree with including voluntary efforts, arguing that effluent guidelines are a more equitable approach or that EPA does not have the authority to consider/include voluntary loading reductions.

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In a teleconference on June 5, 2003, EAD discussed the planning process with members of the Association of State and Interstate Water Pollution Control Authorities (ASIWPCA) and representatives from six states: Alabama, California, Delaware, Florida, Louisiana, and West Virginia. During that call, stakeholders confirmed their support for voluntary programs. They referred EAD to a voluntary program already included in pulp and paper guidelines, and suggested that one approach could be to offer a reduction in monitoring requirements in exchange for implementing better-than-required wastewater treatment technology.

#### **3.2 Permit Compliance System (PCS) Data**

One tool that EAD is investigating for identifying loading reductions which may be the result of voluntary efforts is EPA's Permit Compliance System (PCS). This database provides discharge monitoring data for a subset of facilities that have been issued direct discharge permits to discharge wastewater into waters of the U.S. The system can be used to calculate and sort loadings (in pounds per year) of a large number of regulated pollutants by SIC code and these loadings can be adjusted to reflect relative toxicity using EAD's Toxic Weighting Factors (TWFs). These total and toxicity-adjusted loadings profiles can be used to identify industries that show the greatest decrease in loadings over the past five years. A thorough discussion of PCS and its limitations are provided in both the Factor 1 Report and the PCS Report.

#### **3.3 Toxic Release Inventory (TRI) Data**

Another tool that EAD is considering for identifying loading reductions which may be the result of voluntary efforts is the Toxic Release Inventory (TRI). The TRI collects detailed data for approximately 600 chemicals released and transferred by selected facilities in the United States. Since the information in the TRI has been collected over a number of years, this database can provide a sense of general trends in pollutant discharge over time. The information can be sorted into industry groups using the Standard Industrial Classification (SIC) codes, and EAD can adjust

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these loadings to reflect relative toxicity using EAD's Toxic Weighting Factors (TWFs). EAD is considering a review of these total and toxicity-adjusted loading profiles to identify industries that show the greatest decrease in loadings over the past five years. A thorough discussion of TRI and its limitations are provided in both the Factor 1 Report and the Risk Screening Environmental Indicators (RSEI) / Toxic Release Inventory (TRI) Report.

#### **3.4 EPA Programs Encouraging Voluntary Loading Reductions**

EAD has begun working with staff from three EPA programs that support and encourage loading reductions. They are 1) the Performance Track Program in the Office of Policy, Economics, and Innovation, 2) the Design for the Environment (DfE) program in the Office of Pollution Prevention and Toxics, and 3) the Resource Conservation Challenge in the Office of Solid Waste and Emergency Response. These programs are discussed in more detail in **Section 5.0: Potential Alternative Approaches**. EAD intends to consider voluntary loading reduction results provided by these programs during the detailed investigation phase of the current planning cycle.

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### **4.0 OTHER EPA OFFICES' RANKINGS & LISTS FOR MULTI-MEDIA CONCERNS**

The concept of addressing multi-media impacts was raised in the draft *Strategy*, and stakeholders were encouraged to comment on the issue. This subject is discussed in this section, but due to the amount of information required, EAD was unable to consider multi-media concerns during the screening phase of this initial planning cycle. However, EAD may be able to consider them during the subsequent detailed investigation phase.

Eight commenters on the draft *Strategy* specifically addressed this topic. Two commenters generally agree with consideration of multi-media impacts during the planning process. Five other commenters agree with considering multi-media impacts, but offer specific considerations: 1) EPA also needs to revise other media standards (note the timing issue mentioned by a commenter under “Additional Factors” above); 2) EPA needs to develop an “environmental impact equivalent” to compare toxicity across media (2 commenters); 3) EPA can utilize stakeholder information, and 4) EPA can also explore TRI for media transfer information. The remaining commenter argues that multi-media data and strategies are inconsistent with the CWA and therefore invalid.

There are several offices within EPA that review information on industrial releases of pollutants to the environment, and use this information to generate rankings of those industries or set priorities for future activities by the Agency. As a way to capture multi-media concerns, EAD collected information from several EPA offices that had recently performed such a prioritization effort. These include the Office of Air; the Office of Enforcement and Compliance Assurance; the Office of Policy, Economics, and Innovation; the Office of Environmental Information jointly with the Office of Research and Development; and the National Advisory Council for Environmental Policy and Technology. Each resource is discussed in the sections that follow. These may be used to coordinate Agency efforts across media offices, including sharing data and timing actions for increased effectiveness.

#### **4.1 Office of Air's Integrated Urban Air Toxics Strategy**

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The Integrated Urban Air Toxics Strategy (a part of EPA’s national air toxics program) is a framework for addressing air toxics emissions in urban areas. The Air Toxics Strategy complements the national air toxics program, which develops national standards for stationary and mobile sources; by focusing on achieving further reductions in air toxics emissions in urban areas.

The Air Toxics Strategy identifies 33 air toxics that pose the greatest potential health threat in urban areas. It also presents a list of area sources (e.g., industry categories) responsible for a substantial portion (90%) of the emissions of these air toxics. This list originally included 29 area source categories for which standards are either in place or under development. The Air Toxics Strategy subsequent added 41 area source categories of hazardous air pollutants (HAPs) to the previous lists. With the addition of these categories, OAQPS met its requirement to identify and list area source categories representing at least 90 percent of the emissions of the 30 “listed” (or area source) HAPs under section 112(c)(3) and 112(k)(3)(B)(ii) of the Clean Air Act (CAA) is fulfilled. Table 3 below presents the 70 listed area source categories. Of these, 14 have already been subject to standards. The remaining 56 will be subject to standards in the future.

<b>TABLE 3</b>	
<b>70 AREA SOURCE CATEGORIES ACCOUNTING FOR 90% OF HAPS EMISSIONS</b>	
(Shaded sectors have no corresponding effluent guidelines based on <b>preliminary</b> review)	
<i>Area Source Categories already subject to Air Standards</i>	
Chromic Acid Anodizing	Hazardous Waste Incineration
Commercial Sterilization Facilities	Medical Waste Incinerators
Decorative Chromium Electroplating	Portland Cement Manufacturing
Dry Cleaning Facilities	Secondary Aluminum Production
Halogenated Solvent Cleaners	Secondary Lead Smelting
Hard Chromium Electroplating	Municipal Landfills
Publicly Owned Treatment Works	Hazardous Waste Combustors
<i>Area Source Categories to be subject to Air Standards in the Future</i>	



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<b>TABLE 3</b>	
<b>70 AREA SOURCE CATEGORIES ACCOUNTING FOR 90% OF HAPs EMISSIONS</b>	
(Shaded sectors have no corresponding effluent guidelines based on <b>preliminary</b> review)	
Acrylic Fibers/Modacrylic Fibers Production	Lead Acid Battery Manufacturing
Ag Chemicals & Pesticides Manuf.	Mercury Cell Chlor-Alkali Plants Manufacturing
Asphalt Processing & Asphalt Roofing	Misc. Organic Chemical Manuf. (MON)
Autobody Refinishing Paint Shops	Nonferrous Foundries, nec.
Brick & Structural Clay	Oil & Natural Gas Production
Carbon Black Production	Open Burning of Scrap Tires
Chemical Manufacturing: Chromium Compounds	Other Solid Waste Incinerators (Human/Animal Cremation)
Chemical Preparations	Paint Stripping Operations
Copper Foundries	Paints & Allied Products Manufacturing
Cyclic Crude & Intermediate Production	Pharmaceutical Production
Electrical & Electronic Equip.: Finishing Operations	Plastic Parts & Products (surface coatings)
Fabricated Metal Products, nec.	Plastic Materials and Resins Manufacturing
Fabricated Structural Metal Manuf.	Plating & Polishing
Ferroalloys Production: Ferromanganese & Silicomanganese	Polyvinyl Chloride & Copolymers Production
Flexible Polyurethane Foam Fabrication Operations	Prepared Feeds Manufacturing
Flexible Polyurethane Foam Production	Primary Copper (not subject to Primary Copper Smelting MACT)
Fabricated Plate Work	Primary Metals Products Manufacturing

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<b>TABLE 3</b>	
<b>70 AREA SOURCE CATEGORIES ACCOUNTING FOR 90% OF HAPs EMISSIONS</b>	
(Shaded sectors have no corresponding effluent guidelines based on <b>preliminary</b> review)	
Gasoline Distribution (Stage I)	Primary Nonferrous Metals- Zinc, Cadmium and Beryllium
Heating Equipment, except electric	Pressed & Blown Glass & Glassware Manufacturing
Hospital Sterilizers	Secondary Copper Smelting
Industrial Boilers	Secondary Nonferrous Metals
Industrial Inorganic Chemical Manufacturing	Sewage Sludge Incineration
Industrial Organic Chemical Manufacturing	Stationary Internal Combustion Engines
Industrial Machinery & Equipment: Finishing Op.s	Synthetic Rubber Manufacturing
Inorganic Pigments Manufacturing	Stainless & Non-stainless Steel Manufacturing: Electric Arc Furnaces (EAF)
Institutional/Commerical Boilers	Steel Foundries
Iron Foundries	Valves & Pipe Fittings
Iron & Steel Forging	Wood Preserving

During the detailed investigation phase, EAD intends to determine whether the selected categories have corresponding area sources for which the Office of Air Quality Planning and Standards is developing standards, to determine whether intra-office coordination (such as data sharing or joint rulemaking) may be appropriate. More information may be found in the EPA brief “Integrated Urban Air Toxics Strategy” (DCN 00217). Two additional documents in the public record that pertain to programs within OAQPS are: “NESHAP Rulemaking Since 1990 with Potential Overlap to ELG Industries of Concern” (DCN 00290) and “Table of Final MACT Rules” (DCN 00328).

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**4.2 Office of Enforcement and Compliance Assurance Sector Notebooks**

The Sector Notebook series is produced by the Office of Enforcement and Compliance Assurance (OECA) to provide users with a consolidated source of compliance-related information for specific industry sectors. It is a set of industry profiles containing detailed sector-specific environmental information. Unlike many resource materials, which are organized by air, water, and land pollutants, the Notebooks provide a holistic, “whole facility” approach by integrating manufacturing process, applicable regulations, and other relevant environmental information. Sector Notebooks are available for a total of 34 industry sectors.

These are listed in Table 4 below; Table 5 lists the sectors for which sector notebooks are planned or under development.

<b>TABLE 4</b>	
<b>EXISTING SECTOR NOTEBOOKS</b>	
(Shaded sectors have no corresponding effluent guidelines)	
Agricultural chemical, pesticide and fertilizer (2000)	Agricultural crop production (2000)
Agricultural livestock production (2000)	Aerospace (1998)
Air Transportation (1997)	Dry cleaning (1995)
Electronics and computer (1995)	Fossil fuel electric power generation (1997)
Ground transportation (1997)	Inorganic chemical (1995)
Iron and steel (1995)	Lumber and wood products (1995)
Metal casting (1997)	Metal fabrication (1995)
Metal mining (1995)	Motor vehicle assembly (1995)
Nonferrous metals (1995)	Non-fuel, non-metal mining (1995)
Oil and gas extraction (1999)	Organic chemical (1995, revised 2002)
Petroleum refining (1995)	Pharmaceutical (1997, being revised)
Plastic resins and man-made fibers (1997)	Printing (1995)

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<b>TABLE 4</b>	
<b>EXISTING SECTOR NOTEBOOKS</b>	
(Shaded sectors have no corresponding effluent guidelines)	
Pulp and paper (1995, revised 2002)	Rubber and plastic (1995, being revised)
Shipbuilding and repair (1997)	Stone, clay, glass, and concrete (1995)
Textiles (1997)	Transportation equipment cleaning (1995)
Water transportation (1997)	Wood furniture and fixtures (1995)
Local government operations (1999)	Federal facilities (draft)

<b>TABLE 5</b>	
<b>PLANNED SECTOR NOTEBOOKS</b>	
(Shaded sectors have no corresponding effluent guidelines)	
Auto salvage	Construction
Healthcare	Tribal Governments

Each notebook includes the following information. During the detailed investigation phase, EAD intends to review the appropriate Sector Notebooks, if available for selected categories, to obtain the holistic information they contain.

- Overview of the industry, including size, geographic distribution, organizational structure, products, economic trends, and financial analysis;
- Description of industrial/manufacturing processes, including inputs of raw materials;
- Summary of chemical releases to the environment (pollutant release data);
- A comprehensive environmental profile;
- Pollution prevention techniques and opportunities;
- Summary of applicable federal statutes and regulations, including regulatory requirements;
- Compliance/enforcement history, including review of major legal actions;

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- History of government and industry partnerships including initiatives for compliance assurance and innovative programs;
- Resource materials and contact names;
- Bibliographic references; and
- Description of research methodology.

See the EPA brief “OECA Sector Notebooks” (DCN 00221) for more information.

### **4.3 Office of Enforcement and Compliance Assurance Multi-Media Data Systems**

The information that the Office of Enforcement and Compliance Assurance (OECA) uses to manage and assess performance of the Agency's enforcement and compliance assurance program is stored in more than a dozen data systems. These systems were built to support specific environmental statutes. In general, data in these systems is input by either EPA Regions or States. These systems are the primary source of information used in determining the state of environmental compliance, and may be useful in supporting the 304(m) planning process. EAD identified several multi-media projects and data systems within OECA, including the Sector Facility Indexing Project (SFIP), the Integrated Data for Enforcement Analysis (IDEA), the Integrated Compliance Information System (ICIS), and the Enforcement Compliance History Online (ECHO). All of these are discussed briefly below. Each of them except ICIS is publicly available through the EPA web site. Although they are not utilized in the current planning cycle, they will be evaluated for use in the detailed investigation phase for the current and future planning cycles.

#### **4.3.1 Sector Facility Indexing Project**

The Sector Facility Indexing Project (SFIP) brings together environmental and other information from a number of data systems to produce accessible, internet-based facility-level profiles for six industry sectors. It is available through EPA’s web site, at

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<http://www.epa.gov/sfipmtn1/>. The six sectors listed below were selected for a number of reasons: they were a manageable size (a limited number of facilities); there were compliance problems identified; there was sufficient information available on them, both within the Agency (e.g. permit information) and through outside sources (e.g. through trade associations); and there was interest from outside groups as well. EAD intends to use information collected and generated under SFIP, if available, during the detailed investigation phase of the current planning cycle.

- Petroleum refining;
- Iron and steel production;
- Primary nonferrous metal refining and smelting;
- Pulp manufacturing;
- Automobile assembly; and
- Federal facilities (subset of major facilities as defined by air, wastewater, or solid waste regulations).

Data available from SFIP include compliance and inspection history, chemical releases, pollutant spills, production or production capacity data, and demographics of the population surrounding facilities, and is compiled from EPA's Integrated Data For Enforcement Analysis (IDEA) system. The SFIP website presents "current" data from EPA's Integrated Data For Enforcement Analysis (IDEA) system (discussed in section 4.3.2 below). IDEA is now updated monthly and the date of the current update is displayed online at the top right hand of each facility-level statistics report and sector summary. However, the TRI data currently being accessed by the system is from 1999. Dates and the individual media databases being used (e.g., PCS, TRI) appear at the bottom of each Detailed Facility Report. The SFIP does not rank or order the information it contains, but users can view and sort the data in a number of ways, using standardized report formats or creating their own analyses. See the EPA brief "Sector Facility Indexing Project" (DCN 00220) for more information.

#### **4.3.2 Integrated Data for Enforcement Analysis (IDEA)**

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The Integrated Data for Enforcement Analysis system (IDEA) is a comprehensive single-source of environmental performance data on regulated facilities within the EPA. It is available online at <http://www.epa.gov/Compliance/planning/data/multimedia/idea/index.html>. With IDEA, a user can obtain a comprehensive historical profile of inspections, enforcement actions, penalties assessed, toxic chemicals released, and emergency hazardous spills for any EPA regulated facility. (Public users must obtain an EPA mainframe user ID and account before using this data system.) This single point of access provides information from the Agency's Air, Water, Hazardous Waste, Toxic Chemical Release Inventory, and Emergency Response Notification Systems. EAD intends to use the information collected under IDEA, if available, during the detailed investigation phase of the current planning cycle.

Implemented in early 1991, IDEA supports a multimedia approach to the analysis of environmental problems by retrieving data about facilities across program office databases. IDEA accesses the following multimedia information:

- Air
- Water
- Hazardous Waste
- Toxics
- Enforcement
- Spills
- Demographics
- Federal Facilities

IDEA is in the process of being superseded by the Integrated Compliance Information System, which is discussed in the following section. Until that process is complete, it is a tool that EAD intends to utilize in the current planning cycle.

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### **4.3.3 Integrated Compliance Information System (ICIS)**

OECA is in the process of modernizing its enforcement and compliance data systems, including the IDEA system discussed in the previous section. The product of that modernization is the Integrated Compliance Information System (ICIS) a Web-based system that will integrate data currently located in more than a dozen separate data systems. The first phase of ICIS was completed June 2002, with other phases to be completed in later years. ICIS integrates EPA's enforcement and compliance assurance program data from more than a dozen separate data systems that were originally designed to support specific environmental statutes. This internet-based system will eventually enable individuals from states, communities, facilities, and EPA to access integrated enforcement and compliance data. As of September 2003, ICIS is not publicly available on the EPA web site.

ICIS is a compilation of all existing compliance and enforcement data. The two primary databases relevant to OW include PCS and the Safe Drinking Water Information System/Federal (SDWIS/FED). (See the previous discussion of PCS in Section 3.2 of this document.) The SDWIS/FED is EPA's national database for the Public Water System Supervision Program, and includes inventory, compliance, and enforcement information on the nation's 170,000 public water systems. One sub-system of SDWIS/FED generates/tracks significant non-compliers.

See the EPA brief "ICIS - Integrated Compliance Information System, ECHO - Enforcement and Compliance History Online" (DCN 00219) for more information.

### **4.3.4 Enforcement and Compliance History Online (ECHO)**

The Enforcement and Compliance History Online (ECHO) is one of the pre-existing OECA data systems, and is essentially the publicly available portion of the ICIS data system discussed in the previous section. It is available through EPA's web site, at <http://www.epa.gov/Compliance/planning/data/multimedia/echo.html> and anyone with access to the Internet can use ECHO. EAD expects to rely on the more complete ICIS system, once it is



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completed, for its planning process; however this discussion is included here to provide a definition and make the distinction for readers unfamiliar with the OECA suite of tools.

ECHO is an internet-based tool that provides compliance, permit, and demographic data for approximately 800,000 facilities regulated under the Clean Air Act stationary source program, the Clean Water Act direct discharge program, and the Resource Conservation and Recovery Act hazardous waste generation program. ECHO allows users to find permit, inspection, violation, enforcement action, and penalty information covering the past two years, and is updated monthly. ECHO allows users to sort and analyze data in many ways, according to their needs.

Although the system is currently in the pilot stage, EPA's ability to target the most critical environmental problems will improve as the system integrates data from all media. Once ECHO is available, EAD intends to gather the information available through this tool for the detailed investigation phase of the current planning cycle.

ECHO is also a compilation of all existing publicly available compliance and enforcement data. As with ICIS, the two primary databases relevant to OW include PCS (see discussion in Section 3.2: Permit Compliance System (PCS) Data) and the Safe Drinking Water Information System/Federal (SDWIS/FED). The SDWIS/FED is EPA's national database for the Public Water System Supervision Program, and includes inventory, compliance, and enforcement information on the nation's 170,000 public water systems. One sub-system of SDWIS/FED generates/tracks significant non-compliers.

#### **4.4 Office of Policy, Economics, and Innovation's Sector Strategies Program**

The Office of Policy, Economics and Innovation (OPEI) is expanding its multi-media program to work with new industries in its industry sector program. The Sector Strategies Program is concentrating on a focused set of actions that will prompt industry-wide environmental gains through promoting Environmental Management Systems (EMS), working to address

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regulatory barriers to performance, and measuring performance. On May 1, 2002, OPEI announced the selection of seven sectors to participate in the multi-media sector program (Federal Register Vol. 68, Number 84, pages 23303 and 23304). This announcement was supplemented on June 2, 2003, when the EPA Administrator welcomed eight new and four existing sectors into the program. These sectors are listed below, most of which are expected to include a element on wastewater. EAD intends to use the information collected and generated under this program, if possible, during the detailed investigation phase of the current planning cycle.

- Agribusiness
- Cement Manufacturing
- Colleges and Universities
- Construction
- Forest Products (both timber and pulp)
- Iron and Steel Manufacturing
- Metal Casting
- Metal Finishing
- Paint and Coatings
- Ports
- Shipbuilding and Ship Repair
- Specialty-Batch Chemical Manufacturing

OPEI will partner with EPA programs and regions, states, and select trade associations to craft solutions to sector-specific problems. The program will consist of the following five elements: 1) providing sector point-of-contact, 2) promoting environmental management systems, 3) overcoming regulatory or other barriers to performance improvement, 4) measuring performance, and 5) providing an on-line toolbox.

Under a previous OPEI effort called “Sustainable Industries Program,” similar actions were initiated with the following industries:

- Metal Finishing

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- Metal Casting
- Shipbuilding and Ship Repair
- Specialty Batch Chemical Sectors
- Meat Processing

OPEI will maintain points-of-contact and will follow through on EMS and other projects that are ongoing with these sectors. Accomplishments with the Meat Processing industry will support new work with the Agribusiness Sector.

EAD intends to monitor the progress of this project, and integrate information into both the screening level review phase and the detailed investigation phase of future planning cycles as it becomes available. See the Federal Register notice cited above as well as the EPA flyer “EPA’s New Industry Sector Performance Program” (DCN 00192) for more information.

#### **4.5 Office of Environmental Information/Office of Research and Development Environmental Indicators Initiative**

EPA's Environmental Indicators Initiative was developed to improve the Agency's ability to report on the status of and trends in environmental conditions and their impacts on human health and the nation's natural resources. It is jointly maintained by the Office of Environmental Information and the Office of Research and Development. EPA's long-term goal is to improve the indicators and data that are used to guide the Agency's strategic plans, priorities, performance reports, and decision-making.

Environmental indicators are scientific measurements that track environmental conditions over time. One of the key products of the Environmental Indicators Initiative is the *Draft Report on the Environment*, released on June 23, 2003 and available at [www.epa.gov/indicators](http://www.epa.gov/indicators). The report used available national-level data and indicators to: 1) describe current national environmental conditions and trends using existing data and indicators; 2) identify data gaps and

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research needs; 3) discuss the challenges government and our partners face in filling those gaps; and 4) include supporting technical information.

On the subject of “Purer Water” the report notes that water pollution problems and threats to surface water and drinking water remain. Some of the threats to water resources identified in the report include the aging of the nation’s wastewater and drinking water infrastructure, landscape modification, invasive species, changes to water flow, over-harvesting of fish and shellfish, and deposition of pollutants from the air. The Report also describes general sources of drinking water contamination, recreational water pollution, and fish and shellfish contamination. Storm water runoff is linked to contamination of both drinking water and recreational water.

In summary, this report notes that releases of certain toxic chemicals have declined since 1988, but that the condition of our surface waters is unknown, and that our estuaries are in fair-to-poor condition nationwide. EAD intends to monitor the Environmental Indicators Initiative for information that can inform the planning process in future cycles. See the EPA brief “Environmental Indicators Initiative” (DCN 00216) and EPA’s web site at [www.epa.gov/indicators](http://www.epa.gov/indicators) for more detailed information.

#### **4.6 National Advisory Council for Environmental Policy and Technology (NACEPT) Report: Emerging Challenges and Opportunities for EPA**

In September 2002, the National Advisory Council for Environmental Policy and Technology published its report, “The Environmental Future: Emerging Challenges and Opportunities for EPA.” The report reviews EPA’s future analysis capability and recommends that more be done to support environmental foresight programs. In addition, the report offers a framework to analyze the environmental implications of trends in world population and demographics, natural resources, science and technology, information management and access, economics and commerce, and politics and social evolution.

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The report concludes with general and specific recommendations for how EPA can best address these changing conditions. The discussion of water as a natural resource identifies four opportunities for EPA: 1) develop a holistic approach to water and the environment; 2) integrate water efficiency with environmental regulations; 3) support an effective market environment to minimize generating hazardous wastes; and 4) redouble efforts to effectively include non-point sources in water management programs. For more information, see the EPA brief, “NACEPT Report” at DCN 00218, and the NACEPT report itself, titled “The Environmental Future Emerging Challenges and Opportunities for EPA (DCN 00671).

EPA believes its draft *Strategy* appropriately places the development of industrial discharge regulations in the context of the mandates of the Clean Water Act and a comprehensive national program for water quality protection. The Agency will also continue to consider opportunities for promoting water efficiency in its effluent guidelines planning. (Report recommendation 3 above addresses other parts of the National Water Program, and Report recommendation 4 above addresses the Agency’s hazardous waste programs.)

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### **5.0 POTENTIAL ALTERNATIVE APPROACHES**

The preceding sections of this report address information needed to determine whether there is sufficient concern that new guidelines or revisions to existing guidelines are likely to be justified. However, once such a concern has been identified, the Agency also plans to consider whether effluent guidelines are the best way to address that concern. Determining the existence of alternatives to regulatory action is another consideration that is part of Factor 4. This subject is discussed in this section, but due to the amount of information required, EAD was unable to consider such alternatives during the screening phase of this initial planning cycle. EAD intends to obtain information about alternative approaches during detailed investigation phase.

EPA must first determine whether such alternatives are available and also whether they present a more effective course of action in reducing adverse impacts to human health and the environment. Such alternatives may include the Agency issuing compliance or permitting guidance, providing technical assistance to States or industry, or entering into a voluntary partnership to support broader environmental goals.

Six potential alternatives are discussed in this section: 1) OAQPS' Innovative Regulatory Strategies program, 2) OPEI's Performance Track program, 3) OPPT's Design for the Environment program, 4) OSWER's Resource Conservation Challenge, 5) pollutant trading, and 6) voluntary programs/pollution prevention. In many instances, these programs foster pollutant reductions to air and land, as well as water.

#### **5.1 Office of Air Quality Planning and Standards Innovative Regulatory Strategies Program**

The Office of Air Quality Planning and Standards hosts an Innovative Regulatory Strategies Program, which includes the development of rules, policies, and guidance on market-based incentive programs that apply to national emission standard programs and to State and local

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air pollution control programs. A list of the documents developed under this program can be accessed through <http://www.epa.gov/ttn/ecas/innostra.html>.

For example, The Office of Air and Radiation published Draft Economic Incentive Program Guidance in 1999 discussing discretionary economic incentive programs (EIPs). EIPs use market-based strategies to encourage people to reduce emissions of air pollutants in the most efficient manner. OAR's guidance provides the information necessary to develop a discretionary EIP for air dischargers, submit it to the EPA, and receive approval from the EPA. The guidance document is online at <http://www.epa.gov/ttn/ecas/innoata/eip9-2.pdf>. EAD intends to review this document for possible usefulness to the planning process.

Some economic incentive programs (EIPs) will involve trading of volatile organic compound (VOC) emissions. Because many VOCs are also hazardous air pollutants (HAPs) as defined by section 112(b) of the Clean Air Act, these VOC EIPs will inevitably involve the trading of HAP emissions. The Office of Air Quality Planning and Standards has been working on a ranking system for HAPs to support the determination that a change in pollutants discharged represents a net decrease in discharge of hazardous air pollutants.

OAQPS has been developing a methodology with which to assign, to the extent practicable, the relative hazard to human health of each HAP listed in the section 112(b) of the Act. A 1994 report that describes the methodology and supporting data for developing a hazard ranking and offsetting provisions for pollutants can be found at <http://www.epa.gov/ttn/ecas/innoata/docum1.pdf>. This ranking methodology could be useful to EAD as it considers alternative approaches, including trading, which is discussed in section 5.2.

EAD intends to consider these and other ongoing activities within the Innovative Strategies Program related to the industries identified in EAD's screening review to determine appropriate coordination activities.

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### **5.2 Office of Policy, Economics and Innovation National Environmental Performance Track Program**

The Office of Policy, Economics and Innovation (OPEI) hosts the National Environmental Performance Track Program, which was launched in 2000 and now has over 300 members. Its goal is to recognize and reward top environmental performers that go beyond legal requirements. There are four criteria required for participants in the program: 1) an environmental management system must be in place, 2) a commitment to continuous environmental improvement must be demonstrated, which may include decreases in discharges to water, 3) a good compliance history must be demonstrated, and 4) a community outreach program must be developed. Incentives for participation include public recognition, low inspection priority, networking, and regulatory changes for members of the program.

Members are distributed across 17 sectors, although the majority (251 out of 319) are in the manufacturing sectors. As of September, 2003, the distribution of members in the 11 manufacturing sector was as follows:

- Electronic and Electrical Equipment – 45 members
- Chemical Products – 42 members
- Medical Equipment and Supplies – 29 members
- Metal Products – 28 members
- Wood Products, Paper, and Printing – 26 members
- Transportation Equipment and Services – 24 members
- Pharmaceutical Products – 22 members
- Rubber and Plastics Products – 13 members
- Machinery Equipment – 12 members
- Textile Products – 5 members
- Miscellaneous Products – 5 members

As of September, 2003, the distribution of members in the 6 non-manufacturing sector was as follows:



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- Public Facilities & Institutions – 21 members (6%)
- Wholesale, Retail, and Shipping – 11 members (4%)
- Services – 11 members (3%)
- Energy, Utilities, and Sanitary Services – 10 members (4%)
- Mining and Construction – 10 members (3%)
- Agriculture, Livestock, and Food – 5 members (2%)

Although this program was not considered during the screening phase of the current planning cycle, information about its successes will be considered during the detailed investigation phase or during future planning cycles. EAD has begun a dialogue with OPEI about ways participation in the Performance Track program may justify a lower priority for consideration in the planning process for development or revision of effluent guidelines. This in turn would provide additional incentive for more facilities to join the program.

In addition, EAD intends to evaluate industrial categories that are participating in the Performance Track program during the detailed investigation phase. This program may present a viable alternative method to reduce discharges to surface water to address concerns identified during the screening phase of the current planning process. For more information about this program, see the EPA website at [www.epa.gov/performancetrack](http://www.epa.gov/performancetrack).

### **5.3 Office of Pollution Prevention and Toxics' Design for the Environment Program**

The Design for the Environment (DfE) program works directly with industry to create voluntary partnerships with the goal of integrating health and environmental considerations into business decisions. DfE partnerships inform businesses in the design or redesign of products and processes that are cleaner, more cost-effective, and safer for workers and the public.

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The DfE process promotes voluntary environmental improvement by providing key information to industries on ways to incorporate environmental concerns into business decisions.

The process systematically:

- Identifies the array of technologies, products, and processes that can be used to perform a particular function within an industry and related pollution prevention opportunities.
- Evaluates and compares the risk, performance, and cost tradeoffs of the alternatives.
- Disseminates this information to the entire industry community.
- Encourages and enables use of this information by providing mechanisms and incentives to institutionalize continuous environmental improvement.

EAD has begun working with the DfE to identify voluntary pollutant discharge reductions achieved by industry. The DfE program also provides information on potential alternative approaches. If appropriate, this information will be considered during the detailed investigation phase of the planning cycle. (See section 5: Potential Alternative Approaches for a discussion of potential alternative approaches.)

Current DfE partners include the following industry categories, some of which address discharges to surface water:

- Automotive refinishing;
- Adhesives;
- Computer display;
- Garment and textile care;
- Flexographic printing;
- Product formulators;

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- Gravure printing;
- Industrial and institutional laundry;
- Lead-free solder partnership;
- Lithographic printing;
- Printed wiring board; and
- Screen printing.

Of these, adhesives and product formulators fall under the chemical formulators subcategory of the existing Organic Chemicals, Plastics, and Synthetic Fibers point source category, and the printing activities fall under the new Printing and Publishing category recommended for further consideration by stakeholders (see Section 2.0: Suggestions for Improving Implementation and Efficiency).

#### **5.4 Office of Solid Waste and Emergency Response's Resource Conservation Challenge**

The Resource Conservation Challenge is a major national effort to find flexible, yet more protective ways to conserve our valuable resources through waste reduction and energy recovery activities that will improve public health and the environment. The RCC encompasses activities across EPA programs: waste, air, toxics, pollution prevention, pesticides, and compliance. It also includes activities in the EPA Regions, States, and Tribes. The RCC identifies areas of program focus – challenges – that are ready for voluntary partnerships. Each of these challenges works to resolve national environmental problems by finding environmentally acceptable solutions.

In an effort to identify successful resource conservation projects and coordinate the message of their successes, EPA identified several initial areas of focus, or "challenges." These challenges were either groups of related existing projects or areas of unfinished business that had the potential for development of successful voluntary partnerships. Challenge areas include:

- Construction and Demolition Debris
- Electronics

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- Green Buildings
- Hospitals
- Industrial Wastes
- Paper
- Schools
- Targeted Chemicals
- Tires

For each of these challenge areas, EPA has developed, or is currently developing, voluntary partnerships that will contribute to resource conservation. These partnerships are mutual, consisting both of external partners' commitments to meet measurable objectives and EPA's commitment to provide appropriate support. For those willing to accept the Resource Conservation Challenge, EPA commits at the highest level to mobilize its institutional resources to bring sustained and focused attention and responsive decision-making to achieving RCC goals. We will work with partners to create incentives that reward businesses and communities that meet program goals.

Under the National Waste Minimization Partnership Program (a major RCC initiative), member companies are setting specific waste minimization goals to reduce targeted chemicals and waste streams. As they achieve these goals, they reduce the mass loading of specified chemicals in waste materials to levels below existing compliance levels.

Although this program was not considered during the screening phase of the current planning cycle, information about its successes will be considered during the detailed investigation phase or during future planning cycles. EAD has begun a dialogue with OSWER about ways participation in the Resource Conservation Challenge program may justify a lower priority for consideration in the planning process for development or revision of effluent guidelines. This in turn would provide additional incentive for more facilities to join the program.

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In addition, EAD intends to evaluate industrial categories that are participating in the RCC program, especially the National Waste Minimization Partnership Program, during the detailed investigation phase. This program may present a viable alternative method to reduce discharges to surface water to address concerns identified during the screening phase of the current planning process. For more information about this program, see the EPA website at [www.epa.gov/epaoswer/osw/conserve](http://www.epa.gov/epaoswer/osw/conserve).

#### **5.5 Pollutant Trading**

On January 13, 2003, U.S. EPA Administrator Christie Whitman announced a new Water Quality Trading Policy to reduce industrial, municipal, and agricultural discharges into the nation's waterways. The trading policy seeks to support and encourage states and tribes in developing and putting into place water quality trading programs that implement the requirements of the Clean Water and federal regulations in more flexible ways and reduce the cost of improving and maintaining the quality of the nation's waters. More information about EPA's trading policy is provided online at <http://www.epa.gov/owow/watershed/trading.htm>.

Seven commenters on the draft *Strategy* specifically addressed the issue of pollutant trading. Two commenters endorse EPA's consideration of trading, although one of these expressed concerns about permit language and anti-backsliding. Four other commenters agree conditionally, specifying that trading should be limited to trading within single facilities for direct dischargers or single publicly owned treatment works (POTWs) for indirect dischargers. One of these commenters presented a potential approach, but also identified issues with trading and noted that Pretreatment Regulations would have to be revised to allow it. The remaining commenter argues that in-plant trading with no net decrease in loadings is not the proper subject of effluent guidelines.

During the June, 2003 teleconference with stakeholders in the Association of State and Interstate Water Pollution Control Authorities (ASIWPCA) the subject of trading generated some discussion, with some stakeholders preferring it not be included in ELGs; while others support the

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possibility as a way to allow industries to remove more pollutants than is required and achieve a greater improvement in stream health. When looking at total stream health, there may be ways to adjust the limits to obtain a better result. For example, allowing higher manganese discharges allowed a discharger to avoid increasing the pH required for the higher removal rates and the result was an improvement in the receiving stream. These stakeholders also recommend trading be used for non-toxic pollutants, such as dissolved oxygen parameters. (This teleconference is discussed in more detail in Section 2.6.1: AMSA and ASIWPCA.)

Water quality trading uses economic incentives to improve water quality. It allows one source to meet its regulatory obligations by using pollutant reductions created by another source that has lower pollution control costs. The standards remain the same, but efficiency is increased and costs are decreased. Under the new policy, for example, industrial and municipal facilities would first meet technology control requirements and then could use pollution reduction credits generated by reducing pollutants below what is required and trade these with others.

In order for a water quality trade to take place, a pollution reduction "credit" must first be created. EPA's water quality trading policy is based on sources reducing pollution loads beyond the level required by the most stringent water quality-based requirements in order to create a pollution reduction "credit" that can be traded. For example, a landowner or a farmer could create credits by changing cropping practices and planting shrubs and trees next to a stream. A municipal wastewater treatment plant then could use these credits to meet water quality limits in its permit.

The policy could save the public hundreds of millions of dollars by advancing more effective, efficient partnerships to clean up and protect watersheds. An independent study of three watersheds in Minnesota, Michigan, and Wisconsin looked at the cost of controlling phosphorus loadings. (World Resources Institute 2000) This study found that the cost of reducing phosphorus from controlling point sources to be considerably higher than those based on trading between point and non-point sources which are not regulated by the Clean Water Act.

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Another example of innovative approaches to pollutant and risk reduction is in-plant trading. For example, the “water bubble” is a regulatory flexibility mechanism included in the Iron and Steel regulation at 40 CFR 420.03 to allow for intra-plant trading of conventional and toxic pollutants between outfalls at any single steel mill. The bubble has been used at some facilities to realize cost saving and/or to facilitate compliance.

Based on the level of detailed, industry-specific information required to evaluate the potential for a trading program, EAD was unable to evaluate the feasibility of trading during the screening level review phase. However, EAD intends to collect and consider information about trading for the categories selected for the detailed investigation phase of the planning process.

### **5.6 Other Voluntary Programs/Pollution Prevention**

There are a number of voluntary programs sponsored or supported by EPA designed to achieve real environmental results. The Partners for the Environment web page (<http://www.epa.gov/partners/>) describes a number of voluntary EPA programs. EAD has begun to explore these programs, starting with two approaches to voluntary loading reductions: Section 5.5.1 introduces Environmental Management Systems which are being implemented by many organizations; and Section 5.5.2 discusses State voluntary programs that have had success in reducing pollutant discharges to surface water.

#### **5.6.1 Environmental Management Systems (EMSs)**

EMSs provide organizations of all types with a structured approach for managing environmental and regulatory responsibilities to improve overall environmental performance, including areas not subject to regulation. EMSs can also help organizations better integrate the full scope of environmental considerations and get better results, by establishing a continuous process of checking to make sure environmental goals are met. EMS implementation ensures that procedures are in place for taking remedial action if problems occur. From a business perspective,

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benefits may include cost savings, increased operational efficiency and competitiveness, risk reduction, improved internal communication, and improved relations with external parties. EMSs typically incorporate a feedback mechanism that supports measurement of performance against a set of measurable objectives and provides a mechanism for correction or preventive action.

A strong EMS does not just set rules for employees: it tracks performance, fosters proactive identification and correction of problems, and provides a mechanism to prevent problems from recurring. Many organizations are adopting EMSs as a management tool. EPA encourages the use of EMSs because these tools have the potential to improve compliance rates and environmental performance. EAD expects to gather information about industry-specific EMS programs during the detailed investigation phase of the current planning cycle.

Based on the level of detailed, industry-specific information required to evaluate environmental management systems, EAD was unable to evaluate EMS during the screening level review phase. However, EAD intends to continue to collect information about EMS during the detailed investigation phase of the planning process.



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### **6.0 CONCLUSIONS AND RECOMMENDATIONS**

As a result of this Factor 4 screening level analysis, EAD identified two lists of industry categories for possible further consideration in the detailed investigation phase: (1) industry categories without effluent guidelines suggested for regulatory development, and (2) industry categories already covered by effluent guidelines suggested for regulatory revision. These recommendations were identified through stakeholder input and from observations provided by expert staff in EPA regions and headquarters, as discussed in Section 2.0 of this report. They are listed below.

#### **13 Suggested Categories Without Effluent Guidelines**

Airport Industrial Discharges	Independent and Stand-Alone Laboratories
Aquatic Animal Production	Municipal Storm water Runoff
Construction and Development (storm water discharges)	Ocean Going Vessels (cruise ships, ballast and bilge water)
Dental Facilities	Printing and Publishing
Drinking Water Supply and Treatment	Prisons
Food Service Establishments	Wastewater Treatment & Sewerage Systems
Groundwater Remediation Discharges	

#### **24 Suggested Categories with Existing Effluent Guidelines**

Canned and Preserved Fruits and Vegetables Processing	Metal Products & Machinery
Canned and Preserved Seafood	Mineral Mining and Processing
Coal Mining	Oil and Gas Extraction: coal bed methane
Coil Coating	Ore Mining and Dressing (hard rock mining)
Dairy Products Processing	Organic Chemicals, Plastics, & Synthetic Fibers, including chemical formulators, and adhesives and sealants
Electrical and Electronic Components	Petroleum Refining, including petroleum bulk stations and terminals
Electroplating	Pulp, Paper, and Paperboard (Phases 1, 2, and 3)
Fertilizer Manufacturing	Steam Electric Power Generation
Hospitals	Textile Mills
Inorganic Chemical Manufacturing	Timber Products Processing
Meat (and Poultry) Products	Transportation Equipment Cleaning: industrial container & drum cleaning
Metal Finishing	
Metal Molding and Casting	

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Some of these categories may not fall within the scope of section 304(m) of the Clean Water Act, and others may already be in the process of development or revision by EAD. Those determinations are made during the next step of the planning process. For a discussion of how EPA integrated these results with those of the other factor analyses, see the memorandum titled “Description and Results of EPA Methodology to Synthesize Screening Level Results for the CWA 304(m) Effluent Guidelines Program Plan for 2004/2005” (DCN 00548).

During the detailed investigation phase of this planning cycle, EAD intends to consider as many of the other elements identified in this analysis as possible, including voluntary loading reductions, multi-media concerns, and potential alternative approaches.