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**PUBLIC ACCESS TO COMPLIANCE MONITORING AND ENFORCEMENT DATA: A LOOK AT THE SECTOR FACILITY INDEXING PROJECT AND OTHER AGENCY INITIATIVES**STANLEY, ELAINE G.<sup>1</sup> AND TEPLITZKY, ANDREW L.<sup>2</sup><sup>1</sup>Director, Office of Compliance<sup>2</sup>Special Assistant to the Director, Office of ComplianceUnited States Environmental Protection Agency, 401 M Street, SW (2221A),  
Washington, DC, 20460, United States**SUMMARY**

Achievement of improved compliance and higher levels of environmental control requires a mix of new and old approaches to environmental regulation. One category of new approaches relies on increased public accountability through the dissemination of facility-specific compliance data to inform the local community and to enable the facility to benchmark its own performance. The U.S. Environmental Protection Agency's (EPA) Sector Facility Indexing Project is an example of such an approach. Other approaches provide easier public access to Agency guidance/policy documents and environmental data to allow independent analysis and informed decision making by communities, regulated facilities, and the government. Use of these methods to improve public access to information requires responsible data collection, continued attention to data quality, and resources to take advantage of automated, electronic means of communication. The U.S. and other nations may find that these new approaches to data collection, analysis, and dissemination can prove beneficial in addressing noncompliance problems with certain industries. This paper discusses current U.S. EPA public access initiatives, with particular emphasis on the Sector Facility Indexing Project.

**1 INTRODUCTION**

The past 25 years of environmental regulation have brought about significant environmental improvement in the United States. Despite this progress, however, environmental problems still remain to be addressed. Forty percent of our lakes and rivers still don't meet water quality standards, one in five Americans live in areas where the air still does not meet public health standards, and there is an increase in illnesses or chronic conditions such as asthma and breast cancers that may be attributable to environmental pollution. As problems with more complex causes emerge and are brought under the regulatory umbrella, programs to monitor compliance need to look to new tools and approaches to collect relevant information and to improve facility performance.

While the Agency has long recognized the value of collecting compliance data to help in understanding compliance trends and in targeting enforcement efforts, the data have not been easily accessed by the public. Since the late 1970's, EPA regulations have required facilities to self-monitor and report the monitoring results to the appropriate regulatory authority (EPA, state, local). In addition, EPA and other regulatory authorities periodically check on the compliance of facilities via inspections. While the self-monitoring and inspection data have been entered into the appropriate databases, these databases have not always been readily

accessible to the public nor have they existed in a user-friendly format. Public knowledge of a facility's environmental performance can be a powerful incentive to that facility's achievement of compliance with environmental requirements. Now, with the evolution of computer and communications technologies, we are able to take the environmental data we require facilities to report and regulatory authorities to collect and make the data readily available to the public and to industry.

### 1.1 The U.S. Environmental Protection Agency's (EPA) Re-invention Agenda

Declaring that new approaches and techniques were needed to achieve desired higher levels of environmental improvement, the Administration issued in 1995 an agenda of actions to "re-invent" environmental regulation. Prior approaches to regulation featured performance requirements closely aligned with technology-specific solutions incorporated into regulations or permits issued by the regulating authority (EPA or the State). These permits allowed for discrete, limited opportunities for input by affected parties such as the facility or the community where that facility was located. The re-invented approach to environmental regulation features more collaborative decision making, open accountability for all parties (regulator, regulatee, community), and a greater emphasis on reaching a measurable environmental goal rather than the method(s) to achieve it. These three elements require shared information and targeted data analyses to be successful.

The 1995 Re-invention Agenda also noted that flexibility and creativity in setting and meeting environmental requirements must be premised on continuing and increasing compliance with those requirements. New incentives to comply and assistance to the regulated community can be provided, but only in a context of maintaining a level playing field and providing a deterrent threat through a strong targeted risk-based enforcement program.

### 1.2 Re-inventing Environmental Information

Compliance and risk-based enforcement in this new framework required new approaches to analyzing and presenting facility-specific information as well as a new perspective on the value and responsibility of disseminating information for public use. To direct the Agency's efforts in this, in 1998 the EPA Administrator issued a directive called "Re-inventing Environmental Information." It called for renewed efforts by the Agency to develop standardized data elements, to integrate its data systems, to work collaboratively with the States as co-owners of the data systems, and to promote new approaches to collecting and disseminating data such as use of electronic reporting and public access to Agency policies.

This paper discusses four very different Agency efforts to formulate and disseminate data to achieve, or at least contribute to, better performance by regulated facilities and to promote greater compliance. This paper provides expanded information on one project in particular, the Sector Facility Indexing Project, because it represents one of the first efforts by the Agency to provide up-to-date compliance data on specific facilities within certain industrial sectors, presented in a framework to promote comparison and bench marking. The other three public access projects described in this paper focus on the issue of making Agency data, guidance documents, and policies generally and broadly accessible.

## 2 SECTOR FACILITY INDEXING PROJECT

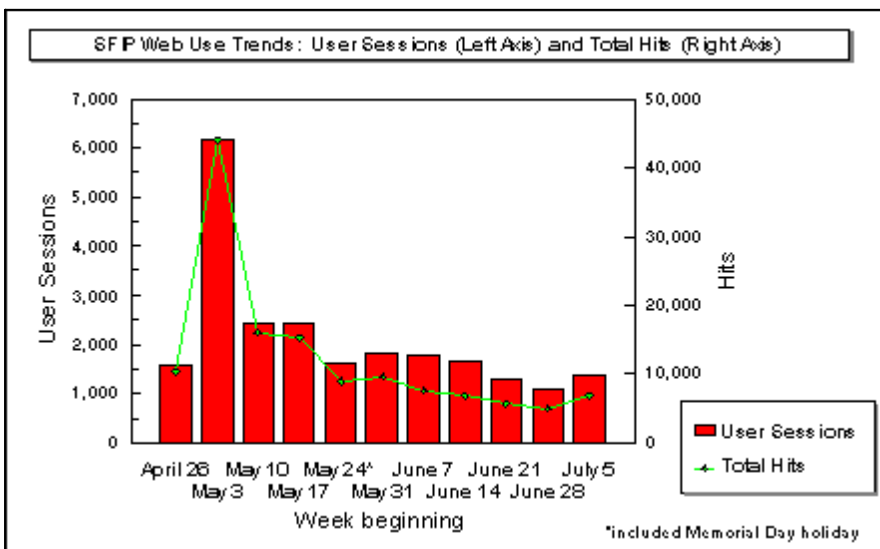
The Sector Facility Indexing Project is a pilot project that provides up-to-date environmental compliance information on a facility-specific basis, accessible to the public via the Internet at [www.epa.gov/oeca/sfi](http://www.epa.gov/oeca/sfi). This section of the paper will discuss the Sector Facility

Indexing Project, beginning with an overview, followed by a discussion of the project goals, the data included in the project, and finally, measures that were and are taken to address data quality concerns.

## 2.1 Introduction and Overview

The Sector Facility Indexing Project is a pilot project that makes it easier for the public to access, via the Internet, a wide range of environmental compliance information about regulated facilities. The Sector Facility Indexing Project currently contains records for 653 facilities in five industry sectors: petroleum refining, iron and steel production, primary nonferrous metal refining and smelting, pulp manufacturing, and automobile assembly. In the past, these records, although public, were very difficult for government and public users to access because they were spread across many different databases. Under the Project, EPA has integrated this information so it can be viewed in one place, and can be used to better understand overall facility environmental records.

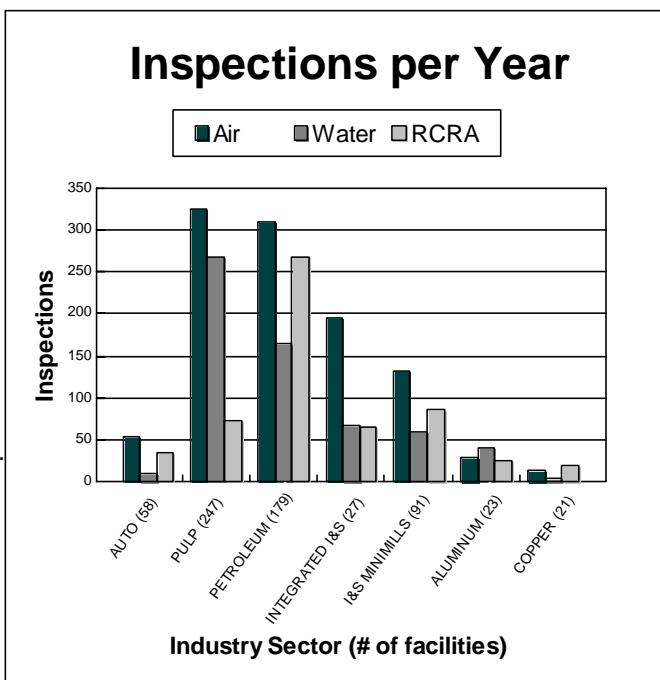
The Sector Facility Indexing Project, in its current pilot stage, will allow EPA to gauge the level of public interest in examining records regarding government oversight of regulated facilities, facility compliance with environmental laws, and the overall pollutant releases that are reported. Initial statistics on the use of the Sector Facility Indexing Project Website provide some preliminary indication of interest in the facility data. Figure 1 shows that the Sector Facility Indexing Project Website usage for both user sessions and total hits has reached a relative steady state since the site was launched on May 1, 1998. (A "user session" is a discrete period of activity generated by a unique user, while a "hit" is an individual action such as page views or file downloads.)



**Figure 1** Sector Facility Indexing Project (SFIP) Website Use Trends (Website was launched on May 1st, 1998)

## 2.2 Goals of the Sector Facility Indexing Project

EPA anticipates that the Sector Facility Indexing Project will provide better public access to facility environmental records. It also will further the dialogue between regulated businesses, their surrounding communities, and state, local and federal governments. The Project will assist the public in examining and comparing records of individual facilities in nearby communities, will assist businesses and corporations in tracking their own performance, and also will be a useful planning and analytical tool for governments and regulatory agencies. For example, Figure 2 illustrates how regulatory agencies may use the Sector Facility Indexing Project to compare data across sectors to determine how often facilities within each sector are being inspected under the air, water, and waste programs.



**Figure 2** The Sector Facility Indexing Project allows for sector comparisons, here showing number of inspections (by federal, state, and local governments) per year by sector for each of the major regulatory programs.

While the Sector Facility Indexing Project examines only a limited number of facilities, the Project will be used to understand what data are important to the public so that access to a greater number of facility records can be provided in the future. This approach also will allow EPA to study the impact of public access on environmental performance by regulated facilities. EPA anticipates that improved public access to data will provide an additional incentive for companies to maintain exemplary environmental records, and may encourage some companies to improve their performance and solve existing problems without government intervention. It also should lead to increased accuracy in self-reporting.

The project is being released in two formats: hard copy and electronic. The hard copy Sector Facility Indexing Project Progress Report is a publication that provides aggregated, pre-formatted information. The Sector Facility Indexing Project Website is designed as an interactive tool that allows users to customize the information displayed for their analytical needs and delve into more detailed facility records than are included in the Report version. The Website platform also will allow EPA to provide more frequent updates than the hard copy version.

### 2.3 Overview of Data Presented in the Sector Facility Indexing Project

EPA presents several categories of information in the Sector Facility Indexing Project. The inspection, compliance, and enforcement data focus on three important environmental statutes: the Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act (which regulates the disposal of solid and hazardous wastes). In most instances, EPA delegates administration of these laws to state and local governments who in turn report their activities to national data systems. In the U.S., state/local authorities perform the majority of inspections under federally delegated programs. The federal EPA performs inspections when a program has not been delegated to a state or in a state oversight capacity. Therefore, while EPA Regional Offices do enter some data directly, the sources of most inspection, compliance and enforcement data presented within this project are from state governments and their local government partners. When assessing the compliance status of individual facilities, government inspections and/or data reported directly by facilities are used by states and EPA to determine whether these facilities are in compliance with environmental laws. These determinations are then logged into federal databases (see section 2.4).

EPA and state/local enforcement actions may be taken and penalties assessed when established enforcement policies indicate that government sanctions are necessary. These enforcement activities and penalties are then entered into the databases. In addition to basic compliance and enforcement data, the Sector Facility Indexing Project also provides information reported by facilities regarding the amount of chemicals released and transferred during plant operations, incidents in which chemical spills were reported, and overall facility production levels. The Project also provides demographic information, such as the estimated number of people living nearby, and the education and income levels of the surrounding population. The information contained within the Project is organized by industry sector so that users can view facility-level information for all facilities that make similar products. Users cannot assume that all facilities within a sector are exactly the same — they are not; however, the close similarities across facilities within each sector do allow some degree of comparison.

Table 1 provides an example of the Sector Facility Indexing Project facility-level information aggregated for all facilities within the pulp manufacturing sector. It illustrates, for example, that of the 247 pulp manufacturers included within the Sector Facility Indexing Project database, an average of 5.4 inspections (air, water, and waste) were conducted over the last eight quarters. It also indicates that while 19.4% of the pulp manufacturers currently are in significant noncompliance under the air program, none of the facilities currently are in significant noncompliance under the Resource Conservation and Recovery Act (hazardous waste) program. (Significant noncompliance provides an indication of whether violations or noncompliance events at a given facility may pose a more severe level of environmental threat; the term for significant noncompliance in the air program is known as a significant violation.) See Table 2 for a description of the indicators presented in Table 1.

**Table 1 Example of a Sector Facility Indexing Project aggregate data summary for the pulp manufacturing sector**

The following tables present the average values calculated for the facility-specific indicators generated and compiled by Sector Facility Indexing Project. For example, of the 247 Pulp Manufacturers included within the SFIP database, an average of 5.4 inspections (Air, Water, RCRA) were conducted over the last eight quarters. In 1996, pulp manufacturers released an average of 1,009,463 pounds of TRI chemicals of which 94,718 pounds were carcinogens.

Inspections (2 years)				Historical Noncompliance (Quarterly periods with 1 or more violations or noncompliance events)				Permit Exceedences - Clean Water Act (2-year data)			
Air	Water	RCRA	Total	Air	Water	RCRA	Total	# of Pollutants Over Limit	# of Pollutants Regulated	# of Reports Over Limit	# of Reports Submitted
3.1	2.7	0.5	5.4	1.0	1.6	0.6	2.6	2.0	12.5	6.0	382.4

Current Significant Noncompliance Indicator			Closed Enforcement Actions (2 years)			
Air	Water	RCRA	Air	Water	RCRA	Total
% of Facilities	% of Facilities	% of Facilities				
19.4%	7.7%	0%	0.3	0.2	0.0	0.5

Production Capacity	TRI Release	TRI Off-Site Transfers	Ration of Chemicals Released & Transferred to Capacity	TRI Releases-Carcinogens
Short Tons/Calendar Day	1996 - Pounds	1996 - Pounds		Pounds
1,016	1,009,463	201,719	1,178.0	94,718

TRI Releases & Transfers - Metals	TRI Production-Related Waste	Pollutant Spills (last 2 years)			Estimated Surrounding Population
Pounds	Pounds	% of Facilities with Spills	# of Spills	Amount Spilled - Pounds	Residents within 3 Miles
39,143	7,129,139	37.7%	3.6	11,879	24,957

**Table 2 Description of Indicators in the Sector Facility Indexing Project**

Indicator Type	Indicator Description
Inspection Data	Presents the number of state/local and federal inspections that have occurred at each facility examined under the project.
Noncompliance Data	Historical Noncompliance - This indicator provides information regarding whether facilities were considered in noncompliance during any of the eight quarterly periods over the last two years. This measure indicates whether violations were detected, but does not indicate the severity of the violations. Background data are available through the Sector Facility Indexing Project in the detailed facility reports; such data provide more information regarding the actual problems that occurred. This indicator is most useful in assessing whether there are historical patterns of compliance or noncompliance at facilities.
	Current Significant Noncompliance - This indicator provides the most recent status for the facility in regard to whether more severe noncompliance has been detected. This indicator does not provide an historical measure, but is designed to capture current noncompliance events that are considered important by regulatory agencies. The determination of Significant Noncompliance status is made only by the state or federal government.
	Discharges Over Permitted Exceedances - This indicator, which is only available for the Clean Water Act, provides the user with information regarding the number of times facilities report their water discharges, and how often and for what pollutants these discharges are over permitted levels.
Closed Enforcement Actions Data	This indicator shows whether administrative enforcement actions or civil/judicial enforcement actions have been taken by the state or federal government against each facility for violating environmental law. Background information available through the Sector Facility Indexing Project also provides more details regarding the nature of each action, and any associated penalties.
Production Data	Information regarding the production capacity is provided for each facility as an indicator of the overall production and a surrogate for size and complexity of the facility's operations. Data sources vary for each sector.
Chemical Release and Transfer Data	Toxics Release Inventory (TRI) Data - Facilities meeting reporting thresholds are required to annually self-report the amount of chemicals released to the environment, and any that are transferred off-site. This information (known as ATRI data@) is provided for each reporting facility. It is not a measure of compliance as the reported releases are typically permissible under current laws.
	TRI Off-Site Transfers - Total pounds of TRI chemicals either discharged to a sewer system or shipped off-site for disposal or treatment.
	Ratio of Chemicals Released & Transferred to Capacity - Pounds of TRI chemicals released and transferred offsite is divided by facility production or capacity (units differ by sector). The ratio of TRI chemical releases and transfers to production or production capacity is designed to indicate differences in chemical releases per unit of production for facilities producing similar outputs.
	TRI Releases-Carcinogens, Metals, Related Waste - Pounds of known or suspect carcinogens released to the air or water, disposed of via underground injection, or landfilled on-site; pounds of metals and metal compounds (only the metal portion of metal compounds) which were either released or transferred off-site; pounds of TRI chemicals contained in production-related waste prior to recycling, treatment, energy recovery or disposal.
	Pollutant Spills Reported to Emergency Response Notification System (ERNS) - Facilities are required to report spills or accidental releases to air, water, or land that are not a part of normal operations. The Sector Facility Indexing Project indicator shows whether a spill has been reported during the last two years. More detailed background information is available through the Sector Facility Indexing Project in the detailed facility report for ERNS which includes: when each spill occurred, what chemical or mixture was released, and the approximate amount released.
Demographic Data	Estimates of the population living in the surrounding three miles are provided through the Sector Facility Indexing Project in the facility-level statistics. In addition, the detailed facility report provides more detailed demographic data (e.g., racial mix, education status and income level). Source of data is the Bureau of Census.

#### 2.4 Regulatory Program Data Contained within the Sector Facility Indexing Project

Facility data from three major EPA regulatory programs are included in the Sector Facility Indexing Project: the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act. Facilities regulated by these programs are subject to federal/state/local authority inspections as well as self-monitoring protocols. The results of these inspections and self-monitoring events are ultimately entered into databases that feed the Sector Facility Indexing Project. A brief description of each of these regulatory programs follows.

- Clean Air Act (CAA) - Facilities releasing air pollutants that are subject to Clean Air Act requirements are inspected to ensure that established emission levels and regulated operating procedures are being followed. The result of these inspections, and self-reports that are provided by the facility, determine the compliance status of each facility.
- Clean Water Act (CWA) - National Pollutant Elimination Discharge System (NPDES) - Facilities self-report whether they are above or below pollution discharge limits that are established at each facility based upon government-established permit limits. These reports, along with the results of periodic government inspections, determine whether facilities are considered in or out of compliance.
- Resource Conservation and Recovery Act (RCRA) - Facilities that generate and manage hazardous wastes are required to meet established regulations regarding storage, transport, treatment, and disposal. Compliance with these requirements is ascertained by inspections and file reviews. The result of these compliance monitoring activities determine the compliance status of each facility.

#### 2.5 "Indicators" Contained within the Sector Facility Indexing Project

Many of the Sector Facility Indexing Project indicators shown in Table 1 are aggregated from raw data contained in EPA databases. To the extent possible, Sector Facility Indexing Project allows data users to view the raw data to give more context to broader aggregate indicators. For example, if a facility is shown as having one closed enforcement action, the underlying data would provide details on the event to which the enforcement action pertained, when it happened, and whether an associated penalty resulted and the amount. This layered approach allows for comparative analysis, and more thorough inquiry regarding individual facility records.

Figure 4 illustrates facility-level statistics for a particular pulp manufacturing facility (the facility ID number, name, city, and state have been deleted for the purposes of this paper) in the Project database. The statistics indicate that this facility is in significant noncompliance for the air program and has had an air enforcement action closed within the past two years. Should the user wish to know more about this facility, such as more details about the demographic profile of the area surrounding the facility, the user may access a detailed facility report in the Sector Facility Indexing Project. Table 4 illustrates the demographic portion of the detailed facility report for the same facility shown in Table 3.

**Table 3 Example of facility-level statistics for a particular pulp Manufacturing facility in Sector Facility Indexing Project**

Table 1 - Facility Statistics											
SFIP ID: PAP.M 95 Facility Name: Deleted City: Deleted											
Inspections (2 Years)				Historical Noncompliance (Quarterly periods with 1 or more violations or noncompliance events)				Permit Exceedances - Clear Water Act (2 Years)			
Air	Water	RCRA	Total	Air	Water	RCRA	Air/Water/RCRA	# of pollutants over limit	# of pollutants regulated	# of reports over limit	# of reports submitted
0	2	0	2	1	7	8	8	0	13	0	198

Current Signification Noncompliance Indicator				Closed Enforcement Actions (2 Years)			
Air (Y/N)	Water (Y/N)	RCRA (Y/N)	Air/Water / RCRA	Air	Water	RCRA	Total
Y	N	N	1	1	0	0	1
Definition of Codes: <b>Air, Water, RCRA:</b> NP = No permit was found <b>Toxics Release Inventory (TRI):</b> NC = No calculation due to missing values.							

Table 2 - Facility Size, Chemical Release and Demographic Data								
SFIP ID: PAP.M 95 Facility Name: Deleted City: Deleted								
Production Capacity	TRI Releases (1995 Pounds)	TRI Off-site Transfers	Rations of Chemicals Released & Transferred to Production	TRI Releases-Carcinogens (Pounds)	TRI Releases and Transfers - Metals (Pounds)	Total Waste Generated (Pounds)	Pollutant Spills (2 Years) One or more report	Estimate Surrounding Population Residents within 3 miles
1,625	617,002	0	379.69	23,416	0	11,303,496	Y	4,198
Definition of Codes: <b>Air, Water, RCRA:</b> NP = No permit was found. <b>Toxics Release Inventory (TRI):</b> NC = No calculation due to missing values.								

**Table 4 Demographic profile extracted from the Sector Facility Indexing Project detailed facility report for the same facility shown in Table 3**

Demographic Profile of Surrounding Area - Summary Based On 1990 Census Block Group Data							
Radius of Area:	3 Miles	Land Area:	95.61%	Households (HH) in area:	1,688		
Center Latitude:	44.4797	Water Area:	4.39%	Housing units in area:	1,825		
Center Longitude:	-70.1973	Population Dens:	148.47/sq. mi	HH On Public Assistance:	191		
Total Persons:	4,198	Percent Minority:	1.64%	Persons Below Poverty Level:	664		
Race:	Persons	(%)	Age:	Persons	(%)	Education:	Persons
						(Persons 25 & older)	(%)
White:	4,174	(99.43)	Child <6 yrs:	383	(9.12)	Less than 9th:	334
African-american:	5	(0.12)	Minors <18 yrs:	1,158	(27.58)	9th-12th:	394
Hispanic-Orig:	46	(1.10)	Adults >17 yrs:	3,040	(72.42)	H.S. Diploma:	1,199
Asian/Pacific:	5	(0.12)	Senior >64 yrs:	627	(14.94)	Some College/2-yr	522
Amer.- Indian:	13	(0.31)	B.S./B.A. or more	279	(10.23)		
Other race:	1	(0.02)					
Income:	Households	(%)					
<\$15k:	535	(31.69)					
\$15k-\$25k:	379	(22.45)					
\$25k-\$50k:	565	(33.47)					
\$50k-\$75k:	143	(8.47)					
> \$75k:	62	(3.67)					

## 2.6 Process Used to Develop the Sector Facility Indexing Project and Assure Quality Data

The Sector Facility Indexing Project took three years from time of inception to the day of Internet site "opening." This section of the paper will provide a brief overview of the steps EPA took to develop the Project over this three year period. Overall, two of the most controversial aspects of the Project involved deciding which data elements to include and how to ensure those data that are included are correct. The Agency realized early in the process that it needed to make the appropriate data available to serve the public's needs, but also needed to address the concerns of the states and industry who feared that erroneous data would be posted on the Internet that could mislead the public.

EPA initiated the Sector Facility Indexing Project in early 1995 by first researching the facilities that fall into each industry category. These lists were then used to collect from specific data bases the core data elements that EPA thought were most important with regard to facility profiling. Once this list was developed, EPA provided each state government with a copy of the profiles for each facility in their state. This information was provided to get feedback from state governments, and to provide an opportunity for correction of any data errors that may have occurred during the data entry process. After this process was completed, EPA announced a public meeting and comment period in the Federal Register to solicit comments on the project design. The public meeting brought together a wide range of interested parties. EPA made substantial modifications to the project to better align it with the needs expressed during this meeting, and the reviews by state/local governments.

Before releasing the Sector Facility Indexing Project data, EPA took one final step to ensure the quality of the information. Each facility covered under this project was sent a copy of their compliance and enforcement data for review and comment to make sure mistakes were caught before the information was released under the Project. While this process revealed that the information contained in each database was generally of high quality, the process did result in some corrections to the underlying databases. EPA also has developed procedures so that a facility (or anyone else) that believes that there are errors in the data presented can bring those to EPA's attention directly through the Web site or in writing. EPA will work to address these in a timely manner.

## 2.7 Next Steps and Possible Project Modifications

EPA plans to evaluate the results of the Sector Facility Indexing Project. This evaluation will assist the Agency in making decisions on future modifications to the project. The Sector Facility Indexing Project is considered an iterative process in which improvements will be made over time. EPA will be seeking feedback on project and data quality from users and the regulated community. There are several project enhancements and modifications that EPA is considering now that the Project has been released:

- developing a standardized methodology to expand to additional sectors;
- presenting information over time for comparison purposes;
- including compliance data from additional regulatory programs;
- factoring in chemical releases reported outside the Toxics Release Inventory (e.g., regulated air pollutants and water discharges under the Clean Water Act permit system);
- including facility-specific toxicity-weighted Toxics Release Inventory release and relative risk data; and
- indicating whether facilities are on "compliance schedules" in which facilities agree to a set schedule to fix compliance problems.

## 3 OTHER MAJOR AGENCY PUBLIC ACCESS INITIATIVES

Whereas the Sector Facility Indexing Project focuses on environmental compliance and enforcement information for specific facilities in specific industries, the Agency is involved in a number of other projects that provide more general environmental data and guidance to the public to address a variety of needs, such as helping communities discover the existence of regulated facilities in their neighborhoods, assisting the public in making decisions about their day-to-day lives as they may be impacted by the environment, and to foster compliance with environmental law. This section of the paper provides a brief description of these projects.

### 3.1 The Envirofacts Warehouse

For the last two years, EPA's World Wide Web site has offered the Envirofacts Warehouse ([www.epa.gov/enviro](http://www.epa.gov/enviro)) to the Internet public. Since its inception, over four million hits have been recorded at the Envirofacts Web site. The Envirofacts Warehouse provides a single place where a user can retrieve environmental information about a facility or facilities simultaneously from a variety of EPA databases without having to search one database at a

time. The Envirofacts Warehouse provides access to the following environmental program databases: Superfund, drinking water, toxic and air releases, hazardous waste, and water discharge permits. Through the Warehouse, a user currently can determine whether a facility or company is regulated by these environmental programs. After future Warehouse modifications, the user also will be able to understand the compliance history of that facility under these programs. For example, in time, a user will be able to easily access information about a facility's compliance with both their water discharge permit and with their hazardous waste management permit.

The Envirofacts Warehouse also provides spatial and demographic information. Spatial information includes latitude and longitude coordinates for EPA-regulated facilities and enables users to visualize EPA facilities in relation to geographic features such as roads, rivers, and county boundaries. Demographic information can be accessed from a database containing 1990 U.S. Bureau of Census data, which include statistics on income, poverty status, race, and education level of the population. This database integrates with the spatial database and the national program databases (described above) to enable the user to perform geo-demographic environmental analyses.

Data without explanation can mislead the public; therefore, the Envirofacts Warehouse includes information that describes the data elements in the Warehouse. The Envirofacts Warehouse also includes pages to educate the public about the environment. Finally, the Warehouse provides links to EPA and non-EPA sites, which contain general information of environmental interest, such as information about environmental laws, and Superfund and drinking water fact sheets. Chemical reference pages link to sites outside the Envirofacts Warehouse Website including EPA resources, other federal agencies, and select university sources that describe chemicals.

### 3.2 Environmental Monitoring for Public Access and Community Tracking Project

The Environmental Monitoring for Public Access and Community Tracking Project is a new EPA pilot effort to work with selected communities to make timely, accurate, and understandable environmental information available to millions of people in the largest metropolitan areas across the United States so that communities and individuals can make informed, day-to-day decisions about their lives. The Tracking Project is intended to allow individuals to answer questions such as: What is the ozone level today? Are there local fish advisories in the stream where we'll be fishing this evening?

The key to the success of the Tracking Project is the cooperative working arrangement that EPA will have with the selected Tracking Project communities. To ensure the delivery of accurate, timely, and useful environmental and public-health information directly to communities and individuals, EPA will work with Tracking Project communities to:

- Put the latest technology to work in keeping track of environmental conditions.
- Present in plain language the information the communities want to know.
- Ensure that information is not only accurate but also useful.

EPA and the communities will use a variety of methods to provide environmental information. Depending on community preferences, these may include: Internet, compact disks, television, radio, newspapers, fliers, billboards, town-hall meetings, community organizations, and person-to-person communication. EPA plans to reach its Tracking Project goals by using two distinct approaches: EPA projects and pilot projects initiated by the Tracking Project

metropolitan areas. For further information about the Environmental Monitoring for Public Access and Community Tracking Project, the reader is encouraged to visit the Internet at [www.epa.gov/empact](http://www.epa.gov/empact).

### 3.3 Enhanced Public Access System

In January, 1997, the EPA Deputy Administrator directed each office within the Agency to begin development of an Enhanced Public Access System that would allow the public to electronically access via the Internet, by the end of Fiscal Year 2000, EPA's policy, guidance, and interpretative documents. Enhancing public access to these Agency documents is simply a matter of good government. An electronic system that provides easy access of Agency guidance documents to the public serves several purposes:

- fosters compliance with environmental law;
- improves national consistency, providing a level playing field for all regulated entities;
- improves Agency productivity in that Regional and national program offices may quickly investigate if and to what end the Agency has already spoken on a particular issue by consulting one system; and
- expedites public access in that Agency information available under a Freedom of Information Act request would be readily accessible to the public electronically.

Since documents are not in a single database, a "metadata" database will be developed to integrate document titles/files and enhance user access. The metadata database is a single database that has a defined set of information about every document in the system, a "card catalogue" that will serve as the primary entry point to the policy and guidance system. This database also will allow the user to access the document directly from the metadata record without searching through multiple office websites. EPA Headquarters and Regional offices began loading documents into the system in January 1998. By September 1998, we expect about one-third of the nearly 800,000 pages of documents will be uploaded into the database.

## **4 ISSUES IN PROVIDING PUBLIC ACCESS TO ENFORCEMENT AND COMPLIANCE DATA**

### 4.1 Data Presentation

An essential element not only in maintaining quality data, but in designing effective public access projects, is to understand the source and limitations of the data. EPA relies upon a variety of sources for original data. The most common sources are: (1) facility self-reported data (e.g., Toxicity Release Inventory data or effluent discharge data under Clean Water Act permits); (2) State data (inspection, ambient monitoring, enforcement actions taken); or (3) EPA data (inspection, ambient monitoring, enforcement actions taken). Each source of data has the responsibility to ensure accuracy in reporting. As managers of the shared systems collecting the data, EPA and the states have the added responsibility of ensuring that reported data is correctly entered and can be viewed and withdrawn easily and without mistakes. To address these concerns, the Sector Facility Indexing Project, Envirofacts, and other such projects devote attention to on-screen explanations, caveats, and metadata databases (described earlier in section 3.3 of this paper) to educate the user.

One of the lessons learned in the Sector Facility Indexing Project was that the presentation of data can inform the public debate about facility compliance and performance as much as the factual content of the data elements. EPA received significant public comment on the indicators it was considering including in the Sector Facility Indexing Project. Comments ranged from concerns about presenting a positive or negative picture (e.g., time in compliance or out of compliance) to possible implied statements about risk to the public (e.g., a table presenting demographic data adjacent to legal reported release data). EPA carefully considered the comments received as well as the limitations of the available database, believing the more neutral the Sector Facility Indexing Project presentation, the more credible a tool it becomes.

#### 4.2 Data Quality in the Sector Facility Indexing Project

One of the two most contentious issues in the Sector Facility Indexing Project was the quality of the data being used. Although all the data used had been collected for years and had been publicly available under U.S. law, the States and facilities expressed significant concern about the quality of the data given the spotlight the Sector Facility Indexing Project would place on it. The Agency went through extra steps (see section 2.6) to allow review of the facility data prior to posting on the Internet.

Two-thirds of the Sector Facility Indexing Project facilities submitted comments as part of the quality assurance review process which was open from August through October 1997, with a small additional number of comments received subsequently. Facilities commented on approximately 9% of the major data elements and EPA/States actually needed to correct 4.5% of the major elements. Facilities commented on approximately 5% of the minor data elements and EPA/States actually needed to correct 2.5% percent of the minor elements.

## 5 CONCLUSION

EPA has for years collected environmental data and has strived to make it available to the public, although not always in an effective manner. Today's technological advances and new approaches to environmental regulation have come together to produce exciting new opportunities for public access to facility compliance and performance data. Government agencies have the responsibility to determine the most effective way to provide this access, but also the responsibility to ensure equal access and accurate data. As more information is made available to the public and the public begins to use the data, data quality is likely to improve because both the regulated facilities and the regulatory authorities are likely to ensure that the publicly accessible data is correct. In addition, we also might anticipate that regulated facilities will be stimulated to improve their compliance and environmental performance knowing that more people have easier means to monitor their facility's performance. Enhanced public access, therefore, could lead to a general improvement in the overall quality of our environment.