

VII. COMPLIANCE AND ENFORCEMENT HISTORY

Background

To date, EPA has focused much of its attention on measuring compliance with specific environmental statutes. This approach allows the Agency to track compliance with the Clean Air Act, the Resource Conservation and Recovery Act, the Clean Water Act, and other environmental statutes. Within the last several years, the Agency has begun to supplement single-media compliance indicators with facility-specific, multimedia indicators of compliance. In doing so, EPA is in a better position to track compliance with all statutes at the facility level, and within specific industrial sectors.

A major step in building the capacity to compile multimedia data for industrial sectors was the creation of EPA's Integrated Data for Enforcement Analysis (IDEA) system. IDEA has the capacity to "read into" the Agency's single-media databases, extract compliance records, and match the records to individual facilities. The IDEA system can match Air, Water, Waste, Toxics/Pesticides/EPCRA, TRI, and Enforcement Docket records for a given facility, and generate a list of historical permit, inspection, and enforcement activity. IDEA also has the capability to analyze data by geographic area and corporate holder.

Compliance and Enforcement Profile Description

Using inspection, violation and enforcement data from the IDEA system, this section provides information regarding the historical compliance and enforcement activity of this sector. In order to mirror the facility universe reported in the Toxic Chemical Profile, the data reported within this section consists of records only from the TRI reporting universe. With this decision, the selection criteria are consistent across sectors with certain exceptions. For the sectors that do not normally report to the TRI program, data have been provided from EPA's Facility Indexing System (FINDS) which tracks facilities in all media databases. Please note, in this section, EPA does not attempt to define the actual number of facilities that fall within each sector. Instead, the section portrays the records of a subset of facilities within the sector that are well defined within EPA databases.

As a check on the relative size of the full sector universe, most notebooks contain an estimated number of facilities within the sector according to the Bureau of Census (See Section II). With sectors dominated by small businesses, such as metal finishers and printers, the reporting universe within the EPA databases may be small in comparison to Census data.

However, the group selected for inclusion in this data analysis section should be consistent with this sector's general make-up.

Following this introduction is a list defining each data column presented within this section. These values represent a retrospective summary of inspections or enforcement actions, and solely reflect EPA, state and local compliance assurance activity that have been entered into EPA databases. To identify any changes in trends, the EPA ran two data queries, one for the past five calendar years (August 10, 1990 to August 9, 1995) and the other for the most recent twelve-month period (August 10, 1994 to August 9, 1995). The five-year analysis gives an average level of activity for that period for comparison to the more recent activity.

Because most inspections focus on single-media requirements, the data queries presented in this section are taken from single media databases. These databases do not provide data on whether inspections are state/local or EPA-led. However, the table breaking down the universe of violations does give the reader a crude measurement of the EPA's and states' efforts within each media program. The presented data illustrate the variations across regions for certain sectors.^e This variation may be attributable to state/local data entry variations, specific geographic concentrations, proximity to population centers, sensitive ecosystems, highly toxic chemicals used in production, or historical noncompliance. Hence, the exhibited data do not rank regional performance or necessarily reflect which regions may have the most compliance problems.

Compliance and Enforcement Data Definitions

General Definitions

Facility Indexing System (FINDS) -- this system assigns a common facility number to EPA single-media permit records. The FINDS identification number allows EPA to compile and review all permit, compliance, enforcement and pollutant release data for any given regulated facility.

Integrated Data for Enforcement Analysis (IDEA) -- is a data integration system that can retrieve information from the major EPA

^d Reg EPA ions include the following states: I (CT, MA, ME, RI, NH, VT); II (NJ, NY, PR, VI); III (DC, DE, MD, PA, VA, WV); IV (AL, FL, GA, KY, MS, NC, SC, TN); V (IL, IN, MI, MN, OH, WI); VI (AR, LA, NM, OK, TX); VII (IA, KS, MO, NE); VIII (CO, MT, ND, SD, UT, WY); IX (AZ, CA, HI, NV, Pacific Trust Territories); X (AK, ID, OR, WA).

program office databases. IDEA uses the FINDS identification number to “glue together” separate data records from EPA’s databases. This is done to create a “master list” of data records for any given facility. Some of the data systems accessible through IDEA are: AIRS (Air Facility Indexing and Retrieval System, Office of Air and Radiation), PCS (Permit Compliance System, Office of Water), RCRIS (Resource Conservation and Recovery Information System, Office of Solid Waste), NCDB (National Compliance Data Base, Office of Prevention, Pesticides, and Toxic Substances), CERCLIS (Comprehensive Environmental and Liability Information System, Superfund), and TRIS (Toxic Release Inventory System). IDEA also contains information from outside sources such as Dun and Bradstreet and the Occupational Safety and Health Administration (OSHA). Most data queries displayed in notebook sections IV and VII were conducted using IDEA.

Data Table Column Heading Definitions

Facilities in Search -- are based on the universe of TRI reporters within the listed SIC code range. For industries not covered under TRI reporting requirements, the notebook uses the FINDS universe for executing data queries. The SIC code range selected for each search is defined by each notebook's selected SIC code coverage described in Section II.

Facilities Inspected --- indicates the level of EPA and state agency inspections for the facilities in this data search. These values show what percentage of the facility universe is inspected in a 12 or 60 month period. This column does not count non-inspectional compliance activities such as the review of facility-reported discharge reports.

Number of Inspections -- measures the total number of inspections conducted in this sector. An inspection event is counted each time it is entered into a single media database.

Average Time Between Inspections -- provides an average length of time, expressed in months, that a compliance inspection occurs at a facility within the defined universe.

Facilities with One or More Enforcement Actions -- expresses the number of facilities that were party to at least one enforcement action within the defined time period. This category is broken down further into federal and state actions. Data are obtained for administrative, civil/judicial, and criminal enforcement actions. Administrative actions include Notices of Violation (NOVs). A facility with multiple enforcement actions is only counted once in this column (facility with three

enforcement actions counts as one). All percentages that appear are referenced to the number of facilities inspected.

Total Enforcement Actions -- describes the total number of enforcement actions identified for an industrial sector across all environmental statutes. A facility with multiple enforcement actions is counted multiple times (a facility with three enforcement actions counts as three).

State Lead Actions -- shows what percentage of the total enforcement actions are taken by state and local environmental agencies. Varying levels of use by states of EPA data systems may limit the volume of actions accorded state enforcement activity. Some states extensively report enforcement activities into EPA data systems, while other states may use their own data systems.

Federal Lead Actions -- shows what percentage of the total enforcement actions are taken by the United States Environmental Protection Agency. This value includes referrals from state agencies. Many of these actions result from coordinated or joint state/federal efforts.

Enforcement to Inspection Rate -- expresses how often enforcement actions result from inspections. This value is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This measure is a rough indicator of the relationship between inspections and enforcement. Reported inspections and enforcement actions under the Clean Water Act (PCS), the Clean Air Act (AFS) and the Resource Conservation and Recovery Act (RCRA) are included in this ratio. Inspections and actions from the TSCA/FIFRA/EPCRA database are not factored into this ratio because most of the actions taken under these programs are not the result of facility inspections. This ratio does not account for enforcement actions arising from non-inspection compliance monitoring activities (e.g., self-reported water discharges) that can result in enforcement action within the CAA, CWA and RCRA.

Facilities with One or More Violations Identified -- indicates the percentage of inspected facilities having a violation identified in one of the following data categories: In Violation or Significant Violation Status (CAA); Reportable Noncompliance, Current Year Noncompliance, Significant Noncompliance (CWA); Noncompliance and Significant Noncompliance (FIFRA, TSCA, and EPCRA); Unresolved Violation and Unresolved High Priority Violation (RCRA). The values presented for this column reflect the extent of noncompliance within the measured time frame, but do not distinguish between the severity of the noncompliance. Percentages within this column may exceed 100 percent because facilities

can be in violation status without being inspected. Violation status may be a precursor to an enforcement action, but does not necessarily indicate that an enforcement action will occur.

Media Breakdown of Enforcement Actions and Inspections -- four columns identify the proportion of total inspections and enforcement actions within EPA Air, Water, Waste, and TSCA/FIFRA/EPCRA databases. Each column is a percentage of either the "Total Inspections," or the "Total Actions" column.

VII.A. Printing and Publishing Industry Compliance History

Exhibit 20 provides an overview of the reported compliance and enforcement data for the printing industry over the past five years (August 1990 to August 1995). These data are also broken out by EPA Region thereby permitting geographical comparisons. A few points evident from the data are listed below.

- The number of different printing facilities inspected was only slightly more than one quarter of those identified in the IDEA search. Also, these facilities were inspected on average only every four years.
- A significantly smaller proportion of facilities had enforcement actions brought against them than were inspected. On average 17 percent of those facilities inspected faced enforcement actions.
- Those facilities with one or more enforcement actions had, on average, over the five year period, almost three enforcement actions brought against them.

Exhibit 20: Five-Year Enforcement and Compliance Summary for Printing									
A	B	C	D	E	F	G	H	I	J
Region	Facilities in Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Enforcement Actions	Percent State Lead Actions	Percent Federal Lead Actions	Enforcement to Inspection Rate
I	440	106	303	87	10	22	86%	14%	0.07
II	268	125	515	31	30	114	93%	7%	0.22
III	568	138	805	44	28	70	87%	13%	0.09
IV	1,057	262	1,569	40	36	161	96%	4%	0.10
V	369	213	796	28	30	39	74%	26%	0.05
VI	596	51	172	208	17	49	78%	22%	0.28
VII	422	81	360	70	16	36	44%	56%	0.10
VIII	36	7	17	127	2	3	67%	33%	0.18
IX	185	36	143	78	5	13	62%	38%	0.09
X	147	17	43	205	2	7	69%	31%	0.17
TOTAL	4,106	1,035	4,723	52	176	514	85%	15%	0.11

VII.B. Comparison of Enforcement Activity Between Selected Industries

Exhibits 21 and 22 allow the compliance history of the printing sector to be compared to the other industries covered by the industry sector notebooks. Comparisons between Exhibits 21 and 22 permit the identification of trends in compliance and enforcement records of the industry by comparing data covering the last five years to that of the past year. Some points evident from the data are listed below.

- Of those sectors listed, the printing industry has been one of the least frequently inspected industries over the past five years based upon its high number of months between inspections.
- State lead actions have dominated the total number of enforcement actions taken against the printing industry.
- Over the past five years, the printing industry has had one of the lowest rates of enforcement actions per inspection of the sectors listed, and the rate has remained constant over the past year.

Exhibits 23 and 24 provide a more in-depth comparison between the printing industry and other sectors by breaking out the compliance and enforcement data by environmental statute. As in the previous Exhibits (Exhibits 21 and 22), the data cover the last five years (Exhibit 23) and the last one year (Exhibit 24) to facilitate the identification of recent trends. A few points evident from the data are listed below.

- The number of inspections carried out under the Clean Air Act and RCRA over the past five years account for over ninety percent of inspections and of total enforcement actions within the sample. This figure has remained constant over the past year.
- Proportional to the number of inspections conducted under each statute, significantly more enforcement actions are taken under RCRA (with an enforcement to inspection rate of 0.15) than under CAA (with an enforcement to inspection rate 0.05)

Exhibit 21: Five-Year Enforcement and Compliance Summary for Selected Industries									
A	B	C	D	E	F	G	H	I	J
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Enforcement Actions	Percent State Lead Actions	Percent Federal Lead Actions	Enforcement to Inspection Rate
Pulp and Paper	306	265	3,766	5	115	502	78%	22%	0.13
Printing	4,106	1,035	4,723	52	176	514	85%	15%	0.11
Inorganic Chemicals	548	298	3,034	11	99	402	76%	24%	0.13
Organic Chemicals	412	316	3,864	6	152	726	66%	34%	0.19
Petroleum Refining	156	145	3,257	3	110	797	66%	34%	0.25
Iron and Steel	374	275	3,555	6	115	499	72%	28%	0.14
Dry Cleaning	933	245	633	88	29	103	99%	1%	0.16
Metal Mining	873	339	1,519	34	67	155	47%	53%	0.10
Non-Metallic Mineral Mining	1,143	631	3,422	20	84	192	76%	24%	0.06
Lumber and Wood	464	301	1,891	15	78	232	79%	21%	0.12
Furniture	293	213	1,534	11	34	91	91%	9%	0.06
Rubber and Plastic	1,665	739	3,386	30	146	391	78%	22%	0.12
Stone, Clay, and Glass	468	268	2,475	11	73	301	70%	30%	0.12
Fabricated Metal	2,346	1,340	5,509	26	280	840	80%	20%	0.15
Nonferrous Metal	844	474	3,097	16	145	470	76%	24%	0.15
Electronics	405	222	777	31	68	212	79%	21%	0.27
Automobiles	598	390	2,216	16	81	240	80%	20%	0.11

Exhibit 22: One-Year Inspection and Enforcement Summary for Selected Industries									
A	B	C	D	E		F		G	H
				Facilities with 1 or More Violations	Number	Percent	Facilities with 1 or more Enforcement Actions		
Pulp and Paper	306	189	576	162	86%	28	15%	88	0.15
Printing	4,106	397	676	251	63%	25	6%	72	0.11
Inorganic Chemicals	548	158	427	167	106%	19	12%	49	0.12
Organic Chemicals	412	195	545	197	101%	39	20%	118	0.22
Petroleum Refining	156	109	437	109	100%	39	36%	114	0.26
Iron and Steel	374	167	488	165	99%	20	12%	46	0.09
Dry Cleaning	933	80	111	21	26%	5	6%	11	0.10
Metal Mining	873	114	194	82	72%	16	114%	24	0.13
Non-metallic Mineral Mining	1,143	253	425	75	30%	28	11%	54	0.13
Lumber and Wood	464	142	268	109	77%	18	13%	42	0.58
Furniture	293	160	113	66	41%	3	2%	5	0.55
Rubber and Plastic	1,665	271	435	289	107%	19	7%	59	0.14
Stone, Clay, and Glass	468	146	330	116	79%	20	14%	66	0.20
Nonferrous Metals	844	202	402	282	140%	22	11%	72	0.18
Fabricated Metal	2,346	477	746	525	110%	46	10%	114	0.15
Electronics	405	60	87	80	133%	8	13%	21	0.24

Exhibit 23: Five-Year Inspection and Enforcement Summary by Statute for Selected Industries											
Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/EPCRA/Other*	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Pulp and Paper	265	3,766	502	51%	48%	38%	30%	9%	18%	2%	3%
Printing	1,035	4,723	514	49%	31%	6%	3%	43%	62%	2%	4%
Inorganic Chemicals	298	3,034	402	29%	26%	29%	17%	39%	53%	3%	4%
Organic Chemicals	316	3,864	726	33%	30%	16%	21%	46%	44%	5%	5%
Petroleum Refining	145	3,237	797	44%	32%	19%	12%	35%	52%	2%	5%
Iron and Steel	275	3,555	499	32%	20%	30%	18%	37%	58%	2%	5%
Dry Cleaning	245	633	103	15%	1%	3%	4%	83%	93%	0%	1%
Metal Mining	339	1,519	155	35%	17%	57%	60%	6%	14%	1%	9%
Non-metallic Mineral Mining	631	3,422	192	65%	46%	31%	24%	3%	27%	0%	4%
Lumber and Wood	301	1,891	232	31%	21%	8%	7%	59%	67%	2%	5%
Furniture	293	1,534	91	52%	27%	1%	1%	45%	64%	1%	8%
Rubber and Plastic	739	3,386	391	39%	15%	13%	7%	44%	68%	3%	10%
Stone, Clay, and Glass	268	2,475	301	45%	39%	15%	5%	39%	51%	2%	5%
Nonferrous Metals	474	3,097	470	36%	22%	22%	13%	38%	54%	4%	10%
Fabricated Metal	1,340	5,509	840	25%	11%	15%	6%	56%	76%	4%	7%
Electronics	222	777	212	16%	2%	14%	3%	66%	90%	3%	5%

Exhibit 24: One-Year Inspection and Enforcement Summary by Statute for Selected Industries											
Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/EPCRA/Other*	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Pulp and Paper	189	576	88	56%	69%	35%	21%	10%	7%	0%	3%
Printing	397	676	72	50%	27%	5%	3%	44%	66%	0%	4%
Inorganic Chemicals	158	427	49	26%	38%	29%	21%	45%	36%	0%	6%
Organic Chemicals	195	545	118	36%	34%	13%	16%	50%	49%	1%	1%
Petroleum Refining	109	437	114	50%	31%	19%	16%	30%	47%	1%	6%
Iron and Steel	167	488	46	29%	18%	35%	26%	36%	50%	0%	6%
Dry Cleaning	80	111	11	21%	4%	1%	22%	78%	67%	0%	7%
Metal Mining	114	194	24	47%	42%	43%	34%	10%	6%	0%	19%
Non-metallic Mineral Mining	253	425	54	69%	58%	26%	16%	5%	16%	0%	11%
Lumber and Wood	142	268	42	29%	20%	8%	13%	63%	61%	0%	6%
Furniture	293	160	5	58%	67%	1%	10%	41%	10%	0%	13%
Rubber and Plastic	271	435	59	39%	14%	14%	4%	46%	71%	1%	11%
Stone, Clay, and Glass	146	330	66	45%	52%	18%	8%	38%	37%	0%	3%
Nonferrous Metals	202	402	72	33%	24%	21%	3%	44%	69%	1%	4%
Fabricated Metal	477	746	114	25%	14%	14%	8%	61%	77%	0%	2%
Electronics	60	87	21	17%	2%	14%	7%	69%	87%	0%	4%
Automobiles	169	284	28	34%	16%	10%	9%	56%	69%	1%	6%

VII.C. Review of Major Legal Actions

This section provides summary information about major cases that have affected this sector, and a list of Supplementary Environmental Projects (SEPs). SEPs are compliance agreements that reduce a facility's stipulated penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can significantly reduce the future pollutant loadings of a facility.

VII.C.1. Review of Major Cases

The Office of Regulatory Enforcement does not regularly compile information related to major cases and pending litigation within an industry sector. The staff are willing to pass along such information to Agency staff as requests are made. (Contact: Office of Enforcement Capacity and Outreach, 202-260-4140) In addition, summaries of completed enforcement actions are published each fiscal year in the *Enforcement Accomplishments Report*; the summaries are not organized by industry sector. (Contact: Office of Enforcement Capacity and Outreach, 202-260-4140)

VII.C.2. Supplementary Environmental Projects (SEPs)

Supplemental environmental projects (SEPs) are enforcement options that require the non-compliant facility to complete specific projects. Regional summaries of SEPs undertaken in federal fiscal year 1993 and 1994 were reviewed. Two SEPs were undertaken that involved printing facilities, as shown in the following table.

EPCRA violations engendered one SEP and RCRA violations engendered the other SEP. Due to differences in regional descriptions, the specifics of the original violations are not known. Both of the projects resulted in a reduction in the use or release of volatile organic chemicals (VOCs). Implementation costs were over \$1.7 million for one of the projects involving major process changes or capital investments in equipment. The second project cost \$26,150 and consisted of a process chemical change.

Both of the SEPs were done in Region VII. However, Region VII has only six percent of U.S. printing facilities (third lowest of all Regions) and only

eight percent of all inspections (fifth in rank of all Regions). The small number of facilities and inspections suggests a possible regional priority on printing sector SEPs or SEPs in general. Region V has the largest proportion of printers of any Region at 23 percent of the total.

Exhibit 25: FY-1993-1994 Supplemental Environmental Projects Overview: Printing										
General SEP Information			Violation Information				Pollutant Reduction			Supplemental Environmental Project Description
FY	Company Name	State/Region	Violation Type	Initial Penalty	Final Penalty	SEP Credit	SEP Cost to Company	Pollutant of Concern	Pollutant Reduction	
93	Z-International	MO	EPCRA	N/A	\$7,700	N/A	\$26,150	Solvents	N/A	Solvent-based ink reduction by 50% and substitute OPTI-SOL for tetrachloroethylene in platewashing operations, also new plate de-tacking installed
93	Hallmark Cards	MO	RCRA	N/A	\$30,000	N/A	\$1,740,000	Solvents	80% reduction in VOCs and RCRA Wastes	Solvent-based inks converted to water-based inks at gravure printing facility
Violation Information Terms										
Initial penalty: Initial proposed cash penalty for violation										
Final penalty: Total penalty after SEP negotiation										
SEP credit: Cash credit given for SEP so that, Final penalty - SEP credit = Final cash penalty										
SEP cost to company: Actual cost to company of SEP implementation										
NOTE: Due to differences in terminology and level of detail between regional SEP information, in some cases the figure listed as Final penalty may be the Final cash penalty after deduction for SEP credit										
N/A: Information not available at time of printing.										

VIII. COMPLIANCE ACTIVITIES AND INITIATIVES

This section highlights the activities undertaken by this industry sector and public agencies to voluntarily improve the sector's environmental performance. These activities include those independently initiated by industrial trade associations. In this section, the notebook also contains a listing and description of national and regional trade associations.

VIII.A. Sector-related Environmental Programs and Activities

Design for the Environment (DfE) Printing Industry Project

The Design for the Environment (DfE) Printing Industry Project (Contact: Stephanie Bergman 202-260-1821) is a joint and cooperative project between the EPA and participating printing industry sectors (screen, lithographic, and flexographic printing). Its purpose is to provide printers cost, risk, and performance information of various chemical, technology, and work practice substitutes to enable them to make informed decisions about incorporating lower risk chemicals into their production processes.

The draft Cleaner Technologies Substitutes Assessment (CTSA) for screen reclamation products and technologies (used in screen printing) was published in September 1994 and was circulated for comment through January 1995. It summarizes the comparative risk, performance, and costs of eleven substitute product systems used to reclaim screens as well as substitute work practices and technologies. A draft CTSA for lithographic blanket washes will be available in 1995.

Pollution prevention case studies and other outreach materials (e.g., videos, software packages, training workshops, and other information products) will be disseminated to printers by various means including a network of volunteer printers. The state of Washington is working with U.S. EPA Region X to disseminate DfE materials and integrate DfE efforts with the state's own "snapshots" initiative (Contact: U.S. EPA Region X - Jayne Carlin 206-553-4762).

The DfE Program has also developed a number of background documents, including the following: Printing Industry and Use Cluster Profile; Federal Environmental Regulations Potentially Affecting the Commercial Printing Industry; and Summary of Focus Group Discussions with Screen Printers and Lithographers for the Design for the Environment Printing Project. For more information about these documents or to request copies of these documents, please contact the Pollution Prevention Information Clearinghouse at 202-260-1023.

Common Sense Initiative

The EPA's Common Sense Initiative was formally announced by Administrator Browner in July of 1994 to encourage sector-based regulatory policy in six pilot industrial sectors including: iron and steel, electronics, metal plating and finishing, automobiles, printing, and oil refining. The program shifts regulatory focus from concentrating on individual pollutants and media, to industry-wide approaches to environmental problems. An EPA team is involved with other stakeholders from industry, environmental groups, environmental justice groups, labor, and state and local government agencies to identify opportunities to coordinate rulemaking and to streamline record-keeping and permitting requirements. The teams will also work with industry to identify innovative approaches in pollution prevention and environmental technology, and compliance and enforcement.

EPA CSI contacts for printing are as follows:

Ginger Gotliffe, Agency Lead (OECA) 202-564-7072
Brian Holtrop (OW) 202-260-6814
Dave Salman (OAR) 919-541-0859
Stephanie Bergman (OPPTS) 202-260-1821
Jim O'Leary (OSWER) 202-260-0724
Adam Saslow (OPPE) 202-260-2857
Paul Shapiro (ORD) 202-260-4969
Jim Curtin (OGC) 703-235-5304

The Great Printers Project

The Great Printers Project, co-sponsored by the Environmental Defense Fund (EDF), Printing Industries of America (PIA), and Council of Great Lakes Governors (CGLC), is investigating potential improvements in regulatory implementation and environmental protection. CGLC, PIA, U.S. EPA, Great Lakes state regulatory agencies, and EDF have examined the possibility of re-orienting both regulatory activities and technical support for lithographic printers toward a whole-facility approach. One of the first efforts was an investigation of the regulatory requirements currently facing printing facilities so that proposals for consolidated permitting can be developed. Great Printers Project participants published their first report in July 1994, "The Great Printers Project: Recommendations to Make Pollution Prevention a Standard Practice in the Printing Industry," which covers issues from regulatory design to technical outreach. (Contact: Kevin Mills 202-387-3500)

Environmental Leadership Program

In FY94, the Agency's Environmental Leadership Program (ELP) solicited proposals for innovative approaches to environmental management and compliance at the facility level. Forty proposals were received from companies, trade associations, and federal facilities representing many manufacturing and service sector facilities. In ELP, the EPA will work with individual facilities to study and evaluate the implementation of a variety of proposed pilot programs. The information collected from the pilot ELP programs will be used to develop a full-scale ELP program. The John Roberts Company was one of 12 proposals selected to participate in the pilot program. The John Roberts Company is a medium sized commercial lithographic printer located in Minneapolis Minnesota, who will work on developing the concept of mentoring as an environmental auditing tool to proactively and voluntarily verify compliance effectiveness. Other proposals are available for review from the Environmental Leadership Program. (Contact: Tai-ming Chang, ELP Director, 202-564-5081)

Project XL

Project XL was initiated in March 1995 as a part of President Clinton's *Reinventing Environmental Regulation* initiative. The projects seek to achieve cost effective environmental benefits by allowing participants to replace or modify existing regulatory requirements on the condition that they produce greater environmental benefits. EPA and program participants will negotiate and sign a Final Project Agreement, detailing specific objectives that the regulated entity shall satisfy. In exchange, EPA will allow the participant a certain degree of regulatory flexibility and may seek changes in underlying regulations or statutes. Participants are encouraged to seek stakeholder support from local governments, businesses, and environmental groups. EPA hopes to implement fifty pilot projects in four categories including facilities, sectors, communities, and government agencies regulated by EPA. Applications will be accepted on a rolling basis and projects will move to implementation within six months of their selection. For additional information regarding XL Projects, including application procedures and criteria, see the May 23, 1995 Federal Register Notice, or contact Jon Kessler at EPA's Office of Policy Analysis (202) 260-4034.

Waste Reduction Innovation Technology Evaluation

EPA's Office of Research and Development has supported a variety of Waste Reduction Innovative Technology Evaluation (WRITE) projects related to printing operations including evaluations of water-based inks for wide-web flexographic printing (Erie County, NY) and soy-based inks for lithographic printers (IL) (Contact: Paul Randall 513-569-7673)

Region I

Region I's Waste Management Division is giving a grant to Vermont to establish model facilities illustrating compliance and pollution prevention, which may include a printing facility. A grant to the Printing Industries of New England (PINE), also a DfE participant, provides for on-site compliance outreach, pollution prevention assistance and hazardous waste management assistance to roughly 75 facilities in the Commonwealth of Massachusetts. (Contacts: Abby Swaine - Region I, 617-565-4523 or Mark Mahoney - Region I, 617-565-1155)

Connecticut

The Connecticut Department of Environmental Protection has developed a site assessment tool for printers.

Region IV

Region IV's VOC Initiative is in the planning stages. Once developed, it may impact printers. (Contact: Bill Klutz, Air Enforcement Branch 404-347-2904)

Region VIII

Pollution prevention training for printing and metal finishing industries will be open to municipalities with approved pretreatment programs.

Region IX

Geographic Initiative focused in Southern California will target many industries.

Printing, Lithographic and Photo Processing Initiative (Washington State)

The Washington Department of Ecology's Hazardous Waste and Toxics Reduction Program is targeting the printing and photo processing industry as one of a series of single industry initiatives. The assistance is being funded with an EPA pollution prevention grant. The assistance includes: outreach training, seminars and publications, responses to inquiries, hotline and/or on-site assistance to individual facilities. Local governments and industry trade associations in King County-Metro are participants. (Contacts: U.S. EPA Region X - Nancy Helm 206-553-8659 or Jayne Carlin 206-553-4762; WADEC - Darrin Rice 206-407-6743)

Oregon Printing Industry Initiative

The Oregon Department of Environmental Quality (DEQ) is providing compliance assistance to printing, lithographic, and photo processing facilities in the state. Assistance will be provided through training, seminars and publications. (Contacts: Region X - Jayne Carlin 206-553-4762 or Kris Colt 206-553-8577; Oregon DEQ - Marianne Fitzgerald 503-229-5946)

State Pollution Prevention Roundtable

The State Pollution Prevention Roundtable will soon be publishing a member survey which will summarize state-level expertise and initiatives according to industry.

VIII.B. EPA Voluntary Programs*33/50 Program*

The "33/50 Program" is EPA's voluntary program to reduce toxic chemical releases and transfers of seventeen chemicals from manufacturing facilities. Participating companies pledge to reduce their toxic chemical releases and transfers by 33 percent as of 1992 and by 50 percent as of 1995 from the 1988 baseline year. Certificates of Appreciation have been given out to participants meeting their 1992 goals. The list of chemicals includes seventeen high-use chemicals reported in the Toxics Release Inventory.

Of the target chemicals, toluene, methyl ethyl ketone, xylenes, and 1,1,1-trichloroethane are released and transferred most frequently by the printing and publishing industry. These four toxic chemicals account for roughly 86 percent of TRI releases and transfers for printing facilities. Twenty-five companies listed under SIC 27 (printing and publishing) are currently participating in the 33/50 program. They account for 12 percent of the 206 TRI reporting companies under SIC 27, which is approximately the average level of participation for all industries (14 percent). (For more information, contact: Mike Burns, U.S. EPA, 202-260-6394 or 33/50 Program 202-260-6907.)

WasteWi\$e Program

The WasteWi\$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste minimization, recycling collection, and the manufacturing and purchase of recycled products. As of 1994, the program had about 300 companies as members, including a number of major corporations. Members agree to identify and implement actions to reduce their solid wastes and must provide EPA with their waste reduction goals along with yearly progress reports. EPA, in turn, provides technical assistance to member companies and allows the use of the WasteWi\$e logo for promotional purposes. (Contact: Lynda Wynn 202-260-0700 or the WasteWi\$e Hotline at 800-372-9473)

Climate Wise Recognition Program

The Climate Change Action Plan was initiated in response to the U.S. commitment to reduce greenhouse gas emissions in accordance with the Climate Change Convention of the 1990 Earth Summit. As part of the Climate Change Action Plan, the Climate Wise Recognition Program is a

partnership initiative run jointly by EPA and the Department of Energy. The voluntary program is designed to reduce greenhouse gas emissions by encouraging reductions across all sectors of the economy, encouraging participation in the full range of Climate Change Action Plan initiatives, and fostering innovation. Participants in the program are required to identify and commit to actions that reduce greenhouse gas emissions. The program, in turn, gives organizations early recognition for their reduction commitments; provides technical assistance through consulting services, workshops, and guides; and provides access to the program's centralized information system. At EPA, the program is operated by the Air and Energy Policy Division within the Office of Policy Planning and Evaluation. (Contact: Pamela Herman 202-260-4407)

*NICE*³

The U.S. Department of Energy and EPA's Office of Pollution Prevention are jointly administering a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE). By providing grants of up to 50 percent of the total project cost, the program encourages industry to reduce industrial waste at its source and become more energy-efficient and cost-competitive through waste minimization efforts. Grants are used by industry to design, test, demonstrate, and assess the feasibility of new processes and/or equipment with the potential to reduce pollution and increase energy efficiency. The program is open to all industries; however, priority is given to proposals from participants in the pulp and paper, chemicals, primary metals, and petroleum and coal products sectors. (Contact: DOE's Golden Field Office, 303-275-4729)

VIII.C. Summary of Trade Associations

The trade and professional organizations serving the printing industry are divided along printing processes as well as type of product produced. For example, there are several trade groups for lithographers as well as the American Newspaper Publishers Association, which typically print using lithographic presses. The large number of small facilities in this industry results in two important characteristics of the trade associations. First, a large number of facilities are not affiliated with any trade associations. Second, a significant portion of the industry research is conducted through trade associations and/or technical foundations which serve the needs of the many smaller members who would otherwise have limited or indirect access to research.

Printing industry membership in trade organizations is approximately 50 percent. The majority of printers not associated with trade groups are small printers with fewer than ten employees. Outreach efforts to unaffiliated small printing shops have been problematic for the printing industry trade associations. The In-Plant Management Association's membership, however, includes in-house operations that would otherwise be difficult to identify or contact as the main business is not printing. Industry officials reported that the trade press, which may be read by nonmembers, and suppliers of equipment and chemicals, offer two vehicles for reaching unaffiliated small printers.

LITHOGRAPHY

Printing Industries of America

100 Daingerfield Rd.
Alexandria, VA 22314
Phone: (703) 519-8100
Fax: (703) 548-3227

Members: 13,200
Staff: 70
Budget: \$12,000,000
Contact: Tom Purcell

Since its inception in 1887, Printing Industries of America (PIA) has grown to be the largest trade group for the printing sector, with the largest membership and budget. PIA focuses on lithographic printing, although their membership includes other printing processes and suppliers. Technical service and support to members occurs through more than 30 strong regional organizations. PIA publishes a variety of periodicals including *The Capital Letter*, a monthly dedicated to government regulatory issues. They are involved in the DfE Printing Industry Project, the Common Sense Initiative, and the Great Printers Project and have developed a voluntary environmental management program for printers. Affiliated trade associations are located throughout the United States.

Graphic Arts Technical Foundation

4615 Forbes Ave.
Pittsburgh, PA 15213
Phone: (412) 621-6941
Fax: (412) 621-3049

Members: 7,000
Staff: 72
Budget: \$6,000,000
Contact: Gary Jones

Graphic Arts Technical Foundation (GATF), established in 1924, is a scientific, technical and educational organization serving the graphic communications industries. Members represent printers, packagers, binders, publishers, design houses, and suppliers. They provide in-facility technical support and training to members as well as evaluations of and educational outreach for advancing technologies. GATF performed laboratory testing of alternative lithographic blanket washes for the DfE Printing Industry Project.

**National Association of Printers and
Lithographers**

780 Palisade Ave.

Teaneck, NJ 07666

Phone: (201) 342-0700

Fax: (201) 692-0286

Members: 3,700

Staff: 38

Budget: \$5,000,000

The National Association of Printers and Lithographers (NAPL), founded in 1933, is actively engaged in presenting conferences, seminars, and workshops on management topics for lithographic printers. It holds over 50 such functions each year. NAPL focuses on business and management planning rather than technical support for the shop-level employee. They publish the *Environmental Advisor* newsletter and *Printing Manager* magazine. NAPL officials also participate in the DfE Printing Industry Project.

Printing and Graphic Communications Association

7 West Tower

1333 H Street, NW

Washington, DC 2005

Phone: (202) 682-3001

GRAVURE

Gravure Association of America
1200-A Scottsville Rd.
Rochester, NY 14624
Phone: (716) 436-2150

Members: 250
Staff: 20

The Gravure Association of America (GAA), founded in 1987, promotes the use of gravure printing in publications and the general advancement of gravure printing techniques. The GAA compiles statistics about the gravure industry, collects/analyzes/disseminates current and historical information on environmental issues, government regulations, marketing, and gravure technology, and runs a seminar/lecture series. The Rochester Institute of Technology provides GAA and its members with academic research, testing facilities and personnel training. It is unique in that all types of suppliers (e.g., waste management vendors, chemical and equipment suppliers) are members and are active participants in many GAA activities. The GAA publishes *GAA Today*, which covers environmental regulations, ink and solvent testing, as well as other topics.

FLEXOGRAPHY

Flexographic Technical Association
900 Marconi Ave.
Ronkonkoma, NY 11779
Phone: (516) 737-6020

Members: 1,400
Staff: 20

Founded in 1958, the Flexographic Technical Association (FTA) is the major industry trade group for the flexographic process. FTA's stated purpose is to "advance the art and science of flexographic printing and assist and recommend developments in flexography." Membership includes suppliers as well as printers. The FTA leads regional workshops for production, supervisory, and management personnel and publishes a monthly magazine entitled *Flexo*, which has a circulation of 9,200.

SCREEN PRINTING

Screenprinting and Graphic Imaging

Association International (SGIA)

10015 Main Street

Fairfax, VA 22031

Phone: (703) 385-1335

Fax: (703) 273-0456

Members: 3,000

Staff: 29

Budget: \$2,900,000

Contact: Marcia Kinter

Founded in 1948, the Screenprinting and Graphic Imaging Association International (SGIA) represents the interests of the screen printing industry throughout the world. SGIA offers technical assistance on all matters concerning the screen printing and graphic imaging industry; conducts educational programming for the industry; compiles industry statistics; and offers a wide variety of management and government related services.

SGIA was the industry partner in the DfE assessment of screen reclamation products. The Association is closely associated with the Screen Printing Technical Foundation (SPTF). SPTF conducts research into the screen printing process. The foundation also participated in the DfE screen printing project by providing the laboratory evaluation of alternative screen reclamation products submitted to the project.

OTHER ASSOCIATIONS

In-Plant Management Association

1205 W. College Ave.

Liberty, MO 64068

Phone: (816) 781-1111

Members: 2,700

Staff: 5

Founded in 1964, the In-Plant Management Association represents managers of in-plant printing and graphics operations. Members are most frequently located within academic institutions (20 percent) and insurance companies (12 percent). They offer training, educational, and certification programs. IPMA conducts research, surveys and studies on industrial and technological trends.

National Association of Quick Printers

401 N. Michigan Ave.

Chicago, IL 60611

Phone: (312) 644-6610

Members: 3,400

Staff: 4

Founded in 1975, the National Association of Quick Printers (NAQP) serves printers that offer "printing-while-you-wait" as well as suppliers. Many of their members are franchise operators. The technology is typically turnkey, xerographic printing, but there is increased use of small lithographic presses in the industry.

**Environmental Conservation Board
of the Graphic Communications Industries**

1899 Preston White Drive

Reston, VA 22091-4367

Phone: (703) 648-3218

Contact: Mark Nuzzaco

The Environmental Conservation Board (ECB) was founded in 1972 to provide a unified and coordinated approach to environmental issues affecting the graphic communications industry. ECB is an intra-industry organization for environmental affairs for the printing, publishing, newspaper, packaging, and metal decorating industries and their suppliers. Members are predominantly other trade associations, not individual companies. Work is conducted by subcommittees convened to address specific issues. Current projects include: review of draft CTG for lithography, participation in DfE Core Group and in the Common Sense Initiative, information dissemination at trade shows, ECB Environmental Conference, and a newsletter and information database.

National Association of Printing Ink
Manufacturers
47 Halstead Ave.
Harrison, NY 10528
Phone: (914) 835-5650

Members: 140
Staff: 5

The National Association of Printing Ink Manufacturers (NAPIM) was founded in 1914 and represents manufacturers of all types of printing inks. NAPIM publications include *Printing Ink Handbook*, *Raw Materials Data Handbooks*, as well as bulletins and booklets.

IX. CONTACTS/ACKNOWLEDGMENTS/RESOURCE MATERIALS/REFERENCES ^f

For further information on selected topics within the petroleum refining industry a list of contacts and publications are provided below:

Contacts

Name	Organization	Telephone	Subject
Ginger Gotliffe	EPA/OECA	(202) 564-7072	Regulatory requirements and compliance assistance. CSI lead.
David Salman	EPA/OAR	(919) 541-0859	Industrial processes and regulatory requirements (Air)
Ron Josephson	EPA/OSW	(202) 260-6715	Industrial processes and regulatory requirements (RCRA)
Stephanie Bergman	EPA/DfE	(202) 26-1821	Nonregulatory initiatives and DfE.

OECA: Office of Enforcement and Compliance Assistance

OAR: Office of Air and Radiation

OSWER: Office of Solid Waste and Emergency Response

DfE: Design for the Environment Program

General Profile

Printing Industry and Use Cluster Profile, U.S. EPA. June 1994. EPA 744-R94-003.

U.S. Industrial Outlook 1994, Department of Commerce.

Graphics Arts Monthly: The Magazine of the Printing Industry, 249 W. 17th St. New York, NY 10011 (212) 463-6834

Bruno, Michael H. 1991. *Michael H. Bruno's Status of Printing, 1991 Update: A State of the Art Report*. Salem, NH: GAMA Communications.

Lewis, A.F. 1991. *Blue Book Marketing Information Reports: Graphic Arts Industry Analysis by Plant Size, Equipment, Product Specialties*. New York, NY: A.F. Lewis & Co., Inc.

^f Many of the contacts listed above have provided valuable background information and comments during the development of this document. EPA appreciates this support and acknowledges that the individuals listed do not necessarily endorse all statements made within this notebook.

PIRA (Packaging, Paper, Printing and Publishing, and Nonwovens Abstracts) database, available through the DIALOG Information Retrieval Service. PIRA provides coverage of the literature of the pulp and paper, packaging, printing, publishing, and nonwovens industries.

See summary of trade associations (Section III.C.4) for periodicals targeted to establishments using specific printing processes.

Process Descriptions and Chemical Use Profiles

Printing Industry and Use Cluster Profile, U.S. EPA. June 1994. EPA 744-R94-003.

Cleaner Technologies Substitutes Assessment for Screen Printing: Screen Reclamation, U.S. EPA, DfE Printing Industry Project, Draft September 1994.

Draft National Emission Standards for the Printing and Publishing Industry - Background Information Document, U.S. EPA, OAR - OAQPS.

Regulatory Profile

Federal Environmental Regulations Possibly Affecting the Commercial Printing Industry, U.S. EPA, DfE Printing Industry Project, EPA744B-94-001, March 1994.

The Great Printers Project: Recommendations to Make Pollution Prevention a Standard Practice in the Printing Industry, Council of Great Lakes Governors, Printing Industries of America, and Environmental Defense Fund, July 1994.

For a listing of all state environmental agency contacts relevant to the printing industry, refer to the March, 1995 issue of *Graphic Arts Monthly*.

Pollution Prevention

Guides to Pollution Prevention: The Commercial Printing Industry, EPA/625/7-90/008, U.S. EPA, August 1990.

Technical Information Publication PRINTING, New Jersey Department of Environmental Protection.

Blanket Wash Technology Study: An Evaluation of Commercially Available Blanket Washes, The Massachusetts Toxics Use Reduction Institute, Technical Report No. 16, 1994.

Cleaner Technologies Substitutes Assessment for Screen Printing: Screen Reclamation, U.S. EPA, DfE Printing Industry Project, Draft September 1994.

Replacement of Hazardous Material in Wide Web Flexographic Printing Process, Kranz, P., Williamson, T., and Randall, P., funded by Risk Reduction Engineering Laboratory, U.S. EPA.

Guides to Pollution Prevention: The Photoprocessing Industry, EPA/625/7-91/012, U.S. EPA, October 1991.

Innovative Clean Technologies Case Studies, EPA/600/R-93/175, U.S. EPA, August 1993.

Innovative Clean Technologies Case Studies Second Year Project Report, EPA/600/R-94/169, U.S. EPA, April 1994.

Waste Reduction Evaluation of Soy-Based Ink at a Sheet-Fed Offset Printer, EPA/600/SR-94/144, U.S. EPA, September 1994.

On-site Waste Ink Recycling, EPA/600/SR-92/251, U.S. EPA, February 1993.

Ink and Cleaner Waste Reduction Evaluation for Flexographic Printers, EPA/600/SR-93/086, U.S. EPA, July 1993.

Several of the documents listed above can be obtained from the Pollution Prevention Information Clearinghouse (PPIC) at (202) 260-1023.

References

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18. University of Northern Iowa Waste Reduction Center. *Pollution Prevention Manual for Lithographic Printers*, 1995.

19. EPA, *Control Techniques Guideline for Offset Lithographic Printing*. July 12, 1993.
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