VII. COMPLIANCE AND ENFORCEMENT HISTORY

Background

Until recently, 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. As the capacity to generate multimedia compliance data improves, EPA will make available more in-depth compliance and enforcement information. Additionally, sector-specific measures of success for compliance assistance efforts are under development.

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 and enforcement actions, and reflect solely EPA, State, and local compliance assurance activities 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 (April 1, 1992 to March 31, 1997) and the other for the most recent twelve-month period (April 1, 1996 to March 31, 1997). 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 EPA Regions for certain sectors.[4] 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 program office databases. IDEA uses the FINDS identification number to link separate data records from EPA's databases. This allows retrieval of records from across media or statutes for any given facility, thus creating a "master list" of

[4] EPA Regions 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).

records for that 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 (metal mining, nonmetallic mineral mining, electric power generation, ground transportation, water transportation, and dry cleaning), or industries in which only a very small fraction of facilities report to TRI (e.g., printing), 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 one-year or five-year period.

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, between compliance inspections at a facility within the defined universe.

Facilities with One or More Enforcement Actions -- expresses the number of facilities that were the subject of 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, e.g., a facility with 3 enforcement actions counts as 1 facility.

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, e.g., a facility with 3 enforcement actions counts as 3.

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 recorded as 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 -- is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This ratio is a rough indicator of the relationship between inspections and enforcement. It relates the number of enforcement actions and the number of inspections that occurred within the one-year or five-year period. This ratio includes the inspections and enforcement actions reported under the Clean Water Act (CWA), the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA). 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. Also, 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. 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. Shipbuilding and Repair Industry Compliance History

Table 11 provides an overview of the reported compliance and enforcement data for the shipbuilding and repair industry over the past five years (April 1992 to April 1997). These data are also broken out by EPA Region thereby permitting geographical comparisons. A few points evident from the data are listed below.

- About half of shipbuilding and repair facility inspections and almost 70 percent of enforcement actions occurred in Regions IV and VI, where most facilities in the database search (60 percent) were located.

- In Region III, a relatively large number of inspections (66) were carried out in relation to the number of facilities (6) found in this Region. This is reflected in the relatively low average time between inspections (5 months). However, the Region had the lowest rate of enforcement actions to inspections (0.02).

- Region X showed three facilities in the database search and only eight inspections over the past five years, giving the Region the highest average time between inspections (23 months). However, enforcement actions were brought against all three facilities in this time period, resulting in the highest enforcement to inspection rate (0.38).

Table 11: Five-Year Enforcement and Compliance Summary for the Shipbuilding and Repair Industry

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	6	6	34	11	4	6	83%	17%	0.18
II	0	0	0	--	0	0	0%	0%	--
III	6	5	66	5	1	1	100%	0%	0.02
IV	13	9	49	16	5	8	100%	0%	0.16
V	1	1	8	8	0	0	0%	0%	--
VI	13	12	72	11	8	14	79%	21%	0.19
VII	0	0	0	--	0	0	0%	0%	--
VIII	0	0	0	--	0	0	0%	0%	--
IX	2	1	6	20	0	0	0%	0%	--
X	3	3	8	23	2	3	67%	33%	0.38
TOTAL	44	37	243	9	20	32	84%	16%	0.13

VII.B. Comparison of Enforcement and Compliance Activity Between Selected Industries

Tables 12 and 13 allow the compliance history of the shipbuilding and repair sector to be compared to the other industries covered by the industry sector notebook project. Comparisons between Tables 12 and 13 permit the identification of trends in compliance and enforcement records of the industry by comparing data covering the last five years (April 1992 to April 1997) to that of the past year (April 1996 to April 1997). Some points evident from the data are listed below.

- Of the sectors shown, the shipbuilding and repair industry had, by far, the smallest number of facilities (44) in the database search. (The facilities presented only include those facilities that report to TRI.)

- The shipbuilding and repair industry had one of the highest enforcement to inspection rates over the past five years (0.13). However, this rate decreased significantly over the past year (0.08).

- Compared to the other sectors shown, the industry was about average in terms of the percent of facilities with violations (86 percent) and enforcement actions (14 percent) in the past year, and in the average time between inspections over the past five years (9 months).

Tables 14 and 15 provide a more in-depth comparison between the shipbuilding and repair industry and other sectors by breaking out the compliance and enforcement data by environmental statute. As in the previous Tables (Tables 12 and 13), the data cover the last five years (Table 14) and the last one year (Table 15) to facilitate the identification of recent trends. A few points evident from the data are listed below.

- Inspections carried out under CAA and RCRA accounted for 81 percent and 89 percent of inspections over the past five years and one year, respectively. RCRA inspections made up only 14 percent of inspections in the past five years, but accounted for 25 percent of enforcement actions.

- Over the past year, a larger percentage of inspections were carried out under CAA (54 percent) compared to the past five years (39 percent).

- Meaningful comparisons of enforcement actions taken under each statute over the past year are not possible since only four enforcement actions (two under RCRA and two under CWA) were taken in this period.

Table 12: 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**
Metal Mining	1,232	378	1,600	46	63	111	53%	47%	0.07
Coal Mining	3,256	741	3,748	52	88	132	89%	11%	0.04
Oil and Gas Extraction	4,676	1,902	6,071	46	149	309	79%	21%	0.05
Non-Metallic Mineral Mining	5,256	2,803	12,826	25	385	622	77%	23%	0.05
Textiles	355	267	1,465	15	53	83	90%	10%	0.06
Lumber and Wood	712	473	2,767	15	134	265	70%	30%	0.10
Furniture	499	386	2,379	13	65	91	81%	19%	0.04
Pulp and Paper	484	430	4,630	6	150	478	80%	20%	0.10
Printing	5,862	2,092	7,691	46	238	428	88%	12%	0.06
Inorganic Chemicals	441	286	3,087	9	89	235	74%	26%	0.08
Resins and Manmade Fibers	329	263	2,430	8	93	219	76%	24%	0.09
Pharmaceuticals	164	129	1,201	8	35	122	80%	20%	0.10
Organic Chemicals	425	355	4,294	6	153	468	65%	35%	0.11
Petroleum Refining	156	148	3,081	3	124	763	68%	32%	0.25
Rubber and Plastic	1,818	981	4,383	25	178	276	82%	18%	0.06
Stone, Clay, Glass and Concrete	615	388	3,474	11	97	277	75%	25%	0.08
Iron and Steel	349	275	4,476	5	121	305	71%	29%	0.07
Metal Castings	669	424	2,535	16	113	191	71%	29%	0.08
Nonferrous Metals	203	161	1,640	7	68	174	78%	22%	0.11
Fabricated Metal Products	2,906	1,858	7,914	22	365	600	75%	25%	0.08
Electronics	1,250	863	4,500	17	150	251	80%	20%	0.06
Automobile Assembly	1,260	927	5,912	13	253	413	82%	18%	0.07
Shipbuilding and Repair	**44**	**37**	**243**	**9**	**20**	**32**	**84%**	**16%**	**0.13**
Ground Transportation	7,786	3,263	12,904	36	375	774	84%	16%	0.06
Water Transportation	514	192	816	38	36	70	61%	39%	0.09
Air Transportation	444	231	973	27	48	97	88%	12%	0.10
Fossil Fuel Electric Power	3,270	2,166	14,210	14	403	789	76%	24%	0.06
Dry Cleaning	6,063	2,360	3,813	95	55	66	95%	5%	0.02

Table 13: One-Year Enforcement and Compliance Summary for Selected Industries

A	B	C	D	E		F		G	H
				Facilities with 1 or More Violations		Facilities with 1 or more Enforcement Actions		Total Enforcement Actions	Enforcement to Inspection Rate
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Number	Percent*	Number	Percent*		
Metal Mining	1,232	142	211	102	72%	9	6%	10	0.05
Coal Mining	3,256	362	765	90	25%	20	6%	22	0.03
Oil and Gas Extraction	4,676	874	1,173	127	15%	26	3%	34	0.03
Non-Metallic Mineral Mining	5,256	1,481	2,451	384	26%	73	5%	91	0.04
Textiles	355	172	295	96	56%	10	6%	12	0.04
Lumber and Wood	712	279	507	192	69%	44	16%	52	0.10
Furniture	499	254	459	136	54%	9	4%	11	0.02
Pulp and Paper	484	317	788	248	78%	43	14%	74	0.09
Printing	5,862	892	1,363	577	65%	28	3%	53	0.04
Inorganic Chemicals	441	200	548	155	78%	19	10%	31	0.06
Resins and Manmade Fibers	329	173	419	152	88%	26	15%	36	0.09
Pharmaceuticals	164	80	209	84	105%	8	10%	14	0.07
Organic Chemicals	425	259	837	243	94%	42	16%	56	0.07
Petroleum Refining	156	132	565	129	98%	58	44%	132	0.23
Rubber and Plastic	1,818	466	791	389	83%	33	7%	41	0.05
Stone, Clay, Glass and Concrete	615	255	678	151	59%	19	7%	27	0.04
Iron and Steel	349	197	866	174	88%	22	11%	34	0.04
Metal Castings	669	234	433	240	103%	24	10%	26	0.06
Nonferrous Metals	203	108	310	98	91%	17	16%	28	0.09
Fabricated Metal	2,906	849	1,377	796	94%	63	7%	83	0.06
Electronics	1,250	420	780	402	96%	27	6%	43	0.06
Automobile Assembly	1,260	507	1,058	431	85%	35	7%	47	0.04
Shipbuilding and Repair	**44**	**22**	**51**	**19**	**86%**	**3**	**14%**	**4**	**0.08**
Ground Transportation	7,786	1,585	2,499	681	43%	85	5%	103	0.04
Water Transportation	514	84	141	53	63%	10	12%	11	0.08
Air Transportation	444	96	151	69	72%	8	8%	12	0.08
Fossil Fuel Electric Power	3,270	1,318	2,430	804	61%	100	8%	135	0.06
Dry Cleaning	6,063	1,234	1,436	314	25%	12	1%	16	0.01

**Percentages in Columns E and F are based on the number of facilities inspected (Column C). Percentages can exceed 100% because violations and actions can occur without a facility inspection.*

Table 14: 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		RCRA		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
Metal Mining	378	1,600	111	39%	19%	52%	52%	8%	12%	1%	17%
Coal Mining	741	3,748	132	57%	64%	38%	28%	4%	8%	1%	1%
Oil and Gas Extraction	1,902	6,071	309	75%	65%	16%	14%	8%	18%	0%	3%
Non-Metallic Mineral Mining	2,803	12,826	622	83%	81%	14%	13%	3%	4%	0%	3%
Textiles	267	1,465	83	58%	54%	22%	25%	18%	14%	2%	6%
Lumber and Wood	473	2,767	265	49%	47%	6%	6%	44%	31%	1%	16%
Furniture	386	2,379	91	62%	42%	3%	0%	34%	43%	1%	14%
Pulp and Paper	430	4,630	478	51%	59%	32%	28%	15%	10%	2%	4%
Printing	2,092	7,691	428	60%	64%	5%	3%	35%	29%	1%	4%
Inorganic Chemicals	286	3,087	235	38%	44%	27%	21%	34%	30%	1%	5%
Resins and Manmade Fibers	263	2,430	219	35%	43%	23%	28%	38%	23%	4%	6%
Pharmaceuticals	129	1,201	122	35%	49%	15%	25%	45%	20%	5%	5%
Organic Chemicals	355	4,294	468	37%	42%	16%	25%	44%	28%	4%	6%
Petroleum Refining	148	3,081	763	42%	59%	20%	13%	36%	21%	2%	7%
Rubber and Plastic	981	4,383	276	51%	44%	12%	11%	35%	34%	2%	11%
Stone, Clay, Glass and Concrete	388	3,474	277	56%	57%	13%	9%	31%	30%	1%	4%
Iron and Steel	275	4,476	305	45%	35%	26%	26%	28%	31%	1%	8%
Metal Castings	424	2,535	191	55%	44%	11%	10%	32%	31%	2%	14%
Nonferrous Metals	161	1,640	174	48%	43%	18%	17%	33%	31%	1%	10%
Fabricated Metal	1,858	7,914	600	40%	33%	12%	11%	45%	43%	2%	13%
Electronics	863	4,500	251	38%	32%	13%	11%	47%	50%	2%	7%
Automobile Assembly	927	5,912	413	47%	39%	8%	9%	43%	43%	2%	9%
Shipbuilding and Repair	**37**	**243**	**32**	**39%**	**25%**	**14%**	**25%**	**42%**	**47%**	**5%**	**3%**
Ground Transportation	3,263	12,904	774	59%	41%	12%	11%	29%	45%	1%	3%
Water Transportation	192	816	70	39%	29%	23%	34%	37%	33%	1%	4%
Air Transportation	231	973	97	25%	32%	27%	20%	48%	48%	0%	0%
Fossil Fuel Electric Power	2,166	14,210	789	57%	59%	32%	26%	11%	10%	1%	5%
Dry Cleaning	2,360	3,813	66	56%	23%	3%	6%	41%	71%	0%	0%

Table 15: 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		RCRA		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
Metal Mining	142	211	10	52%	0%	40%	40%	8%	30%	0%	30%
Coal Mining	362	765	22	56%	82%	40%	14%	4%	5%	0%	0%
Oil and Gas Extraction	874	1,173	34	82%	68%	10%	9%	9%	24%	0%	0%
Non-Metallic Mineral Mining	1,481	2,451	91	87%	89%	10%	9%	3%	2%	0%	0%
Textiles	172	295	12	66%	75%	17%	17%	17%	8%	0%	0%
Lumber and Wood	279	507	52	51%	30%	6%	5%	44%	25%	0%	40%
Furniture	254	459	11	66%	45%	2%	0%	32%	45%	0%	9%
Pulp and Paper	317	788	74	54%	73%	32%	19%	14%	7%	0%	1%
Printing	892	1,363	53	63%	77%	4%	0%	33%	23%	0%	0%
Inorganic Chemicals	200	548	31	35%	59%	26%	9%	39%	25%	0%	6%
Resins and Manmade Fibers	173	419	36	38%	51%	24%	38%	38%	5%	0%	5%
Pharmaceuticals	80	209	14	43%	71%	11%	14%	45%	14%	0%	0%
Organic Chemicals	259	837	56	40%	54%	13%	13%	47%	34%	0%	0%
Petroleum Refining	132	565	132	49%	67%	17%	8%	34%	15%	0%	10%
Rubber and Plastic	466	791	41	55%	64%	10%	13%	35%	23%	0%	0%
Stone, Clay, Glass and Concrete	255	678	27	62%	63%	10%	7%	28%	30%	0%	0%
Iron and Steel	197	866	34	52%	47%	23%	29%	26%	24%	0%	0%
Metal Castings	234	433	26	60%	58%	10%	8%	30%	35%	0%	0%
Nonferrous Metals	108	310	28	44%	43%	15%	20%	41%	30%	0%	7%
Fabricated Metal	849	1,377	83	46%	41%	11%	2%	43%	57%	0%	0%
Electronics	420	780	43	44%	37%	14%	5%	43%	53%	0%	5%
Automobile Assembly	507	1,058	47	53%	47%	7%	6%	41%	47%	0%	0%
Shipbuilding and Repair	**22**	**51**	**4**	**54%**	**0%**	**11%**	**50%**	**35%**	**50%**	**0%**	**0%**
Ground Transportation	1,585	2,499	103	64%	46%	11%	10%	26%	44%	0%	1%
Water Transportation	84	141	11	38%	9%	24%	36%	38%	45%	0%	9%
Air Transportation	96	151	12	28%	33%	15%	42%	57%	25%	0%	0%
Fossil Fuel Electric Power	1,318	2,430	135	59%	73%	32%	21%	9%	5%	0%	0%
Dry Cleaning	1,234	1,436	16	69%	56%	1%	6%	30%	38%	0%	0%

VII.C. Review of Major Legal Actions

Major Cases/Supplemental Environmental Projects

This section provides summary information about major cases that have affected this sector, and a list of Supplemental Environmental Projects (SEPs).

VII.C.1. Review of Major Cases

As indicated in EPA's *Enforcement Accomplishments Report, FY1995 and FY1996* publications, two significant enforcement actions were resolved between 1995 and 1996 for the shipbuilding industry.

U.S. v. First Marine Shipyard Inc., et al. (E.D.NY): On September 30, 1996 the U.S. filed a complaint for CERCLA cost recovery and penalties related to Region II's cleanup of the barge *Nathan Berman*. The complaint seeks recovery of approximately $1,8 million from First Marine Shipyard, Marine Facilities Inc., Marine Movements, Inc., and Peter Frank and Jane Frank Kresch individually. It also includes a second cause of action against First Marine Shipyard for failure to comply with an administrative CERCLA §106 order issued to it in March of 1993.

Cascade General: Cascade General, a ship repair facility in Portland, Oregon, agreed to a penalty of $78,568 for alleged EPCRA violations. The company agreed to pay $39,284 in cash and install air filtration dust collector and solvent recovery systems and to switch to water-based paint to remediate the balance of the penalty. The SEPs will cost about $117,000 to implement. The dust collector will improve air quality in the facility by reducing dust in work areas. The solvent recovery system will reduce by 90% the amount of solvents discharged to the air by recovering batch solvents for reuse in the facility. For TRI reporting years 1988-1993, total releases were reported at 253,000 pounds.

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

Supplemental environmental projects (SEPs) are enforcement options that require the non-compliant facility to complete specific projects. Information on SEP cases can be accessed via the internet at EPA's Enviroene website: http://es.inel.gov/sep.

VIII. COMPLIANCE ASSURANCE 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

National Shipbuilding Research Program Panel SP-1

The National Shipbuilding Research Program (NSRP) is a joint industry/government program aimed at improving the global competitiveness of American shipyards. NSRP's mission is to assist the shipbuilding and ship repair industry in achieving and maintaining global competitiveness with respect to quality, time, cost, and customer satisfaction. The program is also expected to significantly reduce the costs and delivery times of ships ordered by the U.S. Navy. NSRP's objectives are reached through individual projects which form the content of the shipbuilding technology program. Joint Government and industry meetings are held to identify final project descriptions. NSRP utilizes a panel structure to develop project proposals and implement projects. The Panel SP-1 focuses on shipbuilding and repair facilities and environmental effects.

The mission of Panel SP-1, Facilities and Environmental Effects, is to support the NSRP by providing leadership and expertise to the shipbuilding and repair industry, with respect to facilities and environmental issues. The following goals have been established by SP-1:

- increase participation of shipyards and other Maritime Associations by 100 percent;
- improve communication and visibility between NSRP Panels, with the Executive Control Board, within NSRP participating shipyards and beyond NSRP;
- be proactive in representing industry views regarding regulatory matters;
- identify, develop and implement cost-effective technologies in facilities and environmental areas;
- educate and assist the shipbuilding and repair industry and its customers in meeting environmental and regulatory requirements; and

- maintain and continue to improve SP-1 expertise.

Panel SP-1 has a number of active and proposed projects. The following is a list of active projects:

- Environmental Studies and Testing
- Environmental Training Modules
- Feasibility and Economic Study of the Treatment, Recycling & Disposal of Spent Abrasives
- Solid Waste Segregation & Recycling
- Title V Permit for Shipyards Strategy Guide for Development of Generated Permit
- Wastewater Treatment Technology Survey
- Impact on Shipyards from the Reauthorization of the Federal Clean Water Act
- Development of Guidance for Selecting Legitimate Recycling Products and Processes
- Developing a Shipyard Program for NPDES Compliance

More information on Panel SP-1 activities can be obtained from the Environmental Resources and Information Center (ERIC), a division of the Gulf Coast Region Maritime Technology Center at the University of New Orleans at (504) 286-6053.

National Defense Center for Environmental Excellence

The National Defense Center for Environmental Excellence (NDCEE) was established by the Department of Defense to provide the military and private sector industrial base clients with environmentally compliant technologies. NDCEE conducts environmental technology research and disseminates information on environmental technologies and regulations. At the Army's Armament Research, Development and Engineering Center at Picatinny Arsenal, NJ, NDCEE has established an industrial-scale facility for the demonstration of nonpolluting surface coatings. The NDCEE demonstration facility is used to validate cost, schedules and performance parameters of new coating technologies. NDCEE also provides assistance in the form of equipment, site engineers, economic analyses, training, and troubleshooting for those clients implementing demonstrated coating technologies at their

industrial facility. In its powder coating demonstration line, industrial parts are cleaned, pretreated, sprayed with nonpolluting organic powders, then cured in a process than nearly eliminates volatile organic compounds and hazardous wastes. Contact: Dr. Dale A. Denny, Executive Director, NDCEE, (814) 269-2432.

MARITECH

MARITECH is a five-year jointly funded by the Federal Government and industry and is administered by the Department of Defense's Advanced Research Projects Agency (ARPA), in collaboration with MARAD. MARITECH provides matching Government funds to encourage the shipbuilding industry to direct and lead in the development and application of advanced technology to improve its competitiveness and to preserve its industrial base. In the near-term MARITECH aims to assist industry in penetrating the international marketplace with competitive ship designs, market strategies, and modern shipbuilding processes and procedures. In the long-term, the program is meant to encourage advanced ship and shipbuilding technology projects for promoting continuous product and process improvement in order to maintain and enlarge the U.S. share of the commercial and international market. MARITECH funded $30 million in FY94, $40 million in FY95, $50 million in FY96, and $50 million in FY97 for vessel design and shipyard technology projects.

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% as of 1992 and by 50% 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. Table 16 lists those companies participating in the 33/50 program that reported the four-digit SIC code 3731 to TRI. Some of the companies shown also listed facilities that are not building or repairing ships. The number of facilities within each company that are participating in the 33/50 program and that report the shipbuilding and repair SIC code is shown. Where available and quantifiable against 1988 releases and transfers, each company's 33/50 goals for 1995 and the actual total releases and transfers and percent reduction between 1988 and 1994 are presented. TRI 33/50 data for 1995 was not available at the time of publication.

Twelve of the seventeen target chemicals were reported to TRI by shipbuilding and repair facilities in 1994. Of all TRI chemicals released and transferred by the shipbuilding and repair industry, xylenes (a 33/50 target chemical), was released and transferred most frequently (32 facilities), and was the top chemical by volume released and transferred. Toluene, the next most frequently reported 33/50 chemical, was reported by six facilities. The remaining 33/50 chemicals were each reported by four or fewer facilities.

Table 16 shows that 7 companies comprised of 15 facilities reporting SIC 3731 are participating in the 33/50 program. For those companies shown with more than one shipyard, all shipyards may not be participating in 33/50. The 33/50 goals shown for companies with multiple shipyards are company-wide, potentially aggregating more than one shipyard and facilities not carrying out shipbuilding and repair operations. In addition to company-wide goals, individual facilities within a company may have their own 33/50 goals or may be specifically listed as not participating in the 33/50 program. Since the actual percent reductions shown in the last column apply to all of the companies' shipbuilding and repair facilities and only shipbuilding and repair facilities, direct comparisons to those company goals incorporating non-shipbuilding and repair facilities or excluding certain facilities may not be possible. For information on specific facilities participating in 33/50, contact David Sarokin (202-260-6907) at the 33/50 Program Office.

Table 16: Shipbuilding and Repair Industry Participation in the 33/50 Program

Parent Company (Headquarters Location)	Company-Owned Shipyards Reporting 33/50 Chemicals	Company-Wide % Reduction Goal[1] (1988 to 1995)	1988 TRI Releases and Transfers of 33/50 Chemicals (pounds)	1994 TRI Releases and Transfers of 33/50 Chemicals (pounds)	Actual % Reduction for Shipyards (1988-1994)
Avondale Industries Inc. Avondale, LA	3	54	1,558,614	20,285	99
Bethlehem Steel Corp. Bethlehem, PA	2	50	92,000	129,020	-40
Fulcrum II Limited Partner. (Bath Iron Works) New York, NY	4	24	116,500	15,331	87
General Dynamics Corp. Falls Church, VA	2	84	316,777	8,182	97
Tenneco Inc. (Newport News) Houston, TX	1	8	896,292	268,950	70
U.S. Air Force Washington, DC	1	***	0	108,835	-
Unimar International Inc. Seattle, WA	1	*	0	0	-
TOTAL	15	--	2,980,183	550,603	86

Source: U.S. EPA 33/50 Program Office, 1996.

[1] Company-Wide Reduction Goals aggregate all company-owned facilities which may include facilities not building and repairing ships.

* = Reduction goal not quantifiable against 1988 TRI data.
** = Use reduction goal only.
*** = No numeric reduction goal.

Environmental Leadership Program

The Environmental Leadership Program (ELP) is a national initiative developed by EPA that focuses on improving environmental performance, encouraging voluntary compliance, and building working relationships with stakeholders. EPA initiated a one year pilot program in 1995 by selecting 12 projects at industrial facilities and federal installations which would demonstrate the principles of the ELP program. These principles include: environmental management systems, multimedia compliance assurance, third-party verification of compliance, public measures of accountability, pollution prevention, community involvement, and mentor programs. In return for participating, pilot participants received public recognition and were given a period of time to correct any violations discovered during these experimental projects.

EPA is making plans to launch its full-scale Environmental Leadership Program in 1997. The full-scale program will be facility-based with a 6-year participation cycle. Facilities that meet certain requirements will be eligible to participate, such as having a community outreach/employee involvement programs and an environmental management system (EMS) in place for 2 years. (Contact: http://es.inel.gov/elp or Debby Thomas, ELP Deputy Director, at 202-564-5041)

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 providing participants regulatory flexibility on the condition that they produce greater environmental benefits. EPA and program participants will negotiate and sign a Final Project Agreement, detailing specific environmental objectives that the regulated entity shall satisfy. EPA will provide regulatory flexibility as an incentive for the participants' superior environmental performance. 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 industrial facilities, communities, and government facilities regulated by EPA. Applications will be accepted on a rolling basis. For additional information regarding XL projects, including application procedures and criteria, see the May 23, 1995 Federal Register Notice. (Contact: Fax-on-Demand Hotline 202-260-8590, Web: http://www.epa.gov/ProjectXL, or Christopher Knopes at EPA's Office of Policy, Planning and Evaluation 202-260-9298)

Climate Wise Program

Climate Wise is helping US industries turn energy efficiency and pollution prevention into a corporate asset. Supported by the technical assistance, financing information and public recognition that Climate Wise offers, participating companies are developing and launching comprehensive industrial energy efficiency and pollution prevention action plans that save money and protect the environment. The nearly 300 Climate Wise companies expect to save more than $300 million and reduce greenhouse gas emissions by 18 million metric tons of carbon dioxide equivalent by the year 2000. Some of the actions companies are undertaking to achieve these results include: process improvements, boiler and steam system optimization, air compressor system improvements, fuel switching, and waste heat recovery measures including cogeneration. Created as part of the President's Climate Change Action Plan, Climate Wise is jointly operated by the Department of Energy and EPA. Under the Plan many other programs were also launched or upgraded including Green Lights, WasteWi$e and DoE's Motor Challenge Program. Climate Wise provides an umbrella for these programs which encourage company participation by providing information on the range of partnership opportunities available. (Contact: Pamela Herman, EPA, 202-260-4407 or Jan Vernet, DoE, 202-586-4755)

Energy Star Buildings Program

EPA's ENERGY STAR Buildings Program is a voluntary, profit-based program designed to improve the energy-efficiency in commercial and industrial buildings. Expanding the successful Green Lights Program, ENERGY STAR Buildings was launched in 1995. This program relies on a 5-stage strategy designed to maximize energy savings thereby lowering energy bills, improving occupant comfort, and preventing pollution -- all at the same time. If implemented in every commercial and industrial building in the United States, ENERGY STAR Buildings could cut the nation's energy bill by up to $25 billion and prevent up to 35% of carbon dioxide emissions. (This is equivalent to taking 60 million cars of the road). ENERGY STAR Buildings participants include corporations; small and medium sized businesses; local, federal and state governments; non-profit groups; schools; universities; and health care facilities. EPA provides technical and non-technical support including software, workshops, manuals, communication tools, and an information hotline. EPA's Office of Air and Radiation manages the operation of the ENERGY STAR Buildings Program. (Contact: Green Light/Energy Star Hotline at 1-888-STAR-YES or Maria Tikoff Vargas, EPA Program Director at 202-233-9178 or visit the ENERGY STAR Buildings Program website at http://www.epa.gov/appdstar/buildings/)

Green Lights Program

EPA's Green Lights program was initiated in 1991 and has the goal of preventing pollution by encouraging U.S. institutions to use energy-efficient lighting technologies. The program saves money for businesses and organizations and creates a cleaner environment by reducing pollutants released into the atmosphere. The program has over 2,345 participants which include major corporations, small and medium sized businesses, federal, state and local governments, non-profit groups, schools, universities, and health care facilities. Each participant is required to survey their facilities and upgrade lighting wherever it is profitable. As of March 1997, participants had lowered their electric bills by $289 million annually. EPA provides technical assistance to the participants through a decision support software package, workshops and manuals, and an information hotline. EPA's Office of Air and Radiation is responsible for operating the Green Lights Program. (Contact: Green Light/Energy Star Hotline at 1-888-STARYES or Maria Tikoff Vargar, EPA Program Director, at 202-233-9178 the)

WasteWi$e Program

The WasteWi$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste prevention, recycling collection and the manufacturing and purchase of recycled products. As of 1997, the program had about 500 companies as members, one third of whom are Fortune 1000 corporations. Members agree to identify and implement actions to reduce their solid wastes setting waste reduction goals and providing EPA with yearly progress reports. To member companies, EPA, in turn, provides technical assistance, publications, networking opportunities, and national and regional recognition. (Contact: WasteWi$e Hotline at 1-800-372-9473 or Joanne Oxley, EPA Program Manager, 703-308-0199)

NICE^3

The U.S. Department of Energy is administering a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE^3). By providing grants of up to 45 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, and demonstrate 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 forest products, chemicals, petroleum refining, steel, aluminum, metal casting and glass manufacturing sectors. (Contact: http//www.oit.doe.gov/access/nice3, Chris Sifri, DOE, 303-275-4723 or Eric Hass, DOE, 303-275-4728.)

Design for the Environment (DfE)

DfE is working with several industries to identify cost-effective pollution prevention strategies that reduce risks to workers and the environment. DfE helps businesses compare and evaluate the performance, cost, pollution prevention benefits, and human health and environmental risks associated with existing and alternative technologies. The goal of these projects is to encourage businesses to consider and use cleaner products, processes, and technologies. For more information about the DfE Program, call (202) 260-1678. To obtain copies of DfE materials or for general information about DfE, contact EPA's Pollution Prevention Information Clearinghouse at (202) 260-1023 or visit the DfE Website at http://es.inel.gov/dfe.

VIII.C. Trade Associations

American Shipbuilding Association
600 Pennsylvania Ave. Suite 305
Washington, DC 20003
Phone: (202)-544-8170
Fax: (202)-544-9618

Members: 6
Contact: Frank Losey
(202)-544-9614

The American Shipbuilding Association (ASA) is a private, non-profit trade association comprising America's six largest private sector shipyards. The shipyards are: Avondale Industries, Bath Iron Works, Electric Boat, Ingalls Shipbuilding, National Steel & Shipbuilding Company, and Newport News Shipbuilding. These six shipyards employ the large majority of shipbuilding employees in the U.S. More than 98 percent of the Navy's shipbuilding budget is spent on ships constructed in ASA shipyards. The goals of ASA are to preserve and promote the U.S. naval shipbuilding industrial base as well as to educate the U.S. public and government to the importance of shipbuilding to the country. ASA publishes *American Shipbuilder Newsletter* monthly.

National Shipyard Association
1600 Wilson Blvd.
Arlington, VA 22209
Phone: (703) 351-6734
Fax: (703) 351-6736

Members: 44 companies
Staff: 6

The National Shipyard Association (NSA) is a national trade association representing the commercial shipbuilding, repair, and cleaning industry. NSA represents 44 shipyard companies that own and operate over 90 shipyards in 17 states along the Gulf, Pacific, and Atlantic coasts of the U.S. NSA also has among its membership 16 companies that supply services and products to the shipbuilding and repair industry. NSA aims to promote high standards of health, safety, and environmental awareness throughout the industry. NSA publishes a monthly newsletter, *NSA Newsline*.

Shipyard Association for
Environmental Responsibility
Post Office Box 250
Lockport, LA 70374
Phone: (504)-532-7272
Fax: (202)-532-7295

Members: 67
Staff: 5
Contact: Scott Theriot

The Shipyard Association for Environmental Responsibility (SAFER) was formed by 67 shipbuilding and repair facilities in the states of Alabama, Louisiana, Mississippi, and Texas. The goal of SAFER is to work cooperatively with the federal and state

agencies to ensure that environmental standards truly reflect the environmental concerns of the vastly different sizes and capabilities of the Gulf Coast shipyards.

Shipbuilders Council of America
901 No. Washington St. Suite 204
Arlington, VA 22314
Phone: (703) 548-7447

Members: 10
Staff: 10
Contact: Penny Eastman

The Shipbuilders Council of America (SCA) was founded in 1921 and is made up of companies engaged in the construction and repair of vessels and other marine craft; manufacturers of all types of propelling machinery, boilers, marine auxiliaries, marine equipment and supplies; and drydock operators. SCA promotes and maintains sound private shipbuilding and ship repairing industries and adequate mobilization potential of shipbuilding and repairing facilities, organizations, and skilled personnel in times of national emergencies. A newsletter, *Shipyard Chronicle*, is published weekly.

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IX. CONTACTS/ACKNOWLEDGMENTS/RESOURCE MATERIALS

For further information on selected topics within the shipbuilding and repair industry a list of contacts and publications are provided below.

Contacts[5]

Name	Organization	Telephone	Subject
Anthony Raia	U.S. EPA - Office of Compliance	(202) 564-6045	Multimedia Compliance
Mohamed Serageldin	U.S. EPA - Office of Air Quality Planning and Standards	(919) 541-2379	Regulatory Requirements (Air)
Steve Guile	U.S. EPA - Office of Water	(202) 260-9817	MP&M water regulations
Bhaskar Kura	University of New Orleans	(504) 280-6572	Multimedia pollutant outputs and pollution prevention

Section II: Introduction to the Shipbuilding and Repair Industry

U.S. Department of Commerce, International Trade Administration, *1994 U.S. Industrial Outlook*, 1995.

U.S. Department of Commerce, Bureau of the Census, *1992 Census of Manufacturers Industry Series: Ship and Boat Building, Railroad and Miscellaneous Transportation Equipment*, 1996.

U.S. Department of Transportation, Maritime Administration, *Outlook for the U.S. Shipbuilding and Repair Industry 1996*, April 1996.

U.S. Department of Transportation, Maritime Administration, *Report on Survey of U.S. Shipbuilding and Repair Facilities 1995*, December 1995.

ICAF Publications, *Shipbuilding Industry Study Report*, 1996, http://198.80.36.91/ndu/icaf /isshp.html, March 1997.

OECD, Overview of the Agreement Respecting Normal Competitive Conditions in the Commercial Shipbuilding and Repair Industry, http://www.oecd.org/dsti/sid/wp7.html, March 1997.

National Shipbuilding Research Program, Panel SP-4), *US Shipbuilding International Market Study 1996-2005*, June 1995. SPFA:0001.

[5] Many of the contacts listed above have provided valuable 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.

Section III: Industrial Process Description

Kura, Bhaskur (University of New Orleans) and Lacoste, Steve (Avondale Industries, Avondale, LA), *Typical Waste Streams in a Shipbuilding Facility*, 1996.

Storch, R.L., Hammon, C.P., Bunch, H.M., & Moore, R.C., *Ship Production*, 2nd ed., The Society of Naval Architects and Marine Engineers, Jersey City, New Jersey, 1995.

Thornton, James R., *Ship and Boat Building and Repair*, *ILO Encyclopaedia of Occupational Health and Safety* 4th ed., International Labour Office, Geneva, Switzerland, 1996.

Development Document for the Proposed Effluent Limitations Guidelines and Standards for the Metal Products and Machinery Phase 1 Point Source Category, 1995, U.S. EPA, Office of Water, (EPA-821-R-95-021).

Water Environment Federation, *Pretreatment of Industrial Wastes, Manual of Practice No. FD-3*, Alexandria, Virginia, 1994.

National Shipbuilding Research Program, *Hazardous Waste Minimization Guide for Shipyards*, U.S. Navy and National Steel and Shipbuilding Company (NASSCO), January 1994.

National Shipbuilding Research Program, *Introduction to Production Processes and Facilities in the Steel Shipbuilding and Repair Industry*, U.S. Navy and National Steel and Shipbuilding Company (NASSCO), February 1993.

Levy, Doug, *Boat Paint Tied to Dolphin Deaths*, USA Today, December 31, 1996.

Section IV: Chemical Release and Transfer Profile

1994 Toxics Release Inventory Public Data Release, U.S. EPA Office of Pollution Prevention and Toxics, June 1996. (EPA 745-R-96-002)

Section V: Pollution Prevention Opportunities

National Shipbuilding Research Program, *Hazardous Waste Minimization Guide for Shipyards*, U.S. Navy and National Steel and Shipbuilding Company (NASSCO), January 1994.

Guides to Pollution Prevention, The Marine Maintenance and Repair Industry, U.S. EPA, Office of Research and Development, Cincinnati, OH, October 1991. (EPA/625/7-91/015)

Development Document for the Proposed Effluent Limitations Guidelines and Standards for the Metal Products and Machinery Phase 1 Point Source Category, 1995, U.S. EPA, Office of Water, (EPA-821-R-95-021).

Natan, Thomas E., Jr., *Examples of Successful Pollution Prevention Programs,* from Industrial Pollution Prevention Handbook, ed. Freeman, Harry M., McGraw-Hill, Inc., New York, 1995. pp. 142-144.

Identification of Pollution for Possible Inclusion in Enforcement Agreements Using Supplemental Environmental Projects (SEPs) and Injunctive Relief, Final Report, March 1997. U.S. EPA, Office of Enforcement and Compliance Assurance, (EPA-300-R-97-001).

Section VI: Summary of Applicable Federal Statutes and Regulations

Personal Correspondence with Mohamed Serageldin, U.S. EPA, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, March 1997.

Personal Correspondence with Steve Guile, U.S. EPA, Office of Water, Engineering and Analysis Division, Washington, DC, April 1997.

Section VIII: Compliance Activities and Initiatives

National Shipbuilding Research Program, *SNAME Panel SP-1 Newsletter,* Volume 1, Number 1, Summer 1996.