530R05022

EPA United States Environmental Protection Agency

National Priority Chemicals Trends Report

(1999 – 2003)

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Executive Summary

The Purpose of this Trends Report

The National Priority Chemicals (PCs) Trends Report is intended primarily to 1) evaluate the progress made in achieving EPA's Government Performance Results Act (GPRA) national goal of a 10 percent reduction of PCs (Exhibit 1) in wastes by 2008, compared to the 2001 quantities and 2) provide information and trends on the quantities (aggregated and non-aggregated) and management methods of the PCs contained in hazardous wastes (Resource Conservation and Recovery Act (RCRA) Subtitle C) and non-hazardous industrial wastes (RCRA Subtitle D) for the nation, EPA Regions, States, industry sectors, and federal facilities to assist in identifying potential waste minimization opportunities to reduce these chemicals. The data and trends analyses developed for this report supports this program and helps us better understand trends in the generation and management of the PCs, assess chemical reduction priorities, and identify opportunities for eliminating or reducing the PCs. The 31 PCs consist of 28 organics and 3 metals/metal compounds that are frequently found in releases to water, air, and land. These chemicals are present in soil, sediment, ground water, surface water, air, and/or biota, with many serving as the basis for a waste being classified as hazardous. The PCs are frequently found in wastes (hazardous and non-hazardous) and likely present opportunities for PC reductions in the manufacturing, commercial, and government operations that generate these wastes.

Exhibit 1. Priority Chemicals in the National Partnership for Environmental Priorities (NPEP) Program

Priority Chemicals Reported to the Toxics Release Inventory (TRI)	
1,2,4 - Trichlorobenzene	Lindane
2,4,5 - Trichlorophenol	Mercury and Mercury Compounds
Anthracene	Methoxychlor
Benzo(g,h,i)perylene	Naphthalene
Cadmium and Cadmium Compounds	Pendimethalin
Dibenzofuran	Pentachlorobenzene
Dioxins and Dioxin-like compounds	Pentachlorophenol
Heptachlor	Phenanthrene
Hexachloro-1, 3-butadiene	*Polychlorinated biphenyls (PCBs)
Hexachlorobenzene	Polycyclic Aromatic Compounds (PACs)
Hexachloroethane	Quintozene
Lead and Lead Compounds	Trifluralin
Priority Chemicals Not Reported to TRI	
1,2,4,5-Tetrachlorobenzene	Endosulfan, alpha, beta-
4-Bromophenyl phenyl ether	Fluorene
Acenaphthene	Heptachlor epoxide
Acenaphthylene	Pyrene
For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and Heptachlor and Heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single PC in this report. For example, Lead and Lead Compounds are addressed as a single PC. Only the weight of the metal portion of metal compounds is reported to TRI. *Polychlorinated biphenyls (PCBs) are on the list of PCs and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.	

The Trends Report is a tool for identifying opportunities to reduce these PCs in concert with the objectives of the Resource Conservation Challenge (RCC), including assisting EPA in identifying potential partners to voluntarily participate in the National Partnership for

Environmental Priorities (NPEP) program. The EPA's Office of Solid Waste (OSW) is in its third year of implementing the RCC, a program designed in 2002 to reduce the use of raw materials, reuse materials to make new products or generate energy, and reduce the generation of wastes. The RCC's goals are to reduce what comes into the waste management cycle, using pollution prevention, waste minimization, source reduction, and manufacturing process and/or product design changes, when economically feasible.

To support the RCC, OSW launched the voluntary NPEP program. EPA encourages all generators to reduce the quantity of waste they generate. However, we believe that reducing the generation of wastes containing any of these 31 PCs should be the first priority. Of the 31 chemicals identified by EPA as PCs, 24 chemicals are reported to the Toxics Release Inventory (TRI), as required under the Emergency Planning & Community Right to Know Act (EPCRA) § 313. However, since EPA monitors the management of polychlorinated biphenyls (PCBs) under a separate initiative, only 23 of the TRI-reportable chemicals are tracked for the purposes of this Trends Report, including measuring progress toward our GPRA goal. The remaining 7 PCs, not reported to TRI, are not currently tracked. (Exhibit 1).

The NPEP program is one of RCC's tools for "beyond compliance" management of the targeted PCs. EPA recruits partners to participate in NPEP who pledge reductions of PCs through source reduction and/or increased recycling efforts, and then set target deadlines to achieve those reductions. The purpose of this program is to encourage government agencies, businesses, and manufacturers to voluntarily enroll in a partnership with EPA to find ways to minimize the PCs. This reduction preferably should be achieved by reducing the use of these chemicals at the source, whenever possible. When reduction at the source is not possible, environmentally sound recycling practices should be used.

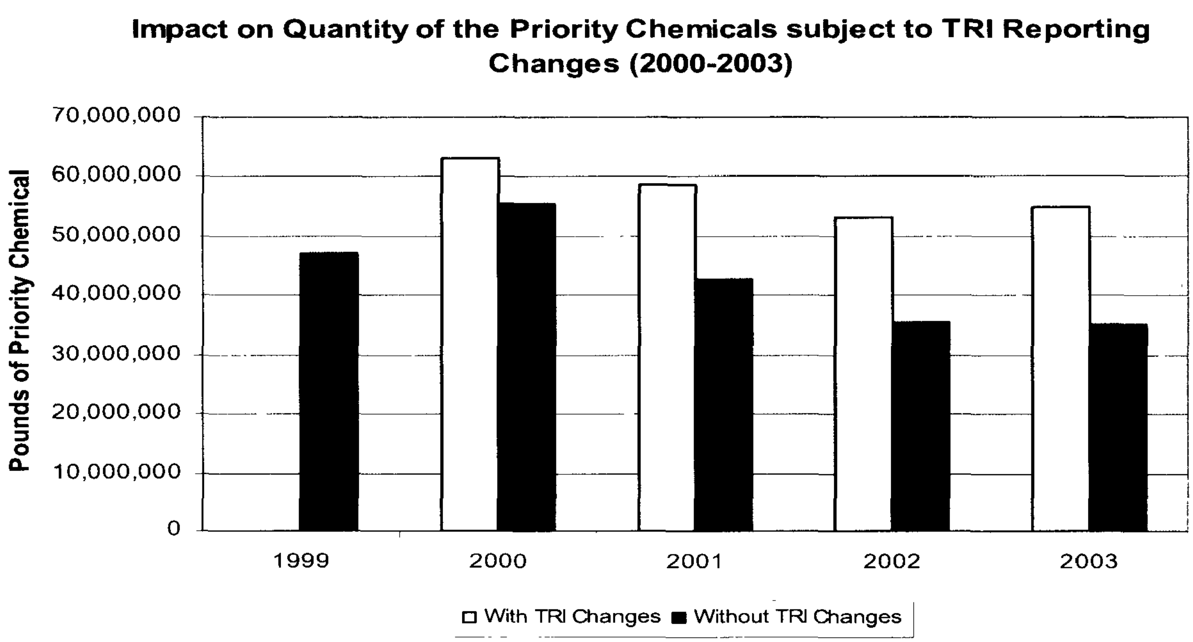
Trends Analyses for the Priority Chemicals (1999-2003)

Summary of Findings and Changes in Trends. We analyze trends for the Priority Chemicals based on the most recent five years of TRI data available. For this Trends Report, the trends analysis is based on data from the 1999 – 2003 TRI reporting years. In 2000 and in 2001 there were significant increases in both the quantities of PCs and the number of reporting facilities compared to 1999. Several changes to TRI reporting requirements caused these increases: 1) In 2000 TRI began requiring reporting for three PCs not previously reported. They are: benzo(g,h,i)perylene, dioxin and dioxin-like compounds, and pentachlorobenzene. In 2000 these three chemicals added 2.3 million pounds to the total quantity of Priority Chemicals in wastes. Between 2000 and 2001 these three chemicals added a total of 1.5 million pounds to the PC quantity reported to TRI. Between 2001 and 2002 they added 0.6 million pounds, and between 2002 and 2003 they added 0.8 million pounds. In total, from 2000 through 2003, the three new chemicals added 5.2 million pounds to the quantity of PCs; 2) Lower TRI reporting thresholds became effective in 2000 for seven other PCs which already were being reported to TRI (See Exhibit 3). They are: heptachlor, hexachlorobenzene, mercury and mercury compounds, methoxychlor, pendimethalin, polycyclic aromatic compounds (PACs), and trifluralin. This change increased the amounts of these chemicals reported to TRI. At the same time, EPA dropped the *de minimis* exemption for these seven PCs, lead and lead compounds, and the three PCs mentioned above that began to be reported to TRI in 2000. The *de minimis* change required reporting of smaller amounts than before, thereby increasing the reported amounts of these chemicals. In 2000, the lowered thresholds and *de minimis* changes added a combined total of

6.5 million pounds to the PC quantity reported to TRI. Between 2000 and 2001 the lowered thresholds and *de minimis* changes added a combined total of 7.3 million pounds to the PC quantity reported to TRI. Between 2001 and 2002 they added 7.8 million pounds, and between 2002 and 2003 they added 8.1 million pounds. From 2000 through 2003 the lowered thresholds and *de minimis* changes combined added 29.7 million pounds to the total quantity of PCs [1]; 3) In 2001 EPA lowered the TRI reporting threshold for lead and lead compounds, substantially increasing the number of facilities reporting this PC. However, even with more facilities reporting, reductions at facilities previously reporting to TRI caused the total quantity of lead and lead compounds to decrease by 0.4 million pounds in 2001. From 2002-2003 reported quantities of lead rose somewhat, from 34.9 million pounds to 36.7 million pounds. All told, the quantity of lead reported from 2001 through 2003 increased by 30.4 million pounds.

As the result of the TRI changes, PCs showed a cumulative increase of 65.3 million pounds for the years 2000 through 2003, compared to their 1999 quantities. The effects of these changes in increasing the quantities of chemicals reported to TRI are shown in Exhibit 2 below. It is important to note that the exhibit shows generally downward trends for PCs, whether one examines quantities before the changes or after those changes took effect.

Exhibit 2. Effect of TRI Changes



[1] Because of limitations of the data reported to TRI it is not possible to distinguish increased quantities resulting from the *de minimis* change from those resulting from the threshold change.

Exhibit 3. Priority Chemicals - TRI Reporting Threshold Changes

Chemical Name	New Reporting Threshold	Year Change Became Effective
Heptachlor	10 pounds	2000
Hexachlorobenzene	10 pounds	2000
Lead and Lead Compounds	100 pounds	2001
Mercury and Mercury Compounds	10 pounds	2000
Methoxychlor	100 pounds	2000
Pendimethalin	100 pounds	2000
Polycyclic Aromatic Compounds category	100 pounds	2000
Trifluralin	100 pounds	2000

In 2003, 4 PCs comprised approximately 82 percent of the total national PC quantity. These were lead and lead compounds, polycyclic aromatic compounds, naphthalene, and hexachloro-1,3-butadiene. Lead and Lead Compounds consistently have accounted for the majority of the total national PC quantity -- comprising approximately 46 percent of the total quantity of the PCs in 2003. Nearly 13 million pounds of polycyclic aromatic compounds accounted for approximately 16 percent of the total national quantity of PCs in 2003.

Exhibit 4. Total Quantity (lbs) of each Priority Chemical (1999 – 2003)

CHEMICAL NAME	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent change (1999-2003)
Lead and Lead Compounds	32,854,376	37,420,838	36,996,580	34,907,262	36,667,276	46.3%	11.6%
Polycyclic Aromatic Compounds	8,354,179	16,569,173	14,115,733	12,771,563	12,672,606	16.0%	51.7%
Naphthalene	13,870,144	14,507,008	10,340,355	11,248,654	10,399,334	13.1%	-25.0%
Hexachloro-1,3-butadiene	8,764,908	11,297,081	6,404,741	5,167,385	5,566,299	7.0%	-36.5%
Hexachlorobenzene	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	5.4%	-20.9%
Hexachloroethane	3,625,369	5,709,981	4,145,249	4,056,497	2,734,341	3.5%	-24.6%
Phenanthrene	483,969	1,017,328	236,212	2,309,275	1,817,292	2.3%	275.5%
1,2,4 – Trichlorobenzene	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271	2.1%	20.6%
Cadmium and Cadmium Compounds	1,103,788	1,488,696	932,493	749,570	817,579	1.0%	-25.9%
Quintozene	227,081	570,013	491,098	412,230	604,434	0.8%	166.2%
Pentachlorobenzene	0	239,852	487,719	311,156	484,733	0.6%	NA
Pendimethalin	219,791	674,131	200,195	421,827	429,551	0.5%	95.4%
Anthracene	453,254	546,297	360,830	345,482	419,068	0.5%	-7.5%
Benzo(g,h,i)perylene	0	2,104,398	988,675	308,362	315,294	0.4%	NA
Pentachlorophenol	212,995	69,790	54,339	36,856	160,760	0.2%	-24.5%
Dibenzofuran	118,826	92,802	66,720	288,912	75,605	0.1%	-36.4%
Trifluralin	87,820	88,485	93,489	63,555	57,290	0.1%	-34.8%
Mercury and Mercury Compounds	56,701	89,760	130,828	97,130	40,544	0.1%	-28.5%
2,4,5 –Trichlorophenol	26,098	32,443	20,657	17,913	22,857	0.0%	-12.4%

CHEMICAL NAME	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent change (1999-2003)
Dioxin and Dioxin-like Compounds	0	641	708	551	709	0.0%	NA
Lindane	2,722	64	46	183	71	0.0%	-97.4%
Heptachlor	0	0	0	79	54	0.0%	NA
Methoxychlor	0	17	1	1	0	0.0%	NA
Total	**77,252,326**	**99,642,648**	**84,015,526**	**79,250,350**	**79,232,695**	**100.0%**	**2.6%**
Note: For some chemical quantities, a zero (0) was inserted for one or more of the following reasons: 1) Prior to 2000, benzo(g,h,i)perylene, dioxin and dioxin-like compounds, and Pentachlorobenzene were not reportable TRI quantities, 2) no quantity was reported to TRI, 3) based on our rounding-off process, quantities reported to TRI as <0.5 lbs are shown as zero quantity.							

PCs, such as naphthalene, hexachloro-1,3-butadiene, hexachlorobenzene, and hexachloroethane, decreased significantly in quantity from 1999-2003. Exhibit 5 shows the national trends regarding the management methods used for the PCs. Disposal quantities have increased, especially onsite disposal. The energy recovery quantity has remained somewhat constant with an increase of about 1.1 million pounds going to onsite energy recovery along with a corresponding decrease of offsite energy recovery quantity. There has been a decrease of approximately 3.5 million pounds in the total treatment quantity – mostly offsite treatment. Although not counted as PC quantities (as explained later in the report), recycling, both onsite and offsite, has decreased, compared to the 1999 quantities. Onsite recycling of the PCs has consistently been around 425 million pounds from 2001 through 2003. In 2003, there was a decrease in recycling of about 208 million pounds. Despite the 25 percent decline in recycling since 1999, it is apparent that a majority of PCs have been and continue to be recycled. The hierarchy of pollution prevention/waste minimization management techniques, recommends recycling practices over treatment, energy recovery or disposal practices. The NPEP Program will continue to encourage recycling as one of its target objectives.

Exhibit 5. Trends in Management Methods for Priority Chemicals (1999-2003)

Management Method	Reporting Year				
	1999	2000	2001	2002	2003
Onsite Disposal	4,129,059	4,107,453	7,619,488	9,124,600	9,071,816
Offsite Disposal	29,937,003	33,226,387	30,436,117	27,961,944	30,589,106
Total Disposal	**34,066,063**	**37,333,840**	**38,055,605**	**37,086,543**	**39,660,922**
Onsite Energy Recovery	8,593,952	14,319,579	13,980,311	10,497,403	9,691,116
Offsite Energy Recovery	3,546,248	6,531,633	2,775,823	5,468,495	2,402,434
Total Energy Recovery	**12,140,200**	**20,851,212**	**16,756,134**	**15,965,898**	**12,093,550**
Onsite Treatment	26,395,997	35,655,905	26,727,256	24,761,134	26,028,974
Offsite Treatment	4,650,067	5,801,691	2,476,531	1,436,775	1,449,249
Total Treatment	**31,046,064**	**41,457,597**	**29,203,787**	**26,197,909**	**27,478,223**
Onsite Recycling	572,683,510	534,083,436	424,174,241	425,762,445	427,154,153
Offsite Recycling	276,392,151	255,700,460	249,330,474	281,847,907	213,044,100
Total Recycling	**849,075,661**	**789,783,897**	**673,504,715**	**707,610,352**	**640,198,253**

Regional Trends for the Priority Chemicals. Four of the Regions (Regions 2, 3, 5, and 10) had a decrease of more than one million pounds in PC quantities. Region 7 had an increase of over 4.6 million pounds. Four EPA Regions had over 80 percent of the total quantity of PCs in 2003 – Region 6 (39.3%), Region 4 (16.8%), Region 5 (16.3%), and Region 7 (9.9%).

Exhibit 6. Priority Chemical Quantities (lbs) by EPA Region (1999 – 2003)

EPA Region	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent Change (1999-2003)
1	525,016	684,861	1,288,898	986,650	1,009,289	1.3%	92.2%
2	3,708,832	3,778,794	2,514,404	1,774,434	1,657,514	2.1%	-55.3%
3	6,378,497	6,870,818	8,231,857	4,673,141	5,362,340	6.8%	-15.9%
4	12,199,897	15,682,639	13,179,721	10,980,492	13,321,440	16.8%	9.2%
5	14,039,745	12,941,398	11,262,484	14,347,790	12,896,587	16.3%	-8.1%
6	31,086,511	44,117,121	34,425,819	33,794,476	31,168,159	39.3%	0.3%
7	3,214,109	6,865,892	6,138,039	6,806,476	7,863,422	9.9%	144.7%
8	1,137,281	1,610,228	1,360,725	1,155,555	1,483,026	1.9%	30.4%
9	1,748,944	3,251,743	2,969,640	2,855,807	2,627,186	3.3%	50.2%
10	3,213,494	3,839,153	2,643,938	1,875,528	1,843,732	2.3%	-42.6%
Total	**77,252,326**	**99,642,648**	**84,015,526**	**79,250,350**	**79,232,695**	**100.0%**	**2.6%**

State/Territory Trends for the Priority Chemicals. Four states accounted for approximately 50 percent of the PCs in 2003 – Louisiana (21.1 percent), Texas (14.3 percent), Indiana (7.9 percent), and Missouri (6.6 percent).

Exhibit 7. Priority Chemical Quantity (lbs) by State (1999-2003)

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity in 2003
AK	0	2,494	25,452	30,306	22,748	22,748	NA	0.0%
AL	2,709,725	2,123,769	2,556,493	4,034,609	3,555,622	845,897	31.2%	4.5%
AR	2,646,546	3,804,040	3,173,953	2,098,513	2,090,351	-556,195	-21.0%	2.6%
AS	0	134	129	0	0	0	NA	0.0%
AZ	44,216	11,185	94,717	62,832	66,113	21,897	49.5%	0.1%
CA	1,687,425	3,230,756	2,719,567	2,478,129	2,222,565	535,140	31.7%	2.8%
CO	62,392	65,515	98,394	96,706	183,709	121,317	194.4%	0.2%
CT	100,509	164,729	143,142	88,411	103,185	2,676	2.7%	0.1%
DC	0	0	960	756	290	290	NA	0.0%
DE	102,582	100,882	10,184	6,672	14,546	-88,036	-85.8%	0.0%
FL	455,709	342,908	621,730	598,019	633,838	178,129	39.1%	0.8%
GA	1,550,453	1,368,547	661,641	857,489	725,966	-824,487	-53.2%	0.9%
GU	28	296	5,447	16	19	-9	-32.8%	0.0%
HI	1,775	1,380	122,219	85,114	98,317	96,542	5439.0%	0.1%
IA	1,106,191	1,156,323	926,531	1,037,108	1,094,882	-11,309	-1.0%	1.4%
ID	641,623	525,956	479,361	339,713	268,595	-373,028	-58.1%	0.3%
IL	2,638,276	2,728,966	1,927,188	1,839,386	1,825,428	-812,849	-30.8%	2.3%

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity in 2003
IN	4,479,811	4,224,006	3,774,765	5,654,748	6,241,772	1,761,961	39.3%	7.9%
KS	199,746	84,455	129,761	111,038	110,247	-89,499	-44.8%	0.1%
KY	938,040	1,211,831	1,325,567	1,362,144	3,505,603	2,567,563	273.7%	4.4%
LA	11,789,287	20,090,538	16,143,542	13,467,405	16,714,766	4,925,479	41.8%	21.1%
MA	272,654	331,813	225,129	144,528	142,752	-129,902	-47.6%	0.2%
MD	82,627	366,133	747,715	309,218	148,832	66,205	80.1%	0.2%
ME	8,099	3,339	817,742	609,821	595,361	587,262	7251.0%	0.8%
MI	796,738	468,867	817,845	604,782	788,319	-8,419	-1.1%	1.0%
MN	434,490	399,771	500,892	487,941	546,928	112,438	25.9%	0.7%
MO	1,533,932	3,169,384	3,814,598	4,346,745	5,226,068	3,692,136	240.7%	6.6%
MP	0	0	2	2	2	2	NA	0.0%
MS	458,158	437,236	524,756	345,610	479,205	21,047	4.6%	0.6%
MT	10,274	12,388	6,390	9,250	10,898	624	6.1%	0.0%
NC	258,817	736,519	1,036,159	952,032	1,211,752	952,935	368.2%	1.5%
ND	7,081	3,250	5,743	7,323	9,145	2,064	29.1%	0.0%
NE	374,240	2,455,729	1,267,149	1,311,585	1,432,225	1,057,985	282.7%	1.8%
NH	41,374	97,027	61,468	111,803	127,448	86,074	208.0%	0.2%
NJ	2,708,337	2,940,106	1,682,357	967,570	914,914	-1,793,423	-66.2%	1.2%
NM	18,115	34,001	79,277	159,094	75,102	56,987	314.6%	0.1%
NV	15,500	7,992	27,560	229,713	240,171	224,671	1449.5%	0.3%
NY	993,392	803,539	773,829	748,464	687,379	-306,013	-30.8%	0.9%
OH	5,342,187	4,783,714	3,793,766	5,281,784	2,884,695	-2,457,492	-46.0%	3.6%
OK	450,564	602,418	704,747	1,939,780	978,246	527,682	117.1%	1.2%
OR	993,427	954,723	818,916	648,238	618,896	-374,531	-37.7%	0.8%
PA	5,241,034	5,142,503	4,363,784	2,952,758	3,591,425	-1,649,609	-31.5%	4.5%
PR	6,679	34,689	57,317	57,793	52,708	46,029	689.2%	0.1%
RI	23,505	49,576	18,322	15,692	30,252	6,747	28.7%	0.0%
SC	1,028,916	1,905,751	1,668,565	1,427,095	1,326,311	297,395	28.9%	1.7%
SD	2,065	1,667	3,954	3,911	2,605	540	26.2%	0.0%
TN	4,800,079	7,556,079	4,784,809	1,403,495	1,883,144	-2,916,935	-60.8%	2.4%
TX	16,181,999	19,586,124	14,324,300	16,129,685	11,309,694	-4,872,305	-30.1%	14.3%
UT	751,701	1,006,014	888,591	928,198	1,183,672	431,971	57.5%	1.5%
VA	564,512	568,551	951,728	744,961	692,333	127,821	22.6%	0.9%
VI	424	461	902	608	2,512	2,088	492.5%	0.0%
VT	78,875	38,377	23,095	16,395	10,291	-68,584	-87.0%	0.0%
WA	1,578,444	2,355,980	1,320,209	857,272	933,493	-644,951	-40.9%	1.2%
WI	348,243	336,074	448,028	479,149	609,445	261,202	75.0%	0.8%
WV	387,742	692,750	2,157,486	658,777	914,914	527,172	136.0%	1.2%
WY	303,768	521,394	357,653	110,168	92,996	-210,772	-69.4%	0.1%

Twenty of the States/Territories had a decreased quantity of PCs in 2003, compared to 1999. A decrease of over 1 million pounds was accomplished in five of these states: Texas (-4.9 million pounds, -30%), Tennessee (- 2.9 million pounds, -61%), Ohio (-2.5 million pounds, - 46%), New Jersey (-1.8 million pounds, - 66%), and Pennsylvania (- 1.6 million pounds, - 32%).

Of the thirty-five states/territories that had an increased quantity of PCs in 2003, compared to 1999, five states had an increase of over 1 million pounds of PCs – Louisiana (+4.9 million pounds, +42%), Missouri (+ 3.7 million pounds, +241%), Kentucky (+2,6 million pounds, + 274%), Indiana (+1.8 million pounds, +39%), and Nebraska (+1.1 million pounds, + 283%).

Industry Sector Trends for the Priority Chemicals. Exhibit 8 presents the PC quantities (1999-2003) for those 24 industry sectors (SICs) that accounted for 90 percent of the total quantity of PCs in 2003. Five industry sectors accounted for over 50 percent of the total quantity of the PCs in 2003: SIC 3341- Secondary non-ferrous metals (16.3%), SIC 2869 - Industrial organic chemicals nec (10.7%), SIC 3312-Blast furnaces and steel mills (10 %), SIC 2812- Alkalies and chlorine (9.4%), and SIC 2895- Carbon Black (95.1%).

Exhibit 8. Quantity (lbs) of Priority Chemicals in the Industry Sectors (SICs) that Accounted for 90 Percent of the Total Priority Chemical Quantity in 2003

SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Change in Quantity 1999-2003
3341	Secondary nonferrous metals	7,476,809	10,527,825	9,720,459	11,993,360	12,933,583	16.3%	5,456,774
2869	Industrial organic chemicals, nec	2,491,268	3,476,162	2,161,860	6,768,248	8,466,025	10.7%	5,974,757
3312	Blast furnaces and steel mills	9,082,485	9,603,363	7,940,587	7,010,168	7,901,057	10.0%	-1,181,428
2812	Alkalies and chlorine	18,732,394	23,417,510	18,975,349	12,511,312	7,456,586	9.4%	-11,275,808
2895	Carbon black	0	3,749,053	3,454,362	3,922,074	4,052,612	5.1%	4,052,612
2819	Industrial inorganic chemicals, nec	3,677,861	5,955,886	3,435,952	2,887,421	3,426,548	4.3%	-251,313
2911	Petroleum refining	4,711,108	6,175,607	2,234,706	4,199,005	3,405,412	4.3%	-1,305,696
3624	Carbon and graphite products	5,067,118	8,300,424	5,119,620	1,834,267	2,891,018	3.6%	-2,176,100
3334	Primary aluminum	2,328,131	3,470,641	2,197,738	1,849,099	2,845,041	3.6%	516,910
9711	National security	71,606	163,504	2,228,042	2,605,080	2,787,601	3.5%	2,715,995
3479	Metal coating and allied services	1,468,003	1,819,255	1,648,889	2,461,943	2,712,495	3.4%	1,244,492
3321	Gray and ductile iron foundries	1,101,863	1,108,568	2,682,182	2,980,670	2,547,436	3.2%	1,445,573
2865	Cyclic crudes and intermediates	2,645,340	1,990,790	1,432,105	3,103,126	1,639,150	2.1%	-1,006,190
2821	Plastics materials and resins	942,386	836,036	565,677	746,511	1,387,892	1.8%	445,506
9511	Air, water, and solid waste management	92,065	375,078	652,869	615,034	1,273,657	1.6%	1,181,592
3229	Pressed and blown glass, nec	1,984,537	1,730,917	1,545,626	1,299,721	1,171,476	1.5%	-813,061

SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Change in Quantity 1999-2003
2879	Pesticides and agricultural chemicals, nec	647,551	1,608,582	2,112,046	758,430	929,347	1.2%	281,796
2491	Wood preserving	177,443	330,966	623,516	456,129	597,763	0.8%	420,320
3691	Storage batteries	1,037,024	788,534	291,592	338,077	557,907	0.7%	-479,118
3315	Steel wire and related products	1,531,147	955,199	795,911	421,571	502,771	0.6%	-1,028,376
3357	Nonferrous wire drawing and insulating	1,271,536	520,149	509,831	351,195	486,727	0.6%	-784,809
2992	Lubricating oils and greases	320	356,966	340,985	434,100	459,677	0.6%	459,357
8733	Noncommercial research organizations	100,105	153	203,452	153,948	426,650	0.5%	326,545
2037	Frozen fruits and vegetables	0	0	376,146	420,737	415,447	0.5%	415,447

Trends Analyses for the Priority Chemicals Reported by Federal Facilities

An analysis of the generation/management trends for the PCs reported by Federal Facilities is provided in Section 5. This analysis of how PCs are generated and managed by Federal Facilities that report PCs to TRI is separate and distinct from the requirements of Executive Order 13148 – including the mandate that Federal Facilities develop a plan to reduce the use of certain identified PCs and submit annual reports regarding progress being made to reduce the use of these chemicals. This Trends Report shows trends regarding the generation and management of the 23 PCs. As previously noted, the purposes of this Trends Report (and database) are: to 1) track progress made toward GPRA goals to reduce the presence of the PCs in wastes and 2) provide data to assist efforts for identifying voluntary potential waste minimization opportunities that present source reduction and recycling as alternatives to land disposal, treatment, and energy recovery.

In 2000 and, again in 2001, there were significant increases in both the quantity and number of reporting Federal Facilities, compared to 1999. In 2003, 192 Federal Facilities reported over 4.1 million pounds of PCs. This represents about 5 percent of the total quantity of PCs reported by all facilities (Federal + non-Federal) in 2003. Only a relatively small number of Federal Facilities accounted for the majority of the total quantity of PCs reported. Of the 192 Federal Facilities that reported a PC quantity in 2003, only 10 Federal Facilities accounted for almost 54 percent of the total quantity; 50 Federal Facilities accounted for almost 95 percent of the total quantity.

In 1999-2003, Federal Facilities in 48 states and Washington, D.C. reported a PC quantity. Federal Facilities in 16 states accounting for over 90 percent of the total quantity reported by Federal Facilities in 2003. Lead and Lead Compounds comprised almost 97 percent of the total quantity of 7 PCs reported by Federal Facilities in 2003. In 2003, Federal Facilities in two agencies, the Department of Defense and Department of Energy reported 97 percent of the total quantity of lead and lead compounds, 100 percent of mercury and mercury compounds, and 100 percent of the PACs. About 97 percent of the PCs reported by Federal Facilities in 2003 were land disposed, primarily onsite. Please refer to Section 5 for more details.

OSW Goals

The 1993 Government Performance and Results Act (GPRA) directs Federal Agencies to establish strategic plans using long and short range goals, in a 5-year planning cycle updated every 3 years. EPA's current strategic plan sets goals for 2008 and supersedes our 2005 strategic goal. OSW achieved the previous GPRA goal of a 50 percent reduction in the total quantity of 17 PCs in hazardous waste by the year 2005, as compared to the quantity in the baseline year of 1991, in 2001. Since OSW is now focusing efforts on the new GPRA goal (2008), the previous GPRA goal (2005) will be discussed in section 2.

The OSW GPRA Goal (2008 GPRA Goal)

Reduce, by 10 percent, the total quantity of 23 Priority Chemicals in hazardous and non-hazardous wastes by the year 2008, as compared to the quantity in the baseline year of 2001.

As of 2003, there was a 5.7 percent reduction in the total quantity of PCs contained in wastes (exhibit 9).

Exhibit 9. National Progress Made Toward the GPRA Goal

Reporting Year	2001	2002	2003
Total Quantity (lbs)	84,015,526	79,250,350	79,232,695
Percent Change from Baseline Year (2001)	Baseline Year	-5.7%	-5.7%

Exhibit 10 shows the quantities and percent change in quantity of each of the 23 PCs that were reported to the TRI for 2001 through 2003.

Exhibit 10. National GPRA Quantity (lbs) of Priority Chemicals (2001-2003)

CHEMICAL NAME	2001	2002	2003	Percent Reduction (2001-2003)
Lead and Lead Compounds	36,996,580	34,907,262	36,667,276	-0.9%
Polycyclic Aromatic Compounds	14,115,733	12,771,563	12,672,606	-10.2%
Naphthalene	10,340,355	11,248,654	10,399,334	0.6%
Hexachloro-1,3-Butadiene	6,404,741	5,167,385	5,566,299	-13.1%
Hexachlorobenzene	5,765,862	4,208,878	4,272,727	-25.9%
Hexachloroethane	4,145,249	4,056,497	2,734,341	-34.0%
Phenanthrene	236,212	2,309,275	1,817,292	669.3%

CHEMICAL NAME	2001	2002	2003	Percent Reduction (2001-2003)
1,2,4 - Trichlorobenzene	2,182,996	1,527,029	1,674,271	-23.3%
Cadmium and Cadmium Compounds	932,493	749,570	817,579	-12.3%
Quintozene	491,098	412,230	604,434	23.1%
Pentachlorobenzene	487,719	311,156	484,733	-0.6%
Pendimethalin	200,195	421,827	429,551	114.6%
Anthracene	360,830	345,482	419,068	16.1%
Benzo(g,h,i)Pperylene	988,675	308,362	315,294	-68.1%
Pentachlorophenol	54,339	36,856	160,760	195.8%
Dibenzofuran	66,720	288,912	75,605	13.3%
Trifluralin	93,489	63,555	57,290	-38.7%
Mercury and Mercury Compounds	130,828	97,130	40,544	-69.0%
2,4,5 - Trichlorophenol	20,657	17,913	22,857	10.7%
Dioxin and Dioxin-Like Compounds	708	551	709	0.1%
Lindane	46	183	71	54.3%
Heptachlor	0	79	54	NA
Methoxychlor	1	1	0	-100.0%
Total	**84,015,526**	**79,250,350**	**79,232,695**	**-5.7%**

Approximately half of the PCs showed a decrease in quantity since 2001. In 2003, five of these chemicals accounted for 88 percent of the total quantity of PCs, lead and lead compounds (46.3%), polycyclic aromatic compounds (16%), naphthalene (13.1%), hexachloro-1,3-butadiene (7%), and hexachlorobenzene (5.4%).

The OSW Priority Chemicals

What Chemicals are addressed? EPA selected the Toxics Release Inventory (TRI) as the primary data source by which to measure progress toward reducing quantities of PCs in hazardous waste and to track trends in the generation, release, and management of the PCs. The TRI is a publicly available EPA database that contains information on more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. This information is reported annually by facilities on TRI Form Rs, and is reviewed and updated on an on-going basis to reflect corrections to reported data resulting from reporters' revised Form Rs and EPA data quality checks[2]. Exhibit 1 lists the 31 chemicals identified by OSW as PCs[3]. However, only 24 of these 31 chemicals are reported to TRI.

[2] Data for each year are published approximately 15 to 18 months following the end of the reporting year. For example, aggregated data for reporting year 2003 were published in May 2005. Individual facility data were made public in November 2004.

[3] For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and heptachlor and heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single Priority Chemical in this report. For example, lead and lead compounds are addressed as a single Priority Chemical. Only the weight of the metal portion of metal compounds is reported to TRI. Polychlorinated Biphenyls (PCBs) are on the list of Priority Chemicals and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.

Therefore, for the purposes of this Trends Report and for tracking progress toward the current GPRA goal (the 2008 GPRA goal), these 24 chemicals are analyzed. For the previous GPRA goal (the 2005 GPRA goal), only those 17 PCs which were reported to TRI since 1991 were tracked. The remaining PCs are not reported to TRI.

Information is reported to the TRI on a chemical-specific basis, rather than by waste stream. Although data reported to TRI includes quantities of chemicals that are contained in the waste, it does not necessarily provide a distinction between hazardous and non-hazardous waste. Furthermore, not all data in the TRI are needed to calculate the PC quantities. The Office of Solid Waste developed a measurement methodology[4], summarized here and discussed in more detail in Appendix C, to identify and extract the applicable data from the TRI database to calculate PC quantities and estimate what portion of the chemical quantity reported to TRI is likely to be found in RCRA Subtitle C hazardous or in non-Subtitle C (non-hazardous) industrial wastes.

We developed the original methodology for the purpose of estimating the quantity of PCs that was contained in RCRA Subtitle C hazardous wastes[5]. With the declaration of a new GPRA goal by which to further reduce the presence of PCs in waste, we revised the original methodology that had been used to calculate PC quantities for the previous GPRA goal. We derived from this revised methodology data which serve as the basis for tracking progress toward the current GPRA goal and doing trends analyses, as presented in this update of the Trends Report.

To identify and collect data on PCs reported to the TRI in 1999 through 2003 for this report, we used the revised methodology to undertake the following steps:

1. Extract Data Regarding PCs Reported to TRI;
2. Exclude selected TRI data;
3. Identify Relevant Releases and Waste Management Quantities to Calculate PC Quantities; and
4. Analyze Data and Measure Progress Made Toward the GPRA Goal

More detailed information concerning these methodologies can be found in Section 2 and Appendix C. Except for the discussion in Section 2 that provides an update on the progress made toward reducing PCs in hazardous waste per the previous GPRA goal, the data used in this Trends report – pertaining to the current GPRA goal and all other trends analyses – were derived using the revised measurement methodology. Please note that the discussion of the previous GPRA goal presented in this Trends Report is expected to be the last update concerning this goal. Future updates of this Trends Report will focus on the current GPRA goal and trends analyses using data from the revised methodology.

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[4] Please note that the methodology used in developing this Trends Report may differ from the methodology used by the TRI program to show trends for the EPCRA section 313 chemicals in the annual TRI Public Data Release.

[5] The term "hazardous waste" as used in this Trends Report refers to wastes that are regulated under RCRA Subtitle C, which are listed in 40 CFR 261.20-24 (characteristics of ignitability, corrosivity, reactivity, or toxicity), 40 CFR 260.31 (non-specific source wastes), 40 CFR 260.32 (specific source wastes) or 40 CFR 260.33 (discarded commercial chemical products). Priority Chemicals that are released in air emissions or surface water discharge may not be RCRA Subtitle C hazardous wastes, but may be considered to be hazardous under other regulatory statutes.

Section 1 –
Overview of Updated
Priority Chemical Trends Report
(1999-2003)

Introduction

In 2002, the EPA's Office of Solid Waste (OSW) implemented the Resource Conservation Challenge (RCC), a program designed to reduce the use of raw materials, reuse materials to make new products or generate energy, and reduce the generation of wastes. When it is economically feasible, the RCC's goals are to reduce what comes into the waste management cycle, using pollution prevention, waste minimization, source reduction, and manufacturing process and/or product design changes.

The Office of Solid Waste has identified 31 chemicals on which to focus its efforts to reduce these chemicals in wastes (Exhibit 1.1). As part of the RCC, an endeavor, referred to as the National Program for Environmental Priorities (NPEP) program, was launched to reduce the presence of these 31 chemicals in wastes. These 31 chemicals, referred to as the Priority Chemicals (PCs), consist of 28 organics and 3 metals/metal compounds that are frequently found in releases to water, air, and land. These chemicals are persistent in the environment, bioaccumulative in the food chain, and are toxic to human health in relatively small quantities. These chemicals are present in soil, sediment, ground water, surface water, air, and/or biota, with many serving as the basis for a waste being classified as hazardous. Further, they are currently being generated (either intentionally or as a by-product or impurity) and continue to be released to the environment potentially exacerbating existing problems and creating new ones. Many of these organics also pose remediation difficulties once they get into the environment resulting in costly cleanup efforts. The three metals/metal compounds were selected because they occur frequently in RCRA waste streams and to be consistent with international efforts to which the United States has commitments.

The PCs are frequently found in wastes (hazardous and non-hazardous) and present likely opportunities for PC reductions in the manufacturing, commercial, and government operations that generate these wastes. EPA encourages all generators to reduce the quantity of waste they generate. However, we believe that reducing the generation of hazardous wastes containing any of these 31 PCs should be the first priority. This reduction preferably should be achieved by reducing the use of these chemicals at the source, whenever possible. When reduction at the source is not possible, environmentally sound recycling practices should be used.

The NPEP program is the RCC's most direct tool for "beyond compliance" management of the targeted PCs and forms a significant foundation upon which EPA will build its chemicals reduction and management plan. EPA recruits partners to NPEP who pledge reductions of targeted chemicals through source reduction and/or increased recycling efforts and then sets target deadlines to achieve those reductions. The NPEP program endeavors to encourage government agencies, businesses, and manufacturers to voluntarily enroll in a partnership with EPA to find ways to minimize use of the PCs through source reduction and recycling.

This PCs Trends Report is used primarily to:

- Evaluate the progress made in achieving EPA's GPRA national goal of a 10 percent reduction of PCs in wastes by 2008, compared to the 2001 quantities (see Section 2) and
- Provide information and trends regarding the generation and management of PC quantities (aggregated and non-aggregated) contained in hazardous wastes (Subtitle C) and non-hazardous industrial wastes (Subtitle D) for the nation, EPA Regions, States, industry sectors, and Federal facilities to assist in identifying potential waste minimization opportunities to reduce these chemicals (see Sections 3, 4, and 5).

EPA uses the Trends Report as a tool for identifying opportunities to reduce these PCs in concert with the objectives of the RCC, including assisting EPA in identifying potential partners to voluntarily participate in the NPEP program. The data and trends analyses developed for this report will serve as a valuable tool in support of this program and assist in our effort to better understand trends in the generation and management of the PCs, assess chemical reduction priorities, and identify opportunities for eliminating or reducing the PCs.

What does this Report Cover and how is it Organized?

Of the 31 chemicals identified by EPA as PCs, 24 chemicals are reported to the Toxics Release Inventory (TRI), required under EPCRA § 313. However, since EPA monitors the management of Polychlorinated Biphenyls (PCBs) under a separate initiative, only 23 of the TRI-reportable chemicals are tracked for the purposes of this Trends Report, including ~~of~~ measuring progress toward our GPRA goal (Exhibit 1.1). The remaining 7 PCs, not reported to TRI, are not currently tracked.

In Section 2 of this report, we evaluate the progress made toward achieving OSW's national GPRA goal of a 10 percent reduction of 23 PCs in waste by 2008, compared to the baseline quantity in 2001. In addition, this report includes a final update concerning the progress made in achieving the original goal of a 50 percent reduction of 17 of the PCs, compared to a 1991 baseline year.

Aside from showing progress made toward reducing the quantities of the PCs, per strategic goals, we also monitor waste generation and management trends for the PCs – to identify potential opportunities in PC reductions. As such, this Trends report presents updated analyses of the generation and management of the 23 PCs contained in wastes for the most recent 5 years of TRI data (1999 to 2003) under sections 3, 4, & 5.

Section 3 provides an overview of the national, EPA Region, State, and industry sector aggregated quantities of 23 PCs, for which data is reported to TRI for the 1999 through 2003 TRI reporting years. We focus on these five most current years of TRI data to facilitate the identification of viable potential opportunities for reducing or eliminating PCs. The data presented in this section was derived using the 2008 GPRA methodology (see discussion in Section 2 and Appendix C) and focuses on trends for the PCs, as a whole.

Section 4 of this Trends Report presents national, EPA Region, state, and industry sector (SIC code) trends for each of the 23 PC reported to TRI. Basic information regarding the PC, including its CAS number, alternative names, general uses, and potential hazards also is presented.

Section 5 of this Trends Report analyzes Federal Facilities at the national, EPA Region, state, and industry sector levels. Categorization by Federal Agency also is included.

Several appendices also are included:

- Appendix A provides a list of the states within each EPA region.
- Appendix B shows a list of the Standard Industry Classification (SIC) codes.
- The methodologies (original and revised) developed to calculate PC quantities are provided in Appendix C.
- Tables with detailed data (too extensive for inclusion in the main text), concerning trends, are included in Appendix D.
- The Index of exhibits, under Appendix E, provides a reference guide to the reader.

Exhibit 1. 1. List of the Priority Chemicals

Priority Chemicals	
Priority Chemicals Reported to TRI (Used in Methodology)	
1,2,4 - Trichlorobenzene	Lindane
2,4,5 - Trichlorophenol	Mercury and Mercury Compounds
Anthracene	Methoxychlor
Benzo(g,h,i)perylene	Naphthalene
Cadmium and Cadmium Compounds	Pendimethalin
Dibenzofuran	Pentachlorobenzene
Dioxins and Dioxin-like compounds	Pentachlorophenol
Heptachlor	Phenanthrene
Hexachloro-1, 3-butadiene	*Polychlorinated biphenyls (PCBs)
Hexachlorobenzene	Polycyclic Aromatic Compounds (PACs)
Hexachloroethane	Quintozene
Lead and Lead Compounds	Trifluralin
Priority Chemicals Not Reported to TRI (Not Used in Methodology)	
1,2,4,5-Tetrachlorobenzene	Endosulfan, alpha, beta-
4-Bromophenyl phenyl ether	Fluorene
Acenaphthene	Heptachlor epoxide
Acenaphthylene	Pyrene
For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and Heptachlor and Heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single Priority Chemical in this report. For example, Lead and Lead Compounds are addressed as a single Priority Chemical. Only the weight of the metal portion of metal compounds is reported to TRI. *Polychlorinated biphenyls (PCBs) are on the list of PCs and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.	

What is the Source of the Data Used in this Report?

For this report, we use the TRI data as the source of information to analyze and identify trends regarding the extent to which PC quantities have increased or decreased over time, the EPA Regions and States where each of these PCs are generated, and the industry sectors that generate/manage these chemicals. The TRI is a publicly available EPA database that contains information on more than 650 toxic chemicals that are being used, manufactured, treated, transported, released into the environment, or recycled. This information is reported annually and reviewed and updated, on an on-going basis, to reflect corrections made to reported data.[1]

The TRI covers a wide variety of industry sectors, including those in manufacturing (i.e., Standard Industrial Classification (SIC) codes 20 through 39). These industry sectors account for more than 90 percent of the hazardous waste generated in the U.S.[2,3] Facilities in the Manufacturing sectors (SIC

[1] Data for each year are published within approximately 18 months following the end of the reporting year. For example, data for reporting year 2003 (deadline for reporting to TRI was July 1, 2004) were published May 11, 2005.

[2] Studies conducted in the early 1990s to determine whether TRI quantities were representative of RCRA waste concluded that the TRI covers a large portion of the hazardous waste generated in the U.S. For additional information on these studies and their findings, refer to Bhatnagar, S., and B C. Murray; *Efforts to Link the Biennial Reporting System (BRS) and the Toxics Release Inventory (TRI)* (prepared for EPA's Office of Solid Waste); 1997.

[3] A study conducted in 1995 found that more than 93 percent of hazardous waste was generated at facilities also covered under the TRI. For additional information on this study, refer to INFORM, Inc.; *Toxics Watch 1995*; 1995.

codes 20 through 39) have been required to report to the TRI since its inception. Beginning with reporting year 1994, Federal facilities also have been required to report to the TRI. A further expansion of the TRI reporting sectors occurred in 1998 when the following seven sectors were added - Metal Mining (SIC code 10, except 1011, 1081, and 1094), Coal Mining (SIC code 12, except 1241), Electrical Utilities that Combust Coal (SIC codes 4911, 4931, and 4939), RCRA Subtitle C Hazardous Waste Treatment and Disposal Facilities (SIC code 4953), Chemical Wholesalers (SIC code 5169), Petroleum Terminals and Bulk Stations (SIC code 5171), and Solvent Recovery Services (SIC code 7389). It should be noted facilities in additional industry sectors also report to TRI even though they are not necessarily required to do so. The database developed for use in this Trends Report includes all facilities, regardless of SIC code (except as noted in the methodology (see Appendix C), that reported a PC quantity to TRI for reporting years 1998-2003.

What Measurement Methodology was used for this Report?

Generators report information to the TRI on a chemical-specific basis, rather than by hazardous waste stream. Although data reported to TRI includes quantities of chemicals that are contained in the waste, it does not necessarily provide a distinction between hazardous and non-hazardous industrial waste. OSW developed a measurement methodology[4] (see Appendix C) to extract the applicable data from the TRI database to calculate PC quantities and estimate what portion of the chemical quantity reported to TRI is likely to be found in hazardous waste versus non-hazardous industrial wastes.

With the declaration of a new GPRA goal by which to reduce the presence of PCs in waste, we revised the original methodology that had been used to calculate PC quantities for the 2005 GPRA goal. The revised methodology differs from the original methodology in that it addresses:

- An expanded number of PCs; 23 versus 17 PCs;
- Both hazardous and non-hazardous industrial wastes;
- Additional industry sectors (that began reporting to TRI in 1998);
- Additional reporting facilities and increased quantities of PCs resulting from lowered TRI reporting thresholds that became effective in 2000 and 2001; and
- Bevill-exempt wastes that we believe currently pose minimal opportunities for waste minimization of the PCs.

Except for the discussion in Section 2 that provides an update on the progress made toward reducing PCs in hazardous waste per the original 2005 GPRA goal, the data used in this Trends report – pertaining to the 2008 GPRA goal and all other trends analyses – were derived using the revised measurement methodology.

How EPA Assures the Quality of the Data Used in this Trends Report

It is important to ensure that the TRI data used in the measurement methodology is accurate. Otherwise, errors in the data could lead to incorrect interpretation of trends. Primary responsibility for quality of the TRI data rests with the Office of Environmental Information (OEI). We primarily rely on the OEI data quality checks and the ever-improving TRI-ME reporting software to minimize mistakes in the TRI data used for the Priority Chemicals database. The TRI Program takes several steps to ensure the quality of their data, including examining a sample of individual reports for potential errors. However, undetected reporting errors may still occur.

For the subset of TRI data that the Office of Solid Waste uses to develop the Priority Chemicals database, it is sometimes necessary to supplement the OEI data quality checks – to ensure that there are

[4] Please note that the methodology used in developing this Trends Report may differ from the methodology used by the TRI program to show trends for the EPCRA section 313 chemicals in the annual TRI Public Data Release.

no significant discrepancies in the more limited universe of facilities associated with the Priority Chemicals – discrepancies that may not necessarily have been included in the broader OEI data quality checks but that could potentially skew the trends and analyses for the Priority Chemicals. The purpose of these supplemental data quality checks is to identify those changes in the quantity of a priority chemical reported to TRI, over two consecutive reporting years, which are of sufficient magnitude to potentially have a significant affect on the trends analysis for that priority chemical. To the extent feasible, time and resources permitting, these data checks are employed to further identify significant changes for possible follow-up verification of the Priority Chemical quantities reported by a given facility. These errors may not always be very noticeable in aggregated quantities at national, state, or even industry sector-level analyses, but they can have a major effect when looking at trends at the facility level, especially for those chemicals reported by only a small number of facilities or by a relatively few number of facilities that account for a large portion of the total quantity of the Priority Chemical. Once we complete the supplemental data checks and incorporate any changes to the database, we "freeze" the database and proceed to develop the Microsoft Access tables and queries needed to analyze the Priority Chemicals trends. Once the database is frozen, it is not modified to incorporate any TRI reporting errors subsequently identified. We depend on the Office of Environmental Information to include them in the next year's TRI dataset. Of course, these reporting errors will only be reflected in the new TRI dataset if the reporting facility had submitted a revised TRI Form R to EPA.

Additional details concerning the steps taken in this process are provided in Appendix C.

Seven of the PCs are not reported to TRI (Exhibit 1.1). Currently, we do not have a readily available means by which to track the generation and management of these 7 PCs. EPA is considering further development of a methodology that would extract information from the RCRA Hazardous Waste Biennial Report (BR) data for use in analyzing trends regarding the generation and management of these 7 PCs. A description of each of these 7 PCs and their uses is provided at the end of Section 4.

Progress and What May Change in Next Year's Report?

In this Trends Report we discuss progress made toward both goals. We used a different measurement methodology for each goal. These methodologies include differences such as the number of PCs addressed, industry sectors included, and changes in TRI reporting thresholds for a certain number of the chemicals. The current goal includes all 23 of the PCs reported to TRI; the previous goal only included the 17 PCs that were reported to TRI in 1991. As such, it is not suitable to make comparisons between the quantities for each of these goals.

We also included graphics that assist the reader in visually interpreting the data. Maps of facilities illustrate the distribution of PC quantities reported. Trends in specific PC quantities reported between 1999 and 2003 are graphed over their respective states.

In addition to these new items, OSW plans to include more analyses in next year's report. Such items may include the transition from SIC (Standard Industrial Classification) to NAICS (North American Industrial Classification System) codes, Geographical Information Systems (GIS) analyses, and Biennial Report System (BRS) data. OSW may also focus efforts on analyzing the reasons behind the trends, as well as including a section on Mercury and Mercury Compounds as a particularly high agency priority.

Section 2 –
Progress Made towards OSW's GPRA Goals for the Priority Chemicals

OSW Goals

This section discusses the progress that has been made toward reducing the quantity of the Priority Chemicals (PCs) in wastes.

The 1993 Government Performance and Results Act (GPRA) requires the Agency to set strategic goals, and to update them every 3 years. In 2004, OSW established a goal aiming for a 10 percent reduction of an expanded list of PCs over a broad universe of wastes, using a 2001 baseline. This goal includes an expanded list of PCs and additional segments of the TRI reporting universe and, as such, identifies new opportunities for reducing PCs.

Previous Trends Reports presented progress toward OSW's PCs goal published in the Agency's last Strategic Plan. This goal was to attain a 50 percent reduction of 17 PCs by 2005, using the baseline year of 1991. EPA achieved this goal as of the 2001 Toxics Release Inventory (TRI) reporting year, with a 52 percent reduction in the quantity of the 17 PCs in wastes (Exhibit 2.10). This will be our last report on our success in achieving our previous goal.

Exhibit 2.1. List of Priority Chemicals Tracked for the OSW Goals

The Priority Chemicals	
Priority Chemicals Reported to TRI Since 1991 –included in both the 2005 and 2008 GPRA Goals	
Anthracene	Mercury and Mercury Compounds
Methoxychlor	Cadmium and Cadmium Compounds
Dibenzofuran	Lead and Lead Compounds
Naphthalene	Lindane
Heptachlor	Pentachlorophenol
Hexachloro-1, 3-butadiene	Quintozene
Hexachlorobenzene	1,2,4 - Trichlorobenzene
Hexachloroethane	2,4,5 - Trichlorophenol
Trifluralin	
Priority Chemicals for Which Reporting to TRI Began in 1995 or 2000 – only included in the 2008 GPRA Goal	
Pendimethalin (1995)	Benzo(g,h,i)perylene (2000)
Phenanthrene (1995)	Dioxins and Dioxin-like Compounds (2000)
Pentachlorobenzene (2000)	TRI Polycyclic Aromatic Compounds (PAC) category (1995)

The OSW GPRA Goal (2001-2003)

What Progress are we making toward the GPRA Goal? This section discusses progress toward OSW's GPRA goal of a 10 percent-reduction of the 23 PCs in hazardous and non-hazardous waste by the year 2008. Exhibit 2.3 shows the quantities of each of the 23 PCs that were reported to the TRI for 2001 through 2003 and the percent reduction from 2001 to 2003. As of 2003, there was a 5.7 percent reduction in the total quantity of PCs contained in wastes, compared to the quantities generated in 2001, with approximately half of the PCs having decreased.

Exhibit 2.2. National Progress Made Towards the Goal to Reduce Priority Chemicals by 10 Percent

Reporting Year	2001	2002	2003
Total Quantity (lbs)	84,015,526	79,250,350	79,232,695
Percent Change from Baseline Year (2001)	Baseline Year	-5.7%	-5.7%

Progress by Chemical

Exhibit 2.3. National GPRA Quantity (lbs) of Priority Chemicals (2001-2003)

CHEMICAL NAME	Reporting Year			Percent Reduction (2001-2003)
	2001	2002	2003	
Lead and Lead Compounds	36,996,580	34,907,262	36,667,276	-0.90%
Polycyclic Aromatic Compounds	14,115,733	12,771,563	12,672,606	-10.20%
Naphthalene	10,340,355	11,248,654	10,399,334	0.60%
Hexachloro-1,3-butadiene	6,404,741	5,167,385	5,566,299	-13.10%
Hexachlorobenzene	5,765,862	4,208,878	4,272,727	-25.90%
Hexachloroethane	4,145,249	4,056,497	2,734,341	-34.00%
Phenanthrene	236,212	2,309,275	1,817,292	669.30%
1,2,4 - Trichlorobenzene	2,182,996	1,527,029	1,674,271	-23.30%
Cadmium and Cadmium Compounds	932,493	749,570	817,579	-12.30%
Quintozene	491,098	412,230	604,434	23.10%
Pentachlorobenzene	487,719	311,156	484,733	-0.60%
Pendimethalin	200,195	421,827	429,551	114.60%
Anthracene	360,830	345,482	419,068	16.10%
Benzo(g,h,i)perylene	988,675	308,362	315,294	-68.10%
Pentachlorophenol	54,339	36,856	160,760	195.80%
Dibenzofuran	66,720	288,912	75,605	13.30%
Trifluralin	93,489	63,555	57,290	-38.70%
Mercury and Mercury Compounds	130,828	97,130	40,544	-69.00%
2,4,5 - Trichlorophenol	20,657	17,913	22,857	10.70%
Dioxin and Dioxin-like Compounds	708	551	709	0.10%
Lindane	46	183	71	54.30%
Heptachlor	0	79	54	NA
Methoxychlor	1	1	0	-100.00%
Total	84,015,526	79,250,350	79,232,695	-5.70%

In 2003, five chemicals accounted for 88 percent of the total quantity of Priority Chemicals, lead (46.3%), polycyclic aromatic compounds (16%), naphthalene (13.1%), hexachloro-1,3-butadiene (7%), and hexachlorobenzene (5.4%). From 2001-2003, four of these 5 chemicals had a decrease in quantity. The PCs with the largest decrease in quantity from 2001-2003 are illustrated in Exhibits 2.4 and 2.5.

Exhibit 2.4. Top 5 (GPRA) Priority Chemicals with the Largest Quantity Decrease (2001-2003)

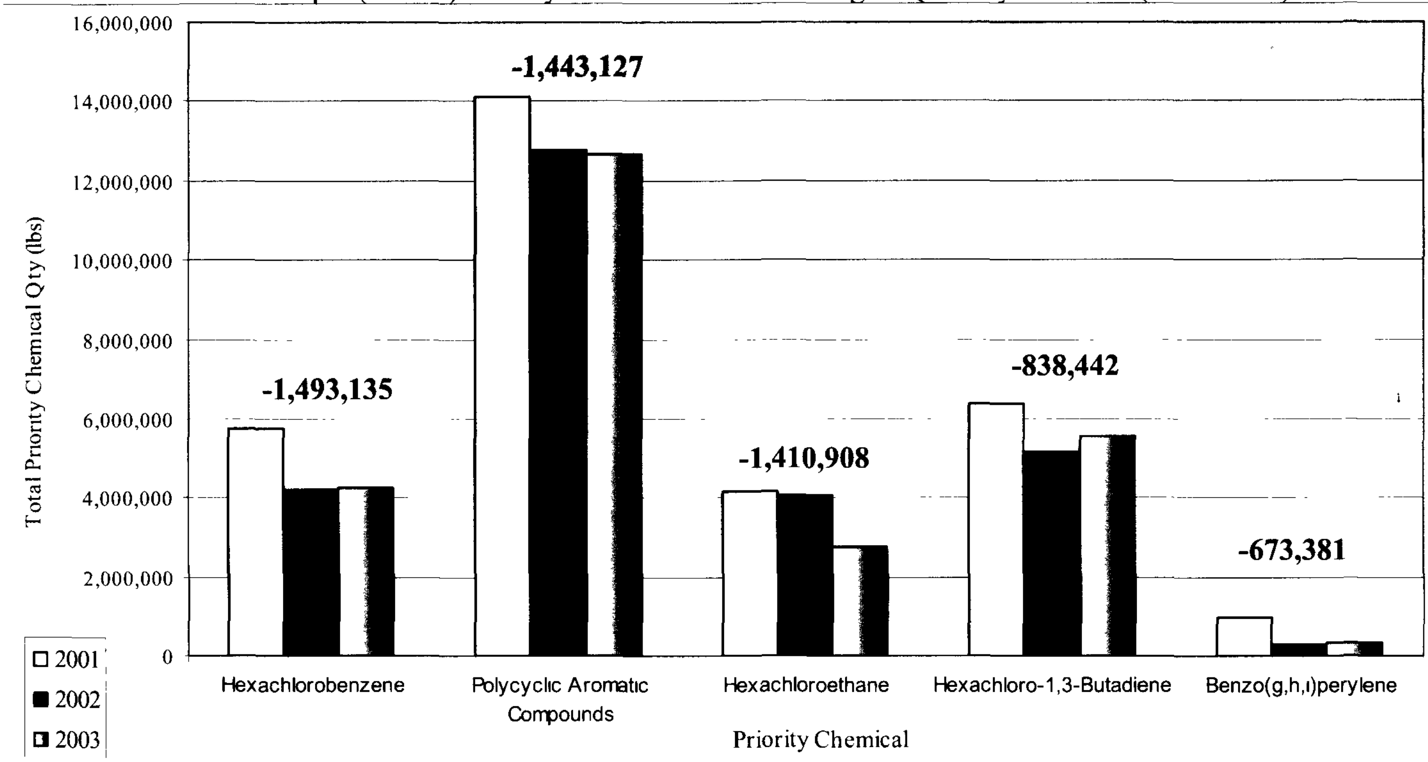
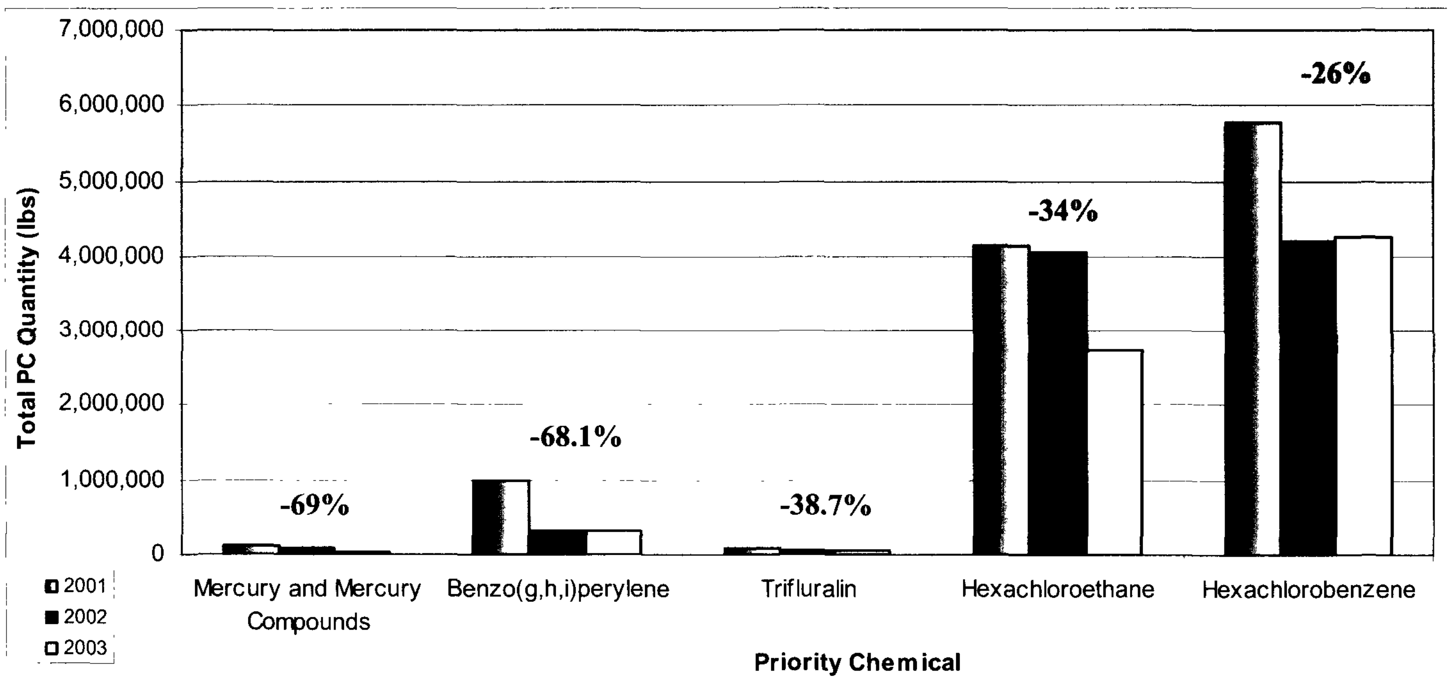


Exhibit 2.5. Top 5 (GPRA) Priority Chemicals with the Largest Percentage Decrease (2001-2003)



Hexachlorobenzene had the largest quantity decrease (Exhibit 2.4) – almost 1.5 million pounds, followed by polycyclic aromatic compounds (PACs) with a decrease of 1.4 million pounds. Mercury had the largest percentage decrease with -69% from 2001 to 2003 (Exhibit 2.5).

Exhibit 2.6. Top 4 (GPRA) Priority Chemicals with the Largest Quantity Increase (2001-2003)

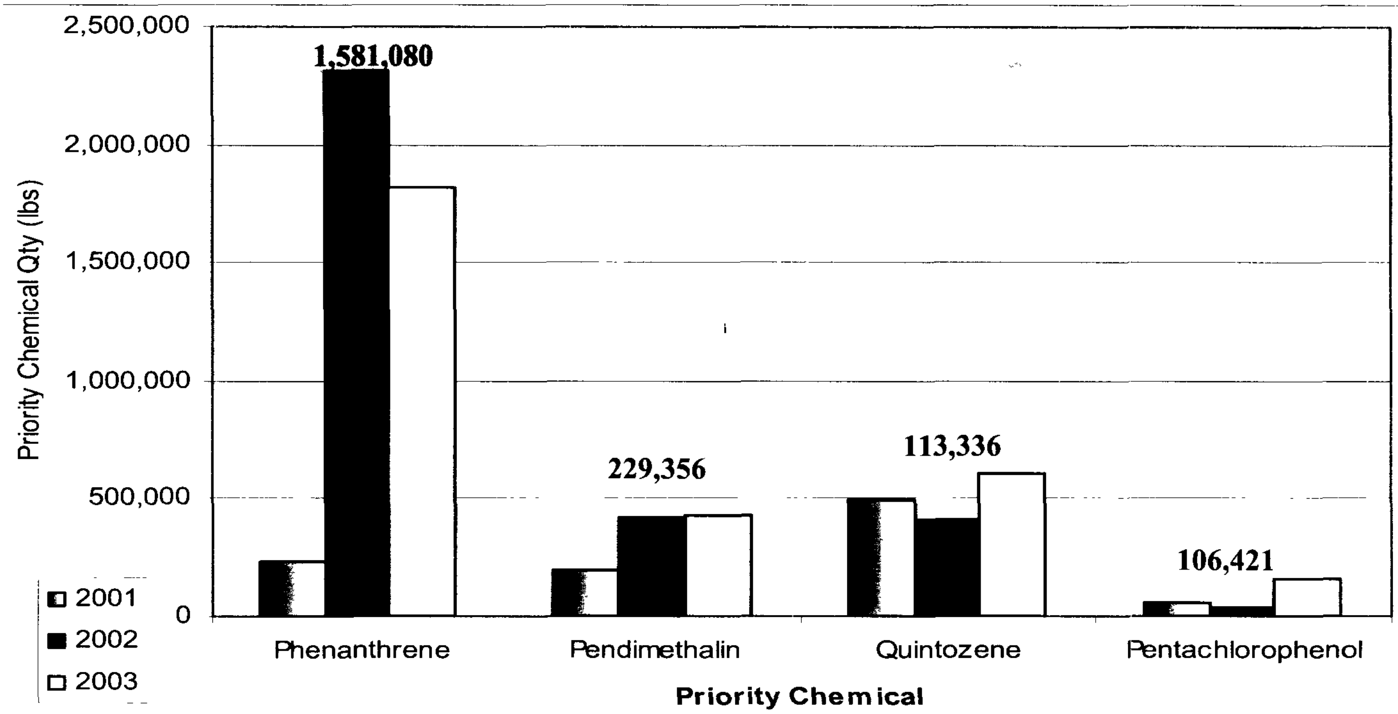
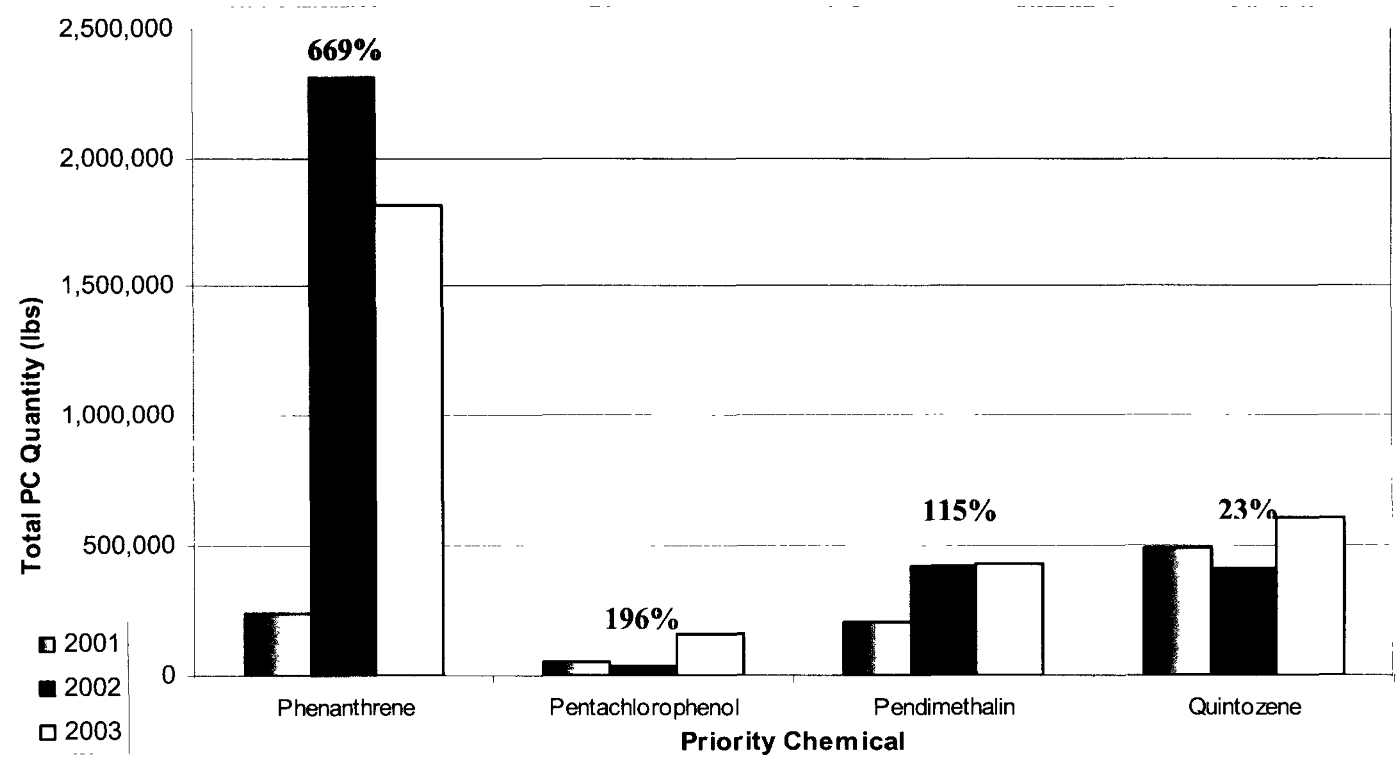


Exhibit 2.7. Top 4 (GPRA) Priority Chemicals with the Largest Percentage Increase (2001-2003)



Phenanthrene had the largest quantity increase (Exhibit 2.6) – almost 1.6 million pounds, followed by pendimethalin with an increase of nearly 230,000 pounds.

Progress by Industry Sector. Five industry sectors, as shown in Exhibit 2.8, accounted for over 50 percent of the total quantity of the PCs. From 2001-2003, three of the industry sectors (Industrial Organic chemicals nec, Secondary Nonferrous metals, and Carbon Black) had a significant increase in quantity of PCs, one industry sector (Alkalies and Chlorine) saw a significant decrease, and the remaining sector's (Blast Furnaces and Steel Mills) quantity was virtually unchanged.

Exhibit 2.8. Industry Sectors that Accounted for 50 Percent of Total Quantity of Priority Chemicals in 2003

SIC CODE	SIC CODE DESCRIPTION	2001	2002	2003	Percent Change in Quantity (2001-2003)	Percent of Total Quantity (2003)
3341	Secondary nonferrous metals	9,720,459	11,993,360	12,933,583	33.1%	16.3%
2869	Industrial organic chemicals, nec	2,161,860	6,768,248	8,466,025	291.6%	10.7%
3312	Blast furnaces and steel mills	7,940,587	7,010,168	7,901,057	-0.5%	10.0%
2812	Alkalies and chlorine	18,975,349	12,511,312	7,456,586	-60.7%	9.4%
2895	Carbon black	3,454,362	3,922,074	4,052,612	17.3%	5.1%

A more detailed discussion of the trends for the PCs, as a group, from 1999 through 2003, is found in Section 3. In Section 4, the trends for each PC are discussed.

The Previous GPRA Goal (1991-2003)

What Progress did OSW make toward the previous GPRA Goal? Between 1991 and 2003, the total quantity of these 17 PCs measured in OSW's previous goal declined by 59.4 percent. Over this period of time, the overall trend has been a steady reduction in the quantity of these PCs, and as of 2001, the 2005 goal of a 50 percent reduction was met. Exhibit 2.9 shows the total quantity of these 17 PCs that were reported to the TRI since 1991, for each year from 1991 through 2003. For a discussion of how these quantities are calculated, refer to Appendix C.

Exhibit 2.9. Quantity of Priority Chemicals for the Previous GPRA Goal (1991-2003)

Reporting Year	Total	Percent Reduction in Total Quantity (compared to 1991 baseline year)
1991	142,045,899	Baseline
1992	141,345,018	-0.5%
1993	139,826,640	-1.6%
1994	98,367,789	-30.7%
1995	100,267,215	-29.4%
1996	75,882,329	-24.3%
1997	87,552,416	-38.4%
1998	74,930,236	-47.2%
1999	72,382,007	-49.0%
2000	82,090,832	-42.2%
2001	68,813,242	-51.6%
2002	66,930,855	-52.9%
2003	57,713,454	-59.4%

Exhibit 2.10 shows the trend for the quantity of the 17 PCs from 1991-2003.

Exhibit 2.10. Trend for Reducing the 17 Priority Chemicals for the Previous GPRA Goal

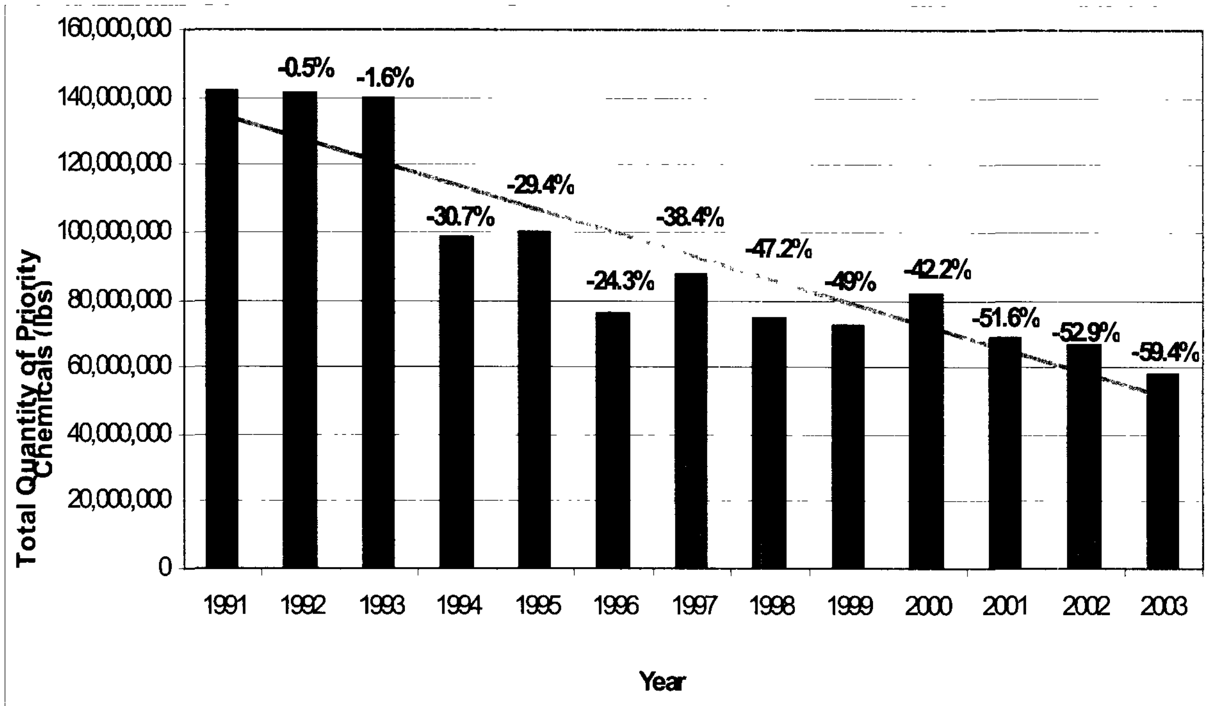


Exhibit 2.11 shows the quantity and percent change in quantity for each of the 17 PCs that were tracked for the previous GPRA goal. Five chemicals, lead/lead compounds, naphthalene, hexachloro-1,3-butadiene, hexachloroethane, and hexachlorobenzene, comprised 90 percent of the total quantity of all 17 PCs with lead and lead compounds, on average, accounting for almost 54 percent of the total quantity.

Exhibit 2. 11. Quantity (lbs) of Priority Chemicals for the Previous GPRA Goal and Percent (%) Change of Priority Chemicals (1991 – 2003)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lead and Lead Compounds	73,601,763	69,249,966	72,176,431	58,845,289	59,646,175	37,043,077	48,019,789	44,111,857	36,505,522	39,762,761	36,602,052	38,177,720	29,471,976	-44,129,787
Naphthalene	26,849,289	36,427,616	29,442,639	13,986,934	15,911,237	19,324,812	12,872,268	14,226,358	13,714,903	14,245,495	9,858,953	10,646,738	9,883,293	-16,965,996
Hexachloro-1,3-Butadiene	11,487,710	7,776,137	5,514,269	4,675,991	7,077,108	6,453,638	8,411,397	4,471,095	8,764,908	11,310,430	6,482,741	5,189,385	5,575,299	-5,912,411
Hexachlorobenzene	5,196,864	3,795,442	4,873,040	3,157,118	3,305,312	2,441,293	1,852,294	1,764,080	5,401,730	5,927,106	5,752,328	4,198,849	4,249,203	-947,661
Cadmium and Cadmium Compounds	2,163,767	1,992,935	4,690,954	3,138,634	2,836,856	2,305,992	8,978,808	3,474,777	1,872,205	2,739,420	2,938,385	2,055,831	3,318,753	1,154,986
Hexachlorophenol	5,269,668	2,694,971	3,142,574	11,812,462	6,303,541	5,733,207	4,253,357	4,892,537	3,625,414	5 711,336	4,149,611	4,057,802	2,734,872	-2,534,796
1,2,4-Trichlorobenzene	1,130,126	2,001,186	5,957,066	1,221,930	1,548,784	906,489	748,218	840,998	1,371,314	1,164,139	2,124,726	1,530,319	1,672,756	542,630
Anthracene	10,820,718	11,626,279	8,056,039	544,851	2,068,065	443,909	323,376	335,021	425,638	508,537	361,470	327,875	397,714	-10,423,004
Quintozene	62,715	3,507	522,668	543,703	759,727	620,725	334,189	355,968	222,854	311,155	216,259	209,092	236,057	173,342
Dibenzofuran	5,068,619	5,073,760	5,060,120	90,056	417,802	43,646	72,188	143,086	143,640	116,010	86,229	297,123	61,284	-5,007,335
Trifluralin	82,759	82,373	36,309	124,842	207,157	200,534	1,539,453	103,803	91,103	84,713	80,975	57,938	44,101	-38,658
Pentachlorophenol	105,898	246,711	191,764	165,723	130,969	299,024	103,053	147,488	172,656	67,021	42,778	32,707	33,431	-72,467
2,4,5-Trichlorophenol	28,000	0	0	0	0	0	0	23,226	26,098	32,443	20,657	17,913	22,857	-5,143
Mercury and Mercury Compounds	176,037	264,370	83,153	51,282	46,555	45,673	41,226	31,670	41,302	110,185	96,029	131,381	11,788	-164,249
Lindana	1,801	1,512	94	668	3,226	1,192	2,800	8,272	2,720	62	49	183	71	-1,730
Methoxyclor	161	253	1	6	0	807	0	0	0	19	0	0	0	-161
Heptachlor	4	108,000	79,519	8,300	4,701	18,311	0	0	0	0	0	0	0	-4
Total	142,045,899	141,345,018	139,826,640	98,367,789	100,267,215	75,882,329	87,552,416	74,930,236	72,382,007	82,090,832	68,813,242	66,930,855	57,713,454	-84,332,445
Percent change in Total Qty (1991-2003)	**Baseline Qty.**	-0.5%	-1.6%	-30.7%	-29.4%	-46.6%	-38.4%	-47.2%	-49.0%	-42.2%	-51.6%	-52.9%	-59.4%	

Section 3 –
Overall Trends Analyses for the Priority Chemicals
(1999-2003)

Introduction

This section provides an overview of the national, EPA Region, State, and industry sector quantities (aggregated) of the 23 Priority Chemicals (PCs), for which data is reported to Toxics Release Inventory (TRI) for the 1999 through 2003 TRI reporting years. We focus on these five most current years of TRI data to facilitate the identification of viable, potential opportunities for reducing or eliminating PCs. The data presented in this section were derived using the 2008 GPRA methodology (see discussion in Appendix C) and focuses on trends for the PCs, as a whole. A discussion of the trends for individual PCs is presented in Section 4.

National Trends for the Priority Chemicals

Exhibits 3.1 and 3.2 show the total quantity of PCs from 1999 through 2003 as well as the number of facilities reporting these chemicals. In 2000 and, again in 2001, both the quantity and number of reporting facilities increased compared to 1999. The increases in 2000 were likely due to TRI reporting thresholds that were lowered for a number of the PCs in 2000 (see Exhibit 3.2) and also the initial reporting of three chemicals (benzo(g,h,i)perylene, dioxin/dioxin-like compounds, and pentachlorobenzene). Most of the increased quantity and number of facilities in 2001 likely can be attributed to the lowered TRI reporting threshold for lead and lead compounds. Since 2001, the total quantity of PCs has decreased and leveled to approximately 79 million pounds.

Exhibit 3.1. Total Quantity and Number of Facilities for the Priority Chemicals (1999-2003)

Reporting Year	1999	2000	2001	2002	2003
Total Quantity of Priority Chemicals (lbs)	77,252,326	99,642,648	84,015,526	79,250,350	79,232,695
Number of TRI Facilities Reporting Priority Chemical Quantity	1,540	2,438	5,560	5,448	5,332

Exhibit 3.2. Total quantity (lbs) and Number of Facilities reporting Priority Chemicals (1999 – 2003)

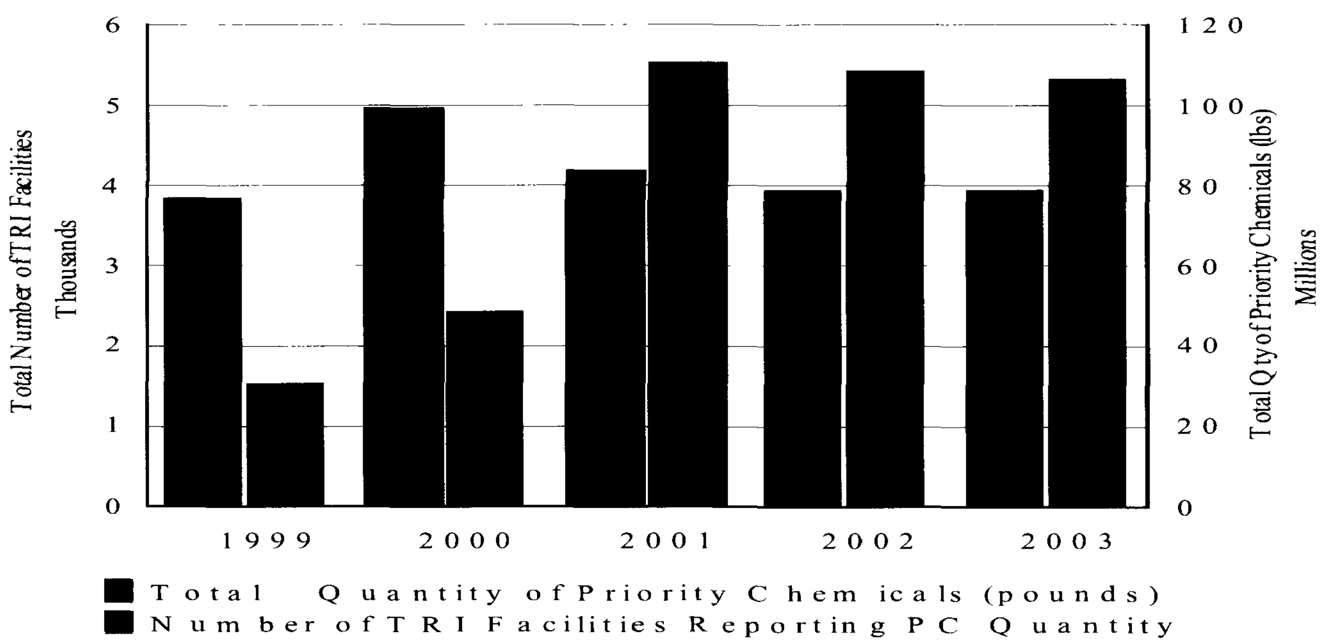


Exhibit 3.3 shows the total quantity of each PC reported in 1999-2003. In 2003, four PCs (lead and lead compounds, polycyclic aromatic compounds, naphthalene, and hexachloro-1,3-butadiene) comprised about 82 percent of the total national PC quantity. Lead and lead compounds consistently have accounted for the majority of the total national PC quantity -- comprise over 46 percent of the total quantity of the PCs in 2003. Nearly 13 million pounds of polycyclic aromatic compounds accounted for approximately 16 percent of the total national quantity of PCs in 2003.

Exhibit 3.3. Priority Chemicals - TRI Reporting Threshold Changes

Chemical Name	**New Reporting Threshold**	**Year Change Became Effective**
Benzo(g,h,i)perylene	10 pounds	2000
Dioxin and dioxin-like compounds category	0.1 grams	2000
Heptachlor	10 pounds	2000
Hexachlorobenzene	10 pounds	2000
Lead and Lead Compounds	100 pounds	2001
Mercury and Mercury Compounds	10 pounds	2000
Methoxychlor	100 pounds	2000
Pendimethalin	100 pounds	2000
Pentachlorobenzene	10 pounds	2000
Polycyclic Aromatic Compounds category	100 pounds	2000
Trifluralin	100 pounds	2000

Between 1999 and 2003, the total quantity of PCs increased by approximately 2.6 percent. Individual chemicals with increases included— polycyclic aromatic compounds, lead and lead compounds, phenanthrene, quintozene, 1,2,4 - trichlorobenzene, and pendimethalin. The quantities of three PCs (pentachlorobenzene, benzo(g,h,i)perylene, and dioxin/dioxin-like compounds), that have been reported to TRI since 2000, also increased. Again, as noted above, the increased quantity of some of the PCs in 2000, as well as lead and lead compounds in 2001, may be due, in part to the lowering of the respective TRI thresholds, likely resulting in additional facilities reporting to TRI and an increase in reported quantities.

Exhibit 3.4 shows the number of facilities that reported each of the PCs from 1999-2003. Please note that in this exhibit the total number of facilities, for any given year, differs from the total number of facilities shown in Exhibit 3.2 because numerous facilities reported more than one PC.

Exhibit 3.4. Total Quantity (lbs) of each Priority Chemical (1999 – 2003)

Chemical Name	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent change (1999-2003)
Lead and Lead Compounds	32,854,376	37,420,838	36,996,580	34,907,262	36,667,276	46.3%	11.6%
Polycyclic Aromatic Compounds	8,354,179	16,569,173	14,115,733	12,771,563	12,672,606	16.0%	51.7%
Naphthalene	13,870,144	14,507,008	10,340,355	11,248,654	10,399,334	13.1%	-25.0%
Hexachloro-1,3-butadiene	8,764,908	11,297,081	6,404,741	5,167,385	5,566,299	7.0%	-36.5%
Hexachlorobenzene	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	5.4%	-20.9%
Hexachloroethane	3,625,369	5,709,981	4,145,249	4,056,497	2,734,341	3.5%	-24.6%
Phenanthrene	483,969	1,017,328	236,212	2,309,275	1,817,292	2.3%	275.5%
1,2,4 - Trichlorobenzene	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271	2.1%	20.6%
Cadmium and Cadmium Compounds	1,103,788	1,488,696	932,493	749,570	817,579	1.0%	-25.9%
Quintozene	227,081	570,013	491,098	412,230	604,434	0.8%	166.2%
Pentachlorobenzene	0	239,852	487,719	311,156	484,733	0.6%	NA
Pendimethalin	219,791	674,131	200,195	421,827	429,551	0.5%	95.4%
Anthracene	453,254	546,297	360,830	345,482	419,068	0.5%	-7.5%
Benzo(g,h,i)perylene	0	2,104,398	988,675	308,362	315,294	0.4%	NA
Pentachlorophenol	212,995	69,790	54,339	36,856	160,760	0.2%	-24.5%
Dibenzofuran	118,826	92,802	66,720	288,912	75,605	0.1%	-36.4%
Trifluralin	87,820	88,485	93,489	63,555	57,290	0.1%	-34.8%
Mercury and Mercury Compounds	56,701	89,760	130,828	97,130	40,544	0.1%	-28.5%
2,4,5 - Trichlorophenol	26,098	32,443	20,657	17,913	22,857	0.0%	-12.4%
Dioxin and dioxin-like compounds	0	641	708	551	709	0.0%	NA
Lindane	2,722	64	46	183	71	0.0%	-97.4%
Heptachlor	0	0	0	79	54	0.0%	NA
Methoxychlor	0	17	1	1	0	0.0%	NA
TOTAL	**77,252,326**	**99,642,648**	**84,015,526**	**79,250,350**	**79,232,695**	**100.0%**	**2.6%**

Note: For some chemical quantities, a zero (0) was inserted for one or more of the following reasons: 1) Prior to 2000, benzo(g,h,i)perylene, dioxin and dioxin-like compounds, and Pentachlorobenzene were not reportable TRI quantities, 2) no quantity was reported to TRI, 3) based on our rounding-off process, quantities reported to TRI as <0.5 lbs are shown as zero quantity.

In 1999-2003, the PC quantity decreased for naphthalene, hexachoro-1,3-butadiene, hexachlorobenzene, and hexachloroethane. Exhibit 3.5 shows, for each of the PCs in 2003, the number of facilities that reported the PC within various quantity ranges. For most of the PCs, only a relatively small number of facilities accounted for the majority of the total quantity reported. For example, of the 4,572 facilities that reported a PC quantity of lead and lead compounds in 2003, only 5 facilities accounted for almost 30 percent of the total quantity and 71 facilities accounted for about 75 percent of the total quantity.

Exhibit 3.5. Number of Facilities That Reported Each Priority Chemical, by Quantity Range (2003)

Quantity Reported	Number of Facilities Reporting this quantity	Percent of Total Quantity for this Priority Chemical
1,2,4 - Trichlorobenzene (1,674,272 pounds)		
up to 10 pounds	2	less than 0.1%
Between 11 - 100 pounds	1	less than 0.1%
Between 101 -1,000 pounds	3	0.1%
Between 1,001 - 10,000 pounds	5	1.4%
Between 10,001 - 100,000 pounds	5	14.8%
Between 100,001 - 1 million pounds	1	6.1%
> 1 million pounds	1	77.7%
2,4,5 - Trichlorophenol (22,857 pounds)		
up to 10 pounds	0	0%
between 11 - 100 pounds	0	0%
between 101 -1,000 pounds	0	0%
between 1,001 - 10,000 pounds	0	0%
between 10,001 - 100,000 pounds	1	100.00%
between 100,001 - 1 million pounds	0	0%
> 1 million pounds	0	0%
Anthracene (419,068 pounds)		
up to 10 pounds	7	less than 0.1%
between 11 - 100 pounds	5	0.1%
between 101 -1,000 pounds	13	1.0%
between 1,001 - 10,000 pounds	7	8.9%
between 10,001 - 100,000 pounds	4	25.8%
between 100,001 - 1 million pounds	1	64.2%
> 1 million pounds	0	0.0%
Benzo(g,h,i)perylene (315,294 pounds)		
up to 10 pounds	218	0.1%
between 11 - 100 pounds	90	1.2%
between 101 -1,000 pounds	30	3.0%
between 1,001 - 10,000 pounds	17	17.8%
between 10,001 - 100,000 pounds	7	35.1%
between 100,001 - 1 million pounds	1	42.8%
> 1 million pounds	0	0.0%
Cadmium and Cadmium Compounds (817,579 pounds)		
up to 10 pounds	14	less than 0.1%
between 11 - 100 pounds	11	0.1%
between 101 -1,000 pounds	16	0.9%
between 1,001 - 10,000 pounds	15	9.1%
between 10,001 - 100,000 pounds	10	44.4%
between 100,001 - 1 million pounds	1	45.6%
> 1 million pounds	0	0.0%
Dibenzofuran (75,605 pounds)		
up to 10 pounds	1	less than 0.1%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	5	2.1%
between 1,001 - 10,000 pounds	4	13.9%

between 10,001 - 100,000 pounds	2	84.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%
Dioxin and dioxin-like compounds (709 pounds)		
up to 10 pounds	360	12.0%
between 11 - 100 pounds	7	43.5%
between 101 -1,000 pounds	1	44.5%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%
Heptachlor (54 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	100.00%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%
Hexachloro-1,3-butadiene (5,566,299 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	1	0.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	1	1.1%
between 100,001 - 1 million pounds	1	7.6%
> 1 million pounds	2	91.2%
Hexachlorobenzene (4,272,727 pounds)		
up to 10 pounds	10	less than 0.1%
between 11 - 100 pounds	9	less than 0.1%
between 101 -1,000 pounds	4	less than 0.1%
between 1,001 - 10,000 pounds	9	0.8%
between 10,001 - 100,000 pounds	2	0.9%
between 100,001 - 1 million pounds	3	38.1%
> 1 million pounds	1	60.2%
Hexachloroethane (2,734,341 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	1	less than 0.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	4	6.3%
between 100,001 - 1 million pounds	4	33.7%
> 1 million pounds	1	60.0%
Lead and Lead Compounds (36,667,276 pounds)		
up to 10 pounds	1,573	less than 0.1%
between 11 - 100 pounds	1,041	0.1%
between 101 -1,000 pounds	1,085	1.1%
between 1,001 - 10,000 pounds	594	5.4%
between 10,001 - 100,000 pounds	208	18.3%

between 100,001 - 1 million pounds	66	45.2%
> 1 million pounds	5	29.9%
Lindane (71 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	100.0%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%
Mercury and Mercury Compounds (40,544 pounds)		
up to 10 pounds	320	2.1%
between 11 - 100 pounds	160	13.0%
between 101 -1,000 pounds	50	35.7%
between 1,001 - 10,000 pounds	10	49.1%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%
Naphthalene (10,399,334 pounds)		
up to 10 pounds	40	less than 0.1%
between 11 - 100 pounds	51	less than 0.1%
between 101 -1,000 pounds	103	0.4%
between 1,001 - 10,000 pounds	127	4.8%
between 10,001 - 100,000 pounds	98	32.2%
between 100,001 - 1 million pounds	27	62.5%
> 1 million pounds	0	0.0%
Pendimethalin (429,551 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	3	2.3%
between 10,001 - 100,000 pounds	4	32.5%
between 100,001 - 1 million pounds	1	65.2%
> 1 million pounds	0	0.0%
Pentachlorobenzene (484,733 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	1	0.7%
between 10,001 - 100,000 pounds	1	6.9%
between 100,001 - 1 million pounds	2	92.4%
> 1 million pounds	0	0.0%
Pentachlorophenol (160,760 pounds)		
up to 10 pounds	1	less than 0.1%
between 11 - 100 pounds	4	0.1%
between 101 -1,000 pounds	6	2.1%
between 1,001 - 10,000 pounds	7	14.8%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	1	83.0%

> 1 million pounds	0	0.0%
Phenanthrene (1,817,292 pounds)		
up to 10 pounds	7	less than 0.1%
between 11 - 100 pounds	8	less than 0.1%
between 101 -1,000 pounds	14	0.5%
between 1,001 - 10,000 pounds	17	3.6%
between 10,001 - 100,000 pounds	3	4.1%
between 100,001 - 1 million pounds	3	91.8%
> 1 million pounds	0	0.0%
Polycyclic Aromatic Compounds (12,672,606 pounds)		
up to 10 pounds	215	less than 0.1%
between 11 - 100 pounds	167	0.1%
between 101 -1,000 pounds	137	0.4%
between 1,001 - 10,000 pounds	84	2.3%
between 10,001 - 100,000 pounds	37	10.2%
between 100,001 - 1 million pounds	14	33.7%
> 1 million pounds	6	53.3%
Quintozene (604,434 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	1	0.1%
between 1,001 - 10,000 pounds	2	1.2%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	2	98.7%
> 1 million pounds	0	0.0%
Trifluralin (57,290 pounds)		
up to 10 pounds	0	0.0%
between 11 - 100 pounds	2	0.2%
between 101 -1,000 pounds	4	2.8%
between 1,001 - 10,000 pounds	6	41.3%
between 10,001 - 100,000 pounds	1	55.7%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

As previously discussed in Section 1, the total PC quantity is comprised of those quantities of the PCs that are managed onsite/offsite via disposal, treatment, and energy recovery. Exhibit 3.6 shows the national trends regarding the methods used to manage the PCs in 1999-2003. Disposal quantities, especially onsite disposal, have increased. Overall, the total energy recovery quantity has remained somewhat constant; with an increase of about 1.1 million pounds going to onsite energy recovery along with a corresponding decrease of the offsite energy recovery quantity. There has been a decrease of approximately 3.5 million pounds in the total treatment quantity – mostly offsite treatment. Recycling, both onsite and offsite, has decreased by about 25 percent, compared to the 1999 quantities. Nonetheless, it is apparent that a considerable percentage of the PCs has been and continues to be recycled. EPA hopes to increase recycling of the PCs, to the extent feasible, rather than have them be disposed, treated, or sent to energy recovery.

Exhibit 3.6. Trends in Management Methods for Priority Chemicals (1999-2003)

Management Method	Reporting Year				
	1999	2000	2001	2002	2003
Onsite Disposal	4,129,059	4,107,453	7,619,488	9,124,600	9,071,816
Offsite Disposal	29,937,003	33,226,387	30,436,117	27,961,944	30,589,106
Total Disposal	**34,066,063**	**37,333,840**	**38,055,605**	**37,086,543**	**39,660,922**
Onsite Energy Recovery	8,593,952	14,319,579	13,980,311	10,497,403	9,691,116
Offsite Energy Recovery	3,546,248	6,531,633	2,775,823	5,468,495	2,402,434
Total Energy Recovery	**12,140,200**	**20,851,212**	**16,756,134**	**15,965,898**	**12,093,550**
Onsite Treatment	26,395,997	35,655,905	26,727,256	24,761,134	26,028,974
Offsite Treatment	4,650,067	5,801,691	2,476,531	1,436,775	1,449,249
Total Treatment	**31,046,064**	**41,457,597**	**29,203,787**	**26,197,909**	**27,478,223**
Onsite Recycling	572,683,510	534,083,436	424,174,241	425,762,445	427,154,153
Offsite Recycling	276,392,151	255,700,460	249,330,474	281,847,907	213,044,100
Total Recycling	**849,075,661**	**789,783,897**	**673,504,715**	**707,610,352**	**640,198,253**

Exhibit 3.7 shows the trend (1999-2003) for recycling of the ten PCs with the largest quantities recycled in 2003. In terms of total quantity, lead and lead compounds dominate, with almost 615 million pounds recycled in 2003. However, since 1999, there has been a 25 percent drop in the recycling of lead and lead compounds. Aside from lead and lead compounds, there also have been significant decreases in recycling of PACs, anthracene, and mercury and mercury compounds. Since 1999, recycling increased for 6 of these PCs: naphthalene, cadmium and cadmium compounds, phenanthrene, hexachlorobenzene, hexachloroethane, and hexachoro-1,3-butadiene.

Exhibit 3.7. Recycling of Top Ten Priority Chemicals (1999-2003)

Chemical	1999	2000	2001	2002	2003	Percent Change 1999-2003	Percent Change 2001-2003
Lead and Lead Compounds	826,400,495	770,094,614	661,313,970	672,394,739	614,615,298	-25.6%	-7.1%
Naphthalene	13,437,824	12,231,088	6,310,310	25,677,936	18,495,107	37.6%	193.1%
Hexachloroethane	2,094,072	1,027,963	850,000	3,530,419	2,336,505	11.6%	174.9%
Polycyclic Aromatic Compounds	3,500,044	2,898,037	2,647,713	2,332,349	1,617,621	-53.8%	-38.9%
Cadmium and Cadmium Compounds	522,513	748,270	469,405	420,139	888,819	70.1%	89.4%
Phenanthrene	371,747	423,479	460,005	982,860	769,067	106.9%	67.2%
Mercury and Mercury Compounds	846,239	450,310	442,954	455,987	491,839	-41.9%	11.0%
Hexachlorobenzene	32,854	17,139	6,310	740,144	399,607	1116.3%	6232.9%
Hexachloro-1,3-butadiene	280,000	250,000	220,000	340,010	300,000	7.1%	36.4%
Anthracene	247,344	222,786	373,799	372,813	134,396	-45.7%	-64.0%

Regional Trends for the Priority Chemicals

Exhibit 3.8 shows the PC quantities by EPA Region, from 1999 to 2003. Facilities in 4 of the Regions (Regions 2, 3, 5, and 10) had a decrease of more than one million pounds in PC quantities. Region 7 facilities had an increase of over 4.6 million pounds. In 2003, approximately over 80 percent of the total quantity of PCs was reported by facilities in 4 EPA Regions: Region 6 (39.3%), Region 4 (16.8%), Region 5 (16.3%), and Region 7 (9.9%).

Exhibit 3.8. Priority Chemical Quantities (lbs) by EPA Region (1999 – 2003)

EPA Region	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent Change (1999-2003)
1	525,016	684,861	1,288,898	986,650	1,009,289	1.3%	92.2%
2	3,708,832	3,778,794	2,514,404	1,774,434	1,657,514	2.1%	-55.3%
3	6,378,497	6,870,818	8,231,857	4,673,141	5,362,340	6.8%	-15.9%
4	12,199,897	15,682,639	13,179,721	10,980,492	13,321,440	16.8%	9.2%
5	14,039,745	12,941,398	11,262,484	14,347,790	12,896,587	16.3%	-8.1%
6	31,086,511	44,117,121	34,425,819	33,794,476	31,168,159	39.3%	0.3%
7	3,214,109	6,865,892	6,138,039	6,806,476	7,863,422	9.9%	144.7%
8	1,137,281	1,610,228	1,360,725	1,155,555	1,483,026	1.9%	30.4%
9	1,748,944	3,251,743	2,969,640	2,855,807	2,627,186	3.3%	50.2%
10	3,213,494	3,839,153	2,643,938	1,875,528	1,843,732	2.3%	-42.6%
Total	77,252,326	99,642,648	84,015,526	79,250,350	79,232,695	100.0%	2.6%

Exhibit 3.9. Percentage of 2003 Priority Chemical Quantity Generated by Region

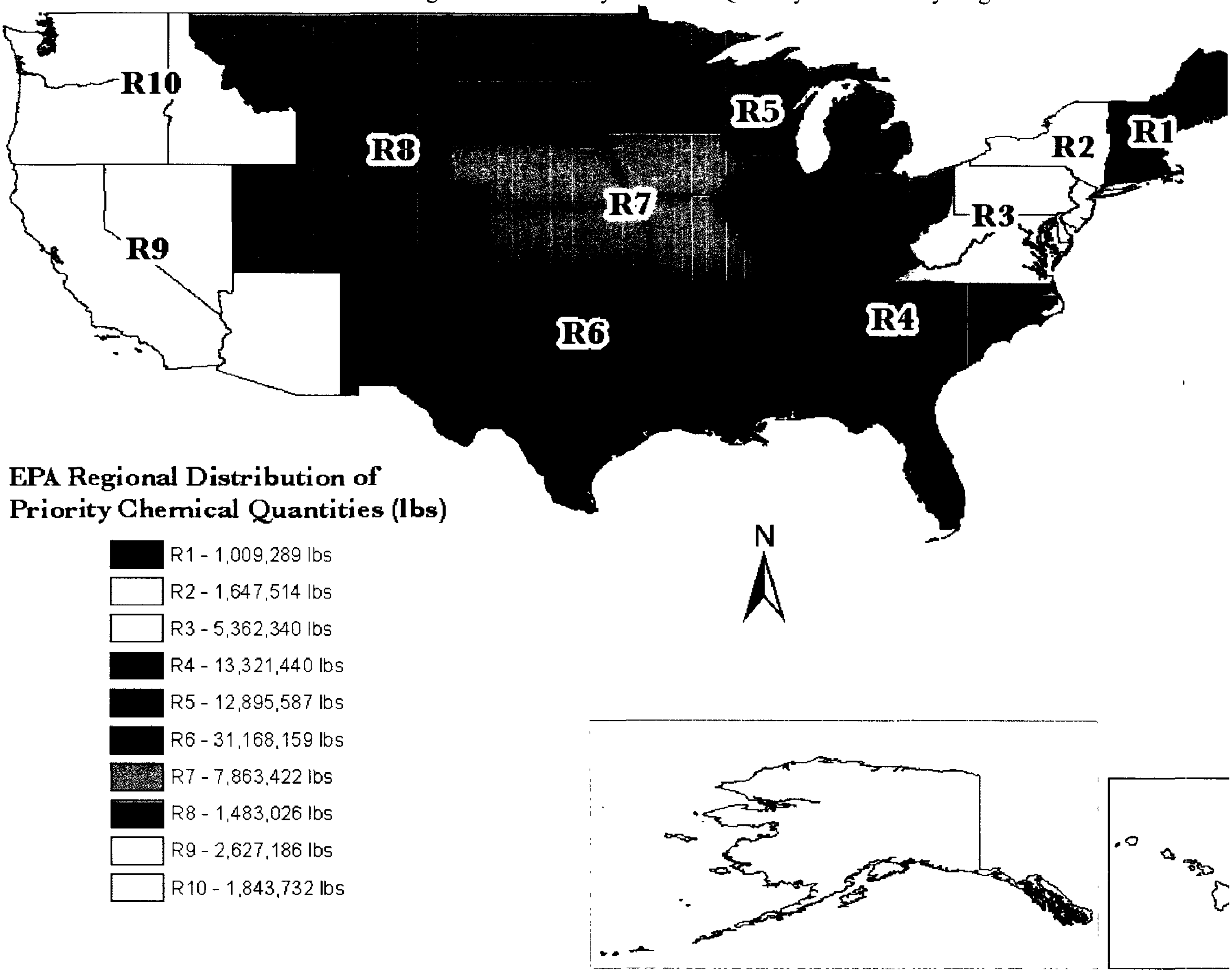


Exhibit 3.10. 2003 Priority Chemical Quantity Generated by Region

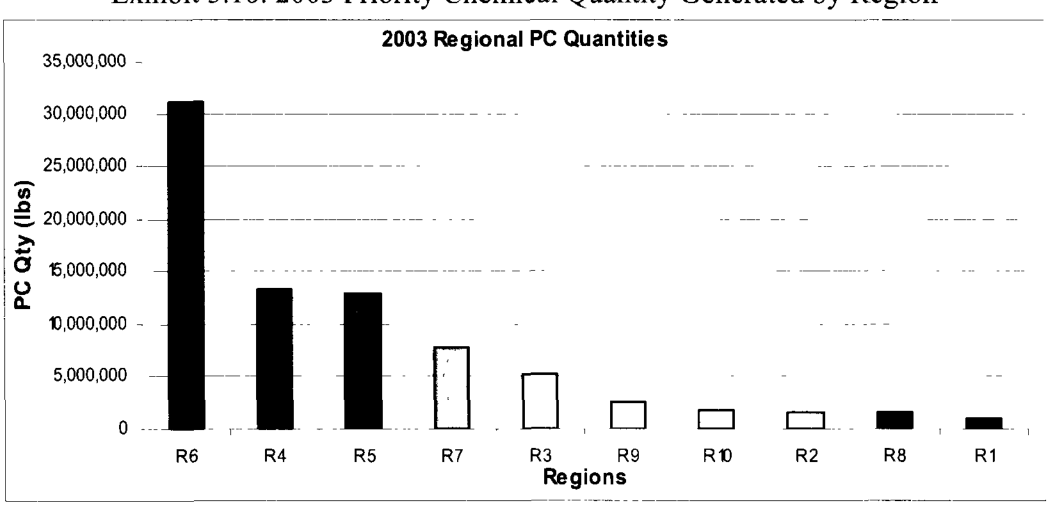


Exhibit 3.11 shows the number of facilities that reported the PCs in each Region from 1999-2003. As noted in the previous discussion of national trends, the increased number of facilities reporting the PCs in 2000 likely was due to lowered TRI reporting thresholds for a number of the PCs that became effective in 2000 (see Exhibit 3.3), including the initial reporting of three chemicals (benzo(g,h,i)perylene, dioxin/dioxin-like compounds, and pentachlorobenzene). The increase in 2001 likely can be attributed to the lowered TRI reporting threshold for lead and lead compounds. Since 2001, the number of facilities reporting the PCs has leveled off in each of the Regions.

Exhibit 3.11. Number of Facilities Reporting Priority Chemicals, by EPA Region (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent of Total Facilities in 2003
1	86	162	397	396	386	7.2%
2	99	170	343	303	287	5.4%
3	179	260	563	533	508	9.5%
4	293	481	1,037	1,035	1,022	19.2%
5	397	541	1,457	1,454	1,406	26.4%
6	221	378	631	615	620	11.6%
7	92	149	324	322	340	6.4%
8	43	64	132	131	135	2.5%
9	89	142	451	434	403	7.6%
10	41	91	225	225	225	4.2%
Total	1,540	2,438	5,560	5,448	5,332	100.0%

A comparison of the methods used to manage the PCs in the EPA Regions, in 2003 compared to 1999, is shown in Exhibit 3.12. Some highlights from this exhibit include:

Disposal

- Decreased in 4 Regions: Region 2 (-469,000 pounds, -32%), Region 3 (-1.5 million pounds, -29%), Region 5 (- 1.2 million pounds, -12%), and Region 10 (-1.4 million pounds, -46%)
- Increased in 6 Regions, including: Region 4 (+ 2.5 million pounds, +47%), Region 6 (+1.8 million pounds, +55%), Region 7 (+ 4.6 million pounds, +167%), Region 9 (+940,000 pounds, +84%)

Treatment

- Decreased in 7 Regions, including: Region 1 (-127,000 pounds, -87%), Region 2 (-1.8 million pounds, -83%), Region 6 (-4.2 million pounds, -18%)
- Increased in 3 Regions, including: Region 4 (+1.8 million pounds, +91%), Region 5 (+1.1 million pounds, +70%)

Energy Recovery

- Decreased in 3 Regions, including: Region 4 (-3.2 million pounds, -64%), Region 5 (-967,000 pounds, - 49%)
- Increased in 7 Regions, including: Region 1 (+608,000 pounds, +2,170%), Region 2 (+183,000 pounds, +148%), Region 3 (+596,000 pounds, +202%), Region 6 (+2.5 million pounds, +59%)

Recycling

- Decreased in 8 Regions, including: Region 3 (-24.7 million pounds, -34%), Region 5 (-55 million pounds, -18%), Region 6 (-108 million pounds, -63%), Region 7 (-24 million pounds, -19%)
- Increased in 2 Regions: Region 4 (+6.6 million pounds, +6%), Region 10 (2.2 million pounds, + 38%)
- Most of the decreased recycling quantity was for Lead and Lead Compounds.

Exhibit 3.12. Management of the Priority Chemicals by EPA Region (1999 and 2003)

EPA Region	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Total Quantity of Priority Chemicals	Onsite Recycling	Offsite Recycling	Total Recycling
1999 (Pounds)										
1	12,255	338,888	25,289	2,712	14,645	131,227	525,016	66,930	1,955,675	2,022,605
2	10,200	1,445,507	6,200	116,909	285,865	1,844,150	3,708,832	6,873,930	13,822,937	20,696,867
3	42,095	5,232,557	191,601	103,782	392,805	415,657	6,378,497	55,955,433	16,336,485	72,291,918
4	1,743,861	3,486,120	4,782,659	171,397	1,461,992	553,868	12,199,897	39,214,218	69,317,021	108,531,239
5	1,056,572	9,535,462	792,278	1,163,053	821,972	670,408	14,039,745	264,647,506	50,005,397	314,652,90
6	593,394	2,707,917	2,598,786	1,664,814	22,732,854	788,747	31,086,511	148,074,276	22,553,087	170,627,36
7	98,801	2,653,376	50,023	31,299	216,745	163,866	3,214,109	55,753,375	67,189,684	122,943,059
8	5,065	1,047,556	2,338	655	78,622	3,045	1,137,281	103,992	3,565,436	3,669,42
9	26,601	1,094,103	126,146	290,120	138,344	73,630	1,748,944	872,164	27,112,613	27,984,777
10	540,215	2,395,517	18,632	1,508	252,154	5,468	3,213,494	1,121,686	4,533,816	5,655,502
Total	4,129,059	29,937,003	8,593,952	3,546,248	26,395,997	4,650,067	77,252,326	572,683,510	276,392,151	849,075,661
2003 (Pounds)										
1	16,919	337,895	633,042	2,605	15,721	3,106	1,009,289	48,913	1,714,346	1,763,25
2	112,158	874,417	45,683	260,166	333,158	31,932	1,657,514	4,803,694	13,183,436	17,987,130
3	203,797	3,532,651	764,634	126,414	502,214	232,630	5,362,340	34,950,549	12,650,684	47,601,234
4	3,850,064	3,832,890	1,680,067	116,538	3,713,230	128,650	13,321,440	50,225,878	64,892,242	115,118,120
5	619,461	8,744,814	477,181	511,577	2,403,869	139,684	12,896,587	227,143,265	32,589,468	259,732,732
6	2,027,386	3,094,895	5,654,471	1,114,745	18,495,127	781,536	31,168,159	33,388,519	30,120,772	63,509,291
7	397,881	6,961,728	62,273	13,231	329,829	98,480	7,863,422	57,825,322	41,285,096	99,110,418
8	405,007	1,006,457	59,937	2,873	4,159	4,593	1,483,026	75,800	3,345,386	3,421,18
9	496,044	1,564,948	242,654	242,808	62,319	18,414	2,627,186	15,233,419	8,895,307	24,128,72
10	943,098	638,410	71,174	11,477	169,348	10,225	1,843,732	3,458,794	4,367,363	7,826,158
Total	9,071,816	30,589,106	9,691,116	2,402,434	26,028,974	1,449,249	79,232,695	427,154,153	213,044,100	640,198,25

State/Territory Trends for the Priority Chemicals

Exhibit 3.13 presents the PC quantities reported by facilities in the States/Territories from 1999 to 2003. Facilities in 4 states accounted for approximately 50 percent of the PCs in 2003 -- Louisiana (21.1%), Texas (14.3%), Indiana (7.9%), and Missouri (6.6%).

Exhibit 3.13. Priority Chemical Quantity (pounds) by State (1999-2003)

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of *Total* Quantity in 2003
AK	0	2,494	25,452	30,306	22,748	22,748	NA	0.0%
AL	2,709,725	2,123,769	2,556,493	4,034,609	3,555,622	845,897	31.2%	4.5%
AR	2,646,546	3,804,040	3,173,953	2,098,513	2,090,351	-556,195	-21.0%	2.6%
AS	0	134	129	0	0	0	NA	0.0%
AZ	44,216	11,185	94,717	62,832	66,113	21,897	49.5%	0.1%
CA	1,687,425	3,230,756	2,719,567	2,478,129	2,222,565	535,140	31.7%	2.8%
CO	62,392	65,515	98,394	96,706	183,709	121,317	194.4%	0.2%
CT	100,509	164,729	143,142	88,411	103,185	2,676	2.7%	0.1%
DC	0	0	960	756	290	290	NA	0.0%
DE	102,582	100,882	10,184	6,672	14,546	-88,036	-85.8%	0.0%
FL	455,709	342,908	621,730	598,019	633,838	178,129	39.1%	0.8%
GA	1,550,453	1,368,547	661,641	857,489	725,966	-824,487	-53.2%	0.9%
GU	28	296	5,447	16	19	-9	-32.8%	0.0%
HI	1,775	1,380	122,219	85,114	98,317	96,542	5439.0%	0.1%
IA	1,106,191	1,156,323	926,531	1,037,108	1,094,882	-11,309	-1.0%	1.4%
ID	641,623	525,956	479,361	339,713	268,595	-373,028	-58.1%	0.3%
IL	2,638,276	2,728,966	1,927,188	1,839,386	1,825,428	-812,849	-30.8%	2.3%
IN	4,479,811	4,224,006	3,774,765	5,654,748	6,241,772	1,761,961	39.3%	7.9%
KS	199,746	84,455	129,761	111,038	110,247	-89,499	-44.8%	0.1%
KY	938,040	1,211,831	1,325,567	1,362,144	3,505,603	2,567,563	273.7%	4.4%
LA	11,789,287	20,090,538	16,143,542	13,467,405	16,714,766	4,925,479	41.8%	21.1%
MA	272,654	331,813	225,129	144,528	142,752	-129,902	-47.6%	0.2%
MD	82,627	366,133	747,715	309,218	148,832	66,205	80.1%	0.2%
ME	8,099	3,339	817,742	609,821	595,361	587,262	7251.0%	0.8%
MI	796,738	468,867	817,845	604,782	788,319	-8,419	-1.1%	1.0%
MN	434,490	399,771	500,892	487,941	546,928	112,438	25.9%	0.7%
MO	1,533,932	3,169,384	3,814,598	4,346,745	5,226,068	3,692,136	240.7%	6.6%
MP	0	0	2	2	2	2	NA	0.0%
MS	458,158	437,236	524,756	345,610	479,205	21,047	4.6%	0.6%
MT	10,274	12,388	6,390	9,250	10,898	624	6.1%	0.0%
NC	258,817	736,519	1,036,159	952,032	1,211,752	952,935	368.2%	1.5%
ND	7,081	3,250	5,743	7,323	9,145	2,064	29.1%	0.0%
NE	374,240	2,455,729	1,267,149	1,311,585	1,432,225	1,057,985	282.7%	1.8%
NH	41,374	97,027	61,468	111,803	127,448	86,074	208.0%	0.2%
NJ	2,708,337	2,940,106	1,682,357	967,570	914,914	-1,793,423	-66.2%	1.2%
NM	18,115	34,001	79,277	159,094	75,102	56,987	314.6%	0.1%
NV	15,500	7,992	27,560	229,713	240,171	224,671	1449.5%	0.3%
NY	993,392	803,539	773,829	748,464	687,379	-306,013	-30.8%	0.9%
OH	5,342,187	4,783,714	3,793,766	5,281,784	2,884,695	-2,457,492	-46.0%	3.6%

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity in 2003
OK	450,564	602,418	704,747	1,939,780	978,246	527,682	117.1%	1.2%
OR	993,427	954,723	818,916	648,238	618,896	-374,531	-37.7%	0.8%
PA	5,241,034	5,142,503	4,363,784	2,952,758	3,591,425	-1,649,609	-31.5%	4.5%
PR	6,679	34,689	57,317	57,793	52,708	46,029	689.2%	0.1%
RI	23,505	49,576	18,322	15,692	30,252	6,747	28.7%	0.0%
SC	1,028,916	1,905,751	1,668,565	1,427,095	1,326,311	297,395	28.9%	1.7%
SD	2,065	1,667	3,954	3,911	2,605	540	26.2%	0.0%
TN	4,800,079	7,556,079	4,784,809	1,403,495	1,883,144	-2,916,935	-60.8%	2.4%
TX	16,181,999	19,586,124	14,324,300	16,129,685	11,309,694	-4,872,305	-30.1%	14.3%
UT	751,701	1,006,014	888,591	928,198	1,183,672	431,971	57.5%	1.5%
VA	564,512	568,551	951,728	744,961	692,333	127,821	22.6%	0.9%
VI	424	461	902	608	2,512	2,088	492.5%	0.0%
VT	78,875	38,377	23,095	16,395	10,291	-68,584	-87.0%	0.0%
WA	1,578,444	2,355,980	1,320,209	857,272	933,493	-644,951	-40.9%	1.2%
WI	348,243	336,074	448,028	479,149	609,445	261,202	75.0%	0.8%
WV	387,742	692,750	2,157,486	658,777	914,914	527,172	136.0%	1.2%
WY	303,768	521,394	357,653	110,168	92,996	-210,772	-69.4%	0.1%

Facilities in 20 of the States/Territories reported a decreased quantity of PCs in 2003, compared to 1999. A decrease of over 1 million pounds was reported in 5 of these states: Texas (-4.9 million pounds, -30%), Tennessee (- 2.9 million pounds, -61%), Ohio (-2.5 million pounds, - 46%), New Jersey (-1.8 million pounds, - 66%), and Pennsylvania (- 1.6 million pounds, - 32%) (Exhibit 3.14). In the thirty-five States/Territories where facilities reported an increased quantity of PCs in 2003, compared to 1999, facilities in 5 of the states reported an increase of over 1 million pounds of PCs: Louisiana (+4.9 million pounds, +42%), Missouri (+ 3.7 million pounds, +241%), Kentucky (+2,6 million pounds, + 274%), Indiana (+1.8 million pounds, +39%), and Nebraska (+1.1 million pounds, + 283%) (Exhibits 3.15).

Exhibit 3.14. Significant Decreases in Priority Chemical Quantities (lbs)

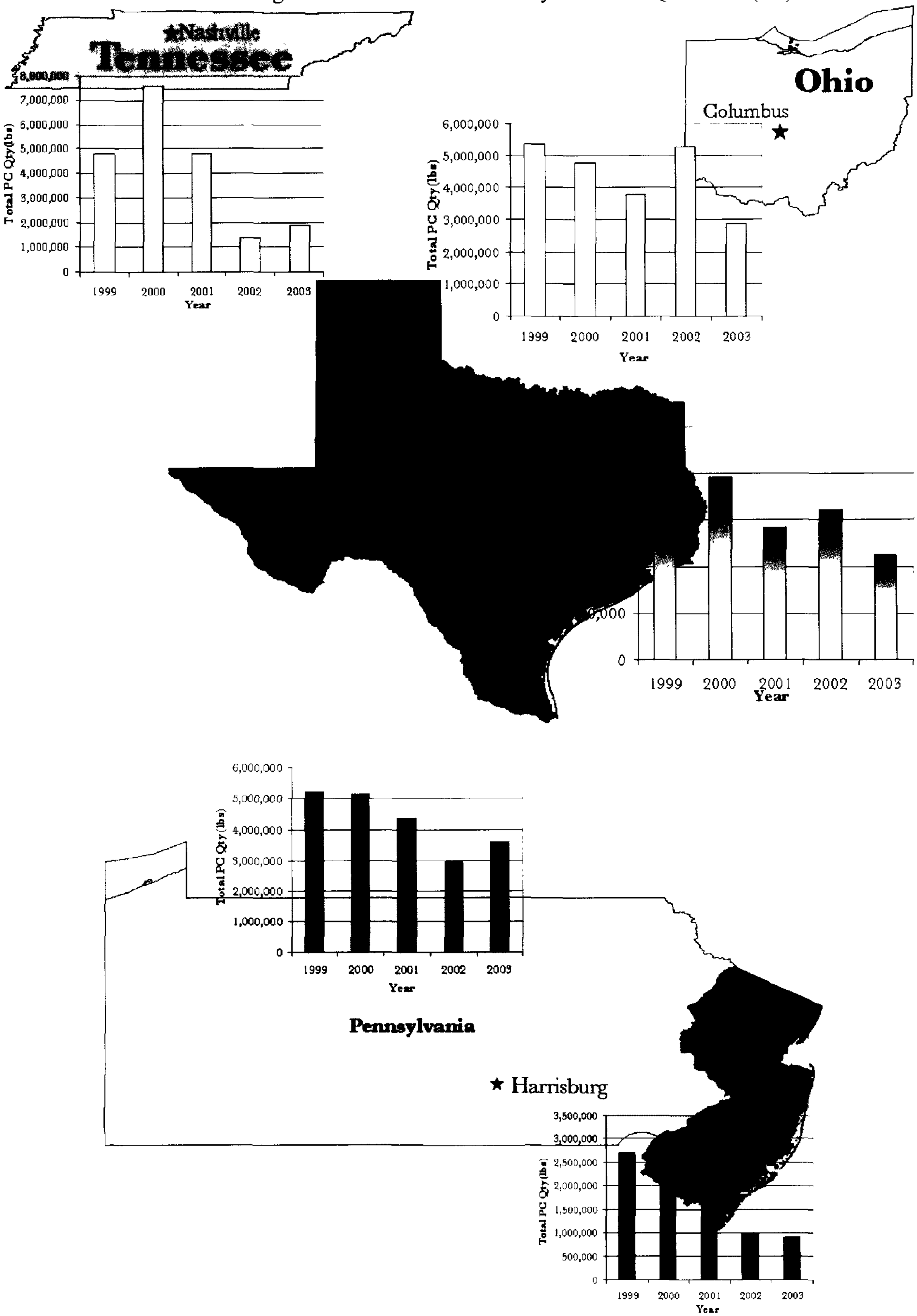
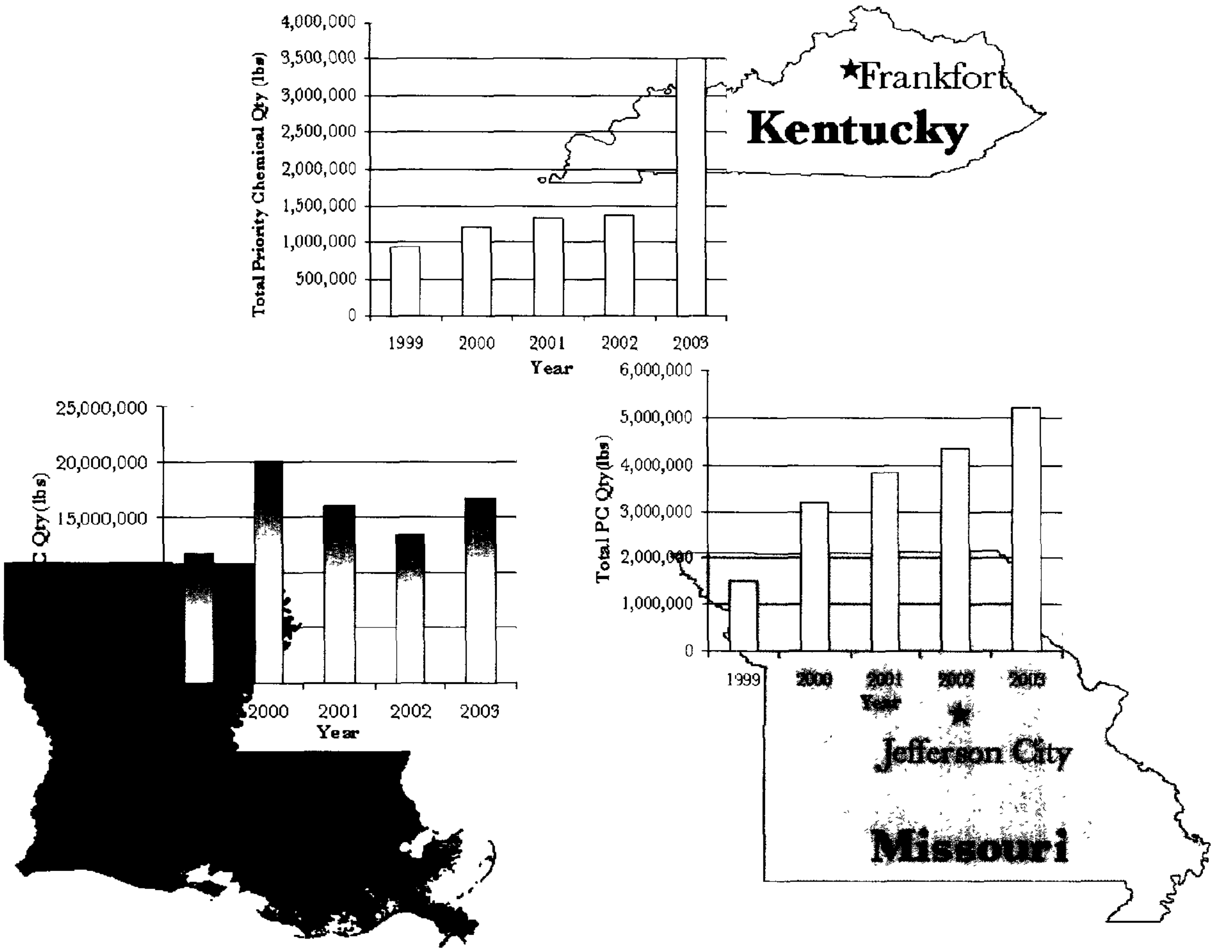
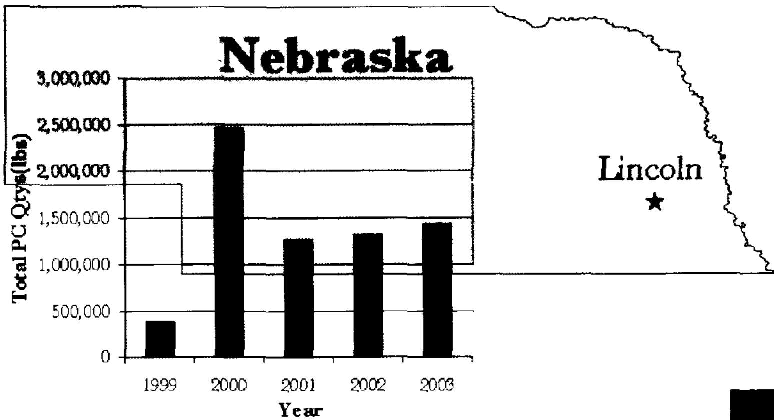


Exhibit 3.1. Significant Increases in Priority Chemical Quantities (lbs)





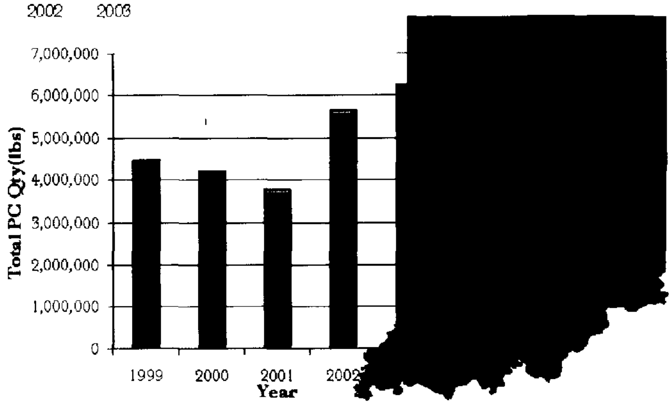


Exhibit 3.16 shows the number of facilities reporting the PCs in each State/Territory from 1999-2003. For the reasons previously noted, i.e., the initial reporting of three additional chemicals and reduced TRI reporting thresholds for certain chemicals, the number of facilities increased in 2000 and 2001, and, in general, leveled. In 2003, over 25 percent of the total number of reporting facilities were located in 4 states (Ohio, Texas, Pennsylvania, and California) nearly 52 percent of the total number of reporting facilities was located in 11 states.

Exhibit 3.16. Number of Facilities Reporting Priority Chemicals, By State/Territory (1999-2003)

State/Territory Name	1999	2000	2001	2002	2003	Percent of Total Number of Facilities (2003)
Alabama	52	75	152	157	154	2.9%
Alaska	0	6	9	10	12	0.2%
American Samoa	0	1	1	0	0	0.0%
Arizona	8	9	58	54	62	1.2%
Arkansas	29	54	84	86	94	1.8%
California	76	120	356	348	310	5.8%
Colorado	14	18	49	47	50	0.9%
Commonwealth of Northern Mariana Islands	0	1	1	1	1	0.0%
Connecticut	26	47	94	92	85	1.6%
Delaware	8	12	15	11	13	0.2%
Florida	19	48	127	129	129	2.4%
Georgia	31	62	141	148	131	2.5%
Guam	1	2	4	2	2	0.0%
Hawaii	2	2	8	8	9	0.2%

State/Territory Name	1999	2000	2001	2002	2003	Percent of Total Number of Facilities (2003)
Idaho	8	13	32	30	29	0.5%
Illinois	79	103	281	276	275	5.2%
Indiana	70	89	244	239	230	4.3%
Iowa	26	42	80	84	93	1.7%
Kansas	19	28	57	59	60	1.1%
Kentucky	40	55	117	112	115	2.2%
Louisiana	45	77	112	109	110	2.1%
Maine	3	18	35	35	35	0.7%
Maryland	11	18	32	35	31	0.6%
Massachusetts	34	49	163	162	168	3.2%
Michigan	56	70	208	208	193	3.6%
Minnesota	20	34	103	103	98	1.8%
Mississippi	26	44	87	88	83	1.6%
Missouri	36	58	140	132	137	2.6%
Montana	5	7	12	12	11	0.2%
Nebraska	11	21	47	47	50	0.9%
Nevada	2	7	23	21	19	0.4%
New Hampshire	9	25	50	53	47	0.9%
New Jersey	40	70	125	112	100	1.9%
New Mexico	4	9	17	20	24	0.5%
New York	54	92	197	174	167	3.1%
North Carolina	39	65	174	161	164	3.1%
North Dakota	1	3	5	8	7	0.1%
Ohio	144	190	417	417	401	7.5%
Oklahoma	17	31	61	64	62	1.2%
Oregon	10	22	69	74	79	1.5%
Pennsylvania	109	149	339	324	318	6.0%
Puerto Rico	4	6	20	16	19	0.4%
Rhode Island	10	18	46	41	39	0.7%
South Carolina	43	63	107	111	106	2.0%
South Dakota	2	3	14	13	16	0.3%
Tennessee	43	69	132	129	140	2.6%
Texas	126	207	357	336	330	6.2%
Utah	14	22	41	42	40	0.8%
Vermont	4	5	9	13	12	0.2%
Virgin Islands	1	2	1	1	1	0.0%
Virginia	32	51	128	121	105	2.0%
Washington	23	50	115	111	105	2.0%
Washington, D.C.	0	0	2	2	2	0.0%
West Virginia	19	30	47	40	39	0.7%
Wisconsin	28	55	204	211	209	3.9%
Wyoming	7	11	11	9	11	0.2%
Total	1,540	2,438	5,560	5,448	5,332	100.0%

Exhibit 3. 2. Comparison of Management Methods for Priority Chemicals by Facilities with 90% of Total Quantity in 2003

1999														
State	Onsite Disposal	Offsite Disposal	Total Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Total Energy Recovery	Onsite Treatment	Offsite Treatment	Total Treatment	Total Quantity of Priority Chemicals	Percent of Total Quantity of Priority Chemicals (1999)	Onsite Recycling	Offsite Recycling	Total Recycling
AL	1,496,411	344,408	1,840,819	607,590	12,894	620,484	69,199	179,223	248,422	2,709,725	3 5%	12,698,886	2,706,027	15,404,913
AR	26,454	1,575,395	1,601,849	110,624	94,063	204,687	622,686	217,324	840,010	2,646,546	3 4%	1,413,211	5,384,513	6,797,724
CA	26,586	1,035,709	1,062,295	126,146	290,117	416,263	136,960	71,907	208,867	1,687,425	2 2%	861,798	26,535,639	27,397,437
IA	49,610	819,049	868,659	48,331	27,090	75,421	44,068	118,043	162,111	1,106,191	1 4%	13,658,662	14,393,287	28,051,949
IL	411,790	1,801,860	2,213,650	10,917	78,843	89,760	210,459	124,407	334,866	2,638,276	3 4%	846,110	9,081,919	9,928,029
IN	138,935	3,003,670	3,142,605	643,533	484,739	1,128,272	186,754	22,180	208,934	4,479,811	5 8%	13,637,245	13,011,105	26,648,350
KY	15,114	369,081	384,195	360,706	36,273	396,979	87,527	69,339	156,866	938,040	1 2%	7,348,073	7,737,193	15,085,265
LA	108,635	154,657	263,292	1,060,689	28,120	1,088,809	10,305,258	131,929	10,437,186	11,789,287	15 3%	139,393,445	7,677,193	147,070,638
MO	49,010	1,267,131	1,316,141	1,692	4,154	5,846	168,157	43,788	211,945	1,533,932	2 0%	12,786,975	15,336,172	28,123,147
NC	10	100,403	100,413	28,729	1,691	30,420	88,763	39,221	127,984	258,817	0 3%	173,263	17,636,521	17,809,784
NE	0	372,581	372,581	0	0	0	0	1,659	1,659	374,240	0 5%	0	526,102	526,102
NJ	10,189	627,464	637,653	0	115,003	115,003	169,199	1,786,482	1,955,681	2,708,337	3 5%	2,817	8,690,643	8,693,460
OH	340,537	3,603,104	3,943,641	40,551	490,060	530,611	369,803	498,131	867,935	5,342,187	6 9%	69,330,761	15,768,540	85,099,301
OK	13,664	417,023	430,687	0	3,078	3,078	12,868	3,931	16,799	450,564	0 6%	225,316	835,353	1,060,669
PA	7,463	4,584,693	4,592,156	126 777	88 717	215,494	165,132	268,252	433,384	5,241,034	6 8%	55,491,644	9,926,110	65,417,754
SC	11,114	693,873	704,987	1,453	23,470	24,923	156,438	142,568	299,006	1,028,916	1 3%	698,095	1,428,381	2,126,476
TN	125,069	351,718	476,787	3,515 360	64,121	3,579,481	718,615	25,196	743,811	4,800,079	6 2%	14,857,043	11,158,100	26,015,143
TX	444,605	542,986	987,592	1,427,473	1,539,553	2,967,026	11,792,042	435,339	12,227,382	16,181,999	20 9%	7,040,279	8,656,028	15,696,307
UT	363	732,848	733,211	0	5	5	17,432	1,053	18,485	751,701	1 0%	13,917	184,442	198,359
WA	778	1,336,103	1,336,881	18,632	1,508	20,140	216,908	4,515	221,423	1,578,444	2 0%	553,046	36,562	589,608
WV	5	181,114	181,119	21,281	12,529	33,810	157,880	14,933	172,813	387,742	0 5%	409,201	175,661	584,862
Total	**3,276,342**	**23,914,871**	**27,191,213**	**8,150,484**	**3,396,027**	**11,546,511**	**25,696,148**	**4,199,421**	**29,895,569**	**68,633,293**	-	**351,439,787**	**176,885,491**	**528,325,278**

Exhibit 3.18. Comparison of Management Methods for Priority Chemicals by Facilities with 90% of Total Quantity in 2003

2003														
State	Onsite Disposal	Offsite Disposal	Total Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Total Energy Recovery	Onsite Treatment	Offsite Treatment	Total Treatment	Total Quantity	Percent of Total Quantity of Priority Chemicals (2003)	Onsite Recycling	Offsite Recycling	Total Recycling
AL	2,183,931	1,235,839	3,419,769	70,513	39,699	110,212	21,586	4,054	25,641	3,555,622	4.5%	20,911,762	1,336,987	22,248,749
AR	78,036	610,613	688,649	29,475	175,057	204,532	809,350	387,820	1,197,170	2,090,351	2.6%	3,562,384	5,764,549	9,326,933
CA	159,183	1,498,945	1,658,128	242,654	242,321	484,974	62,190	17,273	79,463	2,222,565	2.8%	14,416,032	8,512,130	22,928,161
IA	2,621	946,845	949,466	62,198	844	63,042	8,554	73,820	82,374	1,094,882	1.4%	12,814,255	13,208,721	26,022,976
IL	52,199	1,134,820	1,187,019	69,854	161,771	231,625	287,454	119,329	406,783	1,825,428	2.3%	4,271,169	7,980,399	12,251,568
IN	104,277	3,652,454	3,756,731	268,370	272,619	540,989	1,939,823	4,230	1,944,052	6,241,772	7.9%	10,933,932	6,632,833	17,566,765
KY	294,897	416,889	711,785	279,516	22,108	301,624	2,426,982	65,211	2,492,194	3,505,603	4.4%	5,105,918	4,385,506	9,491,424
LA	547,136	488,865	1,036,002	2,075,028	13,222	2,088,250	13,511,343	79,172	13,590,515	16,714,766	21.1%	25,180,091	7,343,879	32,523,970
MO	356,756	4,513,223	4,869,979	75	12,367	12,442	319,105	24,542	343,647	5,226,068	6.6%	10,634,898	14,196,375	24,831,273
NC	297,663	486,186	783,849	2,208	32,164	34,372	391,324	2,207	393,531	1,211,752	1.5%	141,486	16,889,812	17,031,297
NE	3,677	1,428,547	1,432,225	0	0	0	0	0	0	1,432,225	1.8%	70	127,502	127,572
NJ	46,989	406,858	453,847	500	257,627	258,127	183,756	19,184	202,940	914,914	1.2%	15,952	303,952	319,904
OH	339,053	2,315,293	2,654,347	25,959	43,734	69,694	145,816	14,839	160,655	2,884,695	3.6%	38,264,460	10,146,566	48,411,027
OK	61,587	724,573	786,160	105,853	34,999	140,852	50,260	975	51,234	978,246	1.2%	328,842	1,956,480	2,285,322
PA	9,919	2,817,213	2,827,132	458,460	110,848	569,308	137,280	57,706	194,985	3,591,425	4.5%	34,276,714	6,988,405	41,265,119
SC	163,225	897,926	1,061,151	24,331	4,378	28,709	228,501	7,950	236,451	1,326,311	1.7%	547,774	1,268,347	1,816,121
TN	203,388	276,319	479,706	1,094,144	2,345	1,096,489	300,289	6,660	306,949	1,883,144	2.4%	9,957,429	27,063,879	37,021,308
TX	1,293,331	1,243,062	2,536,394	3,444,116	891,461	4,335,576	4,124,174	313,549	4,437,724	11,309,694	14.3%	4,265,977	15,038,073	19,304,050
UT	296,404	886,472	1,182,876	0	0	0	432	364	796	1,183,672	1.5%	9,029	133,437	142,466
WA	742,276	78,118	820,394	71,063	1,776	72,839	34,720	5,542	40,261	933,493	1.2%	129,597	105,671	235,268
WV	1,243	219,757	221,000	281,653	8,964	290,617	247,393	155,904	403,297	914,914	1.2%	616,752	155,944	772,696
Total	7,237,791	26,278,818	33,516,608	8,605,969	2,328,304	10,934,274	25,230,331	1,360,329	26,590,660	71,041,543		196,384,522	149,539,448	345,923,970

Exhibits 3.17 and 3.18 compare the management methods employed for PCs in 1999 and 2003 – by facilities in the 21 States that accounted for 90 percent of the total quantity of PCs in 2003. Several observations from these exhibits include:

Disposal

- Facilities in 3 of the six states reported decreases of over 1 million pounds: Pennsylvania (-1.8 million pounds), Ohio (-1.3 million pounds), and Illinois (-1.0 million pounds). Arkansas facilities reported a decrease of 913,000 pounds.
- Facilities in 15 of these 21 states reported an overall increase of more than 6.3 million pounds of PCs. Facilities in 4 of these states accounted for most of this increase: Missouri (+3.6 million pounds), Alabama (+1.6 million pounds), Texas (+1.6 million pounds), and Nebraska (+1.1 million pounds).

Treatment

- There was an overall decrease of about 3.3 million pounds of PCs going to treatment, mostly offsite. Texas facilities, with a decrease of almost 7.8 million pounds, accounted for most of this overall decrease in treatment. New Jersey facilities also reported a decrease of almost 1.8 million pounds.
- Facilities in 3 states reported an increase of over 1 million pounds: Louisiana (+3.1 million pounds), Kentucky (+2.3 million pounds), and Indiana (+1.7 million pounds).

Energy Recovery

- Overall, there was a decrease of over 600,000 pounds of PCs going to energy recovery. Tennessee facilities reported the largest decrease – almost 2.5 million pounds. Facilities in 3 other states (Indiana, Alabama, and Ohio) reported a decrease of approximately 500,000 pounds.
- The largest increases for energy recovery were reported by facilities in Texas and Louisiana with an increase of 1.4 million pounds and 1 million pounds respectively.

Recycling

- There was a drop in recycling of over 182 million pounds, with facilities in 14 of these 21 states reporting a decreased recycling quantity. Among the largest decreases in recycling were facilities in: Louisiana (-114.5 million pounds), Ohio (-37 million pounds), and Pennsylvania (-24 million pounds).
- Of the 7 states with facilities that reported an increase in recycling of the PCs, Tennessee (+11 million pounds), Alabama (+6.8 million pounds), and Texas (+3.6 million pounds) had the largest increases.

Industry Sector Trends for the Priority Chemicals

In 2003, a PC quantity was reported by facilities in over 320 different SIC codes. Exhibit 3.19 presents the PC quantities (from 1999-2003) for facilities in those 24 industry sectors (SICs) that accounted for 90 percent of the total quantity of PCs in 2003. Facilities in 5 industry sectors accounted for over 50 percent of the total quantity of the PCs in 2003 – SIC 3341- Secondary non-ferrous metals (16.3%), SIC 2869- Industrial organic chemicals nec (10.7%), SIC 3312-Blast furnaces and steel mills (10 %), SIC 2812- Alkalies and chlorine (9.4%), and SIC 2895- Carbon Black (95.1%).

Exhibit 3.19. Quantity (lbs) of Priority Chemicals in the Industry Sectors (SICs) that accounted for 90 Percent of the total Priority Chemical Quantity in 2003

SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Change in Quantity 1999-2003	Percent Change in Quantity (1999-2003)	Number of Reporting Facilities for this SIC (2003)
3341	Secondary nonferrous metals	7,476,809	10,527,825	9,720,459	11,993,360	12,933,583	16.3%	5,456,774	73.0%	90
2869	Industrial organic chemicals, nec	2,491,268	3,476,162	2,161,860	6,768,248	8,466,025	10.7%	5,974,757	239.8%	112
3312	Blast furnaces and steel mills	9,082,485	9,603,363	7,940,587	7,010,168	7,901,057	10.0%	-1,181,428	-13.0%	97
2812	Alkalies and chlorine	18,732,394	23,417,510	18,975,349	12,511,312	7,456,586	9.4%	-11,275,808	-60.2%	19
2895	Carbon black	0	3,749,053	3,454,362	3,922,074	4,052,612	5.1%	4,052,612	NA	19
2819	Industrial inorganic chemicals, nec	3,677,861	5,955,886	3,435,952	2,887,421	3,426,548	4.3%	-251,313	-6.8%	99
2911	Petroleum refining	4,711,108	6,175,607	2,234,706	4,199,005	3,405,412	4.3%	-1,305,696	-27.7%	130
3624	Carbon and graphite products	5,067,118	8,300,424	5,119,620	1,834,267	2,891,018	3.6%	-2,176,100	-42.9%	21
3334	Primary aluminum	2,328,131	3,470,641	2,197,738	1,849,099	2,845,041	3.6%	516,910	22.2%	17
9711	National security	71,606	163,504	2,228,042	2,605,080	2,787,601	3.5%	2,715,995	3793.0%	134
3479	Metal coating and allied services	1,468,003	1,819,255	1,648,889	2,461,943	2,712,495	3.4%	1,244,492	84.8%	103
3321	Gray and ductile iron foundries	1,101,863	1,108,568	2,682,182	2,980,670	2,547,436	3.2%	1,445,573	131.2%	142
2865	Cyclic crudes and intermediates	2,645,340	1,990,790	1,432,105	3,103,126	1,639,150	2.1%	-1,006,190	-38.0%	33
2821	Plastics materials and resins	942,386	836,036	565,677	746,511	1,387,892	1.8%	445,506	47.3%	71
9511	Air, water, and solid waste management	92,065	375,078	652,869	615,034	1,273,657	1.6%	1,181,592	1283.4%	5
3229	Pressed and blown glass, nec	1,984,537	1,730,917	1,545,626	1,299,721	1,171,476	1.5%	-813,061	-41.0%	36
2879	Pesticides and agricultural chemicals, nec	647,551	1,608,582	2,112,046	758,430	929,347	1.2%	281,796	43.5%	27
2491	Wood preserving	177,443	330,966	623,516	456,129	597,763	0.8%	420,320	236.9%	63
3691	Storage batteries	1,037,024	788,534	291,592	338,077	557,907	0.7%	-479,118	-46.2%	58
3315	Steel wire and related products	1,531,147	955,199	795,911	421,571	502,771	0.6%	-1,028,376	-67.2%	38
3357	Nonferrous wire drawing and insulating	1,271,536	520,149	509,831	351,195	486,727	0.6%	-784,809	-61.7%	85
2992	Lubricating oils and greases	320	356,966	340,985	434,100	459,677	0.6%	459,357	143549.1%	9
8733	Noncommercial research organizations	100,105	153	203,452	153,948	426,650	0.5%	326,545	326.2%	8
2037	Frozen fruits and vegetables	0	0	376,146	420,737	415,447	0.5%	415,447	NA	1

Exhibits 3.20 and 3.21 compares the management methods employed for PCs in 1999 and 2003 – by facilities in the industry sectors that accounted for 90 percent of the total quantity of PCs in 2003. Please note that facilities in two industry sectors SIC 2895 – Carbon Black and SIC 2037- Frozen Fruits and Vegetables that were included in the 2003 group of top industry sectors did not report any quantity of PCs to TRI in 1999. The 2003 quantities for facilities in SIC 2895 can be attributed to the reduced TRI reporting threshold for mercury and mercury compounds that became effective in 2000 and the reporting of benzo(g,h,i)perylene that was required to be reported to TRI beginning in 2000. There were no quantities of PCs reported by facilities in SIC 2037 in either 1999 or 2000. However, in 2001, one facility in this industry sector, located in Maine, began reporting quantities of naphthalene and PACs. Several observations from this Exhibit include:

Disposal

- Facilities in 2 of the ten industry sectors with a decreased disposal quantity reported decreases of at least 1 million pounds: SIC 3334 – Primary Aluminum (-1.6 million pounds) and SIC 3312 – Blast Furnaces and Steel Mills (-1.0 million pounds).
- Facilities in 13 of the 24 industry sectors reported an overall increase of more than 6.4 million pounds of PCs. Facilities in 4 of these industry sectors accounted for most of this increase: SIC 3341- Secondary Nonferrous Metals (+5.6 million pounds), SIC 9711 – National Security (+2.6 million pounds), SIC 3321 – Gray and Ductile Iron Foundries (+1.5 million pounds), and SIC 2819 – Industrial Inorganic Chemicals, nec (+1.1 million pounds).

Treatment

- Facilities in 12 of these industry sectors reported an overall decrease of about 2.8 million pounds of PCs going to treatment, mostly offsite. Facilities in 3 industry sectors accounted for the majority of this decrease: SIC 2812 – Alkalies and Chlorine (- 9.9 million pounds), SIC 2819 – Industrial Inorganic Chemicals, nec (- 2.2 million pounds), and SIC 2911 – Petroleum Refining (- 1.5 million pounds).
- Facilities in 11 of the industry sectors reported an increase in treatment. Large increases were reported by facilities in SIC 2869 – Industrial Organic Chemicals (+6.1 million pounds), SIC 3334 – Primary Aluminum (+2.1 million pounds), and SIC 3479 – Metal Coating and Allied Services (+1.4 million pounds).

Energy Recovery

- Facilities in 8 of the industry sectors reported a decreased quantity of PCs going to energy recovery. Most of the decrease was reported by facilities in 2 of these industry sectors SIC 3624 – Carbon and Graphite Products (– 2.4 million pounds) and SIC 2812- Alkalies and Chorine (- 1.3 million pounds).
- Overall, facilities in this group of 24 industry sectors reported an increase of nearly 1 million pounds of PCs going to energy recovery. Facilities in 2 of the industry sectors: SIC 2895 – Carbon Black (+3.4 million pounds) and SIC 2819 – Industrial Inorganic Chemicals, nec (906,000 pounds) accounted for most of this increase.

Recycling

- Recycling decreased by over 200 million pounds for facilities in 13 of these industry sectors. Facilities in 3 of these sectors accounted for most of the decrease: SIC 3341 – Secondary Nonferrous Metals (- 99.5 million pounds), SIC 3691 – Storage Batteries (- 59 million pounds), and SIC 3229 – Pressed and Blown Glass, nec (- 46 million pounds).
- Facilities in 2 of the industry sectors reported a large increase in recycling of the PCs: SIC 2869 – Industrial Organic Chemicals, nec (+10.9 million pounds) and SIC 3312 – Blast Furnaces and Steel Mills (+2.1 million pounds).

Exhibit 3.20. Comparison of Management Methods in 1999 for Priority Chemicals by Industry Sectors with 90% of Total Quantity in 2003

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3341	Secondary nonferrous metals	1,592,281	5,704,611	7,296,892	42,738	363	43,101	4,248	132,568	136,816	7,476,809	9 70%	360,456,162	11 170,170	371,626 332
2869	Industrial organic chemicals, nec	55 405	107,440	162,845	257,766	853,370	1,111,136	1,080,402	136,885	1,217,287	2 491 268	3 20%	2,180,509	326,403	2 516,912
3312	Blast furnaces and steel mills	834,074	8,000,933	8,835,007	24,137	0	24,137	28,173	195,168	223,341	9,082,465	11 80%	1,995,832	8,592,752	10,588,584
2812	Alkalies and chlorine	1,238	6,206	7,444	1,941,250	0	1,941,250	18,646,090	137,611	18,783,700	18,732,394	24 20%	2,573,025	18,184	2,591,209
2895	Carbon black	0	0	0	0	0	0	0	0	0	0	0 00%	0	0	0
2819	Industrial inorganic chemicals, nec	539,844	809,953	1,349,797	109,966	4	109,970	444,542	1 773,552	2,218,094	3,677,861	4 80%	80,701	1 506,561	1,587,262
2911	Petroleum refining	49 077	185,543	234,619	3,613	25,668	29,281	4 269,808	177,400	4,447,208	4,711 108	6 10%	11,406,318	2,000	11,408,318
3624	*Carbon and graphite products*	6,172	9,977	16,149	3,689,957	12,650	3,702,607	1,344,510	3,852	1,348,362	5,067,118	6 60%	285,065	25,692	310,757
3334	Primary aluminum	13,531	1,768,059	1,781,590	210,000	180	210,180	330,175	6,205	336,381	2,328,131	3 00%	463,968	6,500	470,468
9711	National security	25,217	46,059	71,276	275	0	275	0	55	55	71,606	0 10%	0	139,325	139 325
3479	Metal coating and allied services	0	6,741	6,741	644,216	106,092	750,308	683,074	27,880	710,954	1,468,003	1 90%	3,578	276,894	280,472
3321	Gray and ductile iron foundries	549,504	540,929	1,090,433	0	0	0	1,498	9,932	11,430	1,101,863	1 40%	0	42,470	42,470
2865	Cyclic crudes and intermediates	144,465	872,341	1,016,806	261,080	565,698	826,778	170,395	631,361	801,756	2 645,340	3 40%	1,334,851	149,341	1 484 192
2821	*Plastics materials and resins*	468	8,100	8,569	514,805	326,594	841,399	56,056	36,362	92,418	942 386	1 20%	329	1,695	2,024
9511	Air, water, and solid waste management	0	0	0	0	92,065	92,065	0	0	0	92,065	0 10%	0	0	0
3229	Pressed and blown glass, nec	2,942	1 919,289	1,922,231	0	0	0	0	62,306	62,306	1 984,537	2 60%	101,021,030	1,017,491	102,038,521
2879	Pesticides and agricultural chemicals, nec	7,110	73,180	80,270	10	255,750	255,760	167,311	144,210	311,521	647,551	0 80%	306,031	232	306,263
2491	Wood preserving	227	15,388	15,615	39,000	2,907	41,907	1,345	118,576	119,921	177 443	0 20%	18,610	4,773	23,383
3691	*Storage batteries*	618	1 018,309	1,018,927	0	0	0	373	17,725	18,098	1,037,024	1 30%	78,562,675	211,576,515	290,139,190
3315	Steel wire and related products	0	1 192,632	1,192,632	0	0	0	15,641	322,674	338,315	1,531 147	2 00%	0	3 161,698	3,161,698
3357	Nonferrous wire drawing and insulating	0	1 113,371	1,113,371	29,936	1,627	31,563	33,039	93,563	126,602	1 271,536	1 60%	244,133	1,700,644	1,944,777
2992	Lubricating oils and greases	0	320	320	0	0	0	0	0	0	320	0 00%	0	0	0
8733	Noncommercial research organizations	6,600	93,468	100,068	0	0	0	3	34	37	100,105	0 10%	0	91,000	91,000
2037	Frozen fruits and vegetables	0	0	0	0	0	0	0	0	0	0	0 00%	0	0	0
	Total	**3,828,773**	**23,493,029**	**27,321,802**	**7,768,749**	**2,242,948**	**10,011,696**	**26,276,682**	**4,027,919**	**29,304,602**	**66,638,100**	**86.30%**	**560,942,817**	**239,810,340**	**800,753,157**

Exhibit 3.21. Comparison of Management Methods in 2003 for Priority Chemicals by Industry Sectors with 90% of Total Quantity in 2003

SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Total Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Total Energy Recovery	Onsite Treatment	Offsite Treatment	Total Treatment	Total Quantity	Percent of Total Quantity of Priority Chemicals (2003)	Onsite Recycling	Offsite Recycling	Total Recycling
3341	Secondary nonferrous metals	2,139,428	10,761,526	12,900,951	29,256	1,519	30,775	3	1,854	1,857	12,933,583	18.30%	257,271,267	14,817,932	272,088,199
2869	Industrial organic chemicals, nec	10,650	94,920	105,570	252,084	758,823	1,010,907	7,052,605	296,943	7,349,548	8,466,025	10.70%	1,039,536	12,364,819	13,404,354
3312	Blast furnaces and steel mills	182,312	7,638,324	7,820,635	25,348	0	25,348	10,297	44,777	55,074	7,901,057	10.00%	920,211	11,803,209	12,723,420
2812	Alkalies and chlorine	1,631	5,913	7,544	612,719	13	612,732	6,812,846	23,464	6,836,310	7,456,586	9.40%	2,809,628	16,585	2,826,213
2895	Carbon black	742	1,825	2,566	3,431,938	0	3,431,938	617,929	178	618,107	4,052,612	5.10%	0	0	0
2819	Industrial inorganic chemicals, nec	1,337,887	1,069,078	2,406,966	1,015,466	972	1,016,438	2,266	878	3,144	3,426,548	4.30%	256,659	916,631	1,173,290
2911	Petroleum refining	20,892	213,254	234,146	166,455	105,150	271,605	2,857,513	42,148	2,899,661	3,405,412	4.30%	4,738,695	27,874	4,766,570
3624	Carbon and graphite products	41,241	22,219	63,460	1,342,616	1,729	1,344,345	1,478,243	4,970	1,483,213	2,891,018	3.60%	291,078	36,828	327,906
3334	Primary aluminum	74,605	61,394	135,999	265,542	18,216	283,758	2,423,105	2,178	2,425,284	2,845,041	3.60%	158,826	31,704	190,530
9711	National security	2,528,146	116,254	2,644,399	2,204	4,151	6,355	134,372	2,475	136,847	2,787,601	3.50%	467,477	444,277	911,754
3479	Metal coating and allied services	195	66,874	67,069	489,646	73,162	562,807	2,075,615	7,003	2,082,619	2,712,495	3.40%	7,353	194,866	202,219
3321	Gray and ductile iron foundries	812,982	1,730,973	2,543,955	0	0	0	3,445	36	3,481	2,547,436	3.20%	32,212	237,203	269,415
2865	Cyclic crudes and intermediates	132,825	554,414	687,239	204,791	291,683	496,474	124,867	330,570	455,436	1,639,150	2.10%	849,092	0	849,092
2821	Plastics materials and resins	5,696	26,166	31,862	267,795	244,918	512,712	811,931	31,386	843,317	1,387,892	1.80%	432,221	53,533	485,754
9511	Air, water, and solid waste management	643,991	79,788	723,779	0	172,916	172,916	6,390	370,573	376,963	1,273,657	1.60%	0	0	0
3229	Pressed and blown glass, nec	1	1,171,076	1,171,078	0	398	398	0	0	0	1,171,476	1.50%	55,181,195	404,726	55,585,921
2879	Pesticides and agricultural chemicals, nec	4,788	13,031	17,819	281,641	228,547	510,188	285,668	115,672	401,339	929,347	1.20%	10,094	6,333	16,427
2491	Wood preserving	254	217,392	217,647	261,305	31,154	292,459	7,923	79,735	87,658	597,763	0.80%	18,882	2	18,884
3691	Storage batteries	46,231	511,672	557,903	0	0	0	0	4	4	557,907	0.70%	87,215,576	143,907,296	231,122,872
3315	Steel wire and related products	322	502,449	502,771	0	0	0	0	0	0	502,771	0.60%	1,000	2,058,361	2,059,361
3357	Nonferrous wire drawing and insulating	19	474,939	474,957	0	980	980	10,760	30	10,790	486,727	0.60%	237,833	761,836	999,669
2992	Lubricating oils and greases	0	15,019	15,019	0	0	0	444,658	0	444,658	459,677	0.60%	1,358	397	1,755
8733	Noncommercial research organizations	13,565	412,837	426,402	0	158	159	2	87	89	426,650	0.50%	0	27,611	27,611
2037	Frozen fruits and vegetables	0	0	0	415,447	0	415,447	0	0	0	415,447	0.50%	0	0	0
	Total	**7,998,400**	**25,761,337**	**33,759,737**	**9,064,253**	**1,934,489**	**10,998,742**	**25,160,439**	**1,354,960**	**26,515,399**	**71,273,879**	**90.00%**	**411,940,193**	**188,112,022**	**600,052,215**

Section 4 –
Trends Analyses for the Priority Chemicals
(1999 – 2003)

Priority Chemicals Reportable to TRI

This section of the National Trends Report addresses each Priority Chemical (PC), in alphabetical order. In addition to listing the national, Regional, state, and industrial generation trends for each PC that is reported to TRI, basic information regarding each chemical is presented. This section also illustrates the distribution of chemical quantities reported by facilities via maps and graphics.

Exhibit 4. 1. List of Priority Chemicals

Priority Chemicals	
Priority Chemicals Reported to TRI	
1,2,4 - Trichlorobenzene	Lindane
2,4,5 - Trichlorophenol	Mercury and Mercury Compounds
Anthracene	Methoxychlor
Benzo(g,h,i)perylene	Naphthalene
Cadmium and Cadmium Compounds	Pendimethalin
Dibenzofuran	Pentachlorobenzene
Dioxins and Dioxin-like compounds	Pentachlorophenol
Heptachlor	Phenanthrene
Hexachloro-1, 3-butadiene	Polychlorinated biphenyls (PCBs)
Hexachlorobenzene	Polycyclic Aromatic Compounds (PACs)
Hexachloroethane	Quintozene
Lead and Lead Compounds	Trifluralin
Priority Chemicals Not Reported to TRI	
1,2,4,5-Tetrachlorobenzene	Endosulfan, alpha, beta
4-Bromophenyl phenyl ether	Fluorene
Acenaphthene	Heptachlor epoxide
Acenaphthylene	Pyrene

1,2,4 - Trichlorobenzene

Chemical Information.
CAS Number - 95-95-4
Alternate Names - Collunosol, Dowicide 2
General Uses - This chemical is used as a fungicide to destroy or prevent fungi from growing. It is also used as a herbicide and to make other pesticides.
Potential Hazards - If your skin comes into contact with this chemical, it may burn. It can also irritate your eyes, nose, pharynx and lungs. This chemical may cause potential damage to the liver and kidneys (EPA Integrated Risk Information - IRIS).

Summary Analysis– 1,2,4 – Trichlorobenzene.

- 1,2,4 - trichlorobenzene accounted for about 2.1 percent of the national total PC quantity in 2003 with 1,674,271 pounds.
- There was a significant increase (over 20 percent) in reporting of 1,2,4 - trichlorobenzene to TRI during the period 1999 to 2003.
- Eighteen facilities in 14 different SIC codes reported 1,2,4 - trichlorobenzene to TRI in 2003.
- One of these 18 facilities, located in Region 6, accounted for 78 percent of the total quantity of this chemical. Seven of the 18 facilities accounted for over 98 percent of the total quantity.
- Five industry sectors (SIC codes) accounted for over 98 percent of the 1,2,4 - trichlorobenzene in 2003.
- Facilities in SIC 2812 (Alkalies and chlorine) reported the highest quantities, accounting for almost 78 percent of the total PC quantity of 1,2,4 - trichlorobenzene reported in 2003.
- Most of the 1,2,4 - trichlorobenzene was treated, primarily onsite. Some energy recovery also occurred. Overall, there was relatively little recycling of 1,2,4 - trichlorobenzene in 2003.

National Trends – 1,2,4 – Trichlorobenzene. Exhibit 4.2 shows that the number of facilities that reported 1,2,4 - trichlorobenzene from 1999-2003 was relatively constant, with 18 facilities reporting in 2003. It also shows that, in 2003, there was an almost 21 percent increase in the total PC quantity (pounds) of 1,2,4 - trichlorobenzene, compared to 1999. The methods used to manage 1,2,4 - trichlorobenzene, i.e., disposal, energy recovery, and treatment, have essentially remained the same, with treatment used for almost 91 percent of the total quantity, followed by energy recovery (8.1%) and disposal (1.0%). Exhibit 4.3 is a map that shows the facilities and the distribution by quantity of 1,2,4 – trichlorobenzene reported in 2003. Of these 18 facilities that reported 1,2,4 - trichlorobenzene in 2003, one facility accounted for 78 percent of the total quantity of this chemical; 7 of the 18 facilities accounted for over 98 percent of the total quantity (Exhibit 4.4).

Exhibit 4.2. National-Level Information for 1,2,4 - Trichlorobenzene 1999-2003)

	1999	2000	2001	2002	2003	Percent Change in Total Quantity (1999 - 2003)	Management Method -- Percent of Total Quantity of this Chemical in 2003
Number of Facilities	21	19	19	17	18	-14.3%	
Disposal Quantity (pounds)	8,512	6,602	5,299	7,216	17,138	101.3%	1.0%
Energy Recovery Quantity (pounds)	113,944	512,794	486,605	118,074	135,468	18.9%	8.1%
Total Treatment Quantity (pounds)	1,266,143	669,681	1,691,092	1,401,739	1,521,664	20.2%	90.9%
Total PC Quantity Pounds)	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271	20.6%	

Exhibit 4.3. Distribution of Facilities Reporting 1,2,4 – Trichlorobenzene in 2003 & Quantity of 1,2,4 – Trichlorobenzene Reported in 2003 per Region

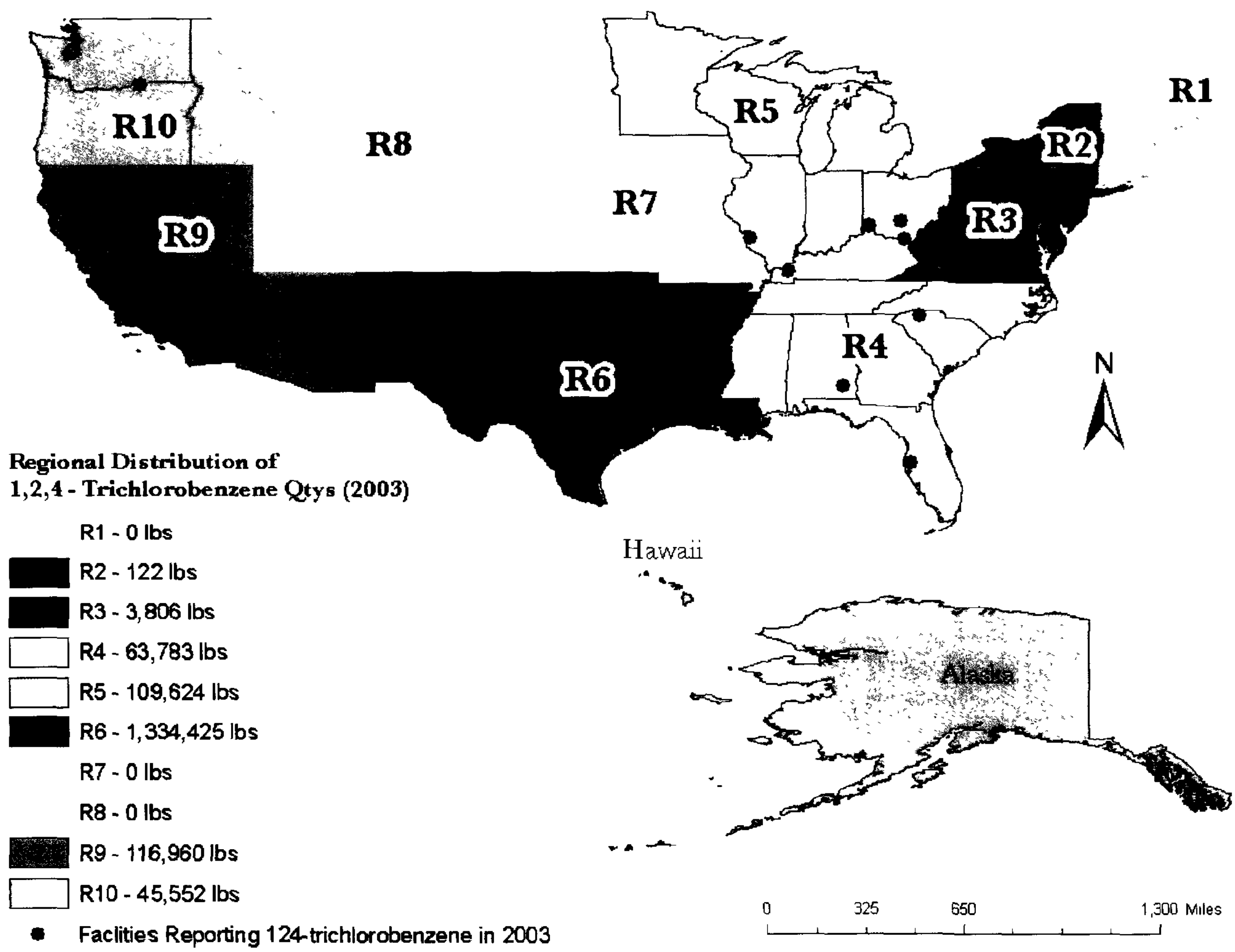


Exhibit 4.4. Distribution of Facilities that Reported Quantities for 1,2,4 - Trichlorobenzene (2003)

1,2,4 - Trichlorobenzene (1,674,271 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	2	less than 0.1%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	3	0.1%
between 1,001 - 10,000 pounds	5	1.4%
between 10,001 - 100,000 pounds	5	14.8%
between 100,001 - 1 million pounds	1	6.1%
> 1 million pounds	1	77.7%

EPA Region Trends– 1,2,4 – Trichlorobenzene. Exhibit 43 shows the quantity (pounds) of 1,2,4 - trichlorobenzene for each EPA Region in 1999-2003. Facilities in Region 6 consistently reported most of the 1,2,4 - tricholorobenzene.

Exhibit 4.5. Quantity of 1,2,4 - Trichlorobenzene Reported by EPA Regions (1999-2003)

EPA REGION	1999	2000	2001	2002	2003
2	0	0	0	0	122
3	128,411	128,562	255,300	3,532	3,806
4	237,689	87,447	59,361	169,125	63,783
5	100,400	92,133	100,000	117,731	109,624
6	878,565	848,986	1,762,188	1,025,770	1,334,425
9	43,534	31,949	6,147	98,044	116,960
10	0	0	0	112,827	45,552
Total	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271

Exhibit 4.6 shows how 1,2,4 - trichlorobenzene was managed within each EPA Region. Most 1,2,4 - trichlorobenzene was treated; however, in Regions 3 and 4, much of the 1,2,4 - trichlorobenzene was recycled.

Exhibit 4.6. Management Methods for 1,2,4 - Trichlorobenzene, By EPA Region (2003)

	Disposal		**Energy Recovery**		**Treatment**		**Recycling**	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
2	0	0	0	0	0	122	0	0
3	0	0	0	0	0	3,806	1,890	7,208
4	0	2,182	1,800	307	487	59,007	23,730	0
5	0	9,855	0	0	0	99,769	0	0
6	3,900	1,201	28,631	1	1,299,720	972	0	0
9	0	0	102,779	1,951	12,230	0	0	7,650
10	0	0	0	0	45,461	91	0	0
Total	**3,900**	**13,238**	**133,210**	**2,259**	**1,357,898**	**163,766**	**25,620**	**14,858**

State Trends– 1,2,4 – Trichlorobenzene. Exhibit 4.7 shows the quantity of 1,2,4 - trichlorobenzene that was reported by facilities in 20 states, between 1999-2003. Facilities in Louisiana had the largest increase in quantity (almost + 900,000 pounds since 1999) and also had the largest share (almost 78 percent) of this quantity. Significant decreases occurred in a number of states, including Texas (-440,606 pounds) (Exhibit 4.8), Mississippi (-98, 750 pounds), Delaware (-89,401 pounds), and Tennessee (-82,407 pounds).

Exhibit 4.7. State-Level Information for 1,2,4 - Trichlorobenzene (1999-2003)

	Total Quantity (pounds) of Priority Chemical							
State	**1999**	**2000**	**2001**	**2002**	**2003**	**Change in Quantity (1999-2003)**	**Percent of Total Quantity of this Priority Chemical (2003)**	**Percent Change in Quantity (1999-2003)**
Alabama	4	5	5	160,005	6	2	0.0%	37.5%
Arkansas	0	0	38,300	0	0	0	0.0%	NA
California	43,534	31,949	6,147	98,044	116,960	73,426	7.0%	168.7%
Delaware	89,401	89,177	0	0	0	-89,401	0.0%	-100.0%
Florida	0	0	0	0	205	205	0.0%	NA
Illinois	97,000	92,133	100,000	114,554	98,139	1,139	5.9%	1.2%
Kentucky	40,290	43,380	37,746	8,494	62,989	22,699	3.8%	56.3%
Louisiana	403,928	354,900	1,501,961	994,066	1,300,394	896,466	77.7%	221.9%
Mississippi	98,750	0	0	0	0	-98,750	0.0%	-100.0%
North Carolina	15,750	21,858	19,905	0	0	-15,750	0.0%	-100.0%
New Jersey	0	0	0	0	122	122	0.0%	NA
Ohio	3,400	0	0	3,177	11,485	8,085	0.7%	237.8%
Oklahoma	0	2,014	533	0	0	0	0.0%	NA
Oregon	0	0	0	112,827	45,552	45,552	2.7%	NA
Pennsylvania	0	1	1	3,532	30	30	0.0%	NA
South Carolina	488	499	1,705	626	583	95	0.0%	19.5%
Tennessee	82,407	21,705	0	0	0	-82,407	0.0%	-100.0%
Texas	474,637	492,072	221,394	31,704	34,031	-440,606	2.0%	-92.8%
Virginia	31,492	33,358	23,591	0	0	-31,492	0.0%	-100.0%
West Virginia	7,518	6,026	231,708	0	3,776	-3,742	0.2%	-49.8%
Total	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271	285,672	100.0%	20.6%

Exhibit 4.8. 1,2,4 - Trichlorobenzene Significant Quantity Trends (1999-2003): Facilities in Texas and Louisiana

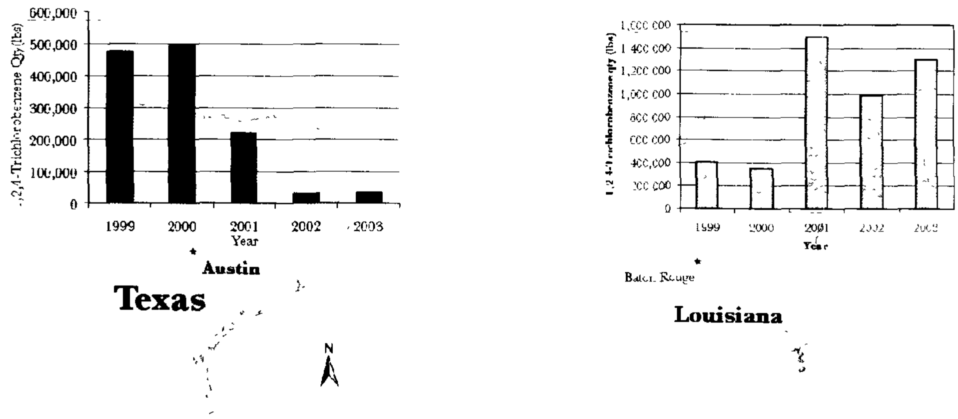


Exhibit 4.9 shows the trend in total quantity for facilities in the three states that accounted for 90 percent of the total quantity of 1,2,4 - trichlorobenzene in 2003. Exhibit 4.10 shows how these facilities managed their 1,2,4 - trichlorobenzene in 2003. Most of the 1,2,4 - trichlorobenzene was treated, primarily onsite. Some energy recovery also occurred. Overall, there was relatively little recycling of 1,2,4 - trichlorobenzene in 2003.

Exhibit 4.9. 1,2,4 - Trichlorobenzene Trends in States with 90 Percent of Total Quantity (2003)

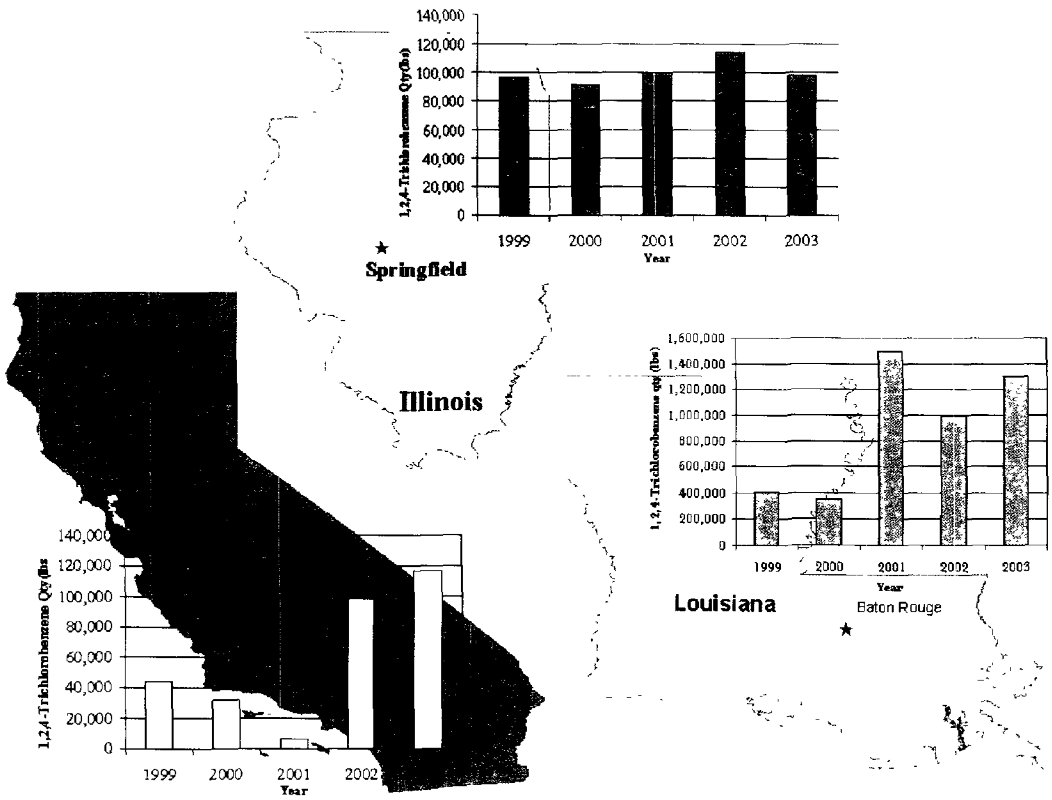


Exhibit 4.10. Management of 1,2,4 - Trichlorobenzene in States with 90 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	1,300,394	0	1	0	1	1,299,720	672	0	0
California	116,960	0	0	102,779	1,951	12,230	0	0	7,650
Illinois	98,139	0	0	0	0	0	98,139	0	0

Industry Sector (SIC) Trends– 1,2,4 – Trichlorobenzene. Exhibit 4.11 shows the PC quantity (pounds) of 1,2,4 - trichlorobenzene for the five industry sectors (SIC codes) where facilities reported over 98 percent of this chemical in 2003. Facilities in SIC 2812 (Alkalies and chlorine) reported the highest quantities, accounting for almost 78 percent of the total PC quantity of 1,2,4 - trichlorobenzene reported in 2003.

Exhibit 4.11. Industry Sector-Level Information for 1,2,4-Trichlorobenze (1999-2003)

			Quantity (pounds) of 1,2,4 Trichlorobenzene						
Primary SIC Code	SIC Description	Number of Facilities for this SIC Code	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2812	Alkalies and chlorine	2	389,522	360,926	1,733,669	993,819	1,304,170	914,648	77.9%
2865	Cyclic crudes and intermediates	4	229,801	224,410	137,730	123,848	162,751	-67,050	9.7%
3479	Metal coating and allied services	1	0	0	0	84,686	102,779	102,779	6.1%
9711	National security	1	0	0	0	112,827	45,552	45,552	2.7%
2819	Industrial inorganic chemicals, nec	2	448,490	426,566	152,930	26,404	28,631	-419,859	1.7%

Exhibit 4.12 shows how 1,2,4 - trichlorobenzene was managed by facilities in the five industry sectors that accounted for over 90 percent of the total quantity of this PC in 2003. Most of the 1,2,4 - trichlorobenzene was treated, primarily onsite, within SIC 2812 – Alkalies and Chlorine and SIC 9711 – National Security. Two of these industry sectors use onsite energy recovery for their 1,2,4 - trichlorobenzene. The SIC 2865 facilities primarily sent the 1,2,4 - trichlorobenzene to offsite treatment but also employed offsite disposal and onsite energy recovery. A relatively small quantity of 1,2,4 - trichlorobenzene was recycled in 2003.

Exhibit 4.12. Management of 1,2,4 - Trichlorobenzene in Industry Sectors (SIC Codes) with 90 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2812	Alkalies and chlorine	1,304,170	0	1	0	1	1,299,720	4,448	1,890	7,208
2865	Cyclic crudes and intermediates	162,751	0	2,182	1,800	0	0	158,769	0	0
3479	Metal coating and allied services	102,779	0	0	102,779	0	0	0	0	0
9711	National security	45,552	0	0	0	0	45,461	91	0	0
2819	Industrial inorganic chemicals, nec	28,631	0	0	28,631	0	0	0	0	0

Recycling. Exhibit 4.13 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of 1,2,4-trichlorobenzene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4.13. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

SIC 2812-- Alkalies and chlorine												
			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
1	3	West Virginia	0	0	0	0	0	0	1,403	5,304	0	0

2,4,5 - Trichlorophenol

Chemical Information
CAS Number - 95-95-4
Alternate Names - Collunosol, Dowicide 2
General Uses - This chemical is used as a fungicide to destroy or prevent fungi from growing. It is also used as a herbicide and to make other pesticides.
Potential Hazards - If your skin comes into contact with this chemical, it may burn. It can also irritate your eyes, nose, pharynx and lungs.

Summary Analysis– 2,4,5 – Trichlorophenol. In 2003, 2,4,5 - trichlorophenol accounted for less than 0.1 percent of the total quantity of PCs. Since 1999, only 1 facility – in SIC code 2869 (industrial organic chemicals, nec), located in New Jersey, has reported a PC quantity of 2,4,5 - trichlorophenol.

National Trends – 2,4,5 – Trichlorophenol. Exhibit 4.14 presents the total PC quantity (pounds) of 2,4,5 - trichlorophenol in 1999 to 2003, showing the disposal, treatment, and energy recovery quantities. In 2003, 2,4,5 - trichlorophenol accounted for less than 0.1 percent of the total quantity of PCs. Since 1999, only 1 facility has reported a PC quantity of 2,4,5 - trichlorophenol.

Exhibit 4.14. National-Level Information for 2,4,5 – Trichlorophenol

	1999	*2000*	*2001*	*2002*	*2003*	**Percent Change (1999-2003)**	**Management Method -- Percent of Total Quantity of this Chemical in 2003**
Number of Facilities	1	1	1	1	1	0.0%	
Disposal Quantity (lbs.)	78	0	82	52	13	-83.3%	0.1%
Energy Recovery Quantity (lbs.)	0	0	0	0	0	NA	0.0%
Total Treatment Quantity (lbs.)	26,020	32,443	20,575	17,861	22,844		99.9%
Total PC Quantity (lbs.)	26,098	32,443	20,657	17,913	22,857		
Total Recycled (lbs.)	0	0	0	0	0	NA	

EPA Region Trends– 2,4,5 – Trichlorophenol. Exhibit 4.15 shows the quantity (lbs.) of 2,4,5 - trichlorophenol reported by the only facility that reported this chemical in 1999-2003, located in EPA Region 2.

Exhibit 4.15. Quantity of 2,4,5 - Trichlorophenol Reported by EPA Regions (1999-2003)

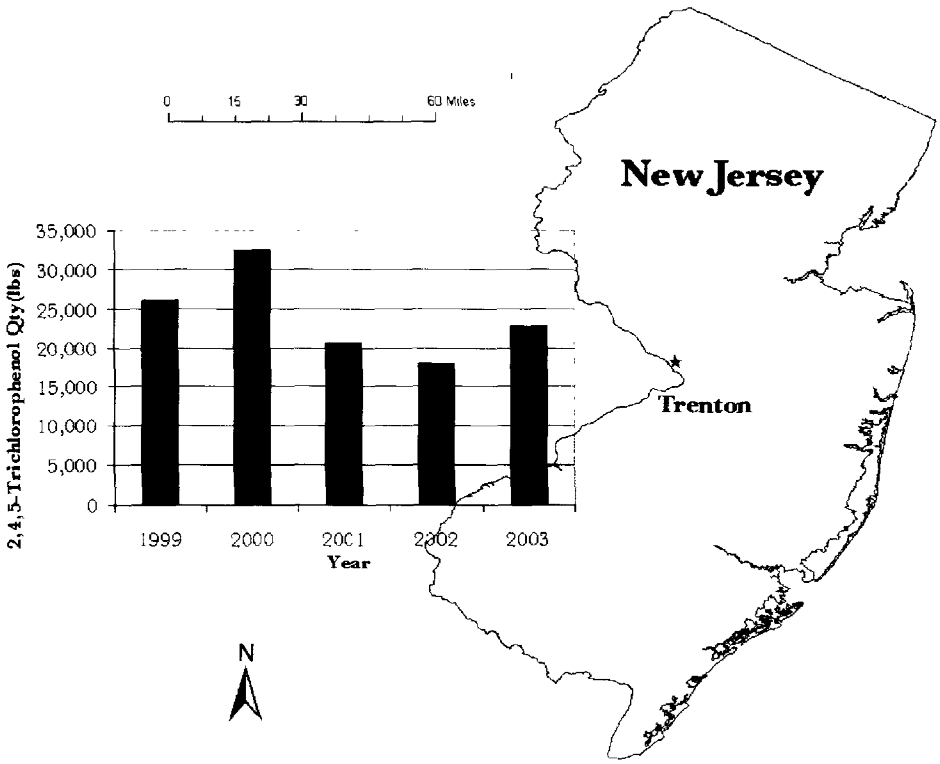
EPA REGION	**1999**	**2000**	**2001**	**2002**	**2003**
2	26,098	32,443	20,657	17,913	22,857

State Trends– 2,4,5 – Trichlorophenol. Exhibits 4.16 and 4.17 show the trends for the PC quantity of 2,4,5 - trichlorophenol reported by the 1 facility in New Jersey that reported this chemical between 1999 and 2003.

Exhibit 4.16. State-Level Information for 2,4,5 - Trichlorophenol (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)	Percent Change in Quantity (1999-2003)
New Jersey	26,098	32,443	20,657	17,913	22,857	-3,241	100.0%	-12.4%

Exhibit 4.17. Trends in 2,4,5 - Trichlorophenol quantities (1999 – 2003)



Industry Sector (SIC) Trends– 2,4,5 – Trichlorophenol. Only 1 facility, in SIC 2869 -- Industrial organic chemicals, nec reported a PC quantity of 2,4,5 - trichlorophenol in 1999-2003 (Exhibit 4.18).

Exhibit 4.18. Industry Sector-Level Information for 2,4,5 - Trichlorophenol (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)	Percent Change in Quantity (1999-2003)
2869	Industrial organic chemicals, nec	1	26,098	32,443	20,657	17,913	22,857	-3,241	100.0%	-12.4%

Exhibit 4.19 shows how 2,4,5 - trichlorophenol was managed at the one facility that accounted for 100 percent of the total quantity of this PC in 2003. This facility treated virtually all of the 2,4,5 - trichlorophenol onsite.

Exhibit 4.19. Management of 2,4,5 - Trichlorophenol (2003)

Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
22,857	13	0	0	0	22,844	0	0	0

Anthracene

Chemical Information.
CAS Number - 120-12-7
Alternate Names - paraNaphthalene, anthracin, anthraxcene
General Uses - This chemical is used to make dyes, plastics and pesticides. It has been used to make smoke screens and scintillation counter crystals.
Potential Hazards - This chemical may cause irritation of the eyes and respiratory tract. It may also irritate the gastrointestinal tract if swallowed. It is combustible.

Summary Analysis– Anthracene.

- Anthracene comprised 0.5 percent of the total PC quantity reported in 2003, for a total quantity of 419,068 pounds. There was approximately a 7.5 percent increase in the PC quantity of anthracene reported from 1999 to 2003.
- Since 1999, there has been an increase in treatment of anthracene and a corresponding decrease in energy recovery. Recycling of anthracene also has decreased.
- Of the 37 facilities that reported anthracene in 2003, one facility accounted for over 64 percent of the total quantity of this chemical; 5 of the 37 facilities accounted for 90 percent of the total quantity.
- In 2003, about 88 percent of the anthracene was reported by facilities in Regions 4 and 5. There was a sizable decrease in the PC quantity of anthracene reported by facilities in Region 6.
- Although facilities in 20 states reported a PC quantity of anthracene in 2003, facilities in 9 of these states accounted for over 99 percent of the total PC quantity of anthracene. Facilities in Kentucky, reported about 65 percent of the total quantity with an increase of over 427 percent since 1999.
- Facilities in 5 industry sectors (SIC codes) accounted for over 99 percent of the PC quantity of anthracene reported in 2003. One facility, in SIC 3334 (Primary Aluminum), accounted for over 64 percent of the total PC quantity of anthracene.

National Trends – Anthracene. Exhibit 4.20 presents the total PC quantity (lbs.) of anthracene in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, anthracene accounted for about 0.5 percent of the total quantity of PCs. Although there has been an increase in the number of facilities reporting anthracene, there has been a decrease (-7.5%) in the PC quantity of anthracene reported from 1999 to 2003.

In 2003, there were significant changes regarding the usage of management methods for anthracene. The quantity going to disposal had been declining since 1999 but increased considerably in 2003. There also was a considerable increase in the treatment of anthracene. However, energy recovery declined significantly. Recycling also dropped off in 2003.

Exhibit 4.20. National-Level Information for Anthracene

	1999	2000	2001	2002	2003	Percent Change (1999-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	29	32	34	34	37	27.6%	
Disposal Quantity (lbs.)	73,355	50,659	57,334	26,515	82,502	12.5%	4.9%
Energy Recovery Quantity (lbs.)	289,337	283,490	187,988	262,799	24,482	-91.5%	1.5%
Treatment Quantity (lbs.)	90,562	212,149	115,507	56,168	312,084	244.6%	18.6%
Priority Chemical Quantity (lbs.)	453,254	546,297	360,830	345,482	419,068	-7.5%	
Recycling Quantity (lbs.)	247,344	222,786	373,799	372,813	134,396	-45.7%	

Exhibit 4.21 shows the number of facilities that reported anthracene within various quantity ranges. Of the 37 facilities that reported anthracene in 2003, one facility accounted for over 64 percent of the total quantity of this chemical. Five of the 37 facilities accounted for 90 percent of the total PC quantity of anthracene in 2003.

Exhibit 4.21. Distribution of Facilities that Reported Quantities for Anthracene (2003)

Anthracene (419,608 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	7	less than 0.1%
between 11 - 100 pounds	5	less than 0.1%
between 101 -1,000 pounds	13	1.0%
between 1,001 - 10,000 pounds	7	8.9%
between 10,001 - 100,000 pounds	4	25.8%
between 100,001 - 1 million pounds	1	64.2%
> 1 million pounds	0	0.0%

EPA Region Trends- Anthracene. Exhibit 4.22 shows the quantity (pounds) of anthracene in each EPA Region where facilities reported this PC in 1999-2003. In 2003, almost 88 percent of the anthracene was reported by facilities in Regions 4 and 5. In particular, there was a considerable increase in the quantity of anthracene in Region 4. Although Region 5 had the second largest quantity of anthracene in 2003, its quantity has decreased, for the most part, including an almost 50 percent decrease compared to the 2002 quantity. There likewise has been a sizable decrease in the PC quantity of anthracene in Region 6. Exhibit 4.23 shows the regional quantities of anthracene and the facilities that reported anthracene in 2003.

Exhibit 4.22. Quantity of Anthracene Reported by EPA Regions (1999-2003)

EPA REGION	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
3	18,160	35,239	7,353	6,686	18,345	1.0%	4.4%
4	53,189	4,229	2,869	4,090	276,556	419.9%	66.0%
5	103,510	128,042	61,054	179,877	91,646	-11.5%	21.9%
6	278,331	378,757	289,097	154,488	31,882	-88.5%	7.6%
8	63	30	363	250	536	750.8%	0.1%
9	0	0	0	6	5	NA	0.0%
10	1	0	94	85	98	9700.0%	0.0%
Total	453,254	546,297	360,830	345,482	419,068	-7.5%	100.0%

Exhibit 4.23. Distribution of Facilities Reporting anthracene in 2003 & Quantity of anthracene Reported in 2003, by Region

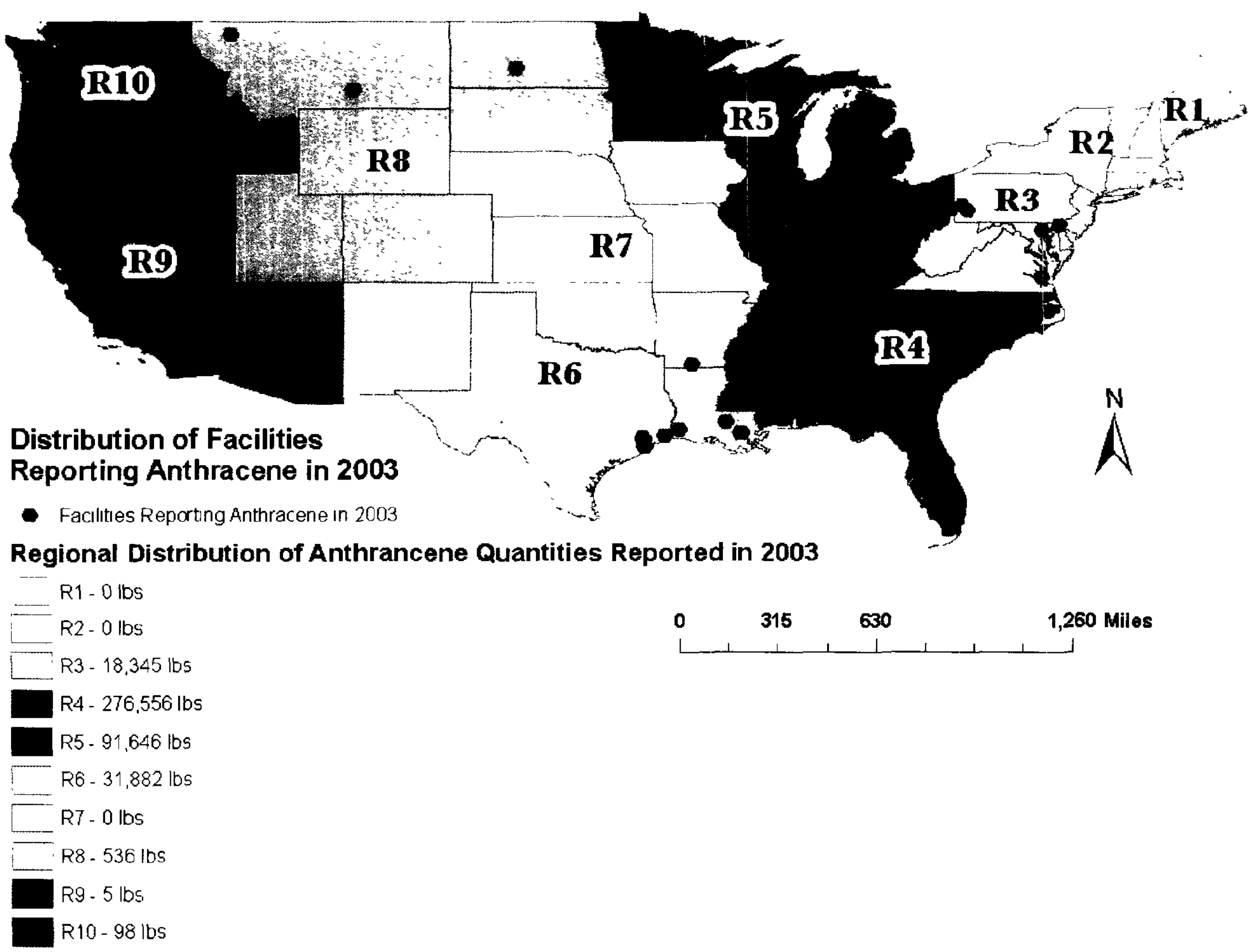


Exhibit 4.24 shows how facilities managed anthracene within each EPA Region in 2003. Most of the PC quantity of anthracene was treated onsite, particularly by facilities in Region 4. In

Region 5, much of the anthracene was sent to offsite disposal. In Region 6, the anthracene was primarily managed via onsite energy recovery; a notable quantity also was recycled.

Exhibit 4.24. Management Methods for Anthracene, By EPA Region (2003)

	Disposal		**Energy Recovery**		**Treatment**		**Recycling**	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
3	0	13,706	0	257	1,126	3,256	201	8,300
4	255	2,568	1	2,800	268,671	2,261	82,790	55
5	516	64,577	0	130	26,265	158	19,049	2
6	288	57	18,156	3,134	4,878	5,369	0	23,880
8	535	0	0	0	0	1	113	6
9	0	0	0	0	0	5	0	0
10	0	0	4	0	75	19	0	0
Total	1,594	80,908	18,161	6,321	301,015	11,069	102,153	32,243

State Trends- Anthracene. Exhibit 4.25 shows the quantity of anthracene in those states where facilities report this chemical, between 1999 and 2003. Although facilities in 20 states reported a PC quantity of anthracene in 2003, facilities in only 9 of these states accounted for over 99 percent of the total PC quantity of anthracene. Kentucky, with almost 65 percent of the total quantity, had an increase of over 427 percent since 1999 (Exhibit 4.26). Facilities in Michigan, with nearly 14 percent of the total quantity, only started reporting anthracene since 2002. Texas facilities had a considerable decrease – almost 240,000 pounds since 1999, a 90 percent decrease (Exhibit 64). Notable decreases also occurred in Ohio (-86,942 pounds (-99.8%)), Louisiana (-8,648 pounds, (-62.1%)), and West Virginia (-5,769 pounds, (-36.1%)).

Exhibit 4.25. State-Level Information for Anthracene (1999-2003)

	Total Quantity (pounds) of Priority Chemical							
State	**1999**	**2000**	**2001**	**2002**	**2003**	**Change in Quantity (1999-2003)**	**Percent of Total Quantity of this Priority Chemical (2003)**	**Percent Change in Quantity (1999-2003)**
Kentucky	51,370	1,004	962	1,878	270,887	219,517	64.6%	427.3%
Michigan	0	0	0	888	57,719	57,719	13.8%	NA
Illinois	16,354	14,963	2,560	9,372	33,573	17,219	8.0%	105.3%
Texas	264,402	373,863	275,398	144,427	26,466	-237,936	6.3%	-90.0%
West Virginia	15,959	33,527	6,029	4,300	10,190	-5,769	2.4%	-36.1%
Pennsylvania	2,201	1,712	1,319	2,380	7,652	5,451	1.8%	247.7%
Alabama	1,549	3,201	1,827	2,176	5,551	4,002	1.3%	258.4%
Louisiana	13,929	4,818	13,638	9,959	5,281	-8,648	1.3%	-62.1%

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)	Percent Change in Quantity (1999-2003)
Montana	0	0	250	250	535	535	0.1%	NA
Virginia	0	0	0	3	274	274	0.1%	NA
Ohio	87,155	112,814	58,486	169,615	213	-86,942	0.1%	-99.8%
Maryland	0	0	0	0	203	203	0.0%	NA
Indiana	1	12	5	1	136	135	0.0%	13500.0%
Arkansas	0	76	61	102	135	135	0.0%	NA
North Carolina	270	24	80	36	118	-152	0.0%	-56.2%
Washington	0	0	94	85	98	98	0.0%	NA
Delaware	0	0	5	3	26	26	0.0%	NA
California	0	0	0	6	5	5	0.0%	NA
Minnesota	0	253	3	1	5	5	0.0%	NA
North Dakota	0	0	2	0	1	1	0.0%	NA
Oregon	1	0	0	0	0	-1	0.0%	-100.0%
Utah	63	30	111	0	0	-63	0.0%	-100.0%
Total	453,254	546,297	360,830	345,482	419,068	-34,186	100.0%	-7.5%

Exhibit 4.26. Anthracene Significant Quantity Trends (1999-2003): Facilities in Texas and Kentucky

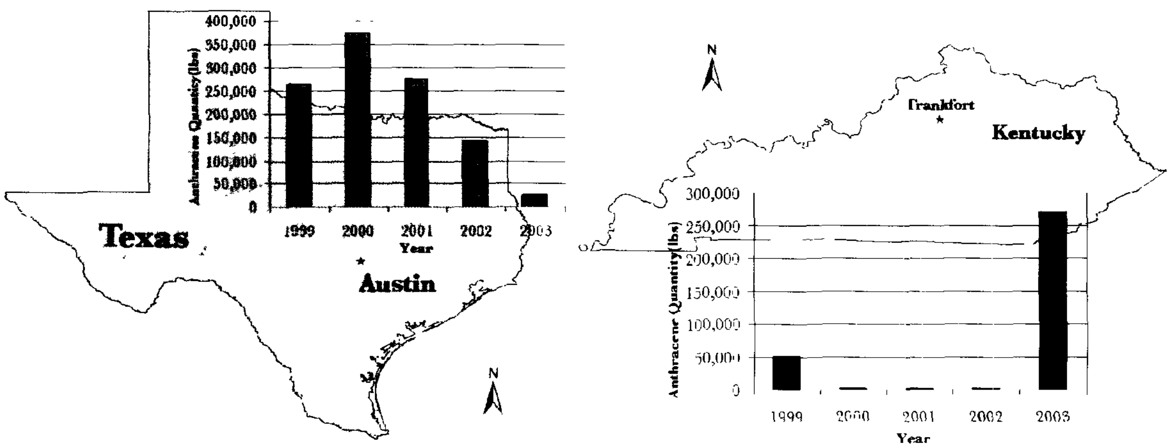
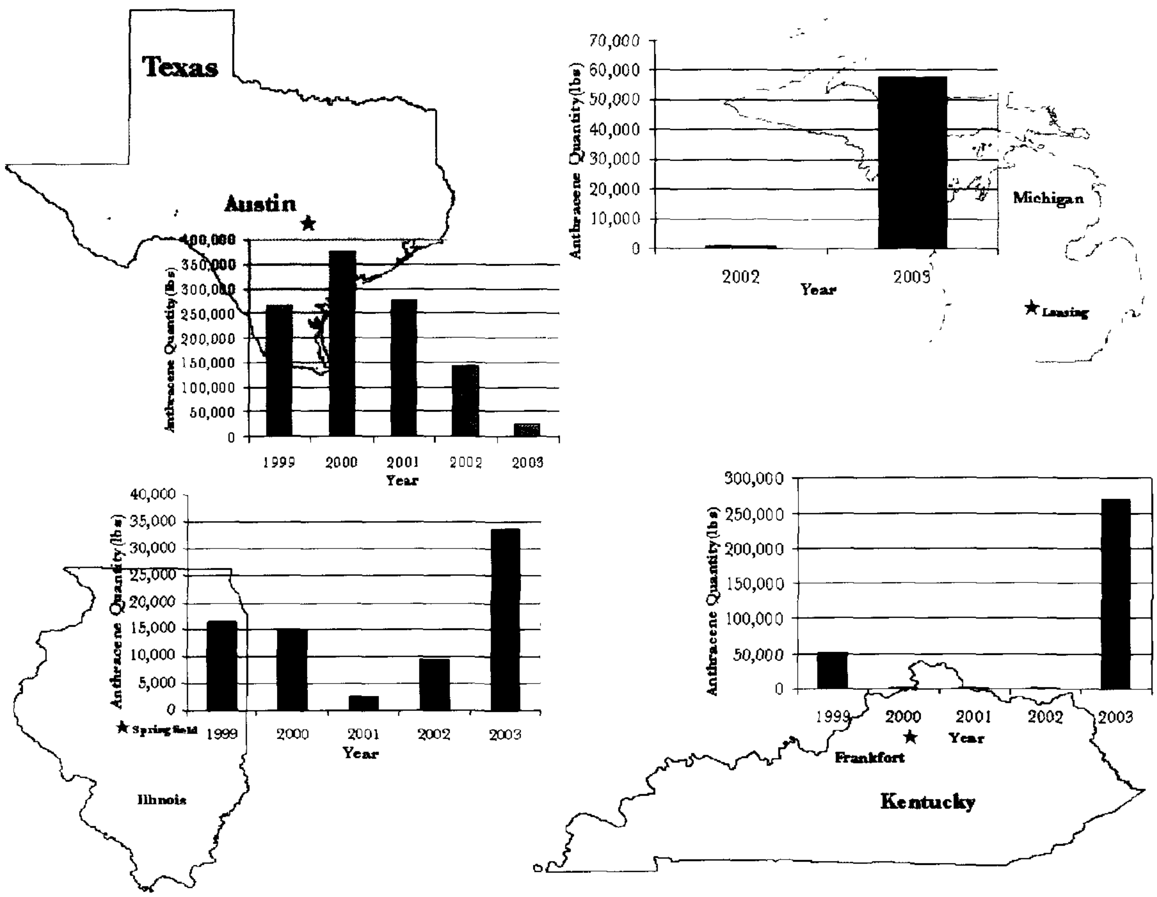


Exhibit 4.27 shows how anthracene was managed by facilities in the 4 states that accounted for over 90 percent of the total quantity of this PC in 2003. Most of the anthracene was treated, primarily onsite, especially by facilities in Kentucky and Illinois. Energy recovery was the primary management method in Texas. Michigan facilities sent their anthracene to land disposal. Recycling of notable quantities occurred in Kentucky and Texas.

Exhibit 4.27. Management of Anthracene in States with 90 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Kentucky	270,887	255	1,450	0	250	268,671	261	70,150	55
Michigan	57,719	516	57,203	0	0	0	0	0	0
Illinois	33,573	0	7,155	0	130	26,265	23	1,089	0
Texas	26,466	288	2	18,156	3,085	0	4,935	0	23,880

Exhibit 4.28. Trends Analyses of States with 90 Percent of Total Quantity (2003)



Industry Sector (SIC) Trends- Anthracene. Exhibit 4.29 shows the PC quantity (pounds) of anthracene for the five industry sectors (SIC codes) where facilities reported over 99 percent of this chemical in 2003. Facilities in SIC 3334 (Primary Aluminum) reported the highest quantities, accounting for over 64 percent of the total PC quantity of anthracene reported in 2003. One facility in this sector, located in Kentucky, reported over 99 percent of the quantity for SIC 3334. This facility, reported 250 pounds in both 2001 and 2002; however, in 2003, their reported quantity increased dramatically to almost 270,000 pounds. Compared to the quantities reported in 1999, there was a significant decrease in the quantity of anthracene reported in 2003 by two of the top 5 industry sectors: SIC 2865 --Cyclic crudes and intermediates (-31.6%) and SIC 2869 - Industrial organic chemicals, nec (-84.6%).

Exhibit 4.29. Industry Sector-Level Information for Anthracene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3334	Primary aluminum	2	0	0	250	250	269,580	NA	64.3%
2865	Cyclic crudes and intermediates	5	121,742	165,658	69,965	186,745	83,230	-31.6%	19.9%
2869	Industrial organic chemicals, nec	6	208,553	203,848	96,761	79,703	32,096	-84.6%	7.7%
2821	Plastics materials and resins	1	0	0	0	0	22,536	NA	5.4%
3312	Blast furnaces and steel mills	4	1,540	339	117	354	7,866	410.8%	1.9%

Exhibit 4.30 shows how anthracene was managed by facilities in the five industry sectors that accounted for over 90 percent of the total quantity of this PC in 2003. Most of the anthracene was treated, primarily onsite, particularly by facilities in SIC 3334 – Primary Aluminum. Facilities in the SIC 2865 – Cyclic crudes and intermediates industry sector primarily sent the anthracene to offsite disposal. Facilities in SIC 2869 - Industrial organic chemicals, nec, and SIC 3312 – Blast Furnaces and steel mills accounted for most of the anthracene that was recycled in 2003.

Exhibit 4.30. Management of Anthracene in Industry Sectors (SIC Codes) with 90 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3334	Primary aluminum	269,580	500	1,449	0	0	267,631	0	113	0
2865	Cyclic crudes and intermediates	83,230	0	72,463	0	2,592	4,919	3,256	1,089	0
2869	Industrial organic chemicals, nec	32,096	250	53	18,156	3,085	5,190	5,362	70,000	23,880
2821	Plastics materials and resins	22,536	0	0	0	88	22,446	2	0	0
3312	Blast furnaces and steel mills	7,866	0	6,064	1	0	0	1,801	12,755	8,300

Recycling. Exhibit 4.31 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of anthracene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4.31. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 2491-- Wood Preserving												
1	2	Connecticut	0	0	866	0	818	0	1,501	0	1,456	0
SIC 2865-- Cyclic Crudes'and Intermediates												
1	4	Alabama	0	0	0	0	0	0	200	0	200	0
SIC 2911-- Petroleum Refining												
1	6	Louisiana	183,679	0	0	0	0	0	0	0	0	0
1	6	Texas	101,000	0	0	0	0	0	0	0	39,896	0
SIC 3312-- Blast Furnaces and Steel Mills												
1	2	New York	0	0	2,765	0	2,953	0	2,822	0	2,727	0
3	3	Pennsylvania	88,000	0	433,839	0	580,091	14,246	18,000	10,120	15,317	0
2	4	Alabama	7,467	0	2,130	0	671	0	721	0	840	0

Benzo(g,h,i)perylene

Chemical Information
CAS Number - 191-24-2
Alternate Names - 1,12-benzoperylene
General Uses - Benzo(g,h,i)perylene is a polycyclic aromatic hydrocarbon (PAH) that occurs naturally in crude oils. It has no known commercial use or production. Emissions typically result from petroleum refining, coal tar distillation, and the incomplete combustion of organic matter.
Potential Hazards - Unknown at this time. Although some PAHs have caused tumors in laboratory animals, benzo(g,h,i) perylene has not been shown to have a cancer concern. This chemical was added to the TRI based on its ecotoxicity.

Summary Analysis– Benzo(g,h,i)perylene

- Benzo(g,h,i)perylene has been reported to TRI since 2000. In 2003, benzo(g,h,i)perylene accounted for about 0.4 percent of the total quantity of PCs, with a total of 315,282 pounds. Since 2000, there has been about an 85 percent decrease in the PC quantity of benzo(g,h,i)perylene.
- Since 2000, energy recovery has been the primary management method used for benzo(g,h,i)perylene.
- Eight of the 364 facilities that reported benzo(g,h,i)perylene in 2003 accounted for 78 percent of the total quantity.
- Facilities in EPA Regions 3, 4, and 6 accounted for over 86 percent of the benzo(g,h,i)perylene reported in 2003. Over 80 percent of the benzo(g,h,i)perylene was reported by facilities in 5 states (Tennessee, Pennsylvania, Louisiana, Texas, and West Virginia).
- Facilities in 6 industry sectors (SIC codes) accounted for over 90 percent of benzo(g,h,i)perylene reported in 2003. Facilities in SIC 3624 (Carbon and graphite products) reported about 52 percent of the total PC quantity of benzo(g,h,i)perylene.

National Trends - Benzo(g,h,i)perylene. Exhibit 4.32 presents the total PC quantity (pounds) of benzo(g,h,i)perylene in 2000 to 2003 [1], showing the disposal, treatment, energy recovery, as well as recycling quantities. Please note that data for 1999 is not included for benzo(g,h,i)perylene because this chemical only was reported to TRI beginning in 2000. In 2003, benzo(g,h,i)perylene accounted for about 0.4 percent of the total quantity of PCs. There has been approximately an 85 percent decrease in the quantity of benzo(g,h,i)perylene reported from 2000 to 2003, although the quantity has been somewhat constant the last two years – a little over 300,000 pounds. Since 2000, Energy recovery has been the primary management method

[1] Some facilities may have mistakenly reported on their TRI Form R the threshold quantity of Benzo(g,h,i)perylene, contained in fuel oil, as a quantity released or as a quantity treated onsite. As such, over-reporting of quantities released to the environment or treated, for these chemicals, may mean that the PC quantity is likewise over-stated. It is important to note that TRI chemicals in fuels that are destroyed during the combustion process are not considered treated. TRI chemicals are only considered treated if they are part of a waste stream and are then managed as a waste. EPA has notified reporters of these potential problems. As facilities submit corrected TRI Form Rs to correct any such over-reporting of this chemical, the PC quantities may decrease in subsequent updates of this Trends Report.

used for benzo(g,h,i)perylene. In 2003, disposal and treatment were used equally to manage benzo(g,h,i)perylene. Recycling of benzo(g,h,i)perylene decreased significantly in 2003.

Exhibit 4.32. National-Level Information for Benzo(g,h,i)perylene

	2000	2001	2002	2003	Percent Change (2000-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	325	352	332	364	12.0%	
Disposal Quantity (lbs.)	121,575	85,381	42,899	72,632	-40.3%	23.0%
Energy Recovery Quantity (lbs.)	1,841,025	797,556	208,853	170,078	-90.8%	53.9%
Treatment Quantity (lbs.)	141,798	105,739	56,611	72,572	-48.8%	23.0%
Priority Chemical Quantity (lbs.)	2,104,398	988,675	308,362	315,282	-85.0%	
Recycling Quantity (lbs.)	84,835	172,995	133,345	61,793	-27.2%	

Exhibit 4.33 shows the number of facilities that reported benzo(g,h,i)perylene within various quantity ranges. Of the 364 facilities that reported benzo(g,h,i)perylene in 2003, one facility accounted for almost 43 percent of the total quantity of this chemical. Eight of the facilities accounted for 78 percent of the total PC quantity of benzo(g,h,i)perylene in 2003.

Exhibit 4.33. Distribution of Facilities that Reported Quantities (lbs) for Benzo(g,h,i)perylene in 2003

Benzo(g,h,i)perylene (315,282 pounds)		
Quantity Reported	Number of Facilities Reporting this quantity (2003)	Percent of Total Quantity for this Priority Chemical
up to 10 pounds	219	0.1%
between 11 - 100 pounds	90	1.2%
between 101 -1,000 pounds	30	3.0%
between 1,001 - 10,000 pounds	17	17.8%
between 10,001 - 100,000 pounds	7	35.1%
between 100,001 - 1 million pounds	1	42.8%
> 1 million pounds	0	0.0%

EPA Region Trends- Benzo(g,h,i)perylene. Exhibit 4.34 shows the PC quantity (pounds) of benzo(g,h,i)perylene reported by facilities in each EPA Region in 2000-2003. In 2003, over 86 percent of the benzo(g,h,i)perylene was reported by facilities in Regions 3, 4, and 6. There has been a considerable decrease -- about 1.7 million pounds -- in the quantity of benzo(g,h,i)perylene reported by facilities in Region 4 since 2000. Also, significant decreases have occurred in Region 2 (-47.9%) and in Region 10 (-98.2%). Exhibit 4.35 displays the regional benzo(g,h,i)perylene quantity distribution and distribution of facilities reporting quantities in 2003.

Exhibit 4.34. Quantity of Benzo(g,h,i)perylene, Reported by EPA Regions (2000-2003)

EPA REGION	2000	2001	2002	2003	Percent Change in Quantity (2000-2003)	Percent Of the Total Priority Chemical quantity (2003)
1	1,391	1,003	845	1,220	-12.3%	0.4%
2	16,637	9,166	8,405	8,666	-47.9%	2.7%
3	54,521	46,336	22,704	56,117	2.9%	17.8%
4	1,866,109	812,551	73,984	162,375	-91.3%	51.5%
5	32,055	38,015	44,999	25,372	-20.9%	8.0%
6	47,465	58,142	111,258	53,603	12.9%	17.0%
7	1,565	1,570	1,241	53,603	-23.8%	0.4%
8	4,641	4,560	41,405	5,091	9.7%	1.6%
9	103	83	214	242	135.6%	0.1%
10	79,911	17,251	3,307	1,404	-98.2%	0.4%
Total	2,104,398	988,675	308,362	315,282	-85.0%	100.0%

Exhibit 4.35. Distribution of Facilities Reporting benzo(g,h,i)perylene in 2003 & Quantity of benzo(g,h,i)perylene Reported in 2003 per Region

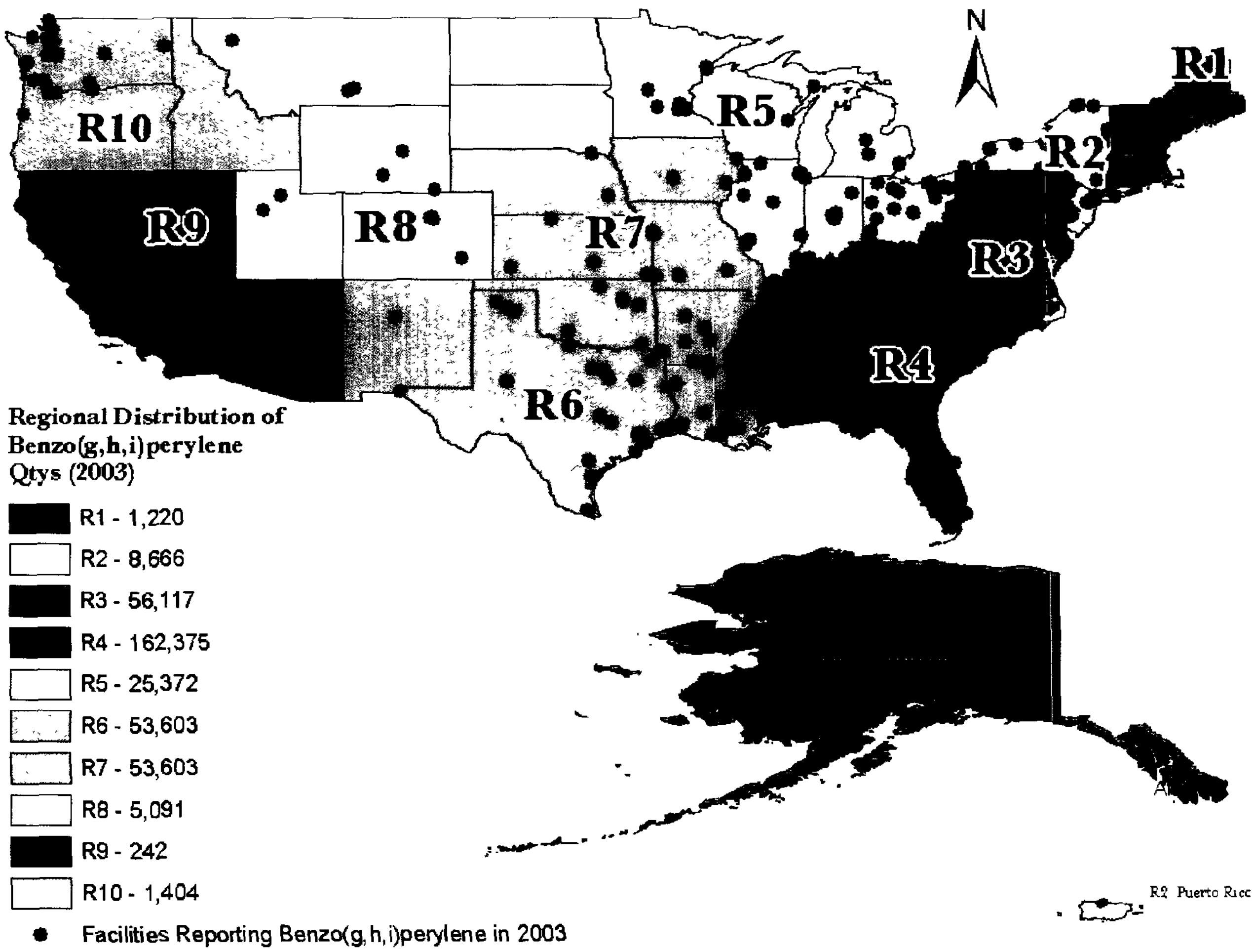


Exhibit 4.36 shows how Benzo(g,h,i)perylene was managed by facilities within each EPA Region in 2003. Most of the PC quantity of Benzo(g,h,i)perylene was managed using onsite energy recovery, particularly by facilities in Region 4. Energy recovery also was the primary method for managing Benzo(g,h,i)perylene in Regions 1,4, 6, and 8. Facilities in Region 2 primarily used treatment, while facilities in Regions 3, 7, 9, and 10 sent most of their Benzo(g,h,i)perylene to land disposal. Region 5 facilities equally used treatment and disposal. Most of the recycling of Benzo(g,h,i)perylene was done by facilities in Region 6.

Exhibit 4.36. Management Methods for Benzo(g,h,i)perylene, By EPA Region (2003)

	Disposal		**Energy Recovery**		**Treatment**		**Recycling**	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
1	29	142	646	5	374	24	0	1
2	0	795	411	17	7,262	181	370	7
3	0	48,474	4,071	66	3,251	255	8,013	191
4	5,174	519	116,777	174	39,356	374	362	3,253
5	6	12,198	263	1,153	11,565	187	9,367	13
6	131	2,926	40,026	1,355	8,808	356	18,698	20,736
7	267	534	22	42	240	87	20	11
8	5	31	4,978	24	2	51	3	0
9	15	196	0	21	0	10	0	2
10	20	1,169	26	0	183	6	744	0

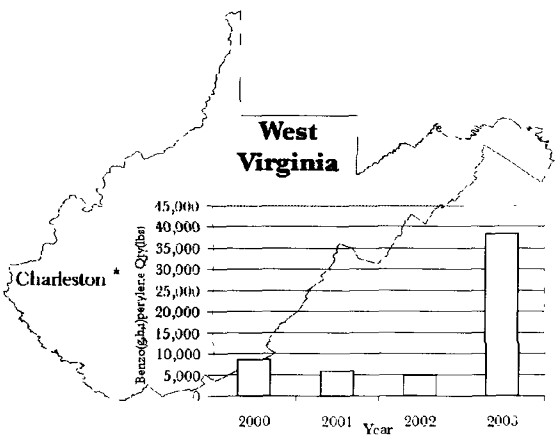
State Trends- Benzo(g,h,i)perylene. Although facilities in 43 states reported a PC quantity of benzo(g,h,i)perylene in 2003, facilities in 8 of these states reported over 90 percent of the total quantity (Exhibit 4.37). Tennessee facilities, with over 48 percent of the total quantity of benzo(g,h,i)perylene, had an decrease of almost 92 percent since 2000 (Exhibit 4.38). Facilities in several other states, including West Virginia (Exhibit 4.38), Ohio, and New York, also had decreased quantities in 2003. In Pennsylvania, the 2003 quantity of benzo(g,h,i)perylene more than tripled. Michigan facilities reported only a very small quantity of benzo(g,h,i)perylene from 2000-2002, but saw a dramatic increase to almost 10,000 pounds in 2003.

Exhibit 4.37. State-Level Information for Benzo(g,h,i)perylene (2000-2003)

State	**2000**	**2001**	**2002**	**2003**	**Change in Quantity (2000-2003)**	**Percent of Total Quantity of this Priority Chemical (2003)**	**Percent Change in Quantity (2000-2003)**
Tennessee	1,855,845	801,205	66,123	152,338	-1,703,507	48.3%	-91.8%
Pennsylvania	8,543	5,973	4,843	38,502	29,959	12.2%	350.7%
Louisiana	21,479	28,668	29,794	25,160	3,680	8.0%	17.1%
Texas	23,444	24,847	24,820	23,732	289	7.5%	1.2%
West Virginia	42,586	38,266	15,285	14,691	-27,895	4.7%	-65.5%
Ohio	26,536	35,729	38,231	11,961	-14,575	3.8%	-54.9%

State	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)	Percent Change in Quantity (2000-2003)
Michigan	3	4	4	9,921	9,918	3.1%	341988.6%
New York	16,274	8,766	8,023	8,219	-8,055	2.6%	-49.5%
Total	2,104,399	988,676	308,363	315,282	-1,789,116	100.0%	-85.0%

Exhibit 4.38. Benzo(g,h,i)perylene Significant Quantity Trends (1999-2003): Facilities in Tennessee and West Virginia



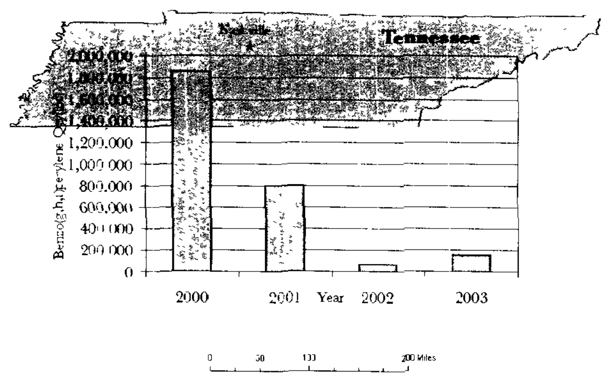
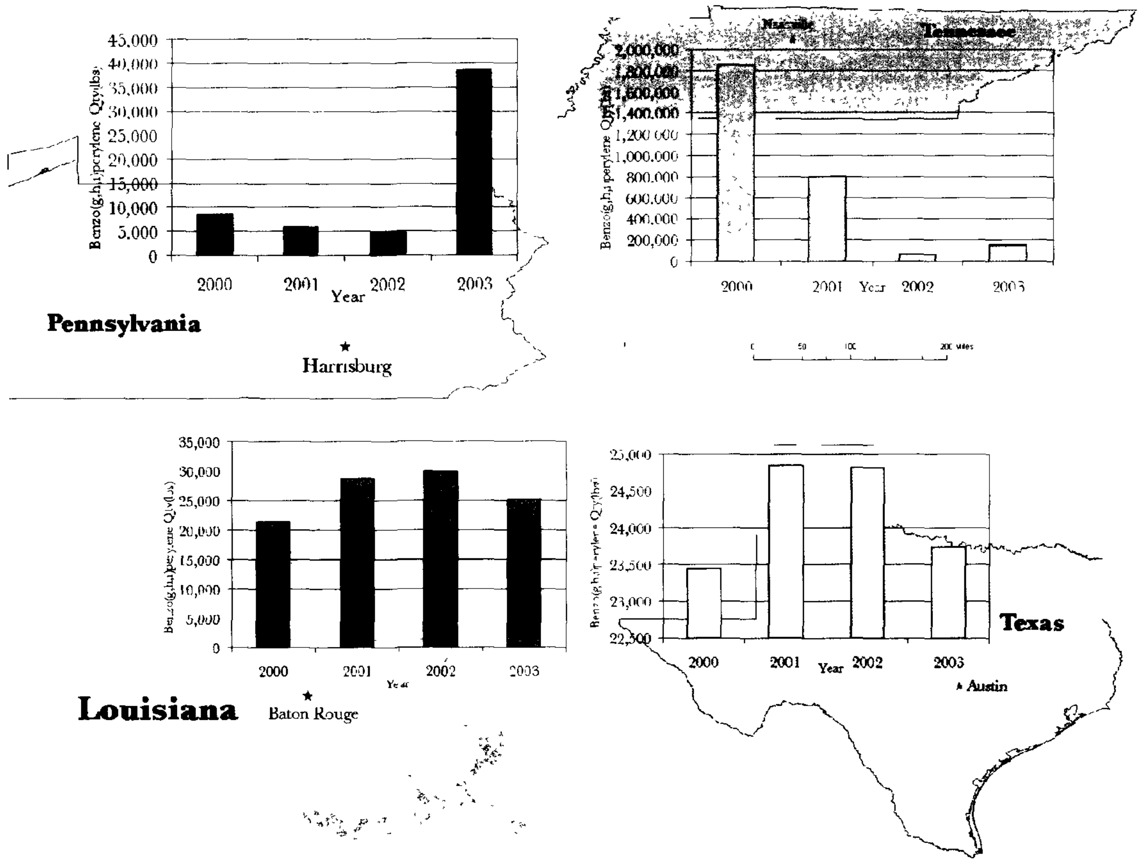


Exhibit 4.39 shows how benzo(g,h,i)perylene was managed by facilities in the 8 states that accounted for over 90 percent of the total quantity of this PC in 2003. Overall, most of the benzo(g,h,i)perylene was managed using onsite energy recovery, especially at facilities in Tennessee, Texas, and Louisiana. Offsite disposal was used primarily by facilities in Pennsylvania, West Virginia, and Michigan. In Ohio and New York facilities, the benzo(g,h,i)perylene was mostly treated onsite. Recycling of notable quantities occurred in Louisiana, Texas, and Pennsylvania. Exhibit 4.40 displays the 4 states that reported the largest quantities of benzo(g,h,i)perylene in 2003.

Exhibit 4.39. Management of Benzo(g,h,i)perylene in States with 90 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Tennessee	152,338	4,653	29	111,627	67	35,923	39	47	2,861
Pennsylvania	38,502	0	34,355	4,069	24	30	24	7,593	8
Louisiana	25,160	26	2,601	15,510	4	6,981	38	0	20,562
Texas	23,732	22	307	21,433	80	1,804	85	18,698	155
West Virginia	14,691	0	14,035	1	7	427	221	0	0
Ohio	11,961	2	772	5	0	11,176	6	0	8
Michigan	9,921	3	9,917	0	0	0	0	0	0
New York	8,219	0	783	44	0	7,217	175	370	4
Total	284,524	4,706	62,800	152,690	182	63,558	588	26,708	23,598

Exhibit 4.40. Trends Analyses of States Reporting Largest 4 Quantities (2003)



Industry Sector (SIC) Trends- Benzo(g,h,i)perylene. Exhibit 4.41 shows the PC quantity (pounds) of benzo(g,h,i)perylene for the six industry sectors (SIC codes) where facilities reported over 90 percent of this chemical in 2003. Facilities in SIC 3624 (Carbon and graphite products) reported the highest quantities, accounting for over 52 percent of the total PC quantity of benzo(g,h,i)perylene reported in 2003. Most of this quantity was reported by one facility, located in Tennessee, with almost 82 percent of the benzo(g,h,i)perylene for this industry sector. This same facility has decreased their quantity of Benzo(g,h,i)perylene by over 90 percent since 2000.

Facilities in 2 of the top 6 industry sectors: SIC 2865 -- Cyclic crudes and intermediates and SIC 3334 – Primary Aluminum reported a significant decrease (-49.6% and -87.2%, respectively) in the quantity of benzo(g,h,i)perylene, compared to the quantities reported in 2000.

Exhibit 4.41. Industry Sector-Level Information for Benzo(g,h,i)perylene (2000-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3624	Carbon and graphite products	10	1,881,345	824,537	77,738	165,116	-1,716,229	52.4%
2895	Carbon black	19	40,665	37,294	42,333	43,745	3,080	13.9%
3312	Blast furnaces and steel mills	3	506	444	118	33,711	33,205	10.7%
2865	Cyclic crudes and intermediates	7	51,129	50,888	47,031	25,785	-25,344	8.2%
2911	Petroleum refining	46	11,152	14,012	101,897	13,102	1,950	4.2%
3334	Primary aluminum	11	100,484	28,139	17,745	12,900	-87,583	4.1%

Exhibit 4.42 shows how benzo(g,h,i)perylene was managed by facilities in the six industry sectors that accounted for over 90 percent of the total quantity of this PC in 2003. Over 50 percent of the benzo(g,h,i)perylene was sent to onsite energy recovery, primarily within SIC 3624 – Carbon and graphite products, SIC 2895 – Carbon Black, and SIC 2911 – Petroleum Refining. Most of the benzo(g,h,i)perylene in SIC 3312-Blast Furnaces and steel mills and SIC 2865 – Cyclic crudes and intermediates was sent to offsite disposal. Facilities in SIC 3334 – Primary Aluminum primarily used onsite treatment and also recycled a significant quantity of benzo(g,h,i)perylene.

Exhibit 4.42. Management of Benzo(g,h,i)perylene in Industry Sectors (SICs) with 90 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3624	Carbon and graphite products	165,116	4,653	1,478	111,628	0	47,321	37	1,220	2,847
2895	Carbon black	43,745	83	59	36,949	0	6,630	25	0	0
3312	Blast furnaces and steel mills	33,711	0	33,711	0	0	0	0	6,373	0
2865	Cyclic crudes and intermediates	25,785	0	25,204	21	0	330	230	270	0
2911	Petroleum refining	13,102	39	280	8,062	2,403	2,175	144	2,668	532
3334	Primary aluminum	12,900	0	1,958	0	0	10,698	245	19,632	0

Recycling. Exhibit 4.43 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of benzo(g,h,i) perylene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4.43. Facilities reporting Recycling but not a PC quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 3312-- Blast Furnaces and Steel Mills												
1	2	New York	0	0	567	0	606	0	579	0	559	0
3	3	Pennsylvania	0	0	1,768	0	859	1,273	6,921	904	5,972	6,500
1	4	Alabama	0	0	1,112	0	1,423	0	1,528	0	1,781	0
SIC 3334-- Primary Aluminum												
1	8	Montana	0	0	209	0	17	0	53	0	54	0
SIC 4925-- Gas Production and/or Distribution												
1	5	Indiana	0	0	25,950	0	15,719	0	18,760	0	0	0

Cadmium and Cadmium Compounds

Chemical Information
CAS Number - 7440-43-9
General Uses – Cadmium, used in this country, is obtained as a by-product from melting zinc, lead, or copper ores. The cadmium by-product is used in metal plating and to make pigments, batteries and plastics.
Potential Hazards - Cadmium and its salts are highly toxic. Breathing high levels of cadmium severely damages the lungs and can cause death.

Summary Analysis– Cadmium and Cadmium Compounds

- In 2003, cadmium and cadmium compounds accounted for about 1 percent of the total quantity of PCs, with a total of 817,579 pounds. There was approximately a 26 percent decrease in the PC quantity of cadmium and cadmium compounds reported from 1999 to 2003.
- Eleven of the 67 facilities that reported cadmium and cadmium compounds in 2003 accounted for 90 percent of the total quantity. One facility accounted for almost 46 percent of the total quantity of this chemical.
- Virtually the entire quantity of cadmium and cadmium compounds was land disposed.
- Over 90 percent of cadmium and cadmium compounds was reported by facilities in 4 Regions (Regions 3, 4, 6, and 10). Facilities in Region 6 accounted for over 47 percent of the total quantity.
- Facilities in 29 states reported a PC quantity of cadmium and cadmium compounds in 2003. Facilities in 8 of these states reported over 90 percent of the total quantity in 2003 with 1 facility in Oklahoma accounting for over 45 percent of the total quantity.
- Six industry sectors (SIC codes) accounted for over 90 percent of cadmium and cadmium compounds reported in 2003. Facilities in SIC 3341 (Secondary nonferrous metals) reported the highest quantities, accounting for 53 percent of the total priority. Most of this quantity was reported by one facility, located in Oklahoma, with about 86 percent of the cadmium and cadmium compounds for this industry sector.

National Trends – Cadmium and Cadmium Compounds. Exhibit 4.44 shows that the number of facilities that reported cadmium and cadmium compounds from 1999 through 2003 has been relatively constant, with 67 facilities reporting in 2003. It also shows that, in 2003, there was an almost 26 percent decrease in the total PC quantity (pounds) of cadmium and cadmium compounds, compared to 1999. Virtually all of the cadmium and cadmium compounds was sent to land disposal.

Exhibit 4.44. National-Level Information for Cadmium and Cadmium Compounds (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (2000-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	73	80	70	72	67	-6.8%	
Disposal Quantity (lbs.)	1,063,795	1,356,083	919,994	744,975	817,338	-23.2%	100.0%
Energy Recovery Quantity (lbs.)	212	0	0	0	0	-100.0%	0.0%
Treatment Quantity (lbs.)	39,781	132,613	12,499	4,595	241	-99.4%	0.0%
Priority Chemical Quantity (lbs.)	1,103,788	1,488,696	932,493	749,570	817,579	-25.9%	
Recycling Quantity (lbs.)	522,513	748,270	469,405	420,139	888,819	70.1%	

Exhibit 4.45 shows the number of facilities that reported cadmium and cadmium compounds, within ranges of quantities. Of the 67 facilities that reported cadmium and cadmium compounds in 2003, one facility accounted for almost 46 percent of the total quantity of this chemical. Eleven of the 67 facilities accounted for 90 percent of the total quantity.

Exhibit 4.45. Distribution of Facilities that Reported Quantities for Cadmium and Cadmium Compounds (2003)

Cadmium and Cadmium Compounds (817,579 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	14	less than 0.1%
between 11 - 100 pounds	11	0.1%
between 101 -1,000 pounds	16	0.9%
between 1,001 - 10,000 pounds	15	9.1%
between 10,001 - 100,000 pounds	10	44.4%
between 100,001 - 1 million pounds	1	45.6%
> 1 million pounds	0	0.0%

EPA Region Trends– Cadmium and Cadmium Compounds. Exhibit 4.46 shows the quantity (pounds) of cadmium and cadmium compounds reported by facilities in each EPA Region in 1999 to 2003. In 2003, facilities in 4 Regions (Regions 3,4, 6, and 10) reported about 90 percent of the cadmium and cadmium compounds; Region 6 facilities accounted for over 47 percent of the total quantity. Decreased quantities of cadmium and cadmium compounds were reported by facilities in 7 of the 10 Regions. Exhibit___ also shows the distribution of cadmium and cadmium compound quantities across EPA Regions as well as the distribution of facilities reporting this chemical in 2003. No facilities in Region 8 reported this PC.

Exhibit 4.46. Quantity of Cadmium and Cadmium Compounds Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (2000-2003)	Percent Of the Total Priority Chemical quantity (2003)
1	13,963	50,835	32,866	5,972	4,271	-69.4%	0.5%
2	14,285	26,073	34,434	28,462	8,466	-40.7%	1.0%
3	137,468	157,948	103,399	68,629	80,042	-41.8%	9.8%
4	162,672	169,707	113,933	102,782	170,480	4.8%	20.9%
5	107,505	209,382	61,863	36,153	48,468	-54.9%	5.9%
6	187,325	366,447	267,921	285,057	386,453	106.3%	47.3%
7	4	43,620	17,905	17,851	11,024	275500.0%	1.3%
8	5,653	695	251	0	0	-100.0%	0.0%
9	5,233	4,029	3,799	7,262	1,818	-65.3%	0.2%
10	469,680	459,960	296,122	197,402	106,556	-77.3%	13.0%
Total	**1,103,788**	**1,488,696**	**932,493**	**749,570**	**817,579**	**-25.9%**	**100.0%**

Exhibit 4.47. Distribution of Facilities Reporting Cadmium and Cadmium Compounds and Quantity of Cadmium and Cadmium Compounds Reported, by EPA Region (2003)

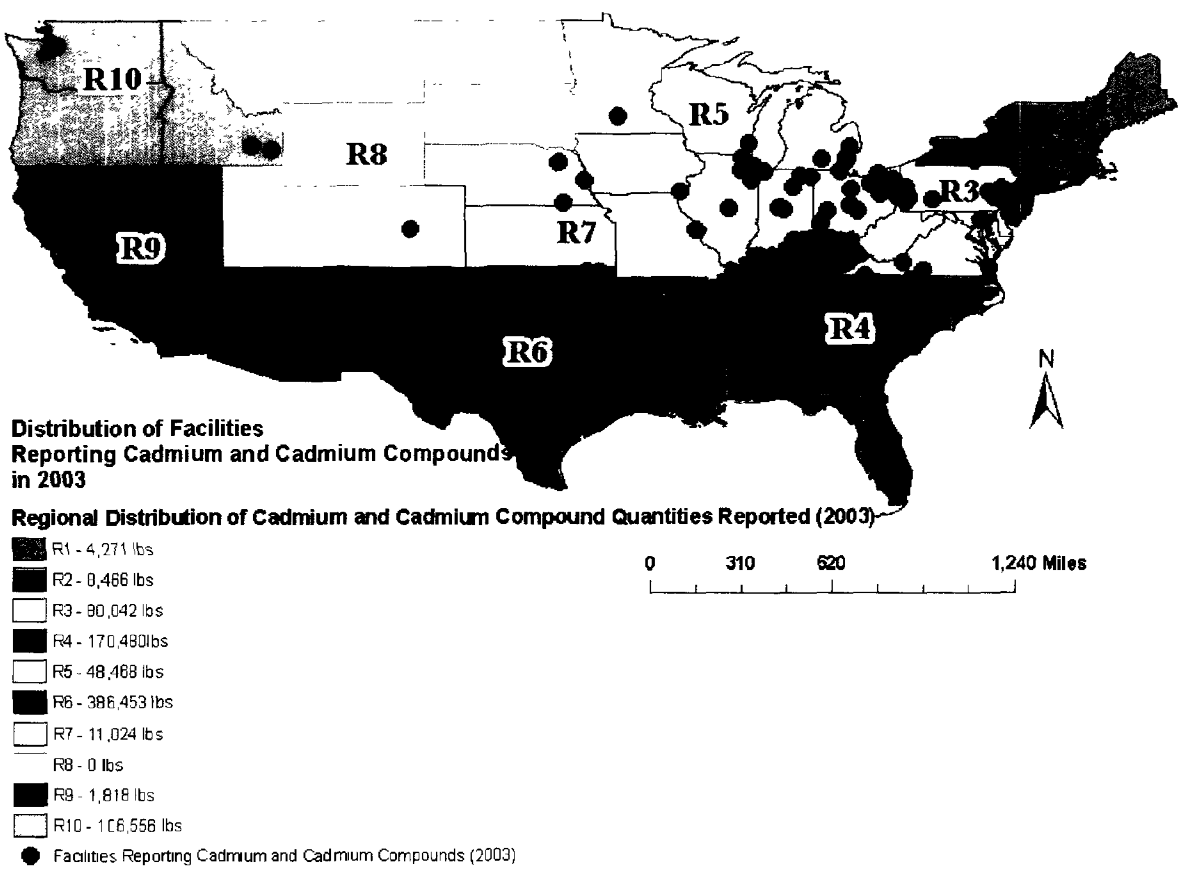


Exhibit 4.48 shows how cadmium and cadmium compounds were managed by facilities within each EPA Region in 2003. Virtually the entire quantity of the cadmium and cadmium compounds was land disposed, primarily by offsite disposal (83 %). There also was significant recycling of cadmium and cadmium compounds by facilities in many of the Regions.

Exhibit 4.48. Management Methods for Cadmium and Cadmium Compounds, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
1	0	4,271	0	0	0	0	0	1,700
2	0	8,466	0	0	'0	0	5,288	3,020
3	4	79,797	0	0	0	241	5,116	464,132
4	51,739	118,741	0	0	0	0	22,008	149,117
5	0	48,468	0	0	0	0	164	2,306
6	32	386,421	0	0	0	0	51,931	81,298
7	0	11,024	0	0	0	0	0	6,647
9	0	1,818	0	0	0	0	60,186	35,906
10	87,000	19,556	0	0	0	0	0	0
Total	138,775	678,563	0	0	0	241	144,693	744,126

State Trends– Cadmium and Cadmium Compounds. Facilities in 29 states reported a PC quantity of cadmium and cadmium compounds in 2003. Exhibit 4.49 shows the quantity of cadmium and cadmium compounds reported by facilities, in those 8 states with facilities that accounted for over 90 percent of the total quantity in 2003. One facility in Oklahoma reported over 45 percent of the total quantity of cadmium and cadmium compounds. Although facilities in Idaho reported 13 percent of the total quantity in 2003, there was a decrease of over 77 percent, compared to the 1999 quantity. Facilities in Florida, South Carolina, Indiana, and Maryland had significant increases, compared to 2002 quantities. Maryland, in particular, had a considerable increase since 1999 – from 69 pounds to almost 67,000 pounds. (Exhibit 4.50).

Exhibit 4.49. State-Level Information for Cadmium and Cadmium Compounds (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Oklahoma	144,903	298,496	227,190	268,060	372,766	227,863	157.3%	45.6%
Idaho	469,620	459,895	296,122	197,402	106,556	-363,064	-77.3%	13.0%
Alabama	92,491	79,728	73,543	78,137	77,169	-15,322	-16.6%	9.4%
Maryland	69	29	42,923	41,171	67,064	66,995	97094.6%	8.2%
Florida	63,198	59,490	17,510	4,440	52,810	-10,388	-16.4%	6.5%
South Carolina	986	15,728	7,752	4,201	25,029	24,043	2438.4%	3.1%
Indiana	6,010	3,051	14,444	9,428	22,825	16,815	279.8%	2.8%
Tennessee	3,114	11,127	11,910	12,159	13,562	10,448	335.5%	1.7%

Exhibit 4.50. Cadmium and Cadmium Compound Significant Quantity Trends (1999-2003): Facilities in Idaho and Oklahoma

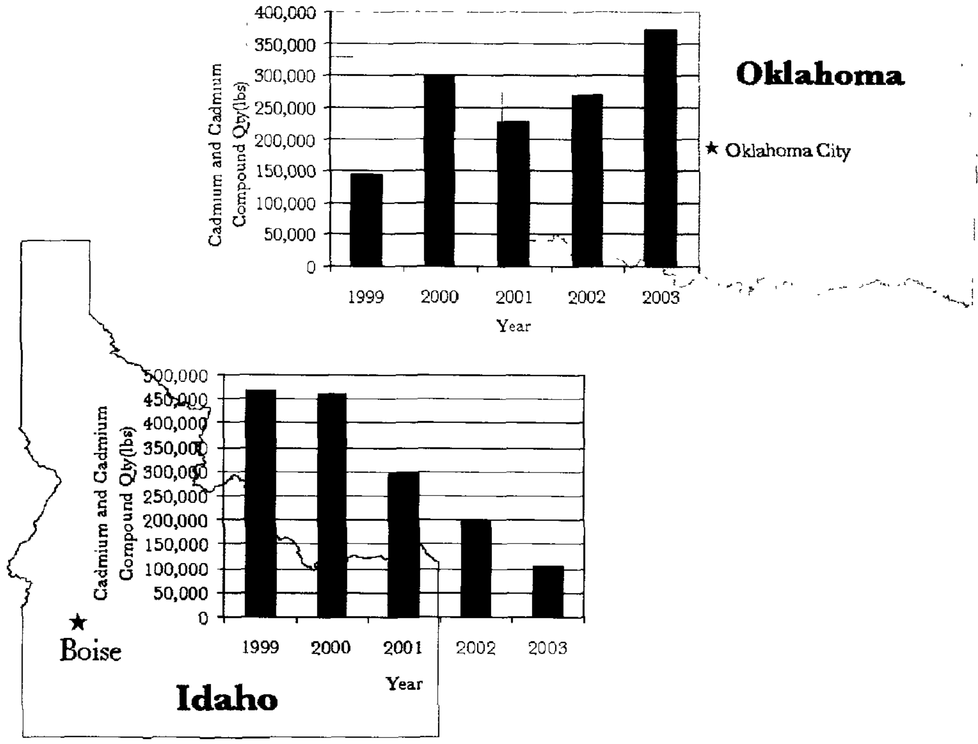
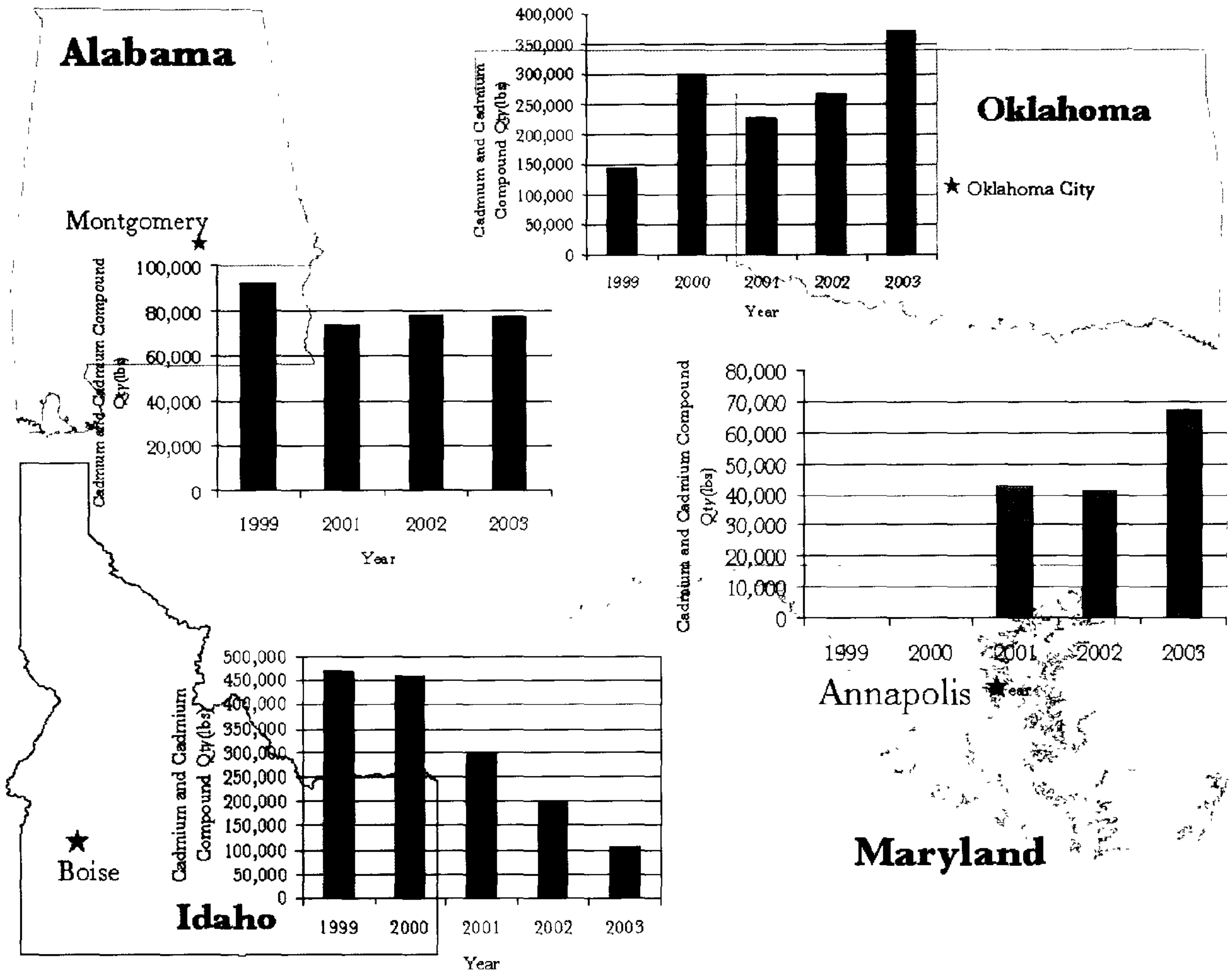


Exhibit 4.51 shows how cadmium and cadmium compounds were managed by facilities in the 8 states that accounted for over 90 percent of the total quantity of this PC in 2003. All of the cadmium and cadmium compounds from facilities in these states was land disposed, mostly offsite. Recycling of notable quantities of cadmium and cadmium compounds occurred in several of the states, including Alabama, Tennessee, and Oklahoma.

Exhibit 4.51. Management of Cadmium and Cadmium Compounds in States with 90 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Oklahoma	372,766	31	372,735	0	0	0	0	0	31,232
Idaho	106,556	87,000	19,556	0	0	0	0	0	0
Alabama	77,169	38,437	38,732	0	0	0	0	6,328	49,778
Maryland	67,064	0	67,064	0	0	0	0	0	0
Florida	52,810	0	52,810	0	0	0	0	0	500
South Carolina	25,029	0	25,029	0	0	0	0	0	7,463
Indiana	22,825	0	22,825	0	0	0	0	0	828
Tennessee	13,562	13,302	260	0	0	0	0	12,230	39,646
Total		**138,770**	**599,011**	**0**	**0**	**0**	**0**	**18,558**	**129,447**

Exhibit 4.52. Trends Analyses of States with 90 Percent of Total Quantity (2003)



Industry Sector (SIC) Trends– Cadmium and Cadmium Compounds. Exhibit 4.53 shows the PC quantity (pounds) of cadmium and cadmium compounds for the six industry sectors (SIC codes) where facilities reported over 90 percent of this chemical in 2003. Facilities in SIC 3341 (Secondary nonferrous metals) reported the highest quantities, accounting for 53 percent of the total PC quantity of cadmium and cadmium compounds reported in 2003. This industry sector had a significant increase compared to quantities reported in both the 1999 and 2002. About 86 percent of this SIC 3341 quantity was reported by one facility, located in Oklahoma. Facilities in SIC 2819 (Industrial inorganic chemicals, nec) industry sector reported the second highest quantity of cadmium and cadmium compounds in 2003 but has experienced a steady decline in the quantity since 2000. Except for SIC 2824 (Organic fibers, noncellulosic), the other 5 top industry sectors reporting cadmium and cadmium compounds had an increased quantity in 2003.

Exhibit 4.53. Industry Sector-Level Information for Cadmium and Cadmium Compounds (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3341	Secondary nonferrous metals	9	170,434	354,899	253,170	309,625	433,279	262,845	154.2%	53.0%
2819	Industrial inorganic chemicals, nec	3	470,240	504,425	314,677	199,423	98,067	-372,173	-79.1%	12.0%
2816	Inorganic pigments	2	2,635	2,891	47,677	32,072	69,032	66,397	2519.8%	8.4%
3312	Blast furnaces and steel mills	8	50,685	93,398	62,922	38,355	55,197	4,512	8.9%	6.8%
3691	Storage batteries	6	72,594	66,026	21,805	5,822	54,874	-17,720	-24.4%	6.7%
2824	Organic fibers, noncellulosic	1	60,710	47,730	44,770	40,725	35,026	-25,684	-42.3%	4.3%

Exhibit 4.54 shows how cadmium and cadmium compounds were managed by facilities in the six industry sectors that accounted for over 90 percent of the total quantity of this PC in 2003. Virtually the entire quantity of the cadmium and cadmium compounds was land disposed, primarily offsite. Facilities in SIC 2819 (Industrial Inorganic chemicals, nec) disposed about 88 percent of their cadmium and cadmium compounds onsite.

Exhibit 4.55. Management of Cadmium and Cadmium Compounds in Industry Sectors (SIC Codes) with 90 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3341	Secondary nonferrous metals	433,279	38,463	394,575	0	0	0	241	63,217	506,419
2819	Industrial inorganic chemicals, nec	98,067	87,000	11,067	0	0	0	0	0	0
2816	Inorganic pigments	69,032	0	69,032	0	0	0	0	0	0
3312	Blast furnaces and steel mills	55,197	13,053	42,144	0	0	0	0	6,328	81,860
3691	Storage batteries	54,874	249	54,625	0	0	0	0	59,844	138,915
2824	Organic fibers, noncellulosic	35,026	0	35,026	0	0	0	0	0	3,672

Recycling. Exhibit 4.55 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of cadmium and cadmium compounds in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4.55. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2819-- Industrial inorganic chemicals, nec												
1	7	Nebraska	0	105,000	0	0	0	0	0	0	0	0
SIC 2851--Paints and allied products												
1	5	Illinois	0	0	0	0	0	0	0	0	4,637	0
SIC 3295-- Minerals, ground or treated												
1	5	Ohio	0	840	0	429	0	1,386	0	0	0	0
SIC 3312-- Blast Furnaces and steel mills												
1	2	New York	0	840	0	429	0	1,386	0	0	0	0
1	4	South Carolina	0	0	0	0	0	0	0	2,153	2,230	2,144
1	4	Florida	0	0	0	0	0	0	0	0	0	5,531
2	4	Alabama	73,932	56,219	8,814	38,266	9,944	39,223	9,944	37,359	0	0
1	4	Kentucky	0	3,208	0	2,801	0	2,126	0	0	0	0
1	5	Indiana	0	0	0	0	0	0	0	2,400	0	0
1	6	Oklahoma	0	17,106	0	7,124	0	4,809	0	5,196	0	6,079
2	6	Texas	0	0	0	16,955	0	5,373	0	4,911	0	0
SIC 3341-- Secondary Nonferrous metals												
1	1	Massachusetts	0	16,617	0	3,440	0	0	0	0	0	0
1	6	Oklahoma	0	0	14,220	30,313	914	13,781	0	35,775	0	0
SIC 3353-- Aluminum sheet, metal, and foil												
1	5	Indiana	2,818	5,549	3,047	5,575	821	5,788	284	7,493	0	0
SIC 3357-- Nonferrous wire drawing and insulation												
1	2	New York	0	0	0	0	0	4,483	0	0	0	0
1	6	Texas	0	3,290	0	3,510	0	0	0	0	0	0
SIC 3369-- Nonferrous foundries												
1	10	New York	0	1	0	1	0	0	0	0	0	144
SIC 3441-- Fabricated structural metal												
1	4	Georgia	0	0	0	0	0	0	0	0	0	12,100
SIC 3443-- Fabricated plate work (boilers)												
1	6	Texas	0	3,560	0	0	0	0	0	0	0	0
SIC 3444-- Sheet metal work												
1	3	West Virginia	0	19,000	0	3,451	0	0	0	0	0	0
1	7	Kansas	0	11,500	0	14,460	0	0	0	0	0	0
SIC 3462-- Iron and steel forgings												
1	4	Tennessee	0	61,063	0	0	0	0	0	0	0	0
SIC 3496-- Miscellaneous fabricated wire products												
1	1	Massachusetts	0	172	0	0	0	0	0	0	0	0
SIC 3499-- Fabricated metal products, nec												
1	5	Illinois	0	0	0	0	0	0	0	0	2,336	0
SIC 3613-- Switchgear and switchboard apparatus												
1	6	Texas	0	0	0	0	0	0	0	0	0	10,629

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 3691-- Storage Batteries												
1	5	Illinois	0	1,100	0	0	0	0	0	0	0	0
1	7	Kansas	0	0	0	2,600	0	619	0	34	0	0
SIC 3694-- Engine Electrical Equipment												
1	4	South Carolina	0	0	0	670	0	6,767	0	3,028	0	0

Dibenzofuran

Chemical Information
CAS Number - 132-64-9
Alternate Names - diphenylene oxide
General Uses - This chemical is used as an insecticide and to make other chemicals. It is made from coal tar and has been found in coke dust, grate ash, fly ash and flame soot.
Potential Hazards - This chemical can cause skin, eye, nose and throat irritation.

Summary Analysis– Dibenzofuran

- In 2003, the 75,605 pounds of dibenzofuran accounted for about 0.1 percent of the total quantity of PCs. Since 1999, there was a 36.4 percent decrease in the quantity of dibenzofuran. The number of facilities that reported dibenzofuran from 1999 to 2003 has remained relatively constant, with 12 facilities reporting this chemical in 2003.
- There have been significant changes, from one year to the next, regarding the usage of management methods for dibenzofuran. Use of disposal, energy recovery, and treatment methods have varied considerably with no obvious trend. In 2003, over 87 percent of the dibenzofuran was land disposed.
- Of the 12 facilities that reported dibenzofuran in 2003, two facilities accounted for 84 percent of the total quantity of this chemical.
- Dibenzofuran was reported by facilities in only 3 Regions in 2003. In 2003, almost 78 percent of the dibenzofuran was reported by facilities in Regions 5.
- Although facilities in 10 states reported a PC quantity of dibenzofuran in 2003, facilities in 5 of these states accounted for over 99 percent of the total PC quantity of dibenzofuran. One facility, in Michigan, which only began reporting dibenzofuran in 2003, accounted for almost 69 percent of the total quantity of this chemical in 2003.
- Facilities in three industry sectors (SIC codes) accounted for over 99 percent of this chemical in 2003. Facilities in SIC 2865 (Cyclic crudes and intermediates) reported the highest quantities, accounting for almost 93 percent of the total quantity.

National Trends – Dibenzofuran. Exhibit 4.56 presents the total PC quantity (lbs.) of dibenzofuran in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 75,605 pounds of dibenzofuran accounted for about 0.1 percent of the total quantity of PCs. Since 1999, there has been a 36.4 percent decrease in the quantity of dibenzofuran. The number of facilities that reported dibenzofuran from 1999 to 2003 has remained relatively constant, with 12 facilities reporting this chemical in 2003.

Since 1999, there have been significant yearly changes regarding the usage of management methods for dibenzofuran. Use of disposal, energy recovery, and treatment methods have varied considerably with no obvious trend. In 2003, over 87 percent of the dibenzofuran was land disposed. Recycling of dibenzofuran reached a peak in 2001 and has since declined.

Exhibit 4.56. National-Level Information for Dibenzofuran

	1999	**2000**	**2001**	**2002**	**2003**	**Percent Change (1999 -2003)**	**Management Method -- Percent of Quantity of this Chemical in 2003**
Number of Facilities	9	11	10	10	12	33.3%	
Disposal Quantity (lbs.)	16,877	11,200	39,885	17,464	66,104	291.7%	87.4%
Energy Recovery Quantity (lbs.)	96,910	23,827	22,574	266,221	1,340	-98.6%	1.8%
Treatment Quantity (lbs.)	5,039	57,775	4,261	5,228	8,161	62.0%	10.8%
Priority Chemical Quantity (lbs.)	118,826	92,802	66,720	288,912	75,605	-36.4%	
Recycling Quantity (lbs.)	41,053	99,627	144,668	132,524	24,754	-39.7%	

Exhibit 4.57 shows the number of facilities that reported dibenzofuran within various quantity ranges. Of the 12 facilities that reported dibenzofuran in 2003, two facilities accounted for 84 percent of the total quantity of this chemical.

Exhibit 4.57. Distribution of Facilities that Reported Quantities for Dibenzofuran (2003)

Dibenzofuran (75,605 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	1	less than 0.1%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	5	2.1%
between 1,001 - 10,000 pounds	4	13.9%
between 10,001 - 100,000 pounds	2	84.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

EPA Region Trends- Dibenzofuran. Exhibit 4.58 shows the quantity (pounds) of dibenzofuran in the 4 EPA Regions where facilities reported this chemical between 1999 and 2003. Dibenzofuran was reported in 1999-2000 by facilities in only 4 EPA Regions, and only 3 Regions in 2003 (Exhibit 4.59). In 2003, almost 78 percent of the dibenzofuran was reported by facilities in Regions 5. However, in Region 5, the quantity of this chemical has decreased significantly – not only compared to the 1999 quantity but even more so, the 2002 quantity. The decommissioning of a facility, located in Ohio, is believed to be the reason for the significant increase of dibenzofuran for this industry sector in 2002. Facilities in Region 3 reported over 15,000 pounds of the dibenzofuran in 2003, accounting for about 20 percent of the total quantity. This quantity represented a significant increase from quantities of dibenzofuran reported in previous years 1999 – 2002.

Exhibit 4.58. Quantity of Dibenzofuran Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
3	2,346	3,226	3,600	5,570	15,011	539.9%	19.9%
4	2,125	2,978	377	69	1,889	-11.1%	2.5%
5	114,355	85,121	62,743	283,273	58,705	-48.7%	77.6%
10	0	1,477	0	0	0	NA	0.0%
Total	118,826	92,802	66,720	288,912	75,605	-36.4%	100.0%

Exhibit 4.59. Distribution of Facilities Reporting Dibenzofuran in 2003 & Quantity of Dibenzofuran Reported in 2003 by Region

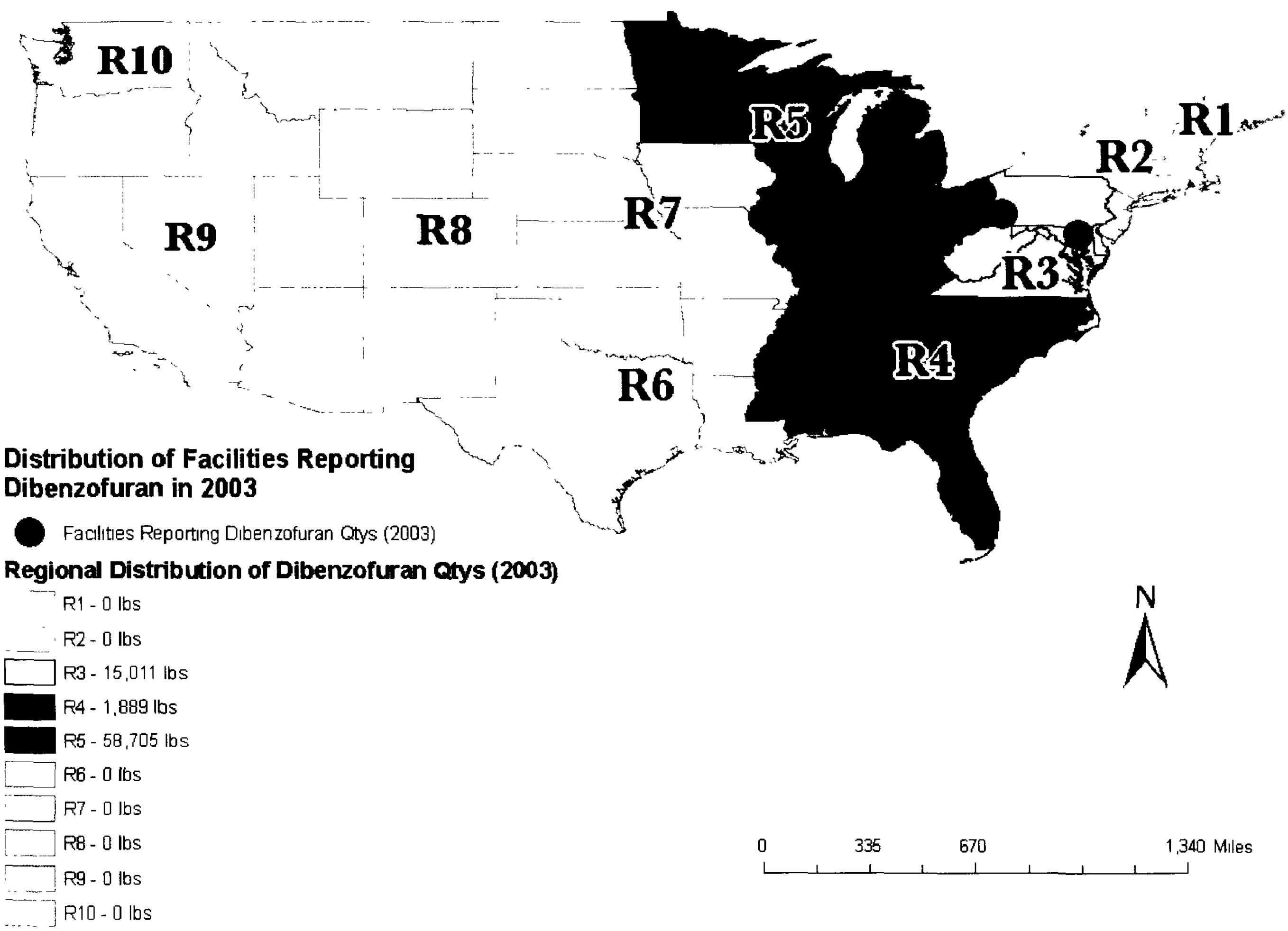


Exhibit 4.60 shows how dibenzofuran was managed by facilities within each of the 3 EPA Regions that reported this chemical in 2003. Almost 98 percent of the PC quantity of

dibenzofuran in Region 5 was sent to offsite land disposal. Facilities in Region 4 used energy recovery for about 50 percent of their quantity of dibenzofuran. Region 3 facilities used both disposal and treatment. A notable quantity of dibenzofuran was recycled by Region 5 facilities.

Exhibit 4. 60. Management Methods for Dibenzofuran, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
3	0	7,828	0	200	2,400	4,583	79	0
4	0	170	0	1,000	0	719	0	0
5	718	57,388	0	140	206	253	24,675	0

State Trends- Dibenzofuran. Although facilities in 10 states reported a PC quantity of dibenzofuran in 2003, facilities in 5 of these states accounted for over 99 percent of the total PC quantity of dibenzofuran. Exhibit 4.61 shows the quantity of dibenzofuran that was reported by facilities in these 5 states in 1999-2003. One facility, in Michigan (Exhibit 4.62), which only began reporting dibenzofuran in 2003, accounted for almost 69 percent of the total quantity of this chemical in 2003. One facility in West Virginia had over a 400 percent increase in 2003, compared to 1999, with most of the increase occurring between 2002 and 2003. In Illinois, the quantity of dibenzofuran has decreased by over 36 percent (Exhibit 4.62).

Exhibit 4. 61. State-Level Information for Dibenzofuran (1999-2003)

State	**1999**	**2000**	**2001**	**2002**	**2003**	**Change in Quantity (1999-2003)**	**Percent Change in Quantity (1999-2003)**	**Percent of Total Quantity of this Priority Chemical (2003)**
Michigan	0	0	0	1,248	52,202	52,202	NA	69.0%
West Virginia	2,302	1,300	2,000	3,400	12,022	9,720	422.2%	15.9%
Illinois	9,608	9,967	392	6,429	6,113	-3,495	-36.4%	8.1%
Pennsylvania	44	1,926	1,600	2,170	2,706	2,662	6050.0%	3.6%
Alabama	1,720	2,945	266	19	1,724	4	0.2%	2.3%

Exhibit 4. 62. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Illinois and Michigan

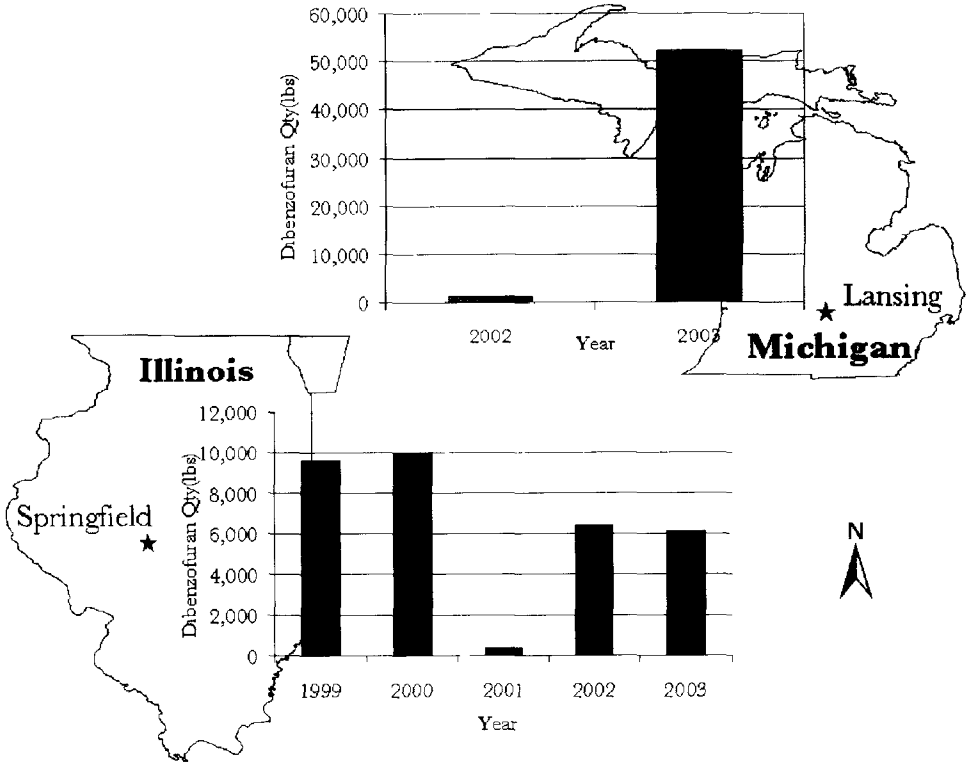
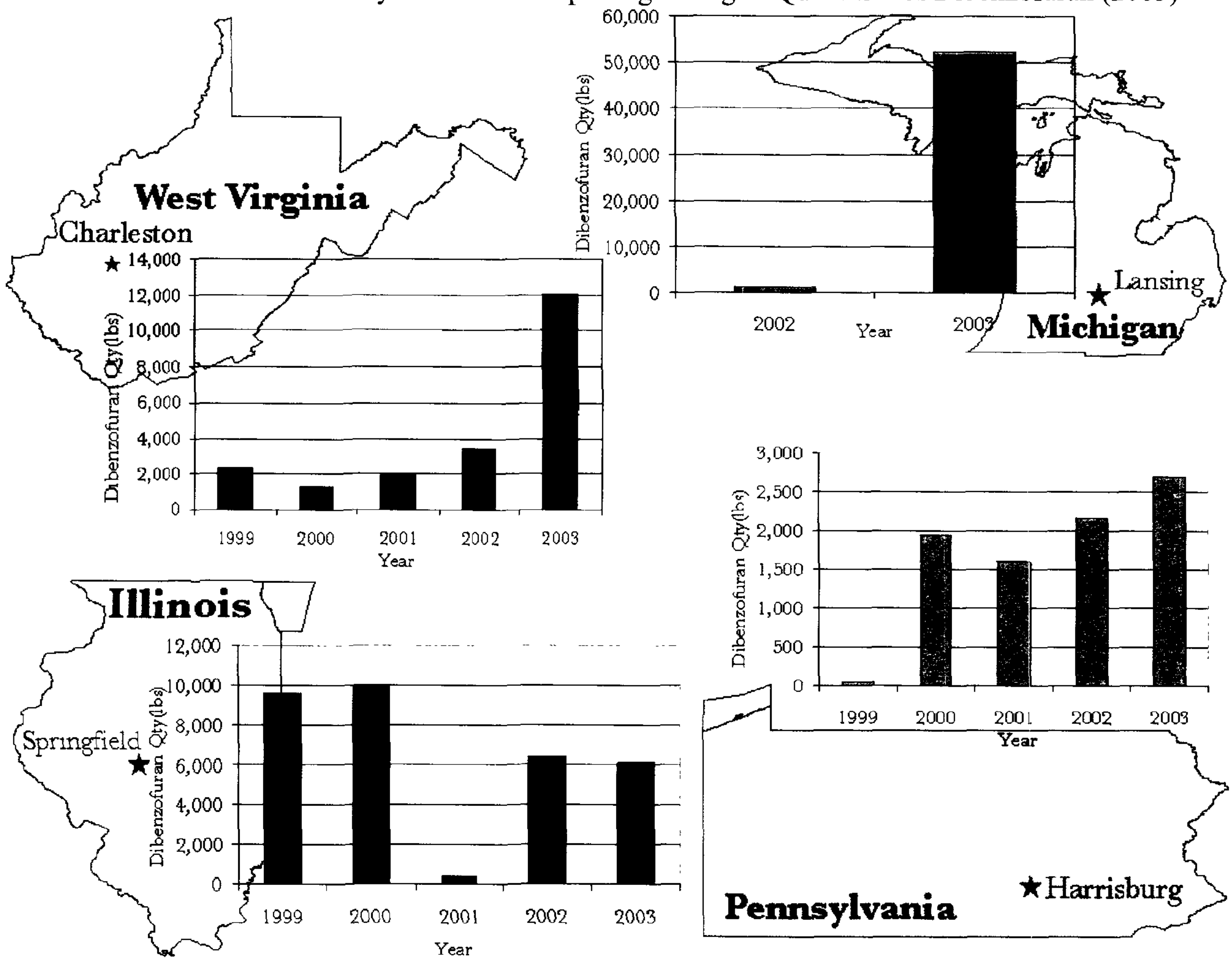


Exhibit 4. 63 shows how dibenzofuran was managed by facilities in the 5 states that accounted for over 99 percent of the total quantity of this PC in 2003. Most of the dibenzofuran reported by facilities in Michigan and Illinois was sent to offsite land disposal. Both offsite land disposal and onsite/offsite treatment were used by West Virginia facilities. Almost 78 percent of the dibenzofuran from Pennsylvania facilities was sent to offsite treatment with the remainder to offsite disposal. Alabama facilities sent their dibenzofuran to offsite energy recovery (58%) and to offsite treatment (42%). Relatively little recycling of dibenzofuran occurred in 2003.

Exhibit 4.63. Management of Dibenzofuran in States with 99 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Michigan	52,202	718	51,484	0	0	0	0	0	0
West Virginia	12,022	0	7,222	0	200	2,400	2,200	0	0
Illinois	6,113	0	5,776	0	140	197	0	897	0
Pennsylvania	2,706	0	606	0	0	0	2,100	79	0
Alabama	1,724	0	5	0	1,000	0	719	0	0

Exhibit 4. 64. Trends Analysis of States Reporting 4 Largest Quantities of Dibenzofuran (2003)



Industry Sector (SIC) Trends- Dibenzofuran. Exhibit 4.65 shows the PC quantity (pounds) of dibenzofuran for the three industry sectors (SIC codes) where facilities reported over 99 percent of this chemical in 2003. Facilities in SIC 2865 (Cyclic crudes and intermediates) reported the highest quantities, accounting for almost 93 percent of the total PC quantity of dibenzofuran reported in 2003. The decommissioning of a SIC 2865 facility, located in Ohio, is believed to be reason for the significant increase of dibenzofuran for this industry sector in 2002. In 2003, facilities in this industry sector had a decrease of over 40 percent, compared to the 1999 quantity. Compared to the quantities reported in 1999, there was a significant increase (+474%) in the quantity of dibenzofuran reported in 2003 by facilities in SIC 3312 (Blast Furnaces and steel mills). Also, facilities in SIC 3272 (Concrete products, nec) only began reporting dibenzofuran in 2002.

Exhibit 4. 65. Industry Sector-Level Information for Dibenzofuran (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2865	Cyclic crudes and intermediates	4	117,927	90,878	65,082	286,288	70,243	-40.4%	92.9%
3312	Blast furnaces and steel mills	2	494	158	32	212	2,834	473.7%	3.7%
3272	Concrete products, nec	3	0	0	0	2,348	2,101	NA	2.8%

Exhibit 4.66 shows how dibenzofuran was managed by the 9 facilities in the 3 industry sectors that accounted for over 99 percent of the total quantity of this PC in 2003. Most of the dibenzofuran was land disposed, primarily offsite, particularly within SIC 2865 (Cyclic crudes and intermediates). The majority of the dibenzofuran reported by facilities in SIC 3312 (Blast Furnaces and steel mills) was sent to offsite treatment. Land Disposal (onsite and offsite) also was the primary method for managing dibenzofuran within SIC 3272 – Concrete products, nec. Very little recycling of dibenzofuran was reported by facilities in these industry sectors in 2003.

Exhibit 4. 66. Management of Dibenzofuran in Industry Sectors (SIC Codes) with 99 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2865	Cyclic crudes and intermediates	70,243	0	63,387	0	1,340	2,597	2,919	897	0
3312	Blast furnaces and steel mills	2,834	0	734	0	0	0	2,100	79	0
3272	Concrete products, nec	2,101	718	1,100	0	0	0	283	0	0

Recycling. Exhibit 4.67 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of dibenzofuran in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 67. Facilities reporting Recycling but not a PC quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2491-- Wood Preserving												
1	1	Connecticut	0	0	1,205	0	1,140	0	2,092	0	1,780	0
SIC 2865--Cyclic crudes and intermediates												
1	4	Alabama	0	0	0	0	0	0	210	0	210	0
SIC 3312-- Blast Furnaces and steel mills												
1	3	Pennsylvania	36,000	0	76,000	0	88,000	0	15,000	0	13,477	0
2	4	Alabama	553	0	5,812	0	5,172	0	5,793	0	10,332	0
SIC 4925-- Gas production and/or distribution												
1	5	Indiana	33,593	0	0	0	0	0	0	0	0	0

Dioxin and Dioxin-Like Compounds

Chemical Information.
"Dioxins" refers to a group of chemical compounds that share similar chemical and biological properties. These toxic compounds are members of closely related families: the chlorinated dibenzo-p-dioxins (CDDs) and chlorinated dibenzofurans (CDFs).
General Uses - CDDs and CDFs are not commercially produced except in small quantities for chemical analyses and toxicological research. CDDs and CDFs are formed as unwanted byproducts when chlorinated materials are involved in combustion or other high-temperature processes, such as waste incineration, energy generation, metallurgical processes, chemical manufacturing and other industrial processes. Energy generation sources of CDD/CDF releases include the combustion of coal, oil, and wood. Other high-temperature sources include Portland cement production, pulp mills using the kraft process, asphalt mixing plants, catalyst regeneration at petroleum refineries, and carbon reactivation furnaces. Metallurgical processes that may release CDD/CDFs include ferrous sources such as iron ore sintering, coke production, and the production of steel in electric arc furnaces from scrap feed. Secondary aluminum, copper, and lead smelters may also be sources of CDD/CDFs. CDDs and CDFs can also be formed as unintended byproducts of manufacturing processes. For example, they are generated in pulp and paper mills during chlorine bleaching.
Potential Hazards - Dioxins and furans can cause a number of health effects. The most well known member of the dioxins/furans family is 2,3,7,8 TCDD which is a known human carcinogen (National Toxicology Program -- NTP). Also, high doses of dioxin have caused a skin disease called chloracne.

Summary Analysis – Dioxin and dioxin-like compounds

- Reporting for dioxins began in 2000. In 2003, the 700 pounds of dioxins accounted for less than 0.1 percent of the total quantity of PCs. There has been approximately a 17 percent decrease in the quantity of dioxins reported from 2000 to 2003. Much of the increase in 2003 was due to over 300 pounds of dioxins (contained in used telephone poles /wood wastes) reported by a wood preserving facility in Louisiana.
- In 2003, land disposal (60.0%) was the primary management method used for dioxins, followed by treatment (39.7%). These management method percentages are heavily influenced by the quantity reported by the Louisiana facility noted above. Previous to 2003, dioxins were managed primarily by treatment (90%), followed by disposal (less than 10%).
- Although 373 facilities reported dioxins in 2003, only 33 facilities accounted for 99 percent of the dioxins reported in 2003. Eight of these facilities accounted for over 89 percent of the total quantity of this chemical. One facility accounted for over 45 percent of the total dioxins quantity reported in 2003.
- Over 84 percent of the dioxins were reported by facilities in Regions 6. Facilities in 3 states (Louisiana, Texas, and Michigan) reported almost 93 percent of the PC quantity of dioxins in 2003. Facilities in Louisiana reported almost 65 percent of the total quantity.
- Facilities in SIC 2491 (Wood Preserving) *and* SIC 2869 (Industrial Organic chemicals, nec) reported the highest quantities.

National Trends – Dioxin and dioxin-like compounds (Dioxins). Exhibit 4.68 presents the total PC quantity (pounds) of dioxin and dioxin-like compounds (hereafter simply referred to as dioxins) in 2000 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. Please note that data for 1999 is not included because this chemical only was reported to TRI beginning in 2000. In 2003, the 700 pounds of dioxins accounted for less than 0.1 percent of the total quantity of PCs. There has been approximately a 17 percent decrease in the quantity of dioxins reported from 2000 to 2003. Much of the increase in 2003 was due to over 300 pounds of dioxins (contained in used telephone poles /wood wastes) reported by a wood preserving facility in Louisiana. This facility had reported much smaller quantities in previous years (2000-2002). In 2003, land disposal (60.0%) was the primary management method used for dioxins, followed by treatment (39.7%). These management method percentages are heavily influenced by the quantity reported by the Louisiana facility noted above. Previous to 2003, dioxins were managed primarily by treatment (90%), followed by disposal (less than 10%).

Exhibit 4. 68. National-Level Information for Dioxin and dioxin-like compounds (2000-2003)

	2000	**2001**	**2002**	**2003**	**Percent Change (2000-2003)**	**Management Method -- Percent of Quantity of this Chemical in 2003**
Number of Facilities*	377(39)	367(34)	364 (32)	373 (33)	-1.1% (-1.5%)	
Disposal Quantity (lbs.)	41	68	54	420	924.4%	60.0%
Energy Recovery Quantity (lbs.)	4	5	4	2	-50.0%	0.3%
Treatment Quantity (lbs.)	555	625	485	278	-49.9%	39.7%
Priority Chemical Quantity (lbs.) **	600	698	543	700	16.6%	
Recycling Quantity (lbs.)	1	0	0	0	-100.0%	

* The larger number represents the total number of facilities that reported a PC quantity of Dioxins. The smaller number, in parenthesis, indicates the number of facilities that are the focus of this Trends Report, i.e., those facilities that reported 1 pound (rounded) or more of Dioxins that were reported as being managed via land disposal, treatment, or energy recovery. As such, the quantities shown are for the indicated smaller number of facilities.

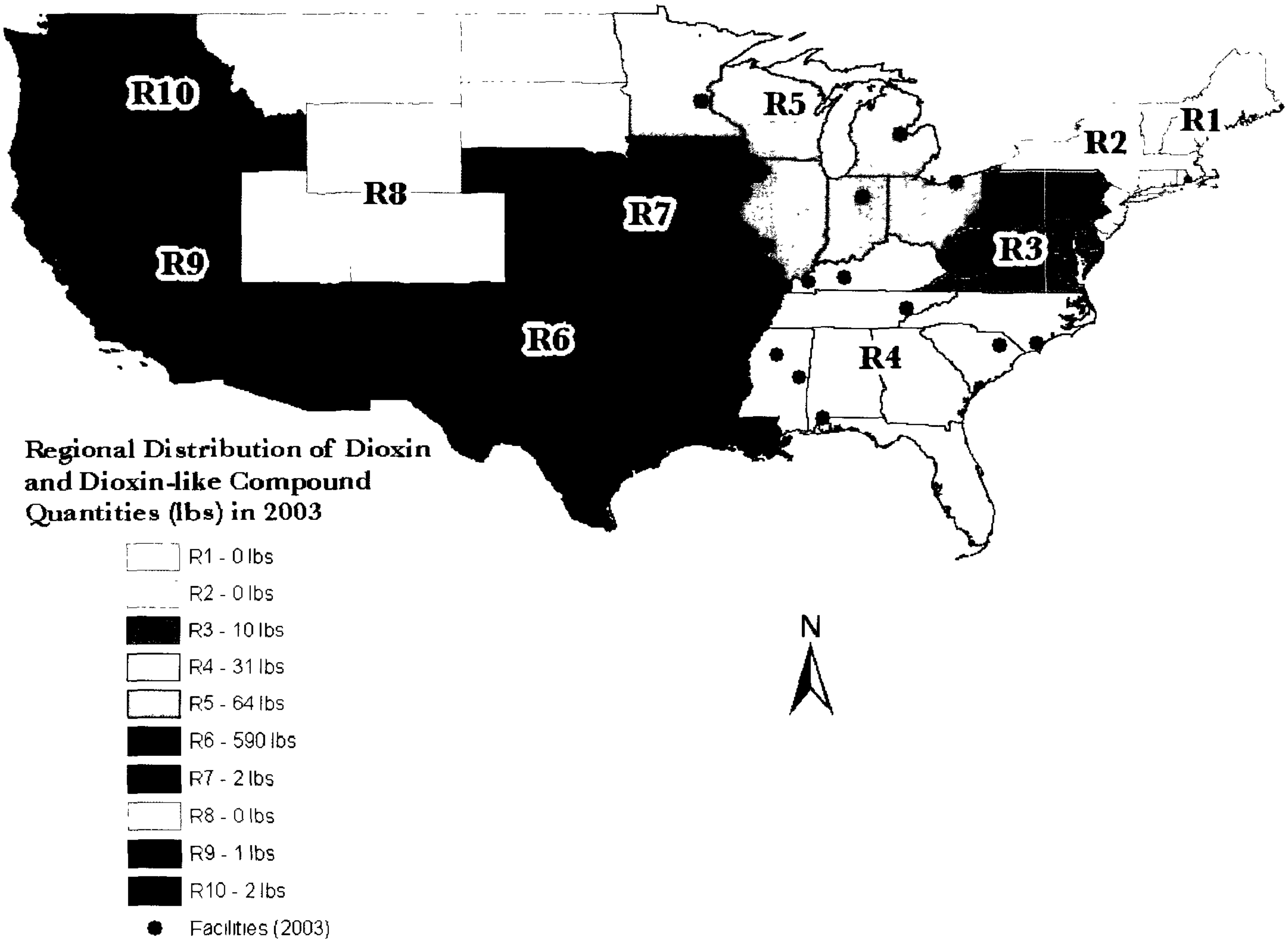
** Facilities report dioxin and dioxin-like compounds to TRI in grams. The reporting threshold for dioxin and dioxin-like compounds is 0.1 grams, which is but a fraction of a pound. For the purposes of this National Trends Report, we converted the quantities to pounds and rounded to the nearest whole pound. Therefore, this Trends Report focuses only on quantities of dioxin and dioxin-like compounds that are equal to or greater than 1 pound. In making this calculation for the purpose of tracking reductions we do not intend to minimize dioxin in smaller quantities which are of considerable concern.

Exhibit 4.69 *shows the number of facilities that reported* dioxins within various quantity ranges. As previously noted, although 373 facilities reported dioxins in 2003, only 33 facilities, accounting for 99 percent of the dioxins reported in 2003, are represented in this Exhibit. Eight of these facilities accounted for over 89 percent of the total quantity of this chemical. One facility, noted above, accounted for over 45 percent of the total dioxins quantity reported in 2003.

Exhibit 4. 69. Distribution of Facilities that Reported Quantities for Dioxins (2003)

Dioxin and dioxin-like compounds (700 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)***	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	25	10.9%
between 11 - 100 pounds	7	44.0%
between 101 -1,000 pounds	1	45.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

Exhibit 4. 70. Distribution of Facilities Reporting Dioxin and Dioxin-like Compounds in 2003 & Quantity of Dioxin and Dioxin-like Compounds reported by Region (2003)



EPA Region Trends– Dioxin and dioxin-like compounds. Exhibit 4.71 shows the quantity (pounds) of Dioxins for the EPA Regions where facilities reported this PC in 2000-2003. In 2003, over 84 percent of the dioxins were reported by facilities in Regions 6. Even discounting the anomaly quantity reported by the wood preserving facility in Louisiana facilities in Region 6 have consistently reported the largest quantity of dioxins since 2000. Several Regions' facilities had decreased quantities, compared to the quantity reported in 2000. Facilities in Region 8 virtually eliminated dioxins in 2003, compared to the quantities reported in 2001 and 2002.

Exhibit 4. 71. Quantity of Dioxin and dioxin-like compounds Reported by EPA Regions (2000-2003)

EPA Region	2000	2001	2002	2003	Percent Change in Quantity (2000-2003)	Percent of Total Priority Chemical Quantity (2003)
2	28	2	0	0	-100.0%	0.0%
3	2	0	0	10	520.4%	1.5%
4	36	32	37	31	-14.9%	4.4%
5	113	143	41	64	-43.0%	9.2%
6	410	472	398	590	44.0%	84.3%
7	1	1	2	2	238.6%	0.3%
8	0	44	63	0	NA	0.0%
9	3	0	1	1	-72.4%	0.1%
10	9	4	2	2	-79.4%	0.3%
Total	**600**	**698**	**543**	**700**	**16.6%**	

Exhibit 4.72 shows how dioxins were managed by facilities within each EPA Region in 2003. Most of the PC quantity of dioxins was managed using offsite disposal, particularly by facilities in Region 6. Again, the "out of the ordinary" quantity of dioxins reported as sent to offsite disposal by a wood preserving facility in Louisiana had a strong influence on the total quantity reported as well as the management method used. Otherwise, prior to 2003, treatment was the primary method used to manage dioxins. No recycling of dioxins was reported in 2003.

Exhibit 4. 72. Management Methods for Dioxin and dioxin-like compounds, By EPA Region (2003)

EPA Region	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3	0	0	0	0	10	0	0	0
4	1	5	0	1	6	18	0	0
5	22	1	0	0	40	1	0	0
6	51	339	0	0	162	37	0	0
7	1	0	0	1	0	0	0	0
9	0	0	0	0	0	1	0	0
10	0	0	0	0	0	2	0	0
Total	**75**	**345**	**0**	**2**	**219**	**59**	**0**	**0**

State Trends– Dioxin and dioxin-like compounds. Although facilities in 19 states reported a PC quantity of dioxins in 2003, Exhibit 4.73 only shows the quantity of dioxins, for 2000-2003, for those 3 states in which facilities reported almost 93 percent of the PC quantity of dioxins in 2003. Facilities in Louisiana reported almost 65 percent of the total quantity of dioxins in 2003. Facilities in the states of Texas and Michigan accounted for almost 28 percent of the totals quantity of dioxins, but there have been significant decreases in both these states, compared to the 2000 quantities.

Exhibit 4. 73. State-Level Information for Dioxin and dioxin-like compounds (2000-2003)

State	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	86	128	131	453	367	424.27%	64.8%
Texas	323	344	263	134	-189	-58.54%	19.1%
Michigan	108	136	36	60	-48	-44.21%	8.6%

Exhibit 4. 14. Dioxin and Dioxin-like Compound Significant Quantity Increase and Decrease Trends (2000 – 2003): Louisiana and Texas

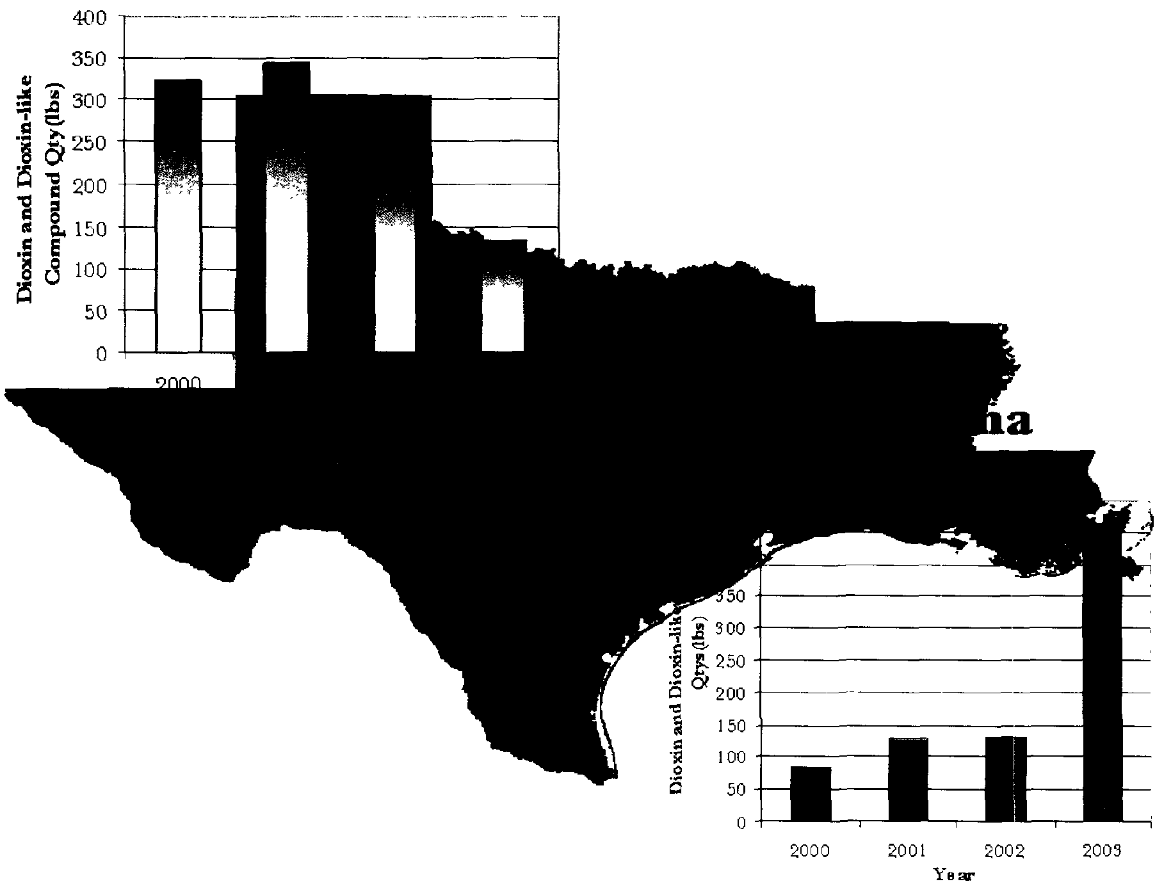


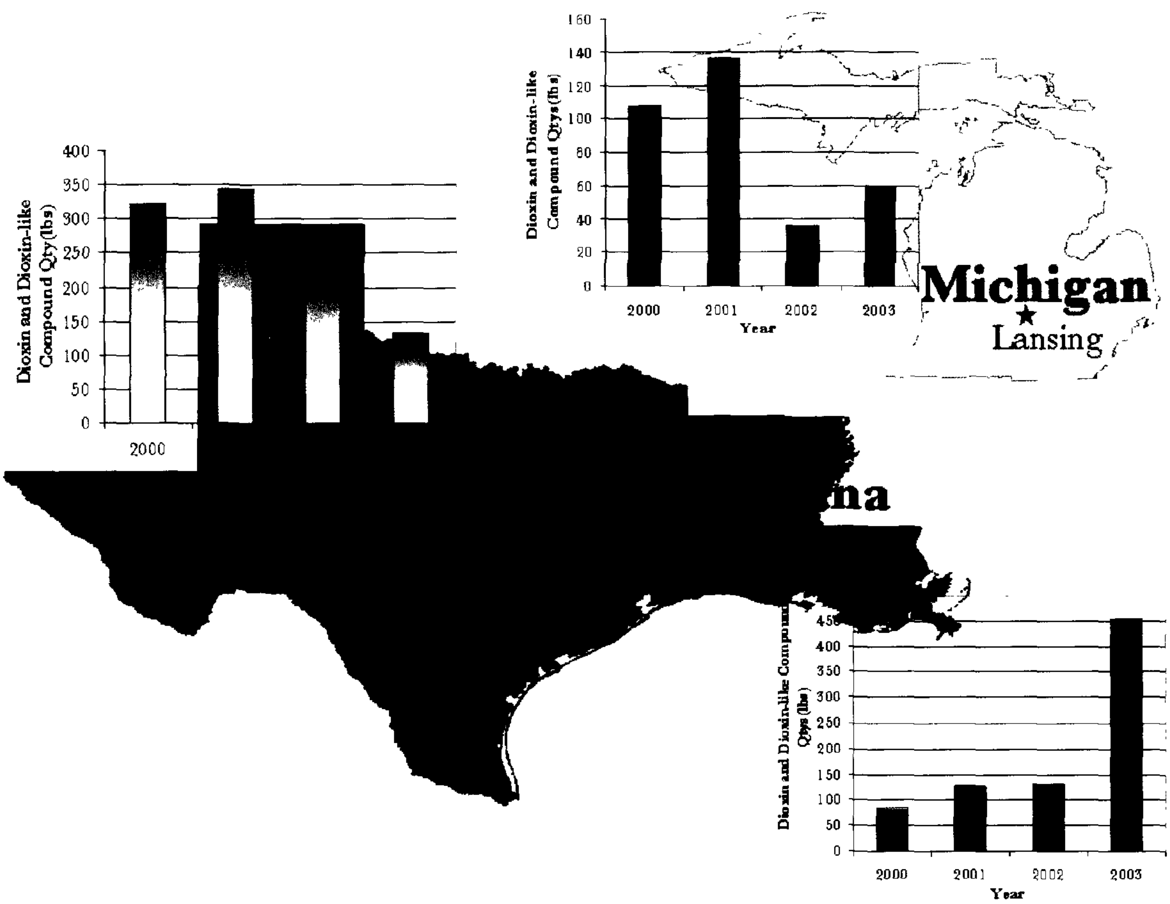
Exhibit 4.75 shows how dioxins were managed by facilities in the 3 states that had almost 93 percent of the total quantity of this PC in 2003. Most of the PC quantity of dioxins was managed using offsite disposal, particularly by facilities in Region 6. Again, the "out of the ordinary"

quantity of dioxins reported as sent to offsite disposal by a wood preserving facility in Louisiana had a strong influence on the total quantity reported as well as the management method used. Otherwise, treatment was the primary method used to manage dioxins. Recycling is not a viable alternative for dioxins; no recycling of dioxins was reported in 2003.

Exhibit 4. 75. Management of Dioxin and dioxin-like compounds in States with 93 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	453	3	305	0	0	124	21	0	0
Texas	134	48	34	0	0	38	14	0	0
Michigan	60	22	0	0	0	38	0	0	0

Exhibit 4. 76. Trends Analysis of States Reporting Dioxin and Dioxin-like Compound Quantities



Industry Sector (SIC) Trends– Dioxin and dioxin-like compounds. Exhibit 4.77 shows the PC quantity (pounds) of dioxins for the 4 industry sectors (SIC codes) where facilities reported almost 95 percent of this chemical in 2003. Facilities in SIC 2491 (Wood Preserving) reported the highest quantities, accounting for almost 49 percent of the total PC quantity of dioxins reported in 2003. Most of this quantity was reported by one facility, located in Louisiana, with almost 89 percent of the dioxins for this industry sector. This same facility, in previous years, had reported a much smaller quantity of dioxins (less than 10 pounds). Facilities in SIC 2869 (Industrial Organic chemicals, nec) have had a significant increase since 2000 of their quantity of dioxins but have consistently reported around 200 pounds in 2001-2003. The one facility reporting dioxins in SIC 2813 (Industrial Gases) reported over 200 pounds of dioxins in 2002 but then had a 69 percent decrease in quantity in 2003. Facilities in SIC 2812 (Alkalies and chlorine) also have decreased, by 87 percent, their quantity of dioxins since 2000.

Exhibit 4. 77. Industry Sector-Level Information for Dioxin and dioxin-like compounds (2000-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2491	Wood preserving	12	28	33	36	342	314	1134.4%	48.9%
2869	Industrial organic chemicals, nec	10	84	208	184	211	127	152.2%	30.1%
2813	Industrial gases	1	0	0	207	65	65	NA	9.3%
2812	Alkalies and chlorine	3	335	350	36	45	-290	-86.7%	6.4%

Exhibit 4.78 shows how dioxins were managed by facilities in the 4 industry sectors that accounted for almost 95 percent of the total quantity of this PC in 2003. Almost 57 percent of the PC quantity of dioxins was land disposed, particularly offsite disposal by facilities in the wood preserving industry sector. Again, the "out of the ordinary" quantity of dioxins reported as sent to offsite disposal by a wood preserving facility in Louisiana had a strong influence on the total quantity reported as well as the management method used. Otherwise, treatment was the primary method used to manage dioxins. Recycling is not a viable alternative for dioxins; no recycling of dioxins was reported in 2003.

Exhibit 4. 78. Management of Dioxin and dioxin-like compounds in Industry Sectors (SIC Codes) with 95 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2491	Wood preserving	342	0	304	0	2	0	36	0	0
2869	Industrial organic chemicals, nec	211	26	23	0	0	151	11	0	0
2813	Industrial gases	65	48	0	0	0	17	0	0	0
2812	Alkalies and chlorine	45	1	0	0	0	42	1	0	0

Heptachlor

Chemical Information
Heptachlor is an organochlorine insecticide produced by the chlorination of chlordane. It is a white powder that smells like mothballs. Heptachlor was first registered in the U.S. in 1952 for use as a general insecticide on a wide range of agricultural crops. Heptachlor was also used for home and garden insect control, for termite control, and as a seed treatment. In 1974, EPA issued a Notice of Intent to Cancel all registered uses of heptachlor except those for subterranean termite control and dipping of non-food plants. In March 1978, most other uses of heptachlor were canceled.
CAS Number – 76-44-8
Alternate Names –1,4,5,6,7,8-Heptachloro-3a, 4,7,7a-tetrahydro-4,7-ethanoindene, Heptachlorane
General Use - Heptachlor is now severely restricted and is presently only used in the U.S. to control fire ants in buried, pad-mounted electric power transformers and in underground cable television and telephone cable boxes.
Potential Hazards – Heptachlor is highly toxic and may be fatal if inhaled, swallowed, or absorbed through the skin.

Summary Analysis – Heptachlor

- No quantity of heptachlor was reported for 1999 through 2001. In 2002 and 2003, only small quantities were reported, 67 pounds and 54 pounds, respectively. Only two facilities reported heptachlor in 2002; one facility in 2003.
- Heptachlor was only reported by 1 facility in Region 2 (New Jersey) in both 2002 and 2003 and by 1 facility in Region 6 (Arkansas) in 2002.
- One facility in SIC 2869 (Industrial organic chemicals, nec) accounted for 100 percent of the reported heptachlor in 2003.
- In 2003, the one reporting facility treated most (85%) of the heptachlor onsite; onsite land disposal (15%) also was used. No recycling of heptachlor was reported in 2003.

National Trends – Heptachlor. Exhibit 4.79 presents the total PC quantity (lbs.) of heptachlor in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. No quantity of heptachlor was reported for 1999 through 2001. In 2002 and 2003, only small quantities were reported, 67 pounds and 54 pounds, respectively. Only two facilities reported heptachlor in 2002; one facility in 2003 (Exhibit 4.82). In 2002, most of the heptachlor went to offsite energy recovery. Onsite treatment was primarily used in 2003.

Exhibit 4.79. National-Level Information for Heptachlor

	1999	2000	2001	2002	2003	Percent Change (2002--2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	0	0	0	2	1		
Disposal Quantity (lbs.)	0	0	0	2	8	300.0%	14.8%
Energy Recovery Quantity (lbs.)	0	0	0	65	0	-100.0%	0.0%
Treatment Quantity (lbs.)	0	0	0	0	46	NA	85.2%
Priority Chemical Quantity (lbs.)	0	0	0	67	54	-19.4%	
Recycling Quantity (lbs.)	0	0	0	0	0	NA	

EPA Region Trends- Heptachlor. Exhibit 4.80 shows the quantity (pounds) of heptachlor in the 2 EPA Regions where facilities reported this PC in 1999-2003. Heptachlor was not reported between 1999 and 2001. Heptachlor was only reported by 1 facility in Region 2 in both 2002 and 2003 and by 1 facility in Region 6 in 2002.

Exhibit 4. 80. Quantity of Heptachlor Reported by EPA Regions (1999-2003)

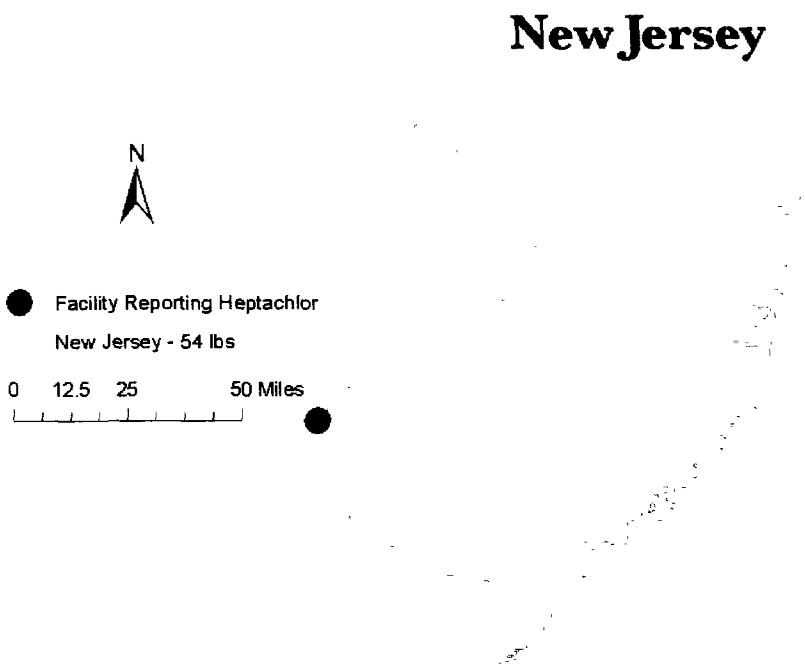
EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (2002-2003)	Percent Of the Total Priority Chemical quantity (2003)
2	0	0	0	2	54	2600.0%	100.0%
6	0	0	0	65	0	-100.0%	0.0%
Total	0	0	0	67	54	-19.4%	100.0%

Exhibit 4.81 shows how heptachlor was managed by the one facility that reported this chemical in 2003. The heptachlor was managed onsite – 46 pounds (85 %) of it treated and the other 8 pounds (15%) land disposed. No recycling of heptachlor was reported.

Exhibit 4. 81. Management Methods for Heptachlor, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2	8	0	0	0	46	0	0	0

Exhibit 4. 82. Facility Reporting Heptachlor in 2003



State Trends- Heptachlor. Since 1999, heptachlor was only reported by 2 facilities -- one facility in New Jersey and one facility in Arkansas (Exhibit 4.82). Only the New Jersey facility reported heptachlor in 2003. The quantity of heptachlor reported by both these facilities has been relatively small (Exhibit 4.83).

Exhibit 4. 83. State-Level Information for Heptachlor (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2002-2003)	Percent of Total Quantity of this Priority Chemical (2003)
New Jersey	0	0	0	2	54	52	2600.0%	100.0%
Arkansas	0	0	0	65	0	-65	-100.0%	0.0%

Exhibit 4. 84. Heptachlor Significant Quantity Trends (1999-2003): Facilities in Arkansas and New Jersey

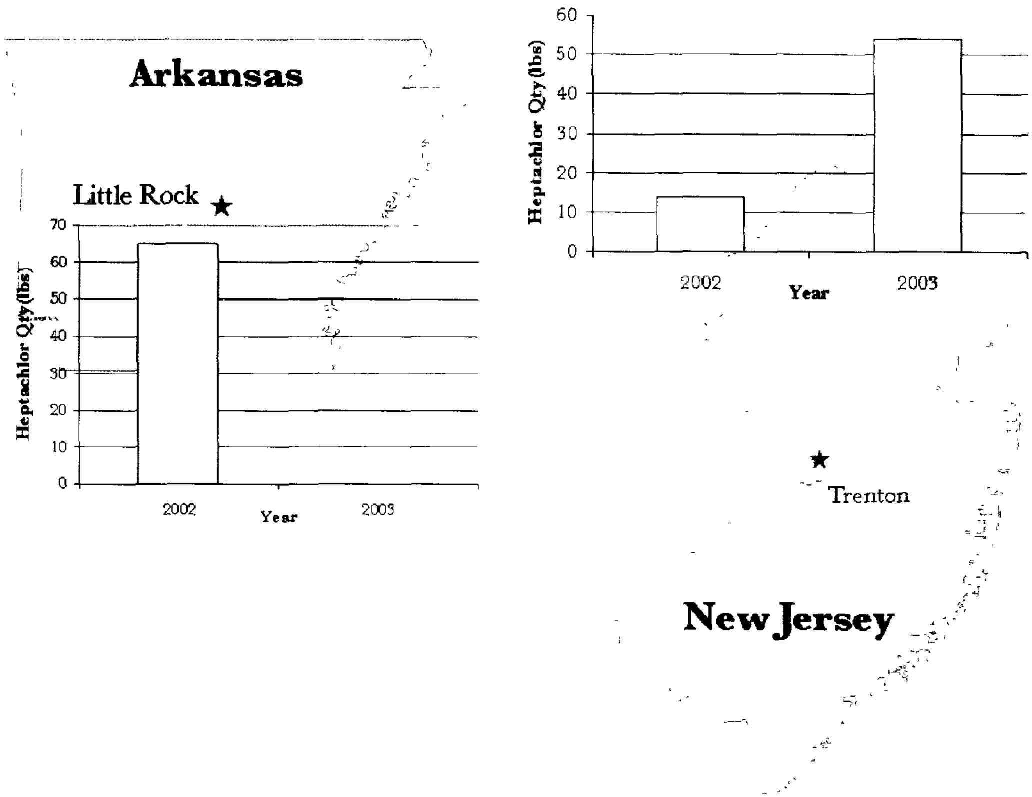


Exhibit 4.85 shows how heptachlor was managed at the one facility in New Jersey that accounted for 100 percent of the total quantity of this PC in 2003. Most (85%) of the heptachlor was treated onsite; onsite land disposal (15%) also was used. No recycling of heptachlor was reported in 2003.

Exhibit 4. 85. Management of Heptachlor in State with Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
New Jersey	54	8	0	0	0	46	0	0	0

Industry Sector (SIC) Trends- Heptachlor. Exhibit 4.86 shows the PC quantity (pounds) of heptachlor reported by one facility in SIC 2869 (Industrial organic chemicals, nec) that accounted for 100 percent of this chemical in 2003.

Exhibit 4. 86. Industry Sector-Level Information for Heptachlor (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2869	Industrial organic chemicals, nec	1	0	0	0	2	54	2600.0%	100.0%

Exhibit 4.87 shows how heptachlor was managed at the one facility in SIC 2869 (Industrial organic chemicals, nec) that accounted for 100 percent of the total quantity of this PC in 2003. Most of the heptachlor was treated onsite; onsite land disposal also was used for 8 pounds (15%) of the total quantity reported by this facility. No recycling of heptachlor was reported in 2003.

Exhibit 4. 87. Management of Heptachlor in Industry Sector (SIC Codes) with Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2869	Industrial organic chemicals, nec	54	8	0	0	0	46	0	0	0

Hexachloro-1,3-butadiene

Chemical Information
CAS Number - 87-68-3
Alternate Names - Hexachloro-1,3-butadiene, 1,3-hexachlorobutadiene, perchlorobutadiene
General Uses - This chemical is used to make rubber, it is used as a solvent and to make lubricants, in gyroscopes, as a heat transfer liquid, and as a hydraulic liquid.
Potential Hazards - This chemical is highly toxic; it may be fatal if inhaled, swallowed or absorbed through the skin.

Summary Analysis– Hexachloro-1,3-butadiene

- In 2003, the 5,566,299 pounds of hexachloro-1,3-butadiene accounted for 7 percent of the total quantity of PCs. Since 1999, there was a 36.4 percent decrease in the quantity of hexachloro-1,3-butadiene.
- The same 5 facilities reported this chemical in 1999 - 2003. Two of these 5 facilities accounted for over 91 percent of the total quantity of this chemical in 2003.
- Except in 2000, when energy recovery was used to manage almost 2.3 million pounds of hexachloro-1,3-butadiene, onsite treatment has been the primary management method -- used to manage over 98 percent of the total quantity of hexachloro-1,3-butadiene.
- Since 2000, only 5 facilities in Region 6 have reported this chemical. Facilities in Louisiana accounted for almost 100 percent of the total quantity of hexachloro-1,3-butadiene in 2003.
- Five facilities in 4 industry sectors reported hexachloro-1,3-butadiene in 2003.

National Trends - Hexachloro-1,3-butadiene. Exhibit 4.88 presents the total PC quantity (lbs.) of hexachloro-1,3-butadiene in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 5,566,299 pounds of hexachloro-1,3-butadiene accounted for 7 percent of the total quantity of PCs. Since 1999, there was a 36.4 percent decrease in the quantity of hexachloro-1,3-butadiene. The number of facilities that reported hexachloro-1,3-butadiene that reported hexachloro-1,3-butadiene between 1999 and 2000 remained relatively constant, with 5 facilities reporting this chemical in 2000- 2003.

Except in 2000, when energy recovery was used to manage almost 2.3 million pounds of hexachloro-1,3-butadiene, treatment has been the primary management method -- used to manage over 98 percent of the total quantity of hexachloro-1,3-butadiene since 1999. Although about 20 percent of the hexachloro-1,3-butadiene went to energy recovery in 2000, this management method has only been used for less than 2 percent of this chemical in other years since 1999. Since 1999, between 220,000 – 340,000 pounds of hexachloro-1,3-butadiene were recycled each year.

Exhibit 4. 88. National-Level Information for Hexachloro-1,3-butadiene

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	7	5	5	5	5	-28.6%	
Disposal Quantity (lbs.)	26	10	563	53	12	-54.0%	0.0%
Energy Recovery Quantity (lbs.)	0	2,274,214	0	80,570	61,619	NA	1.1%
Treatment Quantity (lbs.)	8,764,882	9,022,857	6,404,178	5,086,762	5,504,668	-37.2%	98.9%
Priority Chemical Quantity (lbs.)	8,764,908	11,297,081	6,404,741	5,167,385	5,566,299	-36.5%	
Recycling Quantity (lbs.)	280,000	250,000	220,000	340,010	300,000	7.1%	

Exhibit 4.89 shows the number of facilities that reported hexachloro-1,3-butadiene within various quantity ranges. Of the 5 facilities that reported hexachloro-1,3-butadiene in 2003, 2 facilities accounted for over 91 percent of the total quantity of this chemical.

Exhibit 4. 89. Distribution of Facilities that Reported Quantities for Hexachloro-1,3-butadiene (2003)

Hexachloro-1,3-butadiene (5,566,299 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	1	0.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	1	1.1%
between 100,001 - 1 million pounds	1	7.6%
> 1 million pounds	2	91.2%

EPA Region Trends- Hexachloro-1,3-butadiene. Exhibit 4.90 shows the quantity (pounds) of hexachloro-1,3-butadiene in the 2 EPA Regions where facilities reported this PC in 1999-2003. (Exhibit 4.91).

Exhibit 4. 90. Quantity of Hexachloro-1,3-butadiene Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
2	9,210	0	0	0	0	NA	0.0%
6	8,755,698	11,297,081	6,404,741	5,167,385	5,566,299	NA	100.0%
Total	8,764,882	11,297,081	6,404,741	5,167,385	5,566,299	-36.4%	

Exhibit 4. 91. Distribution of Facilities Reporting Hexachloro-1,3-butadiene in 2003 & Quantity of Hexachloro-1,3-butadiene Reported in 2003, by Region

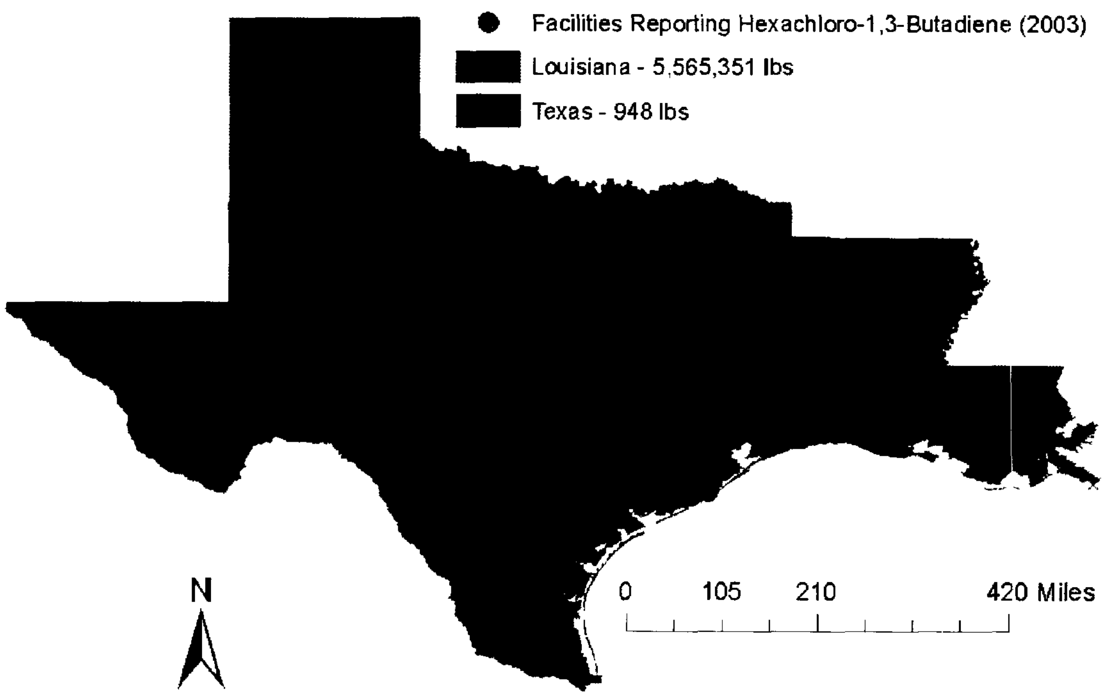


Exhibit 4.92 shows how hexachloro-1,3-butadiene was managed by facilities in Region 6 – the only Region with facilities that reported this chemical in 2003. In 2003, almost 99 percent of the PC quantity of hexachloro-1,3-butadiene was treated, mostly onsite. About 1 percent of the hexachloro-1,3-butadiene also was managed via energy recovery, primarily onsite. Negligible quantities were land disposed. A notable quantity of hexachloro-1,3-butadiene was recycled (onsite) by 1 facility.

Exhibit 4. 92. Management Methods for Hexachloro-1,3-butadiene, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
6	1	11	61,562	57	5,487,714	16,954	300,000	0

State Trends- Hexachloro-1,3-butadiene. In 1999, facilities in 3 states reported a PC quantity of hexachloro-1,3-butadiene. Since 2000, facilities in only 2 of these states reported this chemical. Exhibit 4.93 shows the quantity of hexachloro-1,3-butadiene, between 1999 and 2003, that was reported by facilities in all 3 states (Exhibit 4.94) since 1999. Facilities in

Louisiana accounted for almost 100 percent of the total quantity of hexachloro-1,3-butadiene in 2003, with an increase of 21,952 lbs from 1999 - 2003. Texas facilities accounted for almost 22,000 pounds of hexachloro-1,3-butadiene, with a decrease of -3,211,351 lbs from 1999 – 2003 (Exhibit 4.95).

Exhibit 4. 93. State-Level Information for Facilities Reporting Hexachloro-1,3-butadiene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	5,543,399	11,274,320	6,402,097	5,162,499	5,565,351	21,952	0.4%	99.98%
Texas	3,212,299	22,761	2,644	4,886	948	-3,211,351	-100.0%	0.02%
New York	9,210	0	0	0	0	9,210	-100.0%	0.00%

Exhibit 4. 94. Hexachloro-1,3-butadiene State Trends

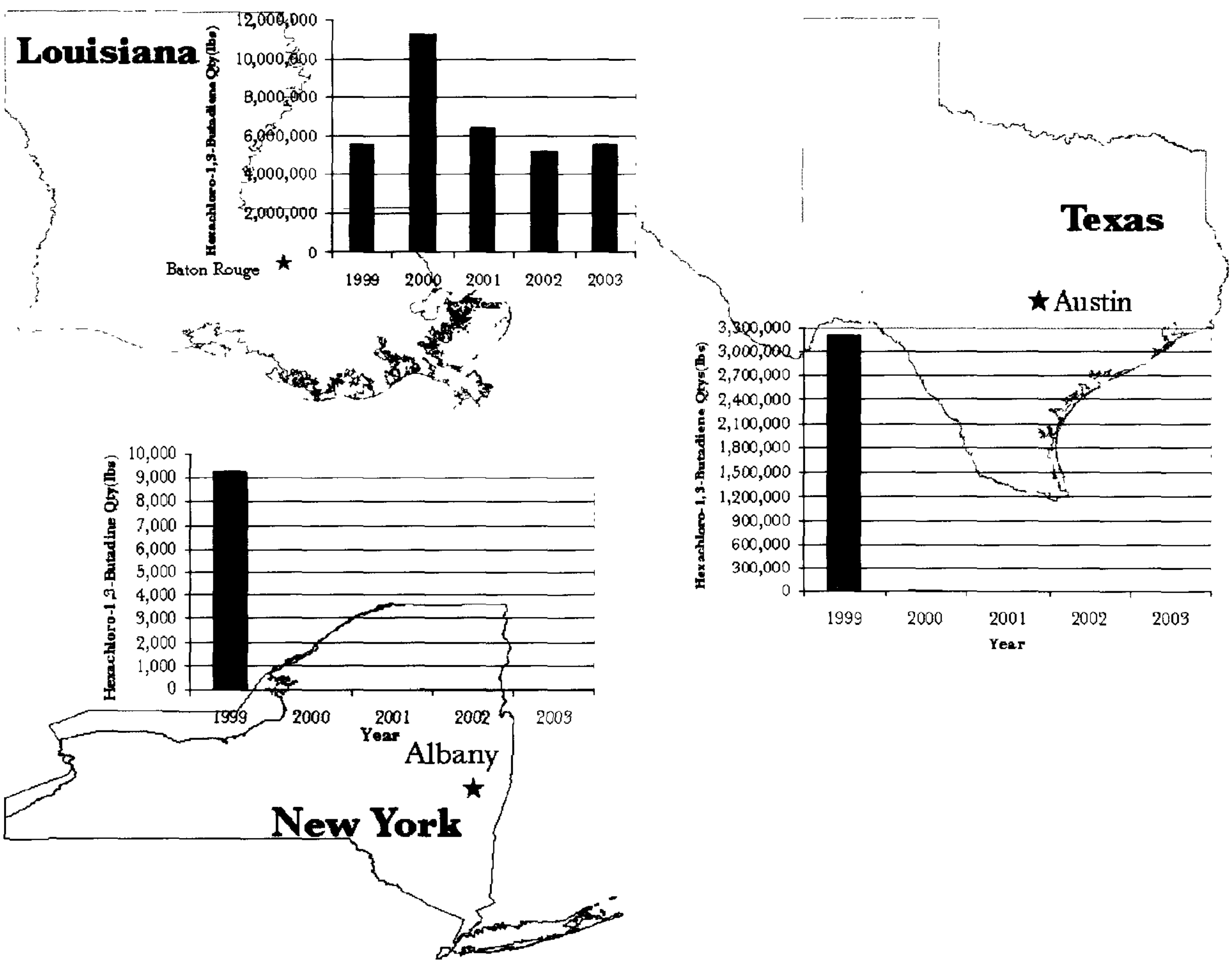


Exhibit 4. 95. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Louisiana and Texas

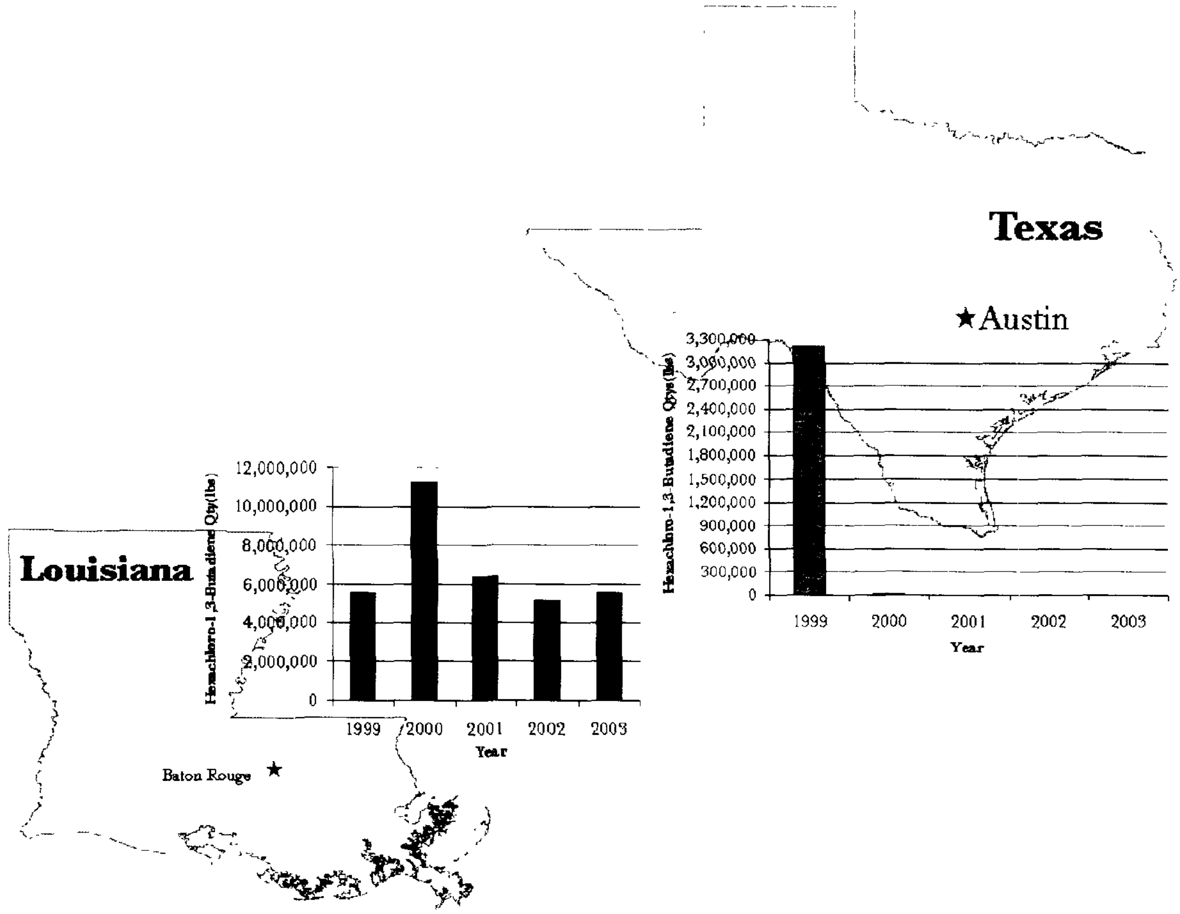


Exhibit 4.96 shows how hexachloro-1,3-butadiene was managed by facilities in the 2 states that accounted for 100 percent of the total quantity of this PC in 2003. Almost 99 percent of the hexachloro-1,3-butadiene reported by facilities in Louisiana and Texas was treated onsite. About 1 percent was managed via onsite energy recovery. A notable quantity of hexachloro-1,3-butadiene was recycled by one of the Louisiana facilities.

Exhibit 4. 96. Management of Hexachloro-1,3-butadiene in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	5,565,351	1	11	61,562	57	5,487,503	16,217	300,000	0
Texas	948	0	0	0	0	211	737	0	0

Industry Sector (SIC) Trends- Hexachloro-1,3-butadiene. Exhibit 4.97 shows the PC quantity (pounds) of hexachloro-1,3-butadiene for the 5 industry sectors (SIC codes) where facilities report 100 percent of this chemical from 1999-2003. Five facilities in 4 industry sectors reported hexachloro-1,3-butadiene in 2003. Two facilities in SIC 2812 (Alkalies and chlorine) reported the highest quantities in each of these years, accounting for almost 71 percent of the total PC quantity of hexachloro-1,3-butadiene in 2003. The I facility in SIC 2869 (Industrial organic chemicals, nec) accounted for over 28 percent of the hexachloro-1,3-butadiene in 2003. This facility's quantity of hexachloro-1,3-butadiene increased significantly in 2002 – to almost 1.6 million pounds from about 9,000 pounds in 1999 (and 0 pounds in 2000 and 2001). One facility in each of two other industry sectors – SIC 2819 (Industrial inorganic chemicals, nec) and SIC 2821 (Plastics materials and resins) reported 61,608 pounds and 948 pounds, respectively.

Exhibit 4. 97. Industry Sector-Level Information for Hexachloro-1,3-butadiene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2812	Alkalies and chlorine	2	8,723,909	11,273,492	6,338,085	3,515,453	3,925,135	-55.0%	70.5%
2869	Industrial organic chemicals, nec	1	8,999	0	0	1,571,362	1,578,608	17442.0%	28.4%
2819	Industrial inorganic chemicals, nec	1	0	23,589	66,656	80,570	61,608	NA	1.1%
2821	Plastics materials and resins	1	0	0	0	0	948	NA	0.0%
2865	Cyclic crudes and intermediates	0	32,000	0	0	0	0	-100.0%	0.0%

Exhibit 4.98 shows how hexachloro-1,3-butadiene was managed at the 5 facilities in the 4 industry sectors that accounted for 100 percent of the total quantity of this PC in 2003. Treatment was used for 100 percent of their hexachloro-1,3-butadiene by facilities in 3 of the 4 industry sectors -- SIC 2812 (Alkalies and chlorine), SIC 2869 (Industrial organic chemicals, nec), and SIC 2821 (Plastics materials and resins). Virtually all of the treatment was performed onsite. Energy recovery (mostly onsite) was used by the 1 I facility in SIC 2819 (Industrial inorganic chemicals, nec). One facility in SIC 2812 recycled a notable quantity (300,000 pounds) of hexachloro-1,3-butadiene in 2003.

Exhibit 4. 98. Management of Hexachloro-1,3-butadiene in Industry Sectors (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2812	Alkalies and chlorine	3,925,135	1	11	0	11	3,908,895	16,217	300,000	0
2869	Industrial organic chemicals, nec	1,578,608	0	0	0	0	1,578,608	0	0	0
2819	Industrial inorganic chemicals, nec	61,608	0	0	61,562	46	0	0	0	0
2821	Plastics materials and resins	948	0	0	0	0	211	737	0	0

Hexachlorobenzene

Chemical Information
Hexachlorobenzene (HCB) is a white crystalline solid created by the chlorination of benzene. A number of manufacturing processes for chlorinated organic compounds generate HCB as a byproduct or impurity. During the manufacture of chlorinated organic chemicals, HCB may be formed by thermal chlorination, oxychlorination, and pyrolysis when carbon and chlorine react at high temperatures. HCB is usually found in the still bottoms generated during product purification or distillation and in air emissions from distillation columns. HCB may also be found as an impurity in commercial chlorinated solvent products.
CAS Number - 118-74-1
Alternate Names - pentachlorophenyl chloride, perchlorobenzene
General Uses - HCB is also a potential byproduct formed during the production of metallic magnesium when produced via electrolysis with carbon electrodes. The degassing of molten aluminum with hexachloroethylene at aluminum foundries and secondary aluminum smelting plants also produces HCB. Gaseous emissions from hexachloroethylene-based aluminum degassing contain high yields of complex organochlorine compounds, including HCB. Hexachlorobenzene was once used as an agricultural fungicide, but health concerns about its toxicity led to the cancellation of the registrations of all pesticides that contained hexachlorobenzene as an active ingredient. Its primary use was to treat wheat seeds, onions, and sorghum. As late as 1985 it was used to prevent wheat smut. Although no longer used as an active ingredient in pesticides, hexachlorobenzene is a byproduct impurity contained in a number of pesticides. However, using and intentionally making hexachlorobenzene is no longer allowed in the United States.
Potential Hazards - This compound is an irritant of the skin, eyes, mucous membranes and upper respiratory tract. It emits toxic fumes of chlorides, carbon monoxide and carbon dioxide when heated to decomposition. Potentially toxic to the liver and a probable human carcinogen (EPA Integrated Risk Information System –IRIS).

Summary Analysis– Hexachlorobenzene

- In 2003, the 4,272,727 pounds of hexachlorobenzene accounted for about 5.4 percent of the total quantity of PCs. Since 1999, there was a 20.9 percent decrease in the quantity of hexachlorobenzene.
- The number of facilities that reported hexachlorobenzene more than tripled between 1999 and 2000, but have remained relatively constant the last few years, with 38 facilities reporting this chemical in 2003. Four facilities accounted for over 98 percent of the total quantity.
- Since 1999, treatment was used to manage over 90 percent of the total quantity of hexachlorobenzene. In 2003, energy recovery was used for about 7 percent of the total quantity; land disposal was used for less than 1 percent. Recycling of hexachlorobenzene has increased significantly since 1999, although there was a decline in 2003, compared to the five-year high quantity of 740,144 pounds in 2002.
- Since 1999, Region 6 facilities have accounted for at least 97 percent of the total quantity of hexachlorobenzene. In 2003, facilities in Louisiana accounted for over 81 percent of the total quantity and Texas facilities accounted for over 18 percent.

- Facilities in 3 industry sectors accounted for over 99 percent of this chemical in 2003: SIC 2869 (Industrial organic chemicals, nec), SIC 2812 (Alkalies and chlorine), and SIC 2821 (Plastics materials and resins).

National Trends – Hexachlorobenzene. Exhibit 4.99 presents the total PC quantity (pounds) of hexachlorobenzene in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 4,272,727 pounds of hexachlorobenzene accounted for about 5.4 percent of the total quantity of PCs. Since 1999, there was a 20.9 percent decrease in the quantity of hexachlorobenzene. The number of facilities that reported hexachlorobenzene more than tripled between 1999 and 2000, but have remained relatively constant the last few years, with 38 facilities reporting this chemical in 2003.

Since 1999, treatment has been the primary management method -- used to manage over 90 percent of the total quantity of hexachlorobenzene. In 2003, energy recovery was used for about 7 percent of the total quantity; land disposal was used for less than 1 percent. Recycling of hexachlorobenzene has increased significantly since 1999, although there was a decline in 2003, compared to the five-year high quantity of 740,144 pounds in 2002.

Exhibit 4. 99. National-Level Information for Hexachlorobenzene

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	12	44	41	37	38	216.7%	
Disposal Quantity (lbs.)	13,573	13,025	13,992	6,247	14,412	6.2%	0.3%
Energy Recovery Quantity (lbs.)	138,945	167,085	350,900	201,616	301,990	117.3%	7.1%
Treatment Quantity (lbs.)	5,249,188	5,754,663	5,400,970	4,001,015	3,956,326	-24.6%	92.6%
Priority Chemical Quantity (lbs.)	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	-20.9%	
Recycling Quantity (lbs.)	32,854	17,139	6,310	740,144	399,607	1116.3%	

Exhibit 4.100 shows the number of facilities that reported hexachlorobenzene within various quantity ranges. Of the 38 facilities that reported hexachlorobenzene in 2003, 4 facilities accounted for over 98 percent of the total quantity of this chemical. One facility reported over 60 percent of the total quantity.

Exhibit 4. 100. Distribution of Facilities that Reported Quantities for Hexachlorobenzene (2003)

Hexachlorobenzene (4,272,727 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this PC**
up to 10 pounds	10	less than 0.1%
between 11 - 100 pounds	9	less than 0.1%
between 101 -1,000 pounds	4	less than 0.1%
between 1,001 - 10,000 pounds	9	0.8%
between 10,001 - 100,000 pounds	2	0.9%
between 100,001 - 1 million pounds	3	38.1%
> 1 million pounds	1	60.2%

EPA Region Trends- Hexachlorobenzene. Exhibit 4.101 shows the quantity (pounds) of hexachlorobenzene for those EPA Regions where facilities reported those PCs in 1999-2003 (see also Exhibit 4.102). In 1999, facilities in only 3 of the 10 EPA Regions reported hexachlorobenzene; in 2003, facilities in 8 of the Regions reported hexachlorobenzene. However, over 99.5 percent of the total quantity was reported by facilities in Region 6. Since 1999, Region 6 facilities have accounted for at least 97 percent of the total quantity of hexachlorobenzene.

Exhibit 4. 101. Quantity of Hexachlorobenzene Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
1	0	6	0	0	0	NA	0.0%
2	0	3,233	2,966	3,146	3,492	NA	0.1%
3	0	0	19	0	83	NA	0.0%
4	23,072	120,556	5,981	1,926	11,642	-49.5%	0.3%
5	0	54	35	49	157	NA	0.0%
6	5,335,049	5,752,014	5,751,600	4,198,285	4,252,854	-20.3%	99.5%
7	0	31	78	53	29	NA	0.0%
8	0	213	623	360	46	NA	0.0%
9	43,585	58,665	4,560	5,059	4,424	-89.8%	0.1%
Total	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	-20.9%	

Exhibit 4. 102. Distribution of Facilities Reporting Hexachlorobenzene in 2003 & Quantity of Dibenzofuran Reported in 2003 per Region

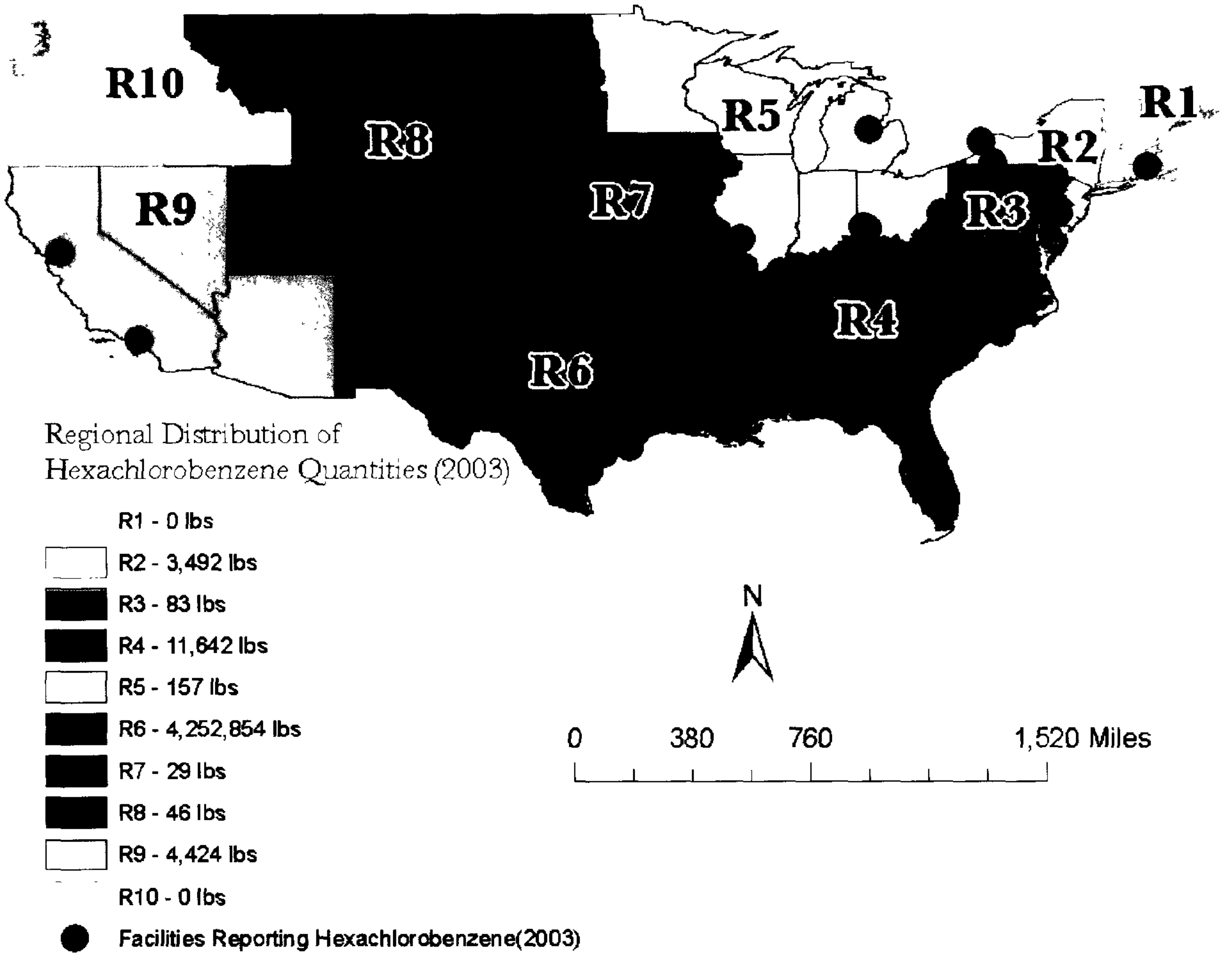


Exhibit 4.103 shows how hexachlorobenzene was managed by the facilities in each of the 8 EPA Regions that reported this chemical in 2003. In 2003, almost 93 percent of the PC quantity of hexachlorobenzene was treated, mostly onsite -- at facilities in Region 6. About 7 percent of the hexachlorobenzene also was managed via onsite energy recovery, primarily by facilities in Region 6. For the most part, non-Region 6 facilities used a combination of land disposal (primarily offsite) and treatment to manage their hexachlorobenzene. Facilities in Region 9 used energy recovery for about 50 percent of their quantity of hexachlorobenzene. A notable quantity of hexachlorobenzene was recycled (onsite) by Region 6 and Region 9 facilities.

Exhibit 4. 103. Management Methods for Hexachlorobenzene, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2	11	53	0	0	757	2,672	0	0
3	0	0	0	0	0	83	0	0
4	0	4,100	0	0	5,169	2,373	0	0
5	2	2	0	0	102	51	0	0
6	488	9,742	299,751	1	3,915,822	27,050	393,716	0
7	6	0	0	0	0	23	0	0
8	8	0	0	0	0	38	0	0
9	0	0	0	2,237	1,998	188	5,891	0

State Trends- Hexachlorobenzene. In 2003, although facilities in 17 states reported a PC quantity of hexachlorobenzene, only 2 of these states (Louisiana and Texas) accounted for over 99 percent of the total PC quantity of hexachlorobenzene. Exhibit 4.104 shows the quantity of hexachlorobenzene, between 1999 and 2003, that was reported by facilities in these 2 states in 2003. Facilities in Louisiana accounted for over 81 percent of the total quantity of this chemical in 2003. Texas facilities accounted for over 18 percent. Since 1999, the Louisiana facilities increased their quantity of hexachlorobenzene by almost 27 percent, with most of the increase occurring in 2003. The quantity of hexachlorobenzene has decreased more than 70 percent at Texas facilities since 1999, with significant decreases occurring in both 2002 and 2003.

Exhibit 4. 104. State-Level Information for Facilities Reporting Hexachloro-1,3-butadiene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
AR	0	12	480	173	1,950	1,950	0%
CA	43,585	58,665	4,560	5,059	4,424	-39,161	0%
CO	0	0	190	30	0	0	0%
CT	0	6	0	0	0	0	0%
FL	0	2,565	2,816	160	53	53	0%
GA	0	2	0	0	0	0	0%
IA	0	1	0	2	1	1	0%
IL	0	22	23	27	23	23	0%
KS	0	30	78	51	28	28	0%
KY	1,650	8	0	0	8,600	6,950	0%
LA	2,747,121	3,001,834	3,180,684	2,445,788	3,478,280	731,159	81%
MI	0	18	1	21	104	104	0%
MN	0	12	0	0	0	0	0%
MS	0	0	0	1	1	1	0%

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
NJ	0	2,985	2,761	2,760	3,325	3,325	0%
NY	0	248	205	387	168	168	0%
OH	0	1	11	1	30	30	0%
SC	0	0	1	0	0	0	0%
TN	21,422	117,980	3,163	1,765	2,988	-18,434	0%
TX	2,587,928	2,750,168	2,570,436	1,752,324	772,624	-1,815,304	18%
UT	0	213	433	330	46	46	0%
WV	0	0	19	0	83	83	0%
Total	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	-1,128,979	100%

Exhibit 4. 105. State-Level Information for Facilities Reporting over 99 Percent of Hexachlorobenzene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	2,747,121	3,001,834	3,180,684	2,445,788	3,478,280	731,159	26.6%	81.4%
Texas	2,587,928	2,750,168	2,570,436	1,752,324	772,624	-1,815,304	-70.1%	18.1%

Exhibit 4. 106. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Louisiana and Texas

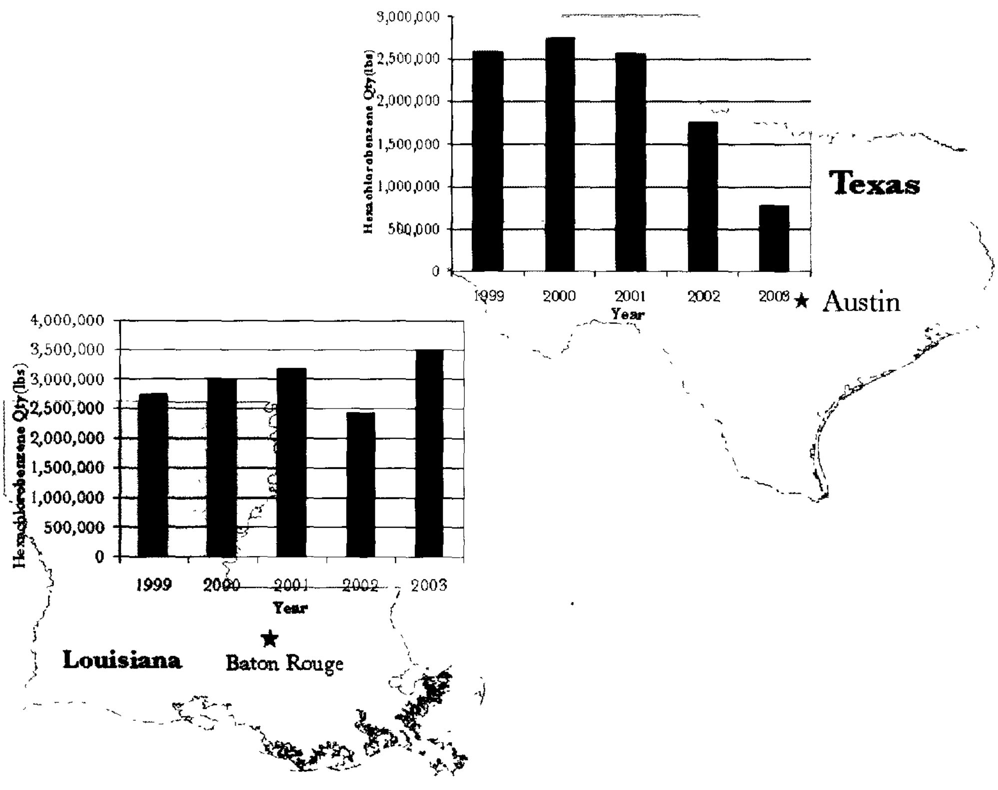


Exhibit 4.107 shows how hexachlorobenzene was managed by facilities in Louisiana and Texas in 2003. Most (over 92%) of the hexachlorobenzene reported by facilities in Louisiana and Texas was treated onsite (Exhibit 4.106). A notable quantity of hexachlorobenzene was recycled by Texas facilities; no recycling was reported by the Louisiana facilities in 2003.

Exhibit 4. 107. Management of hexachlorobenzene in States with over 99 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	3,478,280	33	17	299,735	1	3,178,218	274	0	0
Texas	772,624	454	9,725	16	0	737,604	24,825	393,716	0

Industry Sector (SIC) Trends- Hexachlorobenzene. Exhibit 4.108 shows the PC quantity (pounds) of hexachlorobenzene for the 3 industry sectors (SIC codes) where facilities reported over 99 percent of this chemical in 2003. Facilities in SIC 2869 (Industrial organic chemicals, nec) reported the highest quantities, accounting for over 61 percent of the total PC quantity of hexachlorobenzene in 2003. Since 1999, the quantity of hexachlorobenzene reported by SIC 2869 facilities has increased significantly, particularly in 2002 and again in 2003. Compared to quantities reported in 1999 through 2002, a very large increase in the quantity of hexachlorobenzene also occurred in 2003 for facilities in SIC 2821 (Plastics materials and resins). Facilities in SIC 2812 (Alkalies and chlorine), although accounting for over 21 percent of the total quantity of hexachlorobenzene in 2003, reported decreased quantities in 2002 and in 2003.

Exhibit 4. 108. Industry Sector-Level Information for Hexachlorobenzene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2869	Industrial organic chemicals, nec	11	97,620	222,500	51,414	1,960,603	2,620,397	2584.3%	61.3%
2812	Alkalies and chlorine	5	5,244,353	5,620,951	5,660,497	2,215,976	903,456	-82.8%	21.1%
2821	Plastics materials and resins	3	0	18,111	14,972	14,972	726,196	NA	17.0%

Exhibit 4.109 shows how hexachlorobenzene was managed by the 19 facilities in the 3 industry sectors in 2003. Almost 100 percent of the hexachlorobenzene reported by facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 2821 (Plastics materials and resins) was treated, primarily onsite. Facilities in SIC 2812 (Alkalies and chlorine) also used treatment for about 67 percent of their hexachlorobenzene but also used onsite energy recovery for the other 33 percent

of hexachlorobenzene. A notable quantity of hexachlorobenzene was recycled by facilities in SIC 2821.

Exhibit 4. 109. Management of Hexachlorobenzene in Industry Sectors (SIC Codes) with 99 Percent of Total Quantity (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2869	Industrial organic chemicals, nec	2,620,397	33	4,100	0	0	2,605,474	10,789	0	0
2812	Alkalies and chlorine	903,456	6	2	299,735	1	603,199	512	0	0
2821	Plastics materials and resins	726,196	454	1	16	0	712,169	13,557	393,716	0

Recycling. Exhibit 4.110 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of hexachlorobenzene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 110. Facilities reporting Recycling but not a PC quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2819 -- Industrial inorganic chemicals, nec												
2	8	Colorado	0	0	0	900	0	0	0	0	0	1,237

Hexachloroethane

Chemical Information
CAS Number - 67-72-1
Alternate Names - carbon hexachloride, ethane hexachloride, perchloroethane
General Uses - This chemical is mostly used by the military to make weapons that produce smoke, such as smoke pots and grenades used during training. It is also present as an ingredient in fungicides, insecticides, lubricants and plastics.
Potential Hazards - This chemical is highly toxic; it may be fatal if inhaled, swallowed or absorbed through the skin.

Summary Analysis– Hexachloroethane

- In 2003, the 2,734,341 pounds of hexachloroethane accounted for 3.5 percent of the total quantity of PCs. Since 1999, there was a 24.6 percent decrease in the quantity of hexachloroethane. Ten facilities reported this chemical in 2000-2003.
- Since 1999, treatment was the primary method used to manage hexachloroethane. In 2003, although the quantity treated decreased, compared to previous years, treatment was used for almost 95 percent of the total quantity of hexachloroethane.
- Of the 10 facilities that reported hexachloroethane in 2003, 1 facility accounted for 60 percent of the total quantity and 5 facilities reported almost 94 percent of the total quantity of this chemical.
- Since 1999, the overwhelming majority of hexachloroethane was reported by facilities in Region 6. In 2003, Region 6 facilities accounted for over 96 percent of the total quantity of hexachloroethane. However, this quantity represents a decrease of over 25 percent since 1999 and is indicative of a trend of decreasing quantity since 2000.
- Facilities in Louisiana accounted for over 71 percent of the total quantity of this chemical in 2003. Texas facilities accounted for over 25 percent.
- Facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 2812 (Alkalies and chlorine) reported over 96 percent of hexachloroethane in 2003.

National Trends – Hexachloroethane. Exhibit 4.111 presents the total PC quantity (lbs.) of hexachloroethane in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 2,734,341 pounds of hexachloroethane accounted for 3.5 percent of the total quantity of PCs. Since 1999, there was about a 25 percent decrease in the quantity of hexachloroethane. The number of facilities that reported hexachloroethane between 1999 and 2000 remained relatively constant, with 10 facilities reporting this chemical in 2000-2003.

Since 1999, treatment was the primary method used to manage hexachloroethane. In 2003, although the quantity treated decreased, compared to previous years, treatment was used for almost 95 percent of the total quantity of hexachloroethane. Energy recovery was used for about 5 percent of the quantity. Significant quantities of hexachloroethane were recycled each year (1999-2003), including over 2.3 million pounds in 2003.

Exhibit 4. 111. National-Level Information for Hexachloroethane

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	8	9	8	8	10	25.0%	
Disposal Quantity (lbs.)	191	2,482	233	306	254	33.1%	0.0%
Energy Recovery Quantity (lbs.)	827,873	1,245,190	455,985	143,877	139,929	-83.1%	5.1%
Treatment Quantity (lbs.)	2,797,306	4,462,309	3,689,031	3,849,238	2,594,158	-7.3%	94.9%
Priority Chemical Quantity (lbs.)	3,625,369	5,709,981	4,145,249	3,993,421	2,734,341	-24.6%	
Recycling Quantity (lbs.)	2,094,072	1,027,963	850,000	3,530,419	2,336,505	11.6%	

Exhibit 4.112 shows the number of facilities that reported hexachloroethane within various quantity ranges. Of the 10 facilities that reported hexachloroethane in 2003, 1 facility accounted for 60 percent of the total quantity and 5 facilities reported almost 94 percent of the total quantity of this chemical.

Exhibit 4. 112. Distribution of Facilities that Reported Quantities for Hexachloroethane (2003)

Hexachloroethane (2,734,341 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	1	less than 0.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	4	6.3%
between 100,001 - 1 million pounds	4	33.7%
> 1 million pounds	1	60.0%

EPA Region Trends- Hexachloroethane. Exhibit 4.113 shows the quantity (pounds) of hexachloroethane for those 5 EPA Regions where facilities reported this PC in 1999-2003. In 1999, facilities in only 3 of the 10 EPA Regions reported hexachloroethane; in 2003, facilities in 4 of the Regions reported hexachloroethane. Since 1999, the overwhelming majority of hexachloroethane was reported by facilities in Region 6. In 2003, Region 6 facilities accounted for over 96 percent of the total quantity of hexachloroethane. However, this quantity represents a decrease of about 26 percent since 1999 and is indicative of a trend of decreasing quantity since 2000. Facilities in several other Regions also reported decreased quantities of hexachloroethane in 2003. A facility in Region 10 began reporting hexachloroethane in 2003. Exhibit 4.114 illustrates the distribution of facilities reporting hexachloroethane quantities in 2003.

Exhibit 4. 113. Quantity of Hexachloroethane Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
4	0	0	0	84,900	0	NA	0.0%
5	87,890	70,764	63,652	0	11,549	-86.9%	0.4%
6	3,537,063	5,638,985	4,081,334	3,907,982	2,631,204	-25.6%	96.2%
7	416	232	263	539	333	-20.0%	0.0%
10	0	0	0	0	91,255	NA	3.3%
Total	3,625,369	5,709,981	4,145,249	3,993,421	2,734,341	-24.6%	

Exhibit 4. 114. Distribution of Facilities Reporting Hexachloroethane in 2003 & Quantity of Hexachloroethane Reported in 2003 per Region

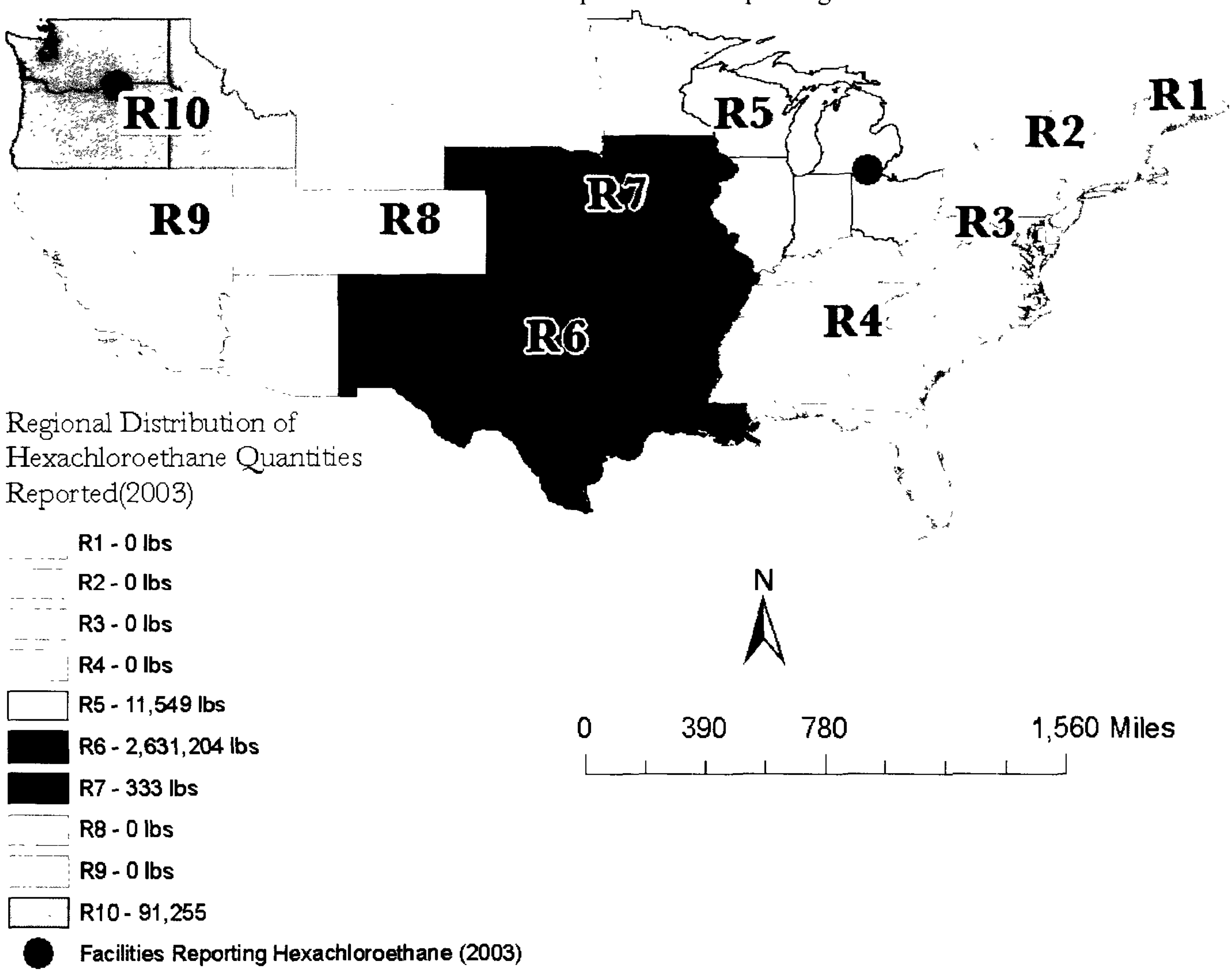


Exhibit 4.115 shows how hexachloroethane was managed by facilities in the 4 EPA Regions in 2003. In 2003, almost 94 percent of the PC quantity of hexachloroethane was treated, mostly onsite -- at facilities in Region 6. About 5 percent of the hexachloroethane also was managed via onsite energy recovery, primarily by facilities in Region 6. Facilities in Regions 5 and 6 recycled notable quantities of hexachloroethane in 2003.

Exhibit 4. 115. Management Methods for Hexachloroethane, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
5	0	0	0	11,549	0	0	0	40,910
6	0	0	128,380	0	2,472,278	30,546	2,295,595	0
7	254	0	0	0	0	79	0	0
10	0	0	0	0	88,911	2,344	0	0

State Trends- Hexachloroethane. Exhibit 4.116 shows the quantity of hexachloroethane, between 1999 and 2003, that was reported by facilities in 5 states. Facilities in Louisiana accounted for over 71 percent of the total quantity of this chemical in 2003. Texas facilities accounted for over 25 percent. Except for the facility in Oregon that only began reporting hexachloroethane in 2003, the quantity of hexachloroethane decreased significantly in each of the other 4 states, compared to the quantity in 1999. Exhibit 4.117 shows the states with significant quantity trends.

Exhibit 4. 116. State-Level Information for Facilities Reporting Hexachloroethane (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	2,300,579	2,454,853	1,506,255	918,178	1,945,275	-355,304	-15.4%	71.1%
Texas	1,236,484	3,184,132	2,575,079	2,989,804	685,929	-550,555	-44.5%	25.1%
Oregon	0	0	0	0	91,255	91,255	NA	3.3%
Michigan	87,890	68,464	63,652	0	11,549	-76,341	-86.9%	0.4%
Kansas	416	232	263	539	333	-83	-20.0%	0.0%

Exhibit 4. 117. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Oregon and Texas

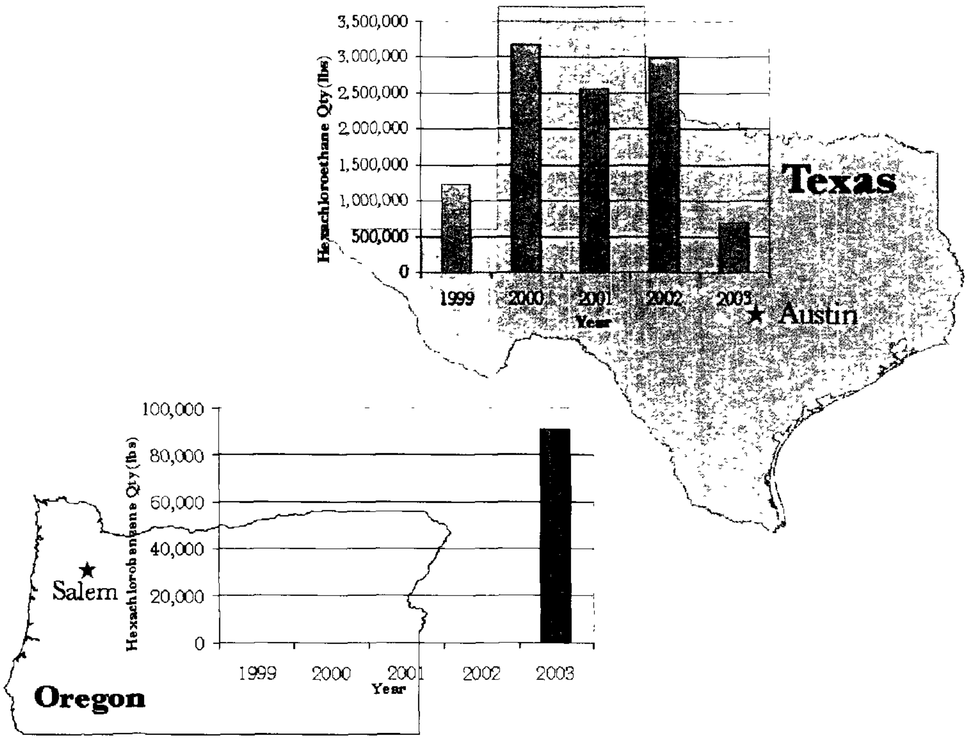
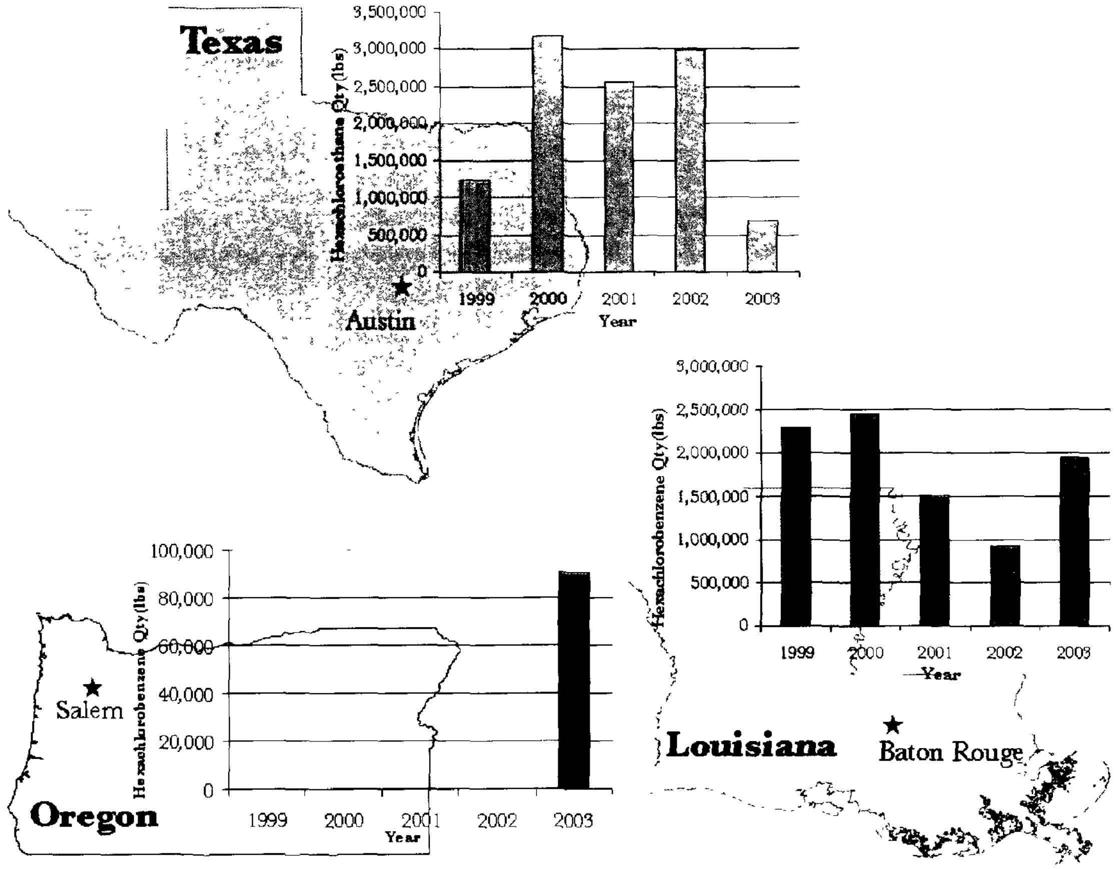


Exhibit 4.118 shows how hexachloroethane was managed by facilities in the 5 states that reported a quantity of this PC in 2003. In 2003, about 95 percent of hexachloroethane was treated, primarily onsite, by facilities in Louisiana, Texas, and Oregon (Exhibit 4.119). Energy recovery was used for about 5 percent of the hexachloroethane by facilities in Louisiana and Michigan. Most of the hexachloroethane from the facility in Kansas was disposed onsite. A significant quantity of hexachloroethane was recycled by facilities in Louisiana, Texas, and Michigan.

Exhibit 4. 118. Management of Hexachloroethane in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	1,945,275	0	0	128,380	0	1,815,673	1,222	1,100,000	0
Texas	685,929	0	0	0	0	656,605	29,324	1,195,595	0
Oregon	91,255	0	0	0	0	88,911	2,344	0	0
Michigan	11,549	0	0	0	11,549	0	0	0	40,910
Kansas	333	254	0	0	0	0	79	0	0

Exhibit 4. 119. Trends Analyses of States with 95 Percent of Total Quantity (2003)



Industry Sector (SIC) Trends- Hexachloroethane. Exhibit 4.120 shows the PC quantity (pounds) of hexachloroethane for the 5 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. Three of these industry sectors accounted for over 99 percent of this chemical in 2003. Facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 2812 (Alkalies and chlorine) reported the highest quantities, accounting for over 96 percent of the total PC quantity of hexachloroethane in 2003. The quantity of hexachloroethane reported by facilities in SIC 2869 increased by over 400 percent since 1999 and more than doubled in 2003, compared to the 2002 quantity. Facilities in SIC 2812 reported over 78 percent less hexachloroethane in 2003, compared to the quantity reported in 1999. Likewise, the facility in SIC 2821 (Plastics materials and resins) reported a decrease of almost 87 percent in 2003.

Exhibit 4. 120. Industry Sector-Level Information for Hexachloroethane (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2869	Industrial organic chemicals, nec	4	364,484	483,682	266,064	801,027	1,940,596	432.4%	71.0%
2812	Alkalies and chlorine	4	3,172,995	5,155,535	3,815,533	3,107,494	690,941	-78.2%	25.3%
9711	National security	1	0	0	0	0	91,255	NA	3.3%
2821	Plastics materials and resins	1	87,890	68,464	63,652	0	11,549	-86.9%	0.4%
3365	Aluminum foundries	0	0	2,300	0	0	0	NA	0.0%
3795	Tanks and tank components	0	0	0	0	84,900	0	NA	0.0%

Exhibit 4.121 shows how hexachloroethane was managed by the 10 facilities in the 4 industry sectors that reported a quantity of this PC in 2003. Over 98 percent of the hexachloroethane reported by facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 9711 (National Security) 2821) was treated, primarily onsite. Facilities in SIC 2812 (Alkalies and chlorine) used onsite treatment for almost 86 percent of their hexachloroethane and also used onsite energy recovery for the other 14 percent. Two of the 4 facilities in SIC 2812 reported significant recycling of hexachloroethane. Onsite energy recovery was used for 100 percent of the PC quantity of hexachloroethane reported by the facility in SIC 2821 (Plastics materials and resins). This facility also recycled a notable quantity of hexachloroethane in 2003.

Exhibit 4. 121. Management of Hexachloroethane in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2869	Industrial organic chemicals, nec	1,940,596	0	0	31,669	0	1,880,481	28,446	0	0
2812	Alkalies and chlorine	690,941	254	0	96,711	0	591,797	2,179	2,295,595	0
9711	National security	91,255	0	0	0	0	88,911	2,344	0	0
2821	Plastics materials and resins	11,549	0	0	0	11,549	0	0	0	40,910

Lead and Lead Compounds

Chemical Information

Lead is a heavy, silver-white metal in its pure (elemental) form. When exposed to air, it reacts with it and turns bluish-gray. Its physical properties include a relatively low melting point (327#C), high density, and an ability to shield radiation, sound waves, and mechanical vibrations. Lead exists in either one of two ways: as the pure metal (i.e., lead metal) or as a compound, in which the lead is combined with some other element or elements. Examples of lead compounds include: lead oxide, lead sulfide, and lead acetate. Lead metal and lead compounds are widely used in a variety of products and applications that include: lead-acid batteries, ammunition, construction materials, solder, metal castings, glass and ceramic products, plastics, electrical cable coverings, lubricating oils and greases, and certain paints

CAS Number - 7439-92-1

General Uses - Lead is often obtained by primary production through mining of ores or by secondary production through recycling. Lead and Lead Compounds are used in the manufacture of a variety of products. The most prominent uses of lead and lead compounds are in storage batteries, pigments and ceramic products, ammunition, sheet lead, casting metal and solder. Various other industries use or make metal products that contain lead and lead compounds. These metal products include sheet lead, casting metals, solder, bearing metals, extruded products, and brass and bronze alloys. (EPA 2000/2001 TRI Public Data Release Report)

Potential Hazards - Lead can affect almost every organ and system in the body. The most sensitive is the central nervous system. At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, ankles, and possibly affect the memory.

Summary Analysis– Lead and Lead Compounds

- The almost 37 million pounds of lead and lead compounds accounted for over 46 percent of the total PC quantity in 2003. For 1999 – 2003, lead and lead compounds comprised, by far, the largest quantity of any of the PCs.
- The lowered TRI reporting threshold for lead and lead compounds that became effective for the 2001 TRI Reporting Year resulted in a quadrupling of the number of reporting facilities; however, the reported PC quantity of lead and lead compounds actually decreased by about 400,000 pounds, compared to the quantity reported in 2000.
- Almost 100 percent of lead and lead compounds was land disposed. This is indicative of the fact that metals, including lead and lead compounds, are not amenable to destruction via treatment and have no energy value. Although the quantity of lead and lead compounds reported as recycled has decreased by almost 26 percent since 1999, approximately 614 million pounds were recycled in 2003.
- Of the 4,609 facilities that reported lead and lead compounds in 2003, 5 facilities accounted for almost 30 percent of the total quantity of this chemical. Seventy-one facilities accounted for over 75 percent of the total quantity.
- In 2003, about 75 percent of lead and lead compounds was reported by facilities in 4 EPA Regions (Regions 4, 5, 6, and 7). Facilities in Region 5 accounted for over 24 percent of the total quantity in 2003.
- Facilities in 16 states reported over 80 percent of the total quantity in 2003. Facilities in Missouri reported the largest PC quantity of lead and lead compounds in 2003, accounting for over 13 percent of the total quantity. These facilities also had the largest

increase in quantity, almost 3.6 million pounds, compared to the 1999 quantity. Most of this quantity was reported by 1 facility, in Missouri.

- Facilities in more than 300 SIC codes reported a PC quantity of lead and lead compounds in 2003. Facilities in 6 industry sectors accounted for almost 80 percent of the total quantity

National Trends – Lead and Lead Compounds. The almost 37 million pounds of lead and lead compounds accounted for over 46 percent of the total PC quantity in 2003. For 1999 – 2003, lead and lead compounds comprised, by far, the largest quantity of any of the PCs. Exhibit 4.122 shows that the number of facilities that reported lead and lead compounds since 2001 has been relatively constant, with 4,609 facilities reporting in 2003. In 2001, there was a significant increase in the number of facilities reporting lead and lead compounds. Most of this increase likely can be attributed to the lowered TRI reporting threshold for lead and lead compounds that became effective for the 2001 TRI Reporting Year. Although the number of reporting facilities more than quadrupled, the reported PC quantity of lead and lead compounds actually decreased by about 400,000 pounds. As such, quantities of lead and lead compounds newly reported by the facilities due to the lowered TRI reporting threshold were more than offset by decreased quantities reported by the other reporting facilities.

Almost 100 percent of lead and lead compounds was land disposed. This is indicative of the fact that metals, including lead and lead compounds, are not amenable to destruction via treatment and have no energy value. Although treatment and energy recovery quantities were reported for lead and lead compounds since 1999, these quantities are steadily decreasing – likely due to improved data quality assurance by the TRI Program and increased awareness by reporters that land disposal is the most suitable method to be reported for this chemical. Although recycling of lead and lead compounds has decreased by almost 26 percent since 1999, approximately 614 million pounds were recycled in 2003.

Exhibit 4. 122. National-Level Information for Lead and Lead Compounds (1999-2003)

	1999	**2000**	**2001**	**2002**	**2003**	**Percent Change (2001-2003)**	**Management Method -- Percent of Quantity of this Chemical in 2003**
Number of Facilities	1,010	1,076	4,825	4,731	4,609	-4.5%	
Disposal Quantity (lbs.)	29,591,284	31,785,023	34,572,297	34,827,486	36,638,200	6.0%	99.9%
Energy Recovery Quantity (lbs.)	18,492	11,010	110,629	5,984	265	-99.8%	0.0%
Treatment Quantity (lbs.)	3,244,600	5,624,555	2,313,654	73,792	28,811	-98.8%	0.1%
Priority Chemical Quantity (lbs.)	32,854,376	37,420,838	36,996,580	34,907,262	36,667,276	-0.9%	
Recycling Quantity (lbs.)	826,400,495	769,496,187	661,304,132	670,990,967	614,018,470	-7.2%	

Exhibit 4.123 shows the number of facilities that reported lead and lead compounds, within ranges of quantities. Of the 4,609 facilities that reported lead and lead compounds in 2003, 5 facilities accounted for almost 30 percent of the total quantity of this chemical. Seventy-one facilities accounted for over 75 percent of the total quantity. Over 3,700 facilities accounted for

less than 1.2 percent of the total PC quantity of lead and lead compounds in 2003 lead and lead compounds in 2003.

Exhibit 4.123. Distribution of Facilities that Reported Quantities for Lead and Lead Compounds (2003)

Lead and Lead Compounds (36,655,132 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	1,590	less than 0.1%
between 11 - 100 pounds	1,045	0.1%
between 101 -1,000 pounds	1,101	1.1%
between 1,001 - 10,000 pounds	593	5.4%
between 10,001 - 100,000 pounds	209	18.3%
between 100,001 - 1 million pounds	66	45.2%
> 1 million pounds	5	29.9%

EPA Region Trends– Lead and Lead Compounds. Exhibit 4.124 shows the quantity (pounds) of lead and lead compounds reported by facilities in each EPA Region from 1999 to 2003. In 2003, facilities in 4 EPA Regions (Regions 4, 5, 6, and 7) reported about 75 percent of lead and lead compounds. Facilities in Region 5 accounted for over 24 percent of the total quantity in 2003, an increase of 12 percent since 2001. Facilities in 4 other Regions also reported an increased quantity of lead and lead compounds in 2003, compared to 2001 quantities: Region 10 (+13.2%), Region 8 (+16.0%), Region 4 (+16.9%), and Region 7 (+27.5%). Compared to the quantity reported in 2001 (the year in which the TRI reporting threshold was lowered), facilities in 5 Regions reported a decreased quantity of lead and lead compounds in 2003: Region 1 (-45.2%), Region 2 (-46.4%), Region 3 (-27.8%), Region 6 (-27.0%), and Region 9 (-19.8%).

Exhibit 4. 124 Quantity of Lead and Lead Compounds Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (2001-2003)	Percent Of the Total Priority Chemical quantity (2003)
1	441,993	344,856	628,001	299,379	344,165	-45.2%	0.9%
2	3,315,851	3,094,854	1,825,446	1,100,971	977,662	-46.4%	2.7%
3	5,171,766	4,881,290	4,230,599	2,715,513	3,055,739	-27.8%	8.3%
4	5,292,399	5,455,603	6,142,228	7,171,738	7,178,973	16.9%	19.6%
5	9,464,741	8,612,192	7,961,664	9,154,985	8,931,957	12.2%	24.4%
6	3,152,539	4,049,426	5,431,780	4,011,131	3,963,116	-27.0%	10.8%
7	2,760,263	5,889,663	5,742,970	6,212,472	7,321,169	27.5%	20.0%
8	1,046,638	1,357,272	1,208,980	1,048,465	1,402,340	16.0%	3.8%
9	1,170,439	2,629,916	2,534,546	2,332,445	2,031,834	-19.8%	5.5%
10	1,037,747	1,105,766	1,290,365	860,164	1,460,320	13.2%	4.0%
Total	32,854,376	37,420,838	36,996,580	34,907,262	36,667,276	-0.9%	100.0%

Exhibit 4.125. Distribution of Facilities Reporting Lead and Lead Compounds in 2003 & Quantity of Lead and Lead Compounds Reported in 2003 by Region

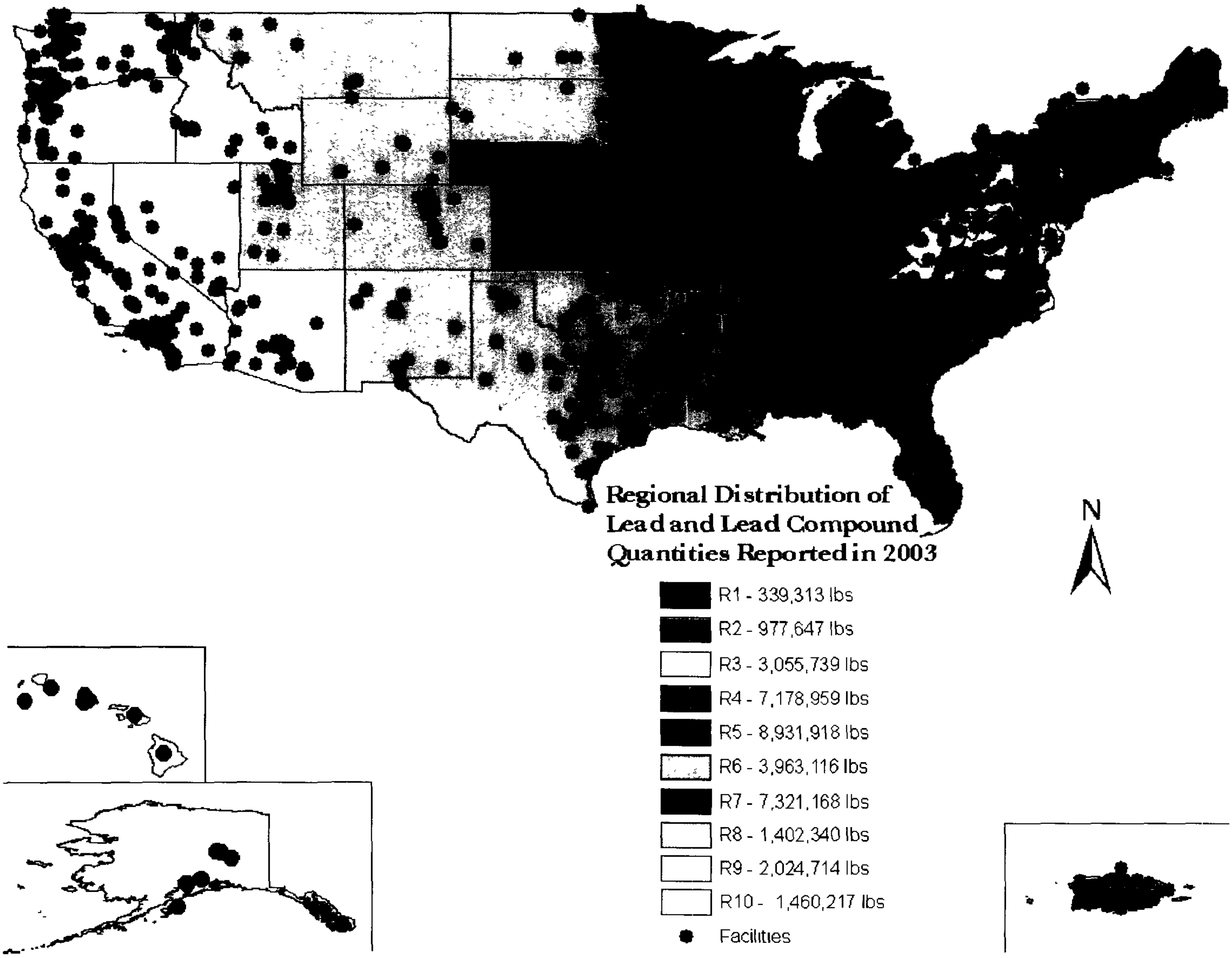


Exhibit 4.126 shows how lead and lead compounds were managed by facilities in 2003. Virtually all of lead and lead compounds were land disposed -- offsite disposal (77 %) and onsite disposal (23%). Minimal quantities were reportedly sent to either energy recovery or treatment. Significant recycling of lead and lead compounds was reported by facilities in every EPA Regions.

Exhibit 4. 126. Management Methods for Lead and Lead Compounds, By EPA Region (2003)

	Disposal		Energy Recovery		Treatment		Recycling	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
1	15,310	328,529	0	0	0	326	47,294	1,707,904
2	111,995	855,452	0	250	101	9,865	4,730,590	13,180,233
3	203,003	2,850,996	0	0	1	1,740	34,204,378	11,986,488
4	3,633,723	3,542,747	4	0	5	2,495	48,920,597	64,629,886
5	608,591	8,312,128	0	0	36	11,201	225,728,886	31,957,305
6	1,866,646	2,095,579	0	0	0	891	25,447,302	17,306,054
7	394,726	6,926,443	0	0	0	0	57,814,462	41,277,849
8	398,777	1,003,564	0	0	0	0	54,655	3,344,619
9	493,590	1,536,083	0	11	338	1,813	15,155,285	8,833,398
10	854,104	606,215	0	0	0	0	3,334,780	4,356,506
Total	8,580,464	28,057,736	4	261	481	28,330	415,438,229	198,580,240

State Trends– Lead and Lead Compounds. Facilities in every state and territory reported a PC quantity of lead and lead compounds in 2003. Exhibit 4.127 shows the quantity of lead and lead compounds, in 1999-2003, in 16 states where facilities reported over 80 percent of the total quantity in 2003. Facilities in Missouri reported the largest PC quantity of lead and lead compounds in 2003, accounting for over 13 percent of the total quantity. These facilities also had the largest increase in quantity, almost 3.6 million pounds, compared to the 1999 quantity. Since 1999, Missouri facilities reported a steadily increasing quantity of lead and lead compounds. Most of this quantity was reported by 1 facility, accounting for about 90 percent of the total quantity reported by facilities in Missouri.

In 2003, the PC quantity of lead and lead compounds increased in most of these 16 states. Facilities in several states (Alabama, Texas, and Nebraska) had increases of over 1 million pounds, compared to the 1999 quantities. Facilities in 3 of the states reported a decreased quantity of lead and lead compounds: Pennsylvania (-2.2 million pounds), Illinois (-950,000 pounds), and Ohio (-395,000 pounds).

Exhibit 4. 127. State-Level Information for Lead and Lead Compounds (1999-2003)

State	1999	2000	2001	2002	2003	Change in quantity	Percent Change in Quantity	Percent of Total Quantity of Lead and Lead Compounds (2003)
Missouri	1,317,042	2,467,289	3,634,704	3,910,471	4,868,678	3,551,636	269.7%	13.3%
Indiana	3,146,526	2,578,526	2,543,535	3,681,900	3,725,556	579,030	18.4%	10.2%
Alabama	1,868,831	1,737,728	2,217,376	3,494,741	3,279,184	1,410,353	75.5%	8.9%
Ohio	2,991,029	3,311,866	2,766,641	3,117,170	2,596,198	-394,831	-13.2%	7.1%
Pennsylvania	4,660,650	4,408,688	3,416,879	2,084,733	2,429,454	-2,231,196	-47.9%	6.6%
Texas	884,255	1,165,601	2,737,430	2,201,554	2,187,257	1,303,002	147.4%	6.0%
California	1,126,223	1,417,281	2,294,565	1,957,431	1,624,336	498,113	44.2%	4.4%
Nebraska	374,236	2,411,580	1,240,341	1,283,688	1,403,425	1,029,189	275.0%	3.8%
Utah	733,151	979,331	880,381	924,921	1,181,068	447,917	61.1%	3.2%
Illinois	2,049,508	1,777,918	1,197,217	1,014,491	1,097,036	-952,473	-46.5%	3.0%
South Carolina	744,840	1,262,532	1,128,315	1,049,187	977,908	233,068	31.3%	2.7%
Iowa	905,912	969,010	787,220	919,647	944,255	38,343	4.2%	2.6%
Washington	82,875	170,074	284,212	161,221	806,955	724,080	873.7%	2.2%
North Carolina	131,880	140,491	726,943	648,977	775,133	643,253	487.8%	2.1%
Louisiana	241,109	203,039	518,975	669,652	758,289	517,180	214.5%	2.1%
Kentucky	398,877	236,355	367,512	241,882	692,470	293,593	73.6%	1.9%

Exhibit 4. 128. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Washington and Pennsylvania

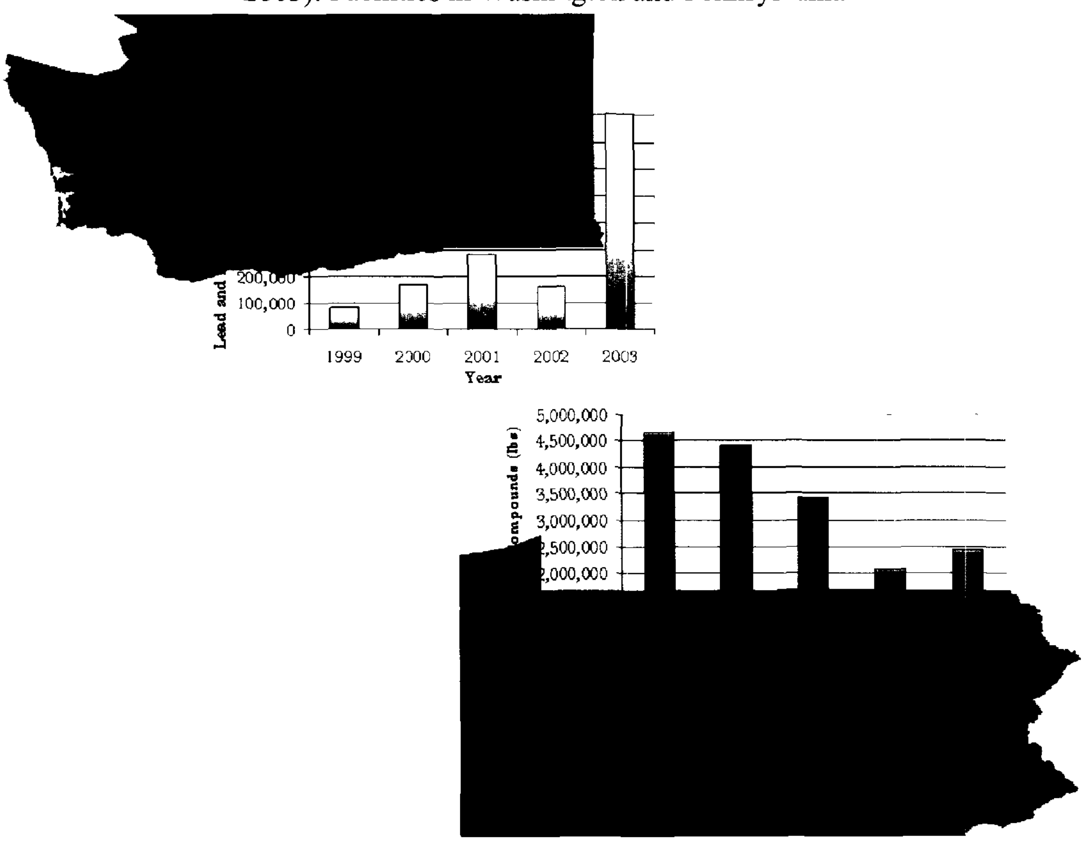
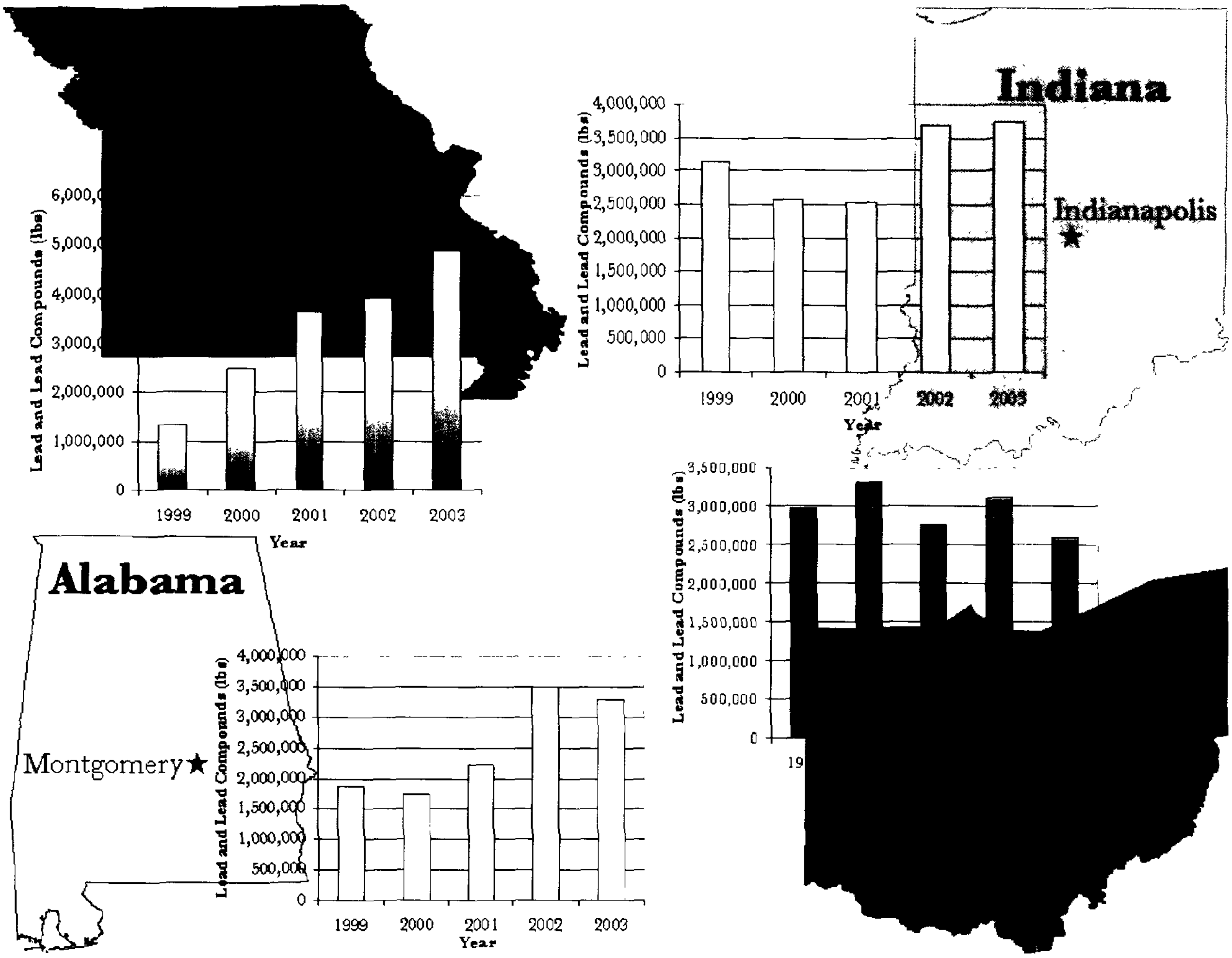


Exhibit 4.129 shows how lead and lead compounds were managed by facilities in the 16 states. Virtually 100 percent of the lead and lead compounds reported by facilities in these states was land disposed, mostly (77%) offsite. In many of the states, the recycling quantities were much greater than quantities that were land disposed.

Exhibit 4. 129. Management of Lead and Lead Compounds in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Missouri	4,868,678	356,619	4,512,060	0	0	0	0	10,633,572	14,196,183
Indiana	3,725,556	104,190	3,620,280	0	0	0	1,085	10,644,405	6,628,281
Alabama	3,279,184	2,143,935	1,135,249	0	0	0	0	20,805,806	1,280,833
Ohio	2,596,198	337,785	2,258,233	0	0	0	181	38,243,915	10,120,895
Pennsylvania	2,429,454	9,743	2,417,973	0	0	0	1,738	33,655,591	6,343,087
Texas	2,187,257	1,142,966	1,044,050	0	0	0	241	385,347	2,675,238
California	1,624,336	157,228	1,464,958	0	0	338	1,813	14,337,899	8,486,126
Nebraska	1,403,425	3,676	1,399,749	0	0	0	0	23	120,852
Utah	1,181,068	295,221	885,847	0	0	0	0	5,389	132,827
Illinois	1,097,036	51,275	1,035,857	0	0	3	9,900	3,266,720	7,955,611
South Carolina	977,908	162,955	814,954	0	0	0	0	264,454	1,260,521
Iowa	944,255	2,616	941,639	0	0	0	0	12,813,964	13,208,502
Washington	806,955	741,009	65,946	0	0	0	0	5,855	95,847
North Carolina	775,133	296,344	478,784	4	0	0	0	140,199	16,889,438
Louisiana	758,289	542,810	215,479	0	0	0	0	21,538,571	6,970,331
Kentucky	692,470	294,358	398,112	0	0	0	0	4,254,034	4,382,582

Exhibit 4. 130. Trends Analysis of States Reporting 4 Largest Quantities of Lead and Lead Compounds (2003)



Industry Sector (SIC) Trends– Lead and Lead Compounds. Facilities in more than 300 SIC codes reported a PC quantity of lead and lead compounds in 2003. Exhibit 4.131 shows the PC quantity (pounds) of lead and lead compounds reported in the 6 industry sectors (SIC codes) where facilities accounted for almost 80 percent of this chemical in 2003. Facilities in SIC 3341 (Secondary nonferrous metals) reported the highest quantities, accounting for 34 percent of the total PC quantity of lead and lead compounds reported in 2003. Facilities in this industry sector reported an increase of about 5.2 million pounds (+71.8%) compared to the 1999 quantity. Much of this increase is attributed to the quantity of lead and lead compounds reported by 1 facility, located in Missouri.

Beginning in 2001, there was a dramatic increase in the quantity of lead and lead compounds reported by facilities in SIC 9711 (National Security). In 2003, these facilities, primarily military installations, reported an increase of almost 2.6 million pounds of lead and lead compounds, compared to the quantity reported in 1999. Although a portion of this large increase may be due to the lowered TRI reporting threshold that became effective in 2001 for lead and lead compounds, most of the increased quantity is likely due to the increase in training and other activities at military installations in support of military operations to counter terrorism worldwide, including in Afghanistan and Iraq. Facilities in SIC 3321 (Gray and ductile iron foundries) reported an increase of more than double the quantity reported in 1999, with an initial large increase in 2001.

Facilities in SIC 3312 (Blast Furnaces and steel mills) reported over 20 percent of the total quantity of lead and lead compounds. Since 1999, facilities in this industry sector reported 17 percent less lead and lead compounds than was reported in 1999. Facilities in SIC 2819 (Industrial inorganic chemicals, nec) and SIC 3229 (Pressed and blown glass, nec) also reported less quantities of lead and lead compounds in 2003 than were reported in 1999.

Exhibit 4. 131. Industry Sector-Level Information for Lead and Lead Compounds (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3341	Secondary nonferrous metals	86	7,258,985	10,113,688	9,409,708	11,625,705	12,469,392	5,210,407	71.8%	34.0%
3312	Blast furnaces and steel mills	80	8,927,197	9,408,641	7,766,085	6,917,785	7,410,626	-1,516,571	-17.0%	20.2%
9711	National security	124	71,221	160,317	2,177,396	2,466,010	2,642,108	2,570,887	3609.7%	7.2%
3321	Gray and ductile iron foundries	135	1,092,666	959,498	2,624,070	2,942,616	2,510,575	1,417,909	129.8%	6.8%
2819	Industrial inorganic chemicals, nec	78	2,644,958	4,553,382	2,626,332	2,376,285	2,285,192	-359,766	-13.6%	6.2%
3229	Pressed and blown glass, nec	34	1,946,047	1,715,864	1,538,505	1,282,440	1,161,252	-784,795	-40.3%	3.2%

Exhibit 4.132 shows how lead and lead compounds were managed by facilities in these six industry sectors in 2003. Most of the quantity reported by facilities in SICs 3341, 3312, 3321, and 3229 was sent to offsite land disposal. Almost 97 percent of the lead and lead compounds reported by SIC 9711 facilities was disposed onsite. The quantity reported by facilities in SIC 2819 was more or less equally disposed onsite and offsite. Considerable recycling of lead and lead compounds was reported by facilities in each of these industry sectors.

Exhibit 4. 132. Management of Lead and Lead Compounds in Industry Sectors (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3341	Secondary nonferrous metals	12,469,392	2,100,962	10,366,826	0	0	0	1,604	257,207,996	14,311,513
3312	Blast furnaces and steel mills	7,410,626	169,173	7,241,453	0	0	0	0	451,297	11,577,803
9711	National security	2,642,108	2,527,001	115,107	0	0	0	0	466,680	431,518
3321	Gray and ductile iron foundries	2,510,575	810,167	1,700,408	0	0	0	0	32,212	237,128
2819	Industrial inorganic chemicals, nec	2,285,192	1,230,643	1,054,541	0	0	8	0	39,586	875,736
3229	Pressed and blown glass, nec	1,161,252	1	1,161,251	0	0	0	0	55,175,907	404,726

Recycling. Exhibit 4.1333 provides some indication of the extent to which facilities in certain industry sectors have recycled at least 10,000 pounds of lead and lead compounds in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 133. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2032 --Canned specialties												
1	6	Texas	0	160,000	0	0	0	0	0	0	0	0
SIC 2431 -- Millwork												
1	6	Iowa	0	0	0	0	0	2,632,000	0	0	0	0
SIC 2511 -- Wood Household Furniture												
1	4	Kentucky	0	20,000	0	7,380	0	8,950	0	5,840	0	6,50
SIC 2542 -- Partitions and fixtures, except wood												
1	5	Indiana	0	40,000	0	40,000	0	44,047	0	33,211	0	33,62
SIC 2631 -- Paperboard mills												
1	4	Florida	0	0	0	0	0	0	0	9,245	0	12,39
SIC 2816 --inorganic pigments												
1	4	Tennessee	53,000	0	54,000	0	71,000	0	68,000	0	73,000	0
1	5	Illinois	54,000	0	54,000	0	56,000	0	56,000	0	65,000	0
SIC 2819 --Industrial inorganic chemicals, nec												
1	4	North Carolina	0	86,910	0	88,400	0	0	0	92,700	0	0
1	4	Mississippi	0	46,000	0	54,000	0	22,566	0	32,200	0	0
2	5	Ohio	0	127,306	0	85,664	0	0	0	0	0	49,81
1	5	Indiana	0	59,720	0	16,244	0	71,610	0	40,640	0	86,32
1	5	Illinois	0	180,100	0	130,725	0	0	0	0	0	0
1	6	Texas	0	45,780	0	87,400	0	0	0	0	0	0
1	7	Nebraska	0	1,180,000	0	0	0	0	0	0	0	0
SIC 2869 -- Industrial organic chemicals, nec												
1	6	Texas	0	0	0	23,504	0	0	0	10,598	0	0
SIC 2891 -- Adhesives and sealants												
1	5	Ohio	71,000	7,100	86,000	8,600	4,850	4,850	6,000	6,000	0	0

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 3069 -- Fabricated rubber products, nec												
1	2	New Jersey	0	55,802	0	0	0	0	0	0	0	0
SIC 3089 -- Plastics products, nec												
1	2	New Jersey	0	0	0	0	0	11,250	0	0	1,500	0
1	2	New York	0	0	0	0	15,000	29,794	15,000	0	15,000	0
1	3	Pennsylvania	0	205,720	0	156,778	0	0	0	94,338	0	90,435
2	4	Mississippi	0	60,791	0	49,581	0	44,342	0	29,882	0	92,213
1	5	Ohio	0	11,384	0	17,039	0	9,635	0	11,564	0	7,472
1	5	Indiana	0	47,250	0	0	0	0	0	0	0	0
1	5	Wisconsin	654,240	0	560,240	102,249	373,650	299,682	448,380	116,272	0	145,853
SIC 3229 -- Pressed and blown glass, nec												
1	3	Pennsylvania	0	0	78,386	23,096	0	0	0	0	0	0
1	7	Missouri	0	34,020	0	51,615	0	31,357	0	0	0	0
SIC 3295 -- Minerals, ground or treated												
1	5	Ohio	0	71,851	0	39,655	0	100,739	0	0	0	0
SIC 3312 --Blast Furnaces and steel mills												
2	2	New Jersey	0	1,107,221	0	1,282,523	0	1,041,616	0	1,004,431	0	916,342
4	3	Pennsylvania	0	170,000	0	103,000	0	37,825	0	10,141	0	13,574
2	4	South Carolina	351	99,642	362	100,894	315	130,443	334	111,420	106,103	108,719
1	4	Georgia	0	0	0	0	48,789	250,503	39,180	184,904	51,268	226,630
2	4	Alabama	0	29,790	0	1,880	0	4,150	0	1,715	0	0
2	4	Tennessee	0	0	0	198,442	0	322,653	0	226,121	0	0
1	4	Mississippi	0	171,311	0	0	0	0	0	0	0	0
2	4	Kentucky	0	356,927	0	383,975	0	64,878	0	0	0	0
3	5	Ohio	0	554,265	0	0	105,000	353,268	0	0	0	0
2	5	Indiana	0	0	0	0	0	42,270	0	112,140	0	99,674
3	5	Illinois	0	0	0	389,020	39,881	709,186	39,428	417,415	0	2,286
1	6	Arkansas	0	66,595	0	135,851			0	121,000	0	119,920
2	6	Oklahoma	0	242,600	0	387,544	0	213,338	0	205,248	0	262,928
4	6	Texas	0	893,747	0	1,203,164	0	141,732	0	153,590	0	0
1	7	Iowa	0	150,515	297	140,179	209	96,800	209	120,175	0	0
1	7	Missouri	0	210,000	0	170,000	0	28,897	0	0	0	0
1	10	Washington	0	305,201	130	416,928	661	382,258	538	311,429	988	555,080
SIC 3315 --Steel wire and related products												
2	3	Pennsylvania	0	247,369	0	59,036	0	299,022	0	166,589	0	750
1	4	North Carolina	0	0	0	0	0	0	0	13,049	0	11,984
1	7	Missouri	0	152,000	0	160,000	0	211,600	0	219,650	0	187,554
SIC 3316 --Cold finishing of steel shapes												
1	9	California	0	0	0	49,535	0	0	0	0	0	0
SIC 3321 -- Gray and ductile iron foundries												
1	2	New Jersey	0	0	0	0	0	0	0	3,215	0	214,649
SIC 3341 -- Secondary nonferrous metals												
3	2	New Jersey	0	36,000	17,585	23,606	31,265	567,291	30,486	338,471	29,998	407,723
4	3	Pennsylvania	0	6,800	0	3,500	0	16,015	0	30,087	8,674	5,363
7	5	Illinois	75,563	62,532	48,882	149,482	54,088	127,414	258,140	250,613	194,778	160,413
1	6	Oklahoma	0	0	127,980	163,047	8,222	66,576	0	187,496	0	92,936
1	6	Texas	610,000	11,000	0	0	0	0	0	0	0	0
1	7	Iowa	0	0	0	0	7,901	81	13,562	960	0	0
3	9	California	855,000	248,575	850,000	334,466	850,000	127,999	470,000	52,661	640,000	146,245
SIC 3351 -- Copper rolling and drawing												
1	3	Pennsylvania	0	100,000	0	100,000	0	100,000	0	100,000	0	100,000

Number of Facilities	EPA Region	State	1999 Onsite Recycle	1999 Offsite Recycle	2000 Onsite Recycle	2000 Offsite Recycle	2001 Onsite Recycle	2001 Offsite Recycle	2002 Onsite Recycle	2002 Offsite Recycle	2003 Onsite Recycle	2003 Offsite Recycle
1	5	Ohio	0	12,730	0	0	0	0	0	0	0	
1	6	Texas	0	31,905	0	0	0	14,141	0	23,203	0	33,42
SIC 3353 -- Aluminum sheet, plate, and foil												
1	4	Alabama	0	0	0	0	0	18,220	0	0	0	
1	7	Missouri	119,284	55,465	0	0	238	32	0	0	0	
SIC 3354 -- Aluminum extruded products												
1	1	Connecticut	0	0	0	0	0	0	0	5,314,260	0	5,618,58
SIC 3356 -- Nonferrous rolling and drawing, nec												
1	3	Pennsylvania	40,000	4,000	40,000	4,390	0	0	40,000	1,354	40,000	12,70
1	5	Ohio	0	190,000	0	190,000	0	190,000	0	190,000	0	190,00
2	5	Wisconsin	0	129,500	0	254,748	0	136,288	0	227,948	0	241,86
3	5	Illinois	34,300	70,786	0	45,109	22,000	4,734	20,000	2,280	0	
2	6	Texas	0	68,720	0	184,533	0	145,600	0	75,935	0	11,64
SIC 3357 -- Nonferrous wire drawing and insulating												
11	1	Masschusetts	0	8,113	0	51,756	0	44,268	0	32,924	0	29,97
2	1	Connecticut	0	12,000	0	21,367	0	11,354	0	8,071	0	9,32
1	2	New York	0	26,281	0	28,641	0	27,429	0	14,889	0	15.64
1	3	Pennsylvania	0	0	0	0	21,523	0	0	0	0	
3	4	North Carolina	0	15,000	0	9,911	0	7,187	0	7,671	24,244	2,65
2	4	Alabama	0	17,647	0	19,520	0	14,637	0	0	0	
3	5	Indiana	0	1,082,338	0	1,245,582	0	807,542	0	138,805	0	288,21
1	5	Michigan	0	19,049	0	0	0	0	0	0	0	
6	6	Texas	0	143,048	0	95,084	370	52,536	360	12,712	400	65,75
2	7	Kansas	0	99,660	0	0	0	0	0	0	0	40,53
1	7	Nebraska	0	25,500	0	41,291	0	16,475	0	11,389	0	1,58
2	9	Arizona	0	3,700	0	6,857	0	7,406	0	7,755	0	20,62
3	9	California	0	40,291	0	42,548	0	40,080	0	25,105	0	10,99
SIC 3363 --Aluminum die castings												
2	4	Kentucky	0	0	250,000	34,000	90,000	24,000	17,719	26,984	12,625	1,04
2	5	Indiana	0	0	0	0	0	450	25,600	6,594	11,385	2,36
2	5	Michigan	0	0	0	0	18,900	12,892	23,200	10,703	12,027	3,50
2	5	Wisconsin	0	0	0	0	15,000	5,990	0	3,030	7,350	4,81
SIC 3364 -- Nonferrous die castings, except aluminum												
1	2	New York	0	13,495	0	11,854	0	4,573	0	8,520	0	1,24
1	5	Minnesota	0	1,600,000	0	1,467,000	0	1,431,486	0	2,961,908	0	1,951,3
1	7	Iowa	0	0	0	0	0	0	0	13,689	0	1,4
SIC 3365 -- Aluminum foundries												
1	5	Michigan	0	10,124	0	8,313	0	5,401	0	4,593	0	4,46
1	5	Illinois	0	13,522	0	0	6,500	3,007	5,100	1,791	3,700	2,29
SIC 3366 -- Copper foundries												
1	3	Virginia	30,000	1,446	24,633	2,052	20,967	1,455	0	0	0	
1	4	North Carolina	0	262,281	0	0	0	0	0	429,598	0	118,3
1	5	Ohio	0	75,937	0	91,182	0	17,619	0	81,102	0	67,1
2	5	Wisconsin	36,197	52,510	34,387	38,957	34,903	17,554	33,158	1,210,920	31,500	42,4
1	9	Arizona	19,813	2,800	12,935	8,551	9,409	6,273	8,324	2,976	3,241	2,9
2	9	California	0	10,726	0	12,458	3,100	20,392	3,200	21,110	6,134	13,3
SIC 3369 -- Nonferrous foundries, nec												
1	1	Rhode Island	425,079	0	418,898	0	338,860	0	342,489	0	317,030	
1	4	Alabama	0	24,244	0	0	0	18,556	0	22,975	0	34,2
3	4	Tennessee	0	30,024	0	9,579	0	0	0	12,700	0	11,3
5	9	California	0	17,038	0	4,436	0	10,394	0	16,520	0	17,1

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 3399 -- Primary metal products, nec												
1	4	South Carolina	0	78,520	0	116,441	0	41,500	0	0	0	0
1	4	Georgia	0	0	0	0	0	0	0	420,335	0	192,240
1	5	Ohio	0	69,752	0	95,663	0	21,490	0	42,660	0	38,435
1	6	Texas	0	0	0	0	0	0	279,593	66,684	215,325	65,552
1	7	Kansas	0	173,040	0	18,668	0	33,405	0	18,848	0	41,915
1	9	Arizona	0	0	0	0	0	0	0	58,714	0	0
SIC 3432 -- Plumbings fixture fittings and trim												
1	6	Texas	1,138,394	125,452	1,106,286	76,783	1,183,267	189,877	1,729,135	171,087	1,082,320	171,102
SIC 3441 -- Fabricated structural metal												
1	4	Georgia	0	0	0	0	0	0	0	0	0	24,200
3	5	Ohio	0	25,329	0	0	0	0	0	0	0	0
1	5	Indiana	0	0	0	35,020	0	0	0	0	0	2,115
SIC 3443 -- Fabricated plate work (boiler shops)												
1	1	Rhode Island	0	0	0	18,728	0	16,225	0	19,551	0	16,472
1	3	Pennsylvania	0	0	0	13,606	0	0	0	0	0	0
SIC 3444 -- Sheet metal work												
1	1	Masschusetts	0	17,000	0	38,370	0	31,590	0	22,520	0	8,947
1	1	Connecticut	0	0	0	0	0	0	0	0	0	46,020
1	3	West Virginia	0	18,000	0	23,281	0	0	0	0	0	0
1	7	Iowa	0	0	0	9,670	0	10,634	0	716	0	269
2	7	Kansas	0	12,500	0	17,522	0	0	0	19,200	0	20,160
SIC 3449 -- Miscellaneous metal work												
1	6	Arkansas	0	15,071	0	0	0	13,050	0	0	0	0
SIC 3451 -- Screw machine products												
4	1	Connecticut	0	98,258	0	113,586	0	92,118	0	27,441	0	119,239
1	4	Alabama	0	19,008	0	19,008	0	0	0	0	0	0
1	4	Tennessee	0	0	0	0	0	23,737	0	18,554	0	19,645
2	5	Ohio	0	30,947	0	36,231	0	38,633	0	0	0	43,980
3	5	Wisconsin	0	177,600	0	162,591	0	153,637	0	147,136	0	143,625
1	5	Minnesota	0	0	0	0	0	15,561	0	9,821	0	8,096
3	5	Nebraska	0	0	0	0	0	9,000	0	9,578	0	10,234
SIC 3452 -- Bolts, nuts, rivets, and washers												
1	2	New York	0	24,558	0	28,831	0	18,920	0	14,701	0	0
1	5	Illinois	0	154,000	0	143,000	0	130,000	0	140,000	0	130,000
SIC 3462 -- Iron and steel forgings												
1	6	Texas	0	0	0	0	0	0	0	0	0	22,578
SIC 3463 -- Nonferrous forgings												
1	5	Illinois	0	0	0	13,600	0	0	0	0	0	0
SIC 3465 -- Automotive stampings												
1	5	Michigan	0	22,976	0	23,419	0	189	0	0	0	0
SIC 3469 -- Metal stampings, nec												
1	1	Connecticut	0	0	0	0	0	76,315	0	112,211	0	99,944
1	5	Wisconsin	0	10,000			0	12,635	0	212	0	54
1	7	Missouri	0	0	0	0	0	0	0	0	0	12,116
SIC 3471 --Plating and polishing												
1	6	Texas	0	50,800	0	0	0	0	0	0	0	0
1	9	California	0	73,680	0	61,452	0	25,478	0	35,982	0	31,772
SIC 3479 --Metal coating and allied services												
1	4	Alabama	33,048	271,775	91,575	397,577	98,536	388,666	106,672	400,760	0	0
1	4	Tennessee	0	10,096	0	8,750	0	10,492	0	10,205	0	212

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
2	5	Ohio	0	18,568	0	18,550	0	23,688	0	29,982	0	20,99
1	5	Michigan	0	0	0	0	0	98,580	0	28,136	0	116,98
2	6	Texas	0	44,513	0	33,257	0	23,446	0	34,629	0	15,72
1	9	Arizona	0	7,173	0	12,171	0	0	0	0	0	
SIC 3482-- Small arms ammunition												
1	7	Nebraska	0	28,204			0	39,942	0	47,722	0	66,77
1	10	Oregon	0	314,200	0	433,400	0	421,400	0	299,340	0	163,93
SIC 3484-- Small arms												
3	2	Connecticut	0	0	0	20,500	0	43,145	0	44,280	0	57,78
1	3	Maryland	0	0	0	0	0	0	0	0	0	21,04
2	6	Texas	0	0	0	0	0	0	0	0	0	32,03
SIC 3491-- Industrial valves												
1	6	Texas	0	0	0	6,313	0	6,121	0	7,942	0	10.73
1	9	California	0	78,983	0	85,544	0	68,730	0	60,419	0	58.45
SIC 3492-- Fluid power valves and hose fittings												
1	5	Ohio	0	0	0	0	0	10,877	0	15,344	0	14,45
1	5	Michigan	0	74,271	0	40,701	0	12,198	0	13,057	0	10,16
SIC 3494-- Valves and pipe fittings, nec												
1	1	New Hampshire	0	63,070	0	54,014	0	0	0	0	0	
1	4	North Carolina	0	57,733	0	0	0	24,500	0	51,646	0	11,04
1	4	South Carolina	0	157,702	0	166,038	0	178,222	0	210,013	0	174,54
1	4	Alabama	0	19,292	0	0	0	0	0	29,799	0	45
1	5	Illinois	0	130,000	0	0	0	0	0	0	0	
1	9	California	0	69,683	0	83,620	0	87,801	0	87,801	0	94,82
SIC 3496-- Miscellaneous fabricated wire products												
1	1	Masschusetts	0	11,127	0	11,867	0	7,917	0	8,240	0	5,5
1	3	Pennsylvania	0	0	0	0	0	113,375	0	0	0	
1	5	Indiana	0	0	0	0	0	21,821	0	29,633	0	
1	5	Illinois	0	0	0	0	0	0	0	0	0	41,2
SIC 3497-- Metal foil and leaf												
1	2	New York	0	0	0	0	0	0	0	0	0	206,5
SIC 3498--Fabricayed pipe and fittings												
1	3	Pennsylvania	0	0	0	0	0	15,757	0	19,978	0	28,8
SIC 3499--Fabricated metal products, nec												
1	3	West Virginia	0	63,656	0	0	0	80	0	0	0	
1	4	North Carolina	0	0	0	39,900	0	37,600	0	0	0	
1	4	South Carolina	0	40,967	0	40,526	0	45,153	0	40,194	0	64,8
1	4	Florida	0	0	0	0	0	64,581	0	96,812	0	82,2
1	5	Ohio	0	160,000	0	160,000	0	160,000	0	160,000	0	160,0
1	5	Indiana	0	0	0	0	0	15,000	0	0	0	
1	5	Michigan	0	30,928	0	0	0	23,914	0	0	0	
1	5	Illinois	0	49,748	0	54,357	7,048	49,663	11,150	28,891	7,557	68,4
1	7	Iowa	0	0	0	16,225	0	21,137	0	21,515	0	21,0
1	9	Nevada	0	8,100	0	12,200	0	5,200	0	5,616	0	
1	9	California	0	94,404	0	54,702	0	59,954	0	80,254	0	79,8
SIC 3523--Farm machinery and equipment												
1	5	Illinois	0	11,161	0	0	0	0	0	0	0	
1	6	Louisiana	0	0	0	0	0	38,017	0	0	0	
SIC 3531--Construction machinery												
1	7	Iowa	0	160,703	0	167,447					0	9,8
SIC 3533--Oil and gas field machinery												

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
2	6	Oklahoma	0	10,307	0	287,565	0	41,931	0	16,186	0	14,712
SIC 3544--Special dies, jigs, tools, and fixture												
1	5	Michigan	120,366	104,029	120,500	134,561	168,400	113,169	0	50,343	0	27,987
1	5	Wisconsin	0	96,000	0	65,000	0	44,000	0	85,600	0	52,888
SIC 3559-- Special industry machinery, nec												
1	4	Tennessee	0	0	0	0	0	588,835	0	417,015	0	391,746
1	5	Michigan	5,900	14,484	10,000	75,234	24,700	71,776	0	18,195	0	41,980
1	9	Nevada	0	0	0	0	0	455,551	0	382,551	0	455,929
SIC 3561-- Pumps and pumping equipment												
1	5	Illinois	0	0	0	13,574	0	13,710	0	4,760	0	11,532
SIC 3562-- Ball and roller bearings												
1	5	Indiana	0	116,280	0	103,106	0	103,683	0	103,683	0	46,374
SIC 3568-- Power transmission equipment												
1	4	Tennessee	26,185	4,961	29,035	5,395	30,050	7,830	15,876	2,360	20,652	2,672
1	5	Ohio	0	0	0	0	0	8,367	0	11,342	0	9,338
SIC 3569-- General industrial machinery, nec												
2	4	North Carolina	100,000	0	100,000	36,093	60,000	20,000	0	39,853	0	0
1	6	Texas	0	7,600	0	10,000	0	0	0	0	0	0
SIC 3585-- *Refrigeration and heating equipment*												
1	4	Alabama	0	0	0	0	0	0	0	0	0	280,000
1	5	Illinois	0	15,103	0	13,772	0	11,472	0	11,508	0	13,786
1	6	Oklahoma	0	6,943	0	38,461	0	44,278	0	26,303	0	14,998
SIC 3599-- Industrial machinery, nec												
1	5	Ohio	0	0	0	0	0	10,195	0	0	0	0
SIC 3613-- Switchgear and switchboard apparatus												
1	6	Oklahoma	0	0	0	16,776	0	10,400	0	4,994	0	5,632
SIC 3641-- Electric Lamps												
1	1	Connecticut	0	0	0	29,043	0	25,119	0	13,755	0	22,992
1	4	Kentucky	0	0	0	304,157	0	212,149	0	243,106	0	0
1	5	Illinois	0	22,000	0	9,240	0	23,913	0	20,255	0	27,084
1	7	Kansas	0	0	0	59,635	0	72,453	0	78,985	0	65,637
SIC 3643-- Current carrying wiring devices												
1	2	Puerto Rico	0	0	0	0	0	10,440	0	11,566	0	22,168
1	3	Pennsylvania	0	0	0	0	72,266	0	0	0	0	0
1	5	Ohio	0	62,491	0	43,195	0	20,847	0	0	0	0
SIC 3645 -- Residential Lighting fixtures												
1	5	Ohio	0	0	0	0	0	0	0	29,000	0	1,069
SIC 3651-- Household audi and video equipment												
1	4	Tennessee	0	23,779	0	11,964	0	4,050	0	14,625	0	5,137
1	5	Indiana	0	10,045	0	10,007	0	6,300	0	6,210	0	5,890
1	9	California	0	27,840	0	16,120	0	19,200	0	17,080	0	26,359
SIC 3661-- Telephone and telegraph apparatus												
1	1	Masschusetts	0	33,000	0	13,000	0	12,800	0	0	0	0
1	5	Illinois	0	133,285	0	147,502	0	19,073	0	0	0	0
1	6	Texas	0	23,008	0	0	0	0	0	0	0	21,525
1	9	California	0	30,026	0	17,856	0	4,520	0	0	0	0
SIC 3663-- Radio and TV communication equipment												
1	4	Georgia	0	30,000	0	33,484	0	49,885	0	24,684	0	20,182
1	6	Texas	0	0	0	0	0	13,000	0	0	0	0
SIC 3669-- Communications equipment												
1	2	New Jersey	0	0	0	0	0	0	0	28,679	0	26,400

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
1	4	Florida	0	17,980	0	0	0	9,399	0	5,902	0	8,23
1	5	Illinois	0	58,555	0	70,027	0	93,563	0	105,397	0	107,17
SIC 3672-- Printed circuit boards												
1	1	Masschusetts	0	0	0	0	0	11,300	0	1,000	0	1,00
1	2	Puerto Rico	0	0	0	0	0	16,000	0	6,000	0	19,80
1	4	Georgia	0	0	0	0	0	0	0	0	0	50,19
1	5	Indiana	0	0	0	0	0	0	0	0	0	15,30
1	5	Michigan	0	0	0	0	0	22,818	0	16,328	0	
1	5	Illinois	0	26,000	0	29,000	0	0	0	0	0	11,60
1	6	Texas	0	325,262	0	0	0	24,664	0	0	0	
1	9	California	0	0	0	0	0	54,955	0	5,358	0	27,29
1	10	Washington	0	0	0	28,400	0	19,976	0	0	0	
SIC 3676-- Electronic Resistors												
1	8	Utah	0	17,792	0	25,300	0	5,122	0	250	0	
SIC 3676-- Electronic Components, nec												
1	2	Puerto Rico	0	0	0	0	0	32,953	0	10,652	0	10,12
1	3	Pennsylvania	0	223,170	0	311,804	0	185,710	0	215,365	0	73,20
1	4	Alabama	0	0	0	0	0	14,000	0	0	0	
1	4	Tennessee	0	0	0	0	0	15,217	0	6,448	0	25,83
1	5	Ohio	0	0	0	0	0	8,428	0	26,142	0	1,63
1	6	Texas	0	33,000	0	40,000	0	44,978	0	41,866	0	
1	8	Colorado	0	0	0	0	0	12,094	30,051	30,852	35,073	23,02
1	9	California	0	222,562	0	0	0	139,536	0	53,972	0	4,93
1	10	Oregon	0	0	0	0	0	14,429	0	0	0	
SIC 3691-- Storage Batteries												
1	2	New Jersey	0	403,666	0	674,673	0	672,111	0	0	0	
1	3	Pennsylvania	0	5,723,661	0	6,095,292	0	842,362	1,843,200	0	0	
1	4	Georgia	0	1,297,229	0	0	0	0	0	0	0	
1	4	Kentucky	0	0	0	0	1,296,234	1,488,247	837,553	1,102,983	837,553	837,5
1	5	Indiana	0	0	0	0	0	533,039	0	0	0	
1	5	Wisconsin	0	176,275	0	388,753	0	658,667	0	1,459,611	0	1,029,1
1	5	Minnesota	0	0	0	0	0	0	0	571,425	0	
1	5	Illinois	81,252	839,852	191,480	923,462	0	0	126,994	943,882	0	751,4
1	6	Texas	0	75,830	0	0	0	0	0	0	0	204,2
1	7	Iowa	0	0	0	0	0	0	0	0	0	44,4
1	7	Missouri	0	1,400,000	0	710,000	0	575,145	0	147,000	0	
1	8	Colorado	0	0	0	1,477,354	0	1,893,822	0	1,900,000	0	
1	9	California	0	57,765	0	97,236	0	38,497	0	22,208	0	
SIC 3699-- Electrical equipment and supplies												
1	5	Illinois	0	40,600	0	49,000	0	50,945	0	79,408	0	77,3
SIC 3713-- Truck and bus bodies												
1	4	Alabama	5,375,000	430,000	5,267,500	421,400	0	0	9,225,000	1,107,000	8,850,000	1,031,0
SIC 3714-- Motor vehicle parts and accessories												
1	2	New York	0	0	0	34,015	0	12,825	0	17,372	0	27,0
1	3	Pennsylvania	0	24,800	0	0	0	0	0	0	0	
1	3	Delaware	0	19,070	0	120,000	0	0	0	208,000	5,000	18,7
2	4	North Carolina	0	0	0	0	0	11,052	0	77,599	0	1,407,8
1	4	South Carolina	0	0	0	0	0	13,721	0	17,319	0	11,8
1	4	Kentucky	0	0	0	0	0	27,411	0	23,000	0	2,0
2	5	Ohio	0	41,360	0	43,001	0	37,634	0	22,627	0	
2	5	Indiana	370	18,949	385	18,693	0	17,152	0	25,808	0	

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
1	5	Wisconsin	0	0	0	0	0	11,432	0	11,349	0	13,673
1	5	Illinois	0	15,450	0	16,580	0	18,384	0	26,376	0	21,923
1	6	Arkansas	0	10,254	0	10,158	0	6,721	0	12,659	0	16,263
2	9	Nevada	1,358,000	198,600	1,485,800	219,259	0	0	0	0	0	0
SIC 3728-- Aircraft parts and equipment, nec												
1	6	Texas	0	0	0	0	0	2,482	0	1,112	0	25,925
1	7	Kansas	0	0	0	0	0	0	22,479	782	114,839	0
1	9	California	0	26,827	1	4,452	319,000	24,025	319,000	19,300	319,000	18,700
SIC 3799-- Transportation equipment												
1	4	Georgia	0	17,091	0	21,741	0	0	0	0	0	0
SIC 3812-- Search and navigation equipment												
1	9	California	0	29,000	0	0	0	21,300	0	11,235	0	9,884
SIC 3823-- Process control instruments												
1	6	Texas	0	0	0	0	0	63,000	0	68,900	0	68,900
SIC 3824-- Fluid meterrs and counting devices												
1	3	Pennsylvania	0	73,000	0	5,200	0	0	0	0	0	0
SIC 3829-- Measuring and controlling devices, nec												
1	3	Pennsylvania	0	8,863	0	11,524	0	12,740	0	9,695	0	5,819
SIC 3842-- Surgical appliances and supplies												
1	4	Georgia	0	7,715	0	14,005	0	9,548	0	12,150	0	22,180
SIC 3843-- Dental equipment and supplies												
1	5	Illinois	0	0	0	0	0	48,795	0	59,531	0	50,417
SIC 3844-- X-ray apparatus and tubes												
1	5	Illinois	0	31,130	0	13,370	0	13,306	0	20,745	0	13,726
SIC 3845-- Electromedical equipment												
1	5	Illinois	0	26,335	0	19,090	0	19,340	0	18,430	0	17,620
SIC 3851-- Ophthalmic Goods												
1	5	Minnesota	0	0	0	0	0	8,284	0	10,154	0	0
1	7	Missouri	0	0	0	0	12,075	9,424	9,000	56,000	0	0
SIC 3861-- Photographic equipment and supplies												
1	3	Pennsylvania	60,000	0	60,000	0	60,000	0	0	0	0	0
SIC 5171-- Petroleum bulk stations and terminals												
1	4	Georgia	0	0	0	0	0	0	121,666	0	127,737	0
SIC 8731-- Commercial physical research												
1	4	Tennessee	0	0	0	0	117,000	46,855	0	0	0	0
SIC 9199-- General government												
1	3	Maryland	0	47,800	0	0	0	54,354	0	40,579	0	13,048
SIC 9711-- National Security												
1	4	Florida	0	0	0	0	0	12,100	0	0	0	0

Lindane

Chemical Information
CAS Number - 58-89-9
Alternate Names - Hexachlorocyclohexane, gamma-
General Uses - This chemical was mainly used on fruit and vegetable crops to kill insects. Today it is used as an ingredient in ointments that help cure head lice, body lice, and scabies. This chemical hasn't been made in the United States since 1977, but it is still imported into the country and formulated. Only individuals who are certified can use this chemical.
Potential Hazards - This chemical is highly toxic; it may be fatal if inhaled, swallowed or absorbed through the skin.

Summary Analysis– Lindane

- In 2003, only 71 pounds of lindane were reported – by 1 facility, located in Idaho. This quantity of lindane accounts for less than 0.1 percent of the total quantity of PCs in 2003. Since 1999, the quantity of lindane has decreased by over 97 percent. Since 1999, no more than 2 facilities reported lindane in a given year.
- Treatment was the primary method used to manage lindane in 1999-2003. A significant quantity of lindane was recycled in each reporting year, compared to the total PC quantity.
- Since 1999, only facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) have reported a PC quantity (pounds) of lindane. One facility accounted for 100 percent of this chemical in 2003. In 1999-2003, this facility reported less than 100 pounds of lindane each year, including 71 pounds in 2003.

National Trends – Lindane. Exhibit 4.134 presents the total PC quantity (pounds) of lindane in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. Since 1999, no more than 2 facilities reported lindane in a given year. In 1999-2003, the largest quantity of lindane was reported in 1999 – by 2 facilities. In 2003, 1 facility reported 71 pounds of lindane. Since 1999, the quantity of lindane has significantly decreased by over 97 percent. Treatment was the primary method used to manage lindane in 1999-2003, used for 100 percent of the total quantity of lindane in 2003. A significant quantity of lindane was recycled in each reporting year.

Exhibit 4. 134. National-Level Information for Lindane

	1999	2000	2001	2002	2003	Percent Change (1999--2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	2	1	1	2	1	-50.0%	
Disposal Quantity (lbs.)	18	17	16	0	0	-100.0%	0.0%
Energy Recovery Quantity (lbs.)	0	0	0	0	0	NA	0.0%
Treatment Quantity (lbs.)	2,704	47	30	183	71	-97.4%	100.0%
Priority Chemical Quantity (lbs.)	2,722	64	46	183	71	-97.4%	
Recycling Quantity (lbs.)	1,121	215	188	163	179	-84.0%	

EPA Region Trends- Lindane. Exhibit 4.135 shows the quantity (pounds) of lindane reported by facilities in each EPA Region in 1999 to 2003. During this time, facilities in only 3 EPA Regions reported lindane; only one facility – located in Region 10 – reported lindane in 2003.

Exhibit 4. 135. Quantity of Lindane Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
7	2,644	0	0	0	0	-100.0%	0.0%
8	0	0	0	86	0	NA	0.0%
10	78	64	46	97	71	-9.0%	100.0%
Total	2,722	64	46	183	71	-97.4%	

Exhibit 4.137 shows how lindane was managed by the one facility, located in Region 10, which reported this chemical in 2003 (Exhibit 4.136). This facility sent all 71 pounds of their lindane to offsite treatment. More than twice the quantity of lindane treated was recycled onsite.

Exhibit 4. 136. Facility Reporting Lindane in 2003

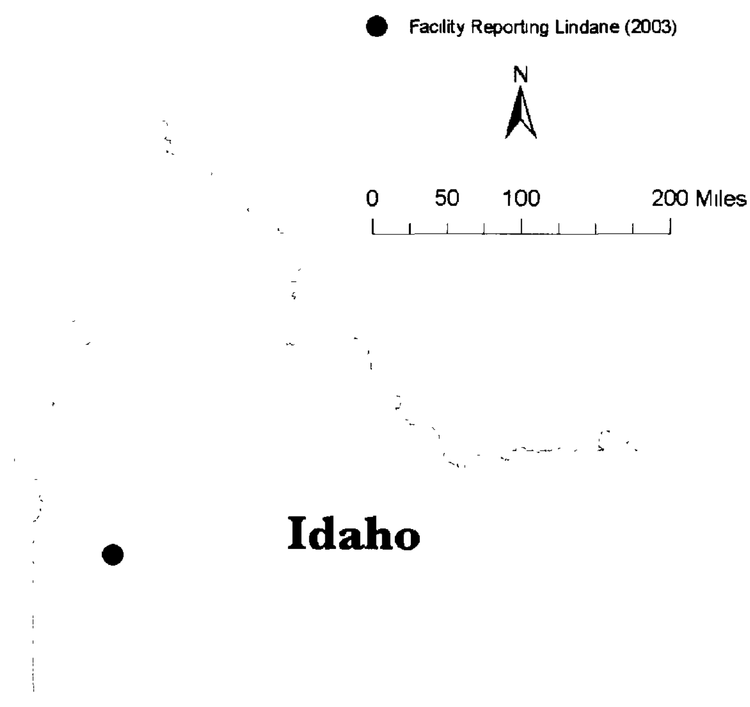


Exhibit 4. 137. Management Methods for Lindane, By EPA Region (2003)

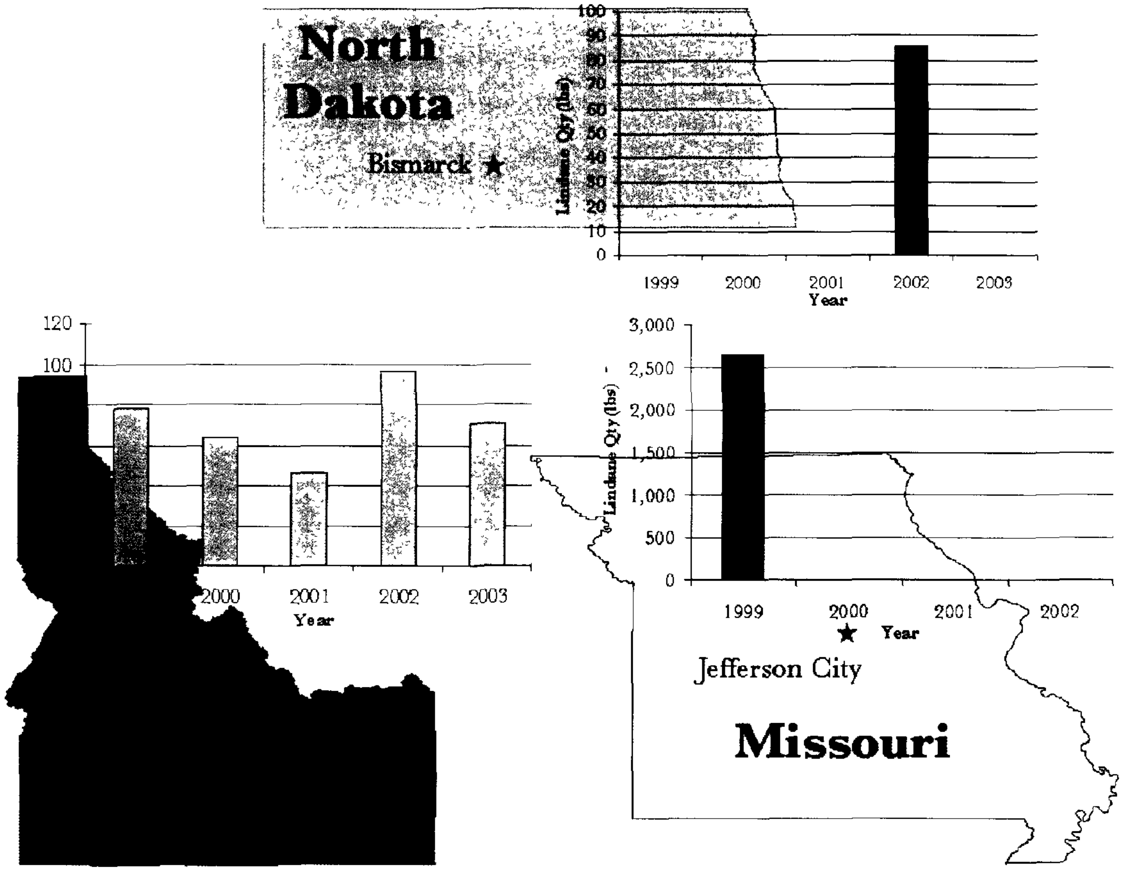
EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
10	0	0	0	0	0	71	179	0

State Trends- Lindane. Since 1999, only 3 facilities reported lindane -- one facility each in Idaho, Missouri, and North Dakota (Exhibits 4.138 and 4.139). The facility in Missouri only reported lindane in 1999 and their 1999 quantity was the highest reported quantity of any of these three facilities in 1999-2003. The facility in North Dakota only reported lindane in 2002. Only the facility in Idaho reported lindane each year (1999-2003) and was the only facility to report this chemical in 2003. As noted above, this facility used offsite treatment to manage 100 percent of their lindane.

Exhibit 4. 138. State-Level Information for Lindane (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Idaho	78	64	46	97	71	-7	-9.0%	100.0%
Missouri	2,644	0	0	0	0	-2,644	-100.0%	0.0%
North Dakota	0	0	0	86	0	0	NA	0.0%

Exhibit 4. 139. State Quantity Trends of Lindane (1999 – 2003)



Industry Sector (SIC) Trends- Lindane. Exhibit 4.140 shows the PC quantity (pounds) of lindane in SIC 2879 (Pesticides and agricultural chemicals, nec) where one facility accounted for 100 percent of this chemical in 2003.

Exhibit 4. 140. Industry Sector-Level Information for Lindane (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2879	Pesticides and agricultural chemicals, nec	1	78	64	46	97	71	-7	-9.0%	100.0%

Mercury and Mercury Compounds

Chemical Information
Mercury (CAS 7439-97-6) is a heavy, silver-white metal that exists as a liquid at ambient temperatures.
CAS Number - 7439-97-6
General Uses - It is a precious metal used in chlor-alkali production, wiring devices, switching mechanisms, amalgam dental fillings, and measurement and control instruments. Industries also manufacture and process mercury reagents, catalysts, and medicinal chemicals. Metal ores, coal, crude oil, and fuel oils contain mercury as a trace constituent. Mercury is produced as a byproduct of gold ore mining operations. Secondary production of mercury involves the recovery of mercury from dismantled equipment and recovery from scrap and industrial wastes using a thermal or chemical extractive process. Major sources of recycled or recovered mercury include scrap from instrument and electrical manufactures (lamps and switches), wastes and sludge from laboratories and electrolytic refining plants, mercury batteries, and dental amalgams. Mercury is also found as a trace contaminant in fossil fuels and waste materials. The combination of the elevated temperature of the process and the volatility of Mercury and Mercury Compounds results in their being emitted in the combustion gas exhaust stream. Two general categories of mercury emissions sources exist involving fuel combustion for energy, steam and heat generation, as well as waste disposal processes.
Potential Hazards - The nervous system is sensitive to all forms of mercury. Methyl mercury and metallic mercury vapors are more harmful than other forms. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus.

Summary Analysis– Mercury and Mercury Compounds.

- In 2003, the 40,450 pounds of mercury and mercury compounds comprised about 0.1 percent of the total PC quantity.
- The number of facilities that reported mercury and mercury compounds increased each year since 2000, with 540 facilities reporting this chemical in 2003. Prior to 2000, only 27 facilities reported a PC quantity of mercury and mercury compounds. This significant increase was likely due to the lowered TRI reporting threshold (10 pounds) for mercury and mercury compounds.
- Almost 100 percent of mercury and mercury compounds was land disposed.
- The more than 490,000 pounds of mercury and mercury compounds recycled in 2003 represented about an 8 percent increase in recycling compared to the quantity recycled in 2002.
- Of the 540 facilities that reported mercury and mercury compounds in 2003, 10 facilities accounted for about 49 percent of the total quantity of this chemical. Sixty facilities accounted for almost 85 percent of the total quantity.
- In 2003, about 80 percent of mercury and mercury compounds were reported by facilities in 4 Regions (Regions 3, 4, 5, and 6).
- Facilities in every state and territory (except Puerto Rico and Vermont) reported a PC quantity of mercury and mercury compounds in 2003. Facilities in 12 states reported over 80 percent of the total quantity in 2003. Facilities in Texas reported the largest PC

quantity of mercury and mercury compounds in 2003, accounting for almost 15 percent of the total quantity.

- Facilities in over 90 SIC codes reported a PC quantity of mercury and mercury compounds in 2003. Over 90 percent was reported by facilities in 18 of the industry sectors (SIC codes); facilities in 3 of these industry sectors accounted for almost 60 percent of the total quantity: SIC 2819 (Industrial inorganic chemicals, nec), SIC 3312 (Blast furnaces and steel mills), and SIC 2812 (Alkalies and chlorine).

National Trends – Mercury and Mercury Compounds. The 40,540 pounds of mercury and mercury compounds accounted for about 0.1 percent of the total PC quantity in 2003. Exhibit 4.141 shows that the number of facilities that reported mercury and mercury compounds has risen each year since 2000, with 540 facilities reporting in 2003. Prior to 2000, only 27 facilities reported a PC quantity of mercury and mercury compounds. The increase in reporting facilities was likely due to the lower TRI reporting threshold (10 pounds) for mercury and mercury compounds that became effective for the 2000 TRI Reporting Year. The large increase in the number of reporting facilities contributed to an increase of almost 70 percent of the reported PC quantity of mercury and mercury compounds in 2000, compared to the quantity reported in 1999. Almost 100 percent of mercury and mercury compounds was land disposed. This is indicative of the fact that metals, including mercury and mercury compounds, are not amenable to destruction via treatment and have no energy value. Although treatment and energy recovery quantities were reported for mercury and mercury compounds since 1999, these quantities are steadily decreasing – likely due to improved data quality assurance by the TRI Program and increased awareness by reporting facilities that land disposal is the most suitable method to be reported for this chemical. Although the quantity of mercury and mercury compounds reported as recycled has decreased by almost 42 percent compared to the quantity recycled in 1999, the quantity recycled has remained relatively constant since 2000.

Exhibit 4. 141. National-Level Information for Mercury and Mercury Compounds (1999-2003)

	1999	**2000**	**2001**	**2002**	**2003**	**Percent Change (1999-2003)**	**Management Method -- Percent of Quantity of this Chemical in 2003**
Number of Facilities	27	477	502	513	540	1900.0%	
Disposal Quantity (lbs.)	47,066	86,129	94,168	95,226	40,475	-14.0%	99.8%
Energy Recovery Quantity (lbs.)	0	93	2	0	0	NA	0.0%
Treatment Quantity (lbs.)	5,813	3,480	36,605	1,897	65	-98.9%	0.2%
Priority Chemical Quantity (lbs.)	52,879	89,702	130,775	97,124	40,540	-23.3%	
Recycling Quantity (lbs.)	846,239	450,310	442,954	455,987	491,839	-41.9%	

Exhibit 4.142 shows the number of facilities that reported mercury and mercury compounds, within ranges of quantities. Of the 540 facilities that reported mercury and mercury compounds in 2003, 10 facilities accounted for about 49 percent of the total quantity of this chemical. Sixty facilities accounted for almost 85 percent of the total quantity.

Exhibit 4. 142. Distribution of Facilities that Reported Quantities for Mercury and Mercury Compounds (2003)

Mercury and Mercury Compounds (40,540 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	320	2.1%
between 11 - 100 pounds	160	13.0%
between 101 -1,000 pounds	50	35.7%
between 1,001 - 10,000 pounds	10	49.1%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

EPA Region Trends– Mercury and Mercury Compounds. Exhibit 4.143 shows the quantity (pounds) of mercury and mercury compounds reported by facilities in each EPA Region in 1999 to 2003. In 2003, facilities in 4 Regions (Regions 3, 4, 5, and 6) reported about 80 percent of mercury and mercury compounds. Facilities in Region 6 reported almost 10,000 pounds, about 25 percent, of the total quantity in 2003. This represents a decrease of almost 53 percent compared to the quantity reported by Region 6 facilities in 2000. Compared to the quantities reported in 2000 (the year in which the TRI reporting threshold was lowered), facilities in 5 other Regions also reported a decreased quantity of mercury and mercury compounds: Region 10 (-94.50%), Region 4 (-56.3%), Region 1 (-55.3%), Region 2 (-52.4%), and Region 5 (-49.6%). Increased quantities of mercury and mercury compounds were reported by facilities in 4 Regions: Region 3 (+148.8%), Region 9 (+90.4%), Region 8(+84.8%), and Region 7 (+16.5%). Exhibit 4.144 shows the distribution of mercury and mercury compounds reported across EPA regions and their respective facilities in 2003.

Exhibit 4. 143. Quantity of Mercury and Mercury Compounds by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent Of the Total Priority Chemical quantity (2003)
6	2,794	21,079	12,959	24,280	9,960	-11,119	-52.7%	24.6%
5	8,514	16,033	4,995	4,542	8,077	-7,956	-49.6%	19.9%
3	1,439	2,985	21,276	6,055	7,427	4,443	148.8%	18.3%
4	3,262	15,595	35,557	48,940	6,820	-8,776	-56.3%	16.8%
9	0	1,171	51,382	6,925	2,229	1,058	90.4%	5.5%
1	1,612	4,200	647	611	1,877	-2,324	-55.3%	4.6%
10	35,201	25,193	1,515	1,351	1,397	-23,796	-94.5%	3.4%
7	10	903	719	1,614	1,052	149	16.5%	2.6%
2	47	2,185	1,440	2,247	1,039	-1,146	-52.4%	2.6%
8	0	359	286	559	662	304	84.8%	1.6%

Exhibit 4. 144. Distribution of Facilities Reporting Mercury and Mercury Compounds in 2003 & Quantity of Mercury and Mercury Compounds Reported in 2003 per Region

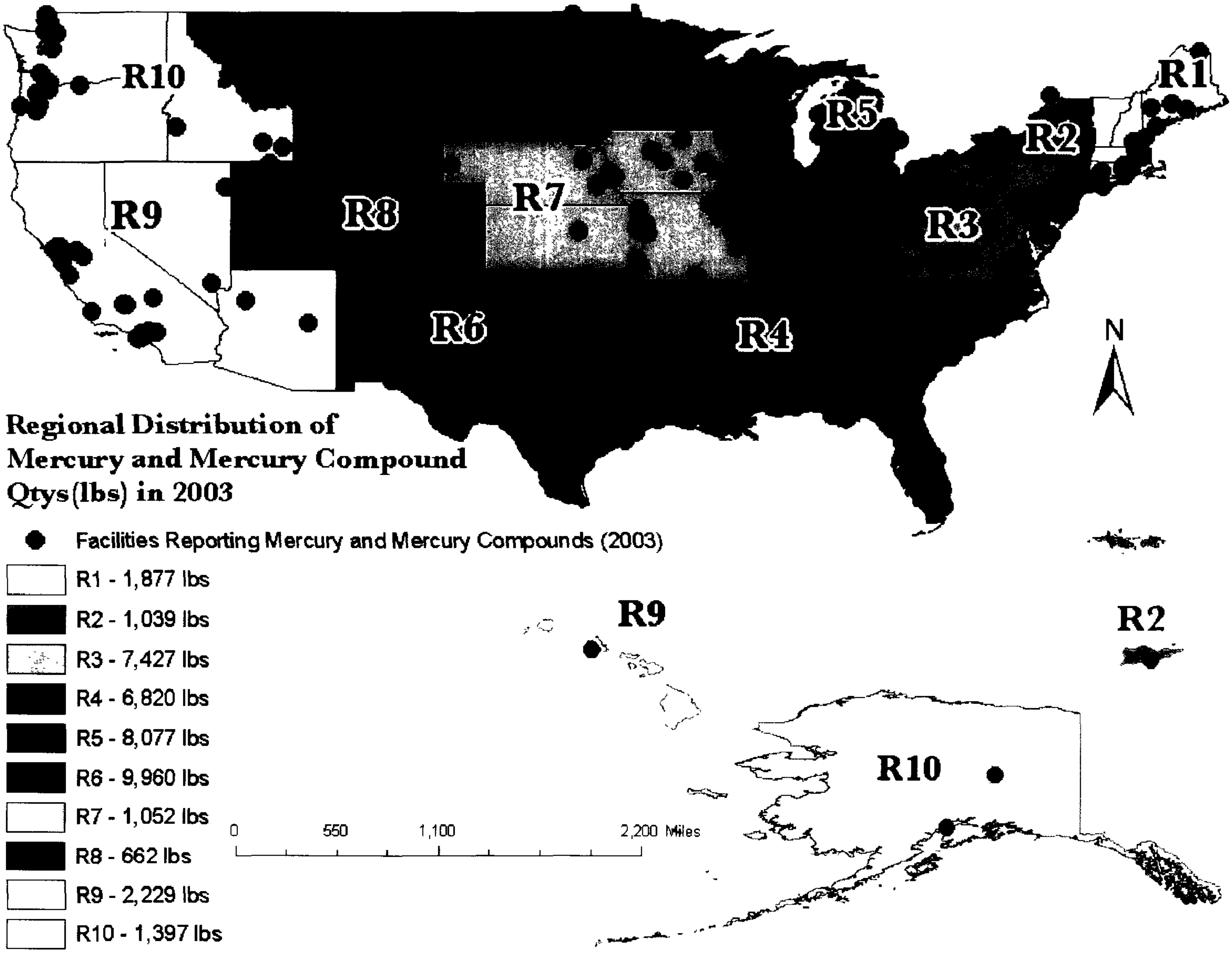


Exhibit 4.145 shows how mercury and mercury compounds were managed by facilities in each EPA Region in 2003. Virtually all of the PC quantity of mercury and mercury compounds was land disposed -- offsite disposal (72 %) and onsite disposal (28%). Facilities in many of the Regions reported significant recycling of mercury and mercury compounds.

Exhibit 4. 145. Management Methods for Mercury and Mercury Compounds, By EPA Region (2003)

	Disposal		Energy Recovery		Treatment		Recycling	
EPA Region	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
1	31	1,841	0	0	0	4	0	1,863
2	12	1,027	0	0	0	0	132	49
3	262	7,157	0	0	0	9	316,956	38,395
4	4,155	2,664	0	0	0	0	42,190	8,491
5	477	7,547	0	0	0	52	5,561	9,771
6	4,523	5,437	0	0	0	0	58,020	8,791
7	137	915	0	0	0	0	0	361
8	442	221	0	0	0	0	0	44
9	512	1,717	0	0	0	0	57	120
10	824	573	0	0	0	0	0	1,040

State Trends– Mercury and Mercury Compounds. Facilities in every state and territory (except Puerto Rico and Vermont) reported a PC quantity of mercury and mercury Compounds in 2003. Exhibit 4.146 shows the quantity of mercury and mercury compounds, in 1999-2003, in those 12 states where facilities comprised over 80 percent of the total quantity in 2003. Facilities in Texas reported the largest quantity of mercury and mercury compounds in 2003, accounting for almost 15 percent of the total quantity.

Facilities in many of the states reported an increased quantity of mercury and mercury compounds. Facilities in Pennsylvania reported about 47 percent of the overall increase (6,279 pounds) in quantity (Exhibit 4.147). Significant increases also were reported by facilities in Florida, Alabama, Louisiana, and Connecticut.

In addition to the decreased quantity reported by facilities in Texas, facilities in Ohio and Tennessee also reported decreased quantities of mercury and mercury compounds, compared to the quantities reported in 2000. (Exhibit 4.147).

Exhibit 4. 146. State-Level Information for Mercury and Mercury Compounds (1999-2003)

State	1999	2000	2001	2002	2003	Change in quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of Mercury and Mercury Compounds (2003)
Texas	2,303	6,725	8,013	4,884	5,986	-740	-11.0%	14.8%
Ohio	242	9,049	2,163	1,968	5,445	-3,604	-39.8%	13.4%
Louisiana	486	2,138	4,738	19,050	3,756	1,618	75.7%	9.3%
Pennsylvania	293	580	3,043	3,108	3,555	2,975	512.8%	8.8%
Alabama	415	913	8,271	15,863	2,618	1,706	186.9%	6.5%

State	1999	2000	2001	2002	2003	Change in quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of Mercury and Mercury Compounds (2003)
Delaware	1,081	1,327	1,047	1,277	2,150	823	62.0%	5.3%
Florida	0	214	1,284	1,188	2,011	1,797	840.8%	5.0%
Connecticut	0	259	408	332	1,766	1,507	582.8%	4.4%
California	0	1,086	51,282	6,639	1,713	627	57.8%	4.2%
West Virginia	62	320	16,773	1,009	1,249	929	290.7%	3.1%
Wisconsin	41	630	748	1,189	1,107	478	75.8%	2.7%
Tennessee	1,793	2,846	1,924	1,960	1,008	-1,838	-64.6%	2.5%

Exhibit 4. 147. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Pennsylvania and Ohio

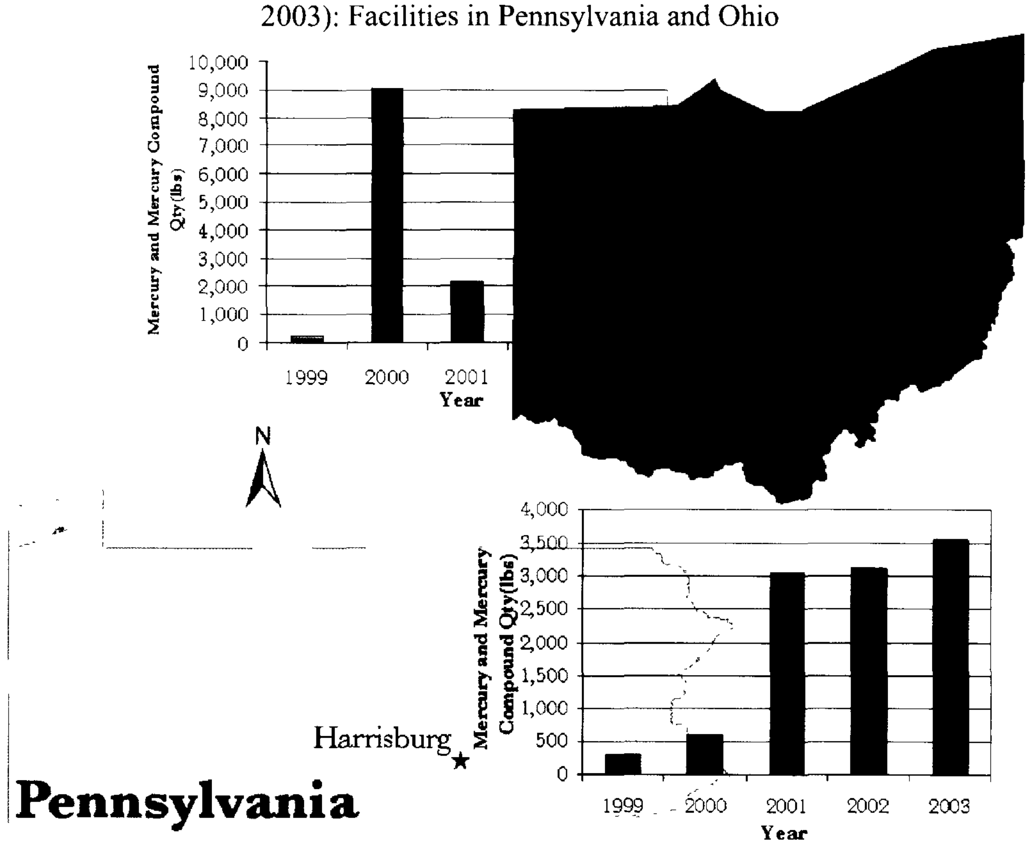
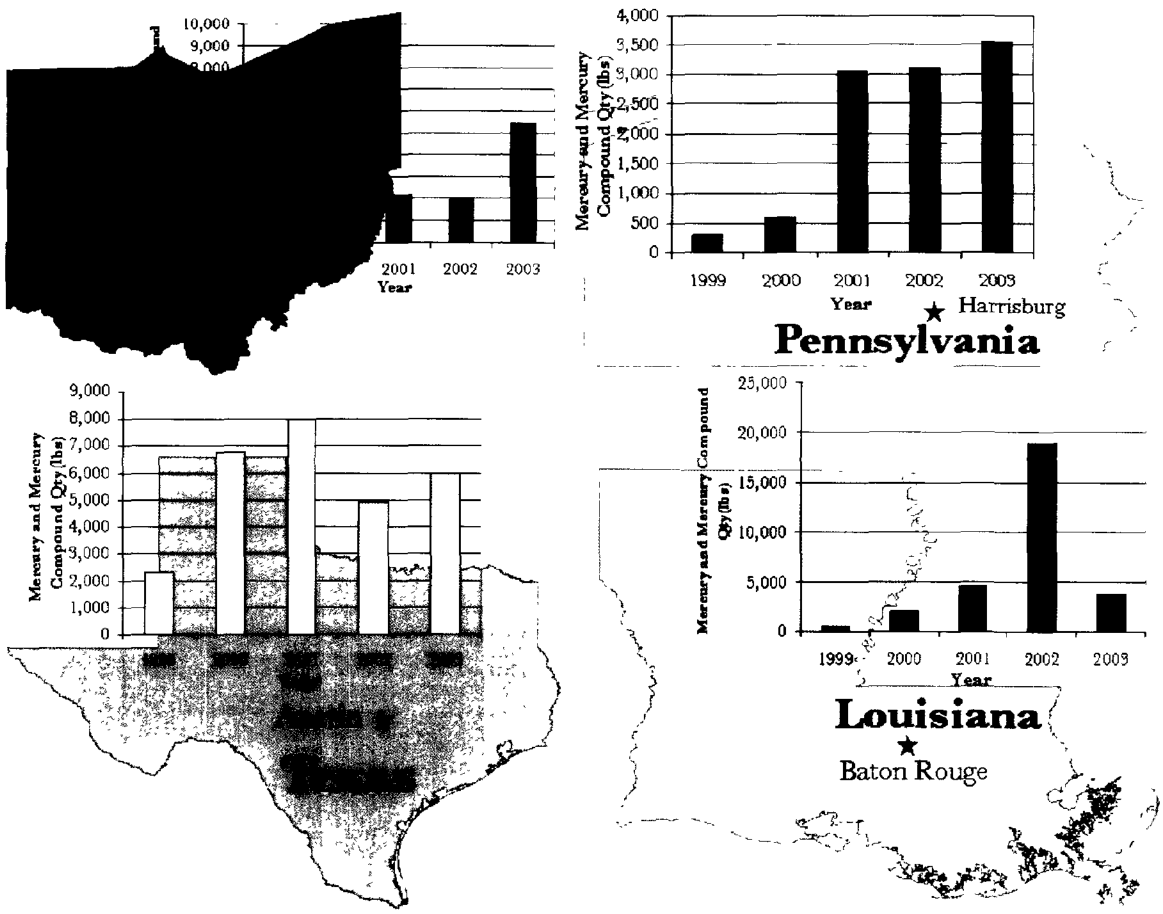


Exhibit 4.148 shows how mercury and mercury compounds were managed by facilities in these 12 states. Virtually 100 percent of the mercury and mercury compounds from facilities in these states was land disposed, mostly (74%) offsite. For numerous facilities in these states, the recycling quantities were considerably greater than the PC quantities that were land disposed.

Exhibit 4. 148. Management of Mercury and Mercury Compounds in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Texas	5,986	2,340	3,646	0	0	0	0	0	1,418
Ohio	5,445	190	5,255	0	0	0	0	462	6,785
Louisiana	3,756	2,111	1,645	0	0	0	0	58,017	380
Pennsylvania	3,555	75	3,472	0	0	0	9	209,264	38,372
Alabama	2,618	547	2,072	0	0	0	0	15,417	136
Delaware	2,150	34	2,116	0	0	0	0	2,182	1
Florida	2,011	1,984	26	0	0	0	0	0	1,823
Connecticut	1,766	0	1,762	0	0	0	4	0	1,041
California	1,713	19	1,694	0	0	0	0	56	120
West Virginia	1,249	60	1,189	0	0	0	0	105,510	0
Wisconsin	1,107	75	1,032	0	0	0	0	5,083	11
Tennessee	1,008	887	121	0	0	0	0	25,952	170

Exhibit 4. 149. Trends Analysis of States Reporting 4 Largest Quantities of Mercury and Mercury Compounds (2003)



Industry Sector (SIC) Trends– Mercury and Mercury Compounds. Facilities in over 90 SIC codes reported a PC quantity of mercury and mercury compounds in 2003. Exhibit 4.150 shows the PC quantity (pounds) of mercury and mercury compounds reported in the 18 industry sectors (SIC codes) where facilities accounted for almost 90 percent of the mercury and mercury compounds in 2003. Facilities in 3 of these industry sectors accounted for almost 60 percent of the total quantity: SIC 2819 (Industrial inorganic chemicals, nec), SIC 3312 (Blast furnaces and steel mills), and SIC 2812 (Alkalies and chlorine). Almost all of these industry sectors had a significant increase in 2000 – perhaps due to the lowered TRI reporting threshold that became effective for mercury and mercury compounds beginning in 2000. Since then, the total PC quantity of mercury and mercury compounds decreased in 6 of the industry sectors, including:

- SIC 3312 (Blast furnaces and steel mills) – a decrease of 65.1%
- SIC 2869 (Industrial organic chemicals, nec) – a decrease of 94.8%
- SIC 2911 (Petroleum refining) – a decrease of 63.8%
- SIC 3692 (Primary batteries, wet and dry) – a decrease of 82.3%).

Among those industry sectors for which the total quantity of Mercury and Mercury Compounds increased since 2000 were:

- SIC 2819 (Industrial organic chemicals, nec) -- an increase of 107.6%
- SIC 3823 (Process control instruments) – an increase of 1833%

Exhibit 4. 150. Industry Sector-Level Information for Mercury and Mercury Compounds (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2819	Industrial inorganic chemicals, nec	27	293	4,763	8,137	8,946	9,887	5,124	107.6%	24.4%
3312	Blast furnaces and steel mills	44	2,802	22,698	4,094	3,182	7,918	-14,780	-65.1%	19.5%
2812	Alkalies and chlorine	10	7,688	5,834	25,273	6,161	6,361	527	9.0%	15.7%
2911	Petroleum refining	83	5	6,606	4,800	2,216	2,391	-4,215	-63.8%	5.9%
3823	Process control instruments	1	0	60	0	45	1,160	1,100	1833.3%	2.9%
3479	Metal coating and allied services	1	0	0	6,680	11,560	1,083	1,083	NA	2.7%
3274	Lime	28	3	946	652	535	926	-20	-2.1%	2.3%
9999	Nonclassifiable establishment	1	0	138	663	140	900	762	552.3%	2.2%
2046	Wet corn milling	12	0	364	241	231	711	347	95.5%	1.8%
3692	Primary batteries, dry and wet	4	5	3,792	467	567	671	-3,121	-82.3%	1.7%
9711	National security	9	0	55	47,568	5,394	656	601	1095.7%	1.6%
2874	Phosphatic fertilizers	4	0	588	1,012	1,277	646	59	10.0%	1.6%
8733	Noncommercial research organizations	2	0	10	0	1	601	592	6027.0%	1.5%
Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2899	Chemical preparations, nec	4	0	88	52	304	588	500	565.6%	1.5%
1422	Crushed and broken limestone	10	0	0	0	418	566	566	NA	1.4%
2621	Paper mills	44	0	1,217	656	720	560	-657	-54.0%	1.4%
2869	Industrial organic chemicals, nec	19	563	9,753	22,625	28,093	504	-9,249	-94.8%	1.2%
3641	Electric lamps	14	0	1,387	1,092	930	489	475	-64.8%	1.2%

Exhibit 4.151 shows how mercury and mercury compounds were managed by facilities in these 18 industry sectors in 2003. Virtually 100 percent of the mercury and mercury compounds were land disposed, with 73 percent sent offsite disposal and 27 percent disposed onsite. Facilities in SIC 2819 (Industrial organic chemicals, nec) and SIC 2812 (alkalies and chlorine), among others, reported considerable recycling of mercury and mercury compounds.

Exhibit 4. 151. Management of Mercury and Mercury Compounds in Industry Sectors (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2819	Industrial inorganic chemicals, nec	9,887	6,448	3,386	0	0	0	52	209,264	40,896
3312	Blast furnaces and steel mills	7,918	86	7,833	0	0	0	0	43	1,246
2812	Alkalies and chlorine	6,361	562	5,799	0	0	0	0	212,143	9,377
2911	Petroleum refining	2,391	336	2,055	0	0	0	0	13	745
3823	Process control instruments	1,160	0	1,160	0	0	0	0	0	154
3479	Metal coating and allied services	1,083	0	1,083	0	0	0	0	0	0
3274	'Lime	926	723	203	0	0	0	0	0	0
9999	Nonclassifiable establishment	900	0	900	0	0	0	0	0	5
2046	Wet corn milling	711	0	711	0	0	0	0	0	67
3692	Primary batteries, dry and wet	671	0	671	0	0	0	0	0	64
9711	National security	656	9	647	0	0	0	0	797	6,947
2874	Phosphatic fertilizers	646	646	0	0	0	0	0	0	7
8733	Noncommercial research organizations	601	0	601	0	0	0	0	0	0
2899	Chemical preparations, nec	588	1	587	0	0	0	0	0	6
1422	Crushed and broken limestone	566	566	0	0	0	0	0	0	0
2621	Paper mills	560	235	324	0	0	0	0	0	75
2869	Industrial organic chemicals, nec	504	98	406	0	0	0	0	0	307
3641	Electric lamps	489	0	489	0	0	0	0	460	4,580

Recycling. Exhibit 4.152 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of mercury and mercury compounds in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 152. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 1442 --Construction and gravel												
1	9	California	0	0	0	0	185	0	0	584	0	0
SIC 2821 -- Paper mills												
1	3	Pennsylvania	0	0	0	0	0	137	0	38	0	0
SIC 2531 -- Paperboard mills												
1	10	Oregon	0	0	0	0	0	64	0	110	0	0
SIC 2812 -- Alkalies and chlorine												
1	6	Louisiana	8,200	0	0	0	0	0	0	0	0	0
SIC 2819 --Industrial inorganic chemicals, nec												
1	3	Pennsylvania	105,000	0	112,000	0	0	0	0	0	0	0
SIC 2821 -- Plastics materials and resins												

1	3	Pennsylvania	0	0	0	0	0	140	0	0	0	0
SIC 2891 -- Adhesives and sealants												
1	5	Illinois	0	0	0	108	0	0	0	0	0	0
SIC 2892 -- Explosives												
1	6	Texas	0	0	0	0	0	504	0	116	0	23
SIC 2899 -- Chemical preparations												
1	5	Ohio	0	0	0	390	0	390	0	0	0	0
SIC 2911 -- Petroleum Refining												
1	2	New Jersey	0	0	0	5	0	1,751	0	0	0	0
1	6	Texas	0	0	0	0	0	0	0	179	0	0
SIC 3275 -- Gypsum products												
1	4	Alabama	0	0	0	0	0	0	0	0	155	0
SIC 3299 -- Nonmetallic mineral products,nec												
1	5	Ohio			0	150					30	0
SIC 3312 --Blast Furnaces and steel mills												
1	2	New Jersey	0	0	0	100	0	0	0	0	0	110
2	3	Pennsylvania	0	0	0	270	0	0	0	126	0	0
1	5	Indiana	0	0	0	0	0	0	0	1,200	0	777
1	5	Minnesota	0	0	0	144	0	46	0	57	0	50
2	6	Texas	0	0	0	2,911	0	3,075	0	2,928	0	57
SIC 3321 -- Gray and ductile iron foundries												
1	2	New York	0	0	0	0	0	110	0	92	0	0
SIC 3341 -- Secondary nonferrous metals												
1	1	Louisiana	0	0	0	0	0	156	0	12	0	0
SIC 3443 -- Fabricated plate work (boiler shops)												
1	3	Virginia	0	0	0	206	0	0	0	0	0	0
SIC 3499--Fabricated metal products, nec												
1	7	Iowa	0	596	0	0	0	0	0	0	0	0
SIC 3561-- Pumps and pumping equipment												
1	3	Maryland	0	0	0	0	0	100	0	145	0	148
SIC 3564-- Blowers and fans												
			1999		**2000**		**2001**		**2002**		**2003**	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
1	5	Indiana	0	0	0	0	0	160	0	0	0	0
SIC 3613-- Switchgear and switchboard apparatus												
1	2	New Jersey	0	0	0	0	0	0	0	3,173	0	2,350
SIC 3629-- Electrical industrial apparatus, nec												
1	2	Puerto Rico	0	0	0	0	0	1,392	0	0	0	1,403
SIC 3639-- Household appliances, nec												
1	4	Tennessee	0	0	0	0	0	0	0	243	0	65
SIC 3641-- Electric Lamps												
1	4	Kentucky	0	5,254	0	3,137	0	0	0	0	0	0
1	5	Illinois	0	0	0	16	0	218	0	194	0	26
SIC 3674-- Semiconductors and related devices												
1	6	Texas	0	0	0	0	0	326	0	0	0	20
SIC 3676-- Electronic Components, nec												
1	5	Indiana	0	5,391	0	1,579	0	1,592	0	0	0	0
SIC 3691-- Storage Batteries												
1	3	Pennsylvania	0	0	0	110	0	12	0	0	0	0
SIC 3692-- Primary batteries, dry and wet												
1	1	Vermont	0	0	0	0	0	3,500	0	5,900	0	8,858
SIC 3721-- Aircraft												
1	7	Missouri	0	0	0	16	0	0	0	190	0	0
SIC 3724-- Aircraft engines and engine parts												

1	5	Indiana	0	0	0	46	0	95	0	176	0	320
SIC 3812-- Search and navigation equipment												
1	9	California	0	0	0	0	0	160	0	197	0	401
SIC 3823-- Process control instruments												
1	3	Pennsylvania	0	0	0	538	0	0	0	581	0	0
SIC 3829-- Measuring and controlling devices, nec												
1	1	Massachusetts	0	0	0	215	0	0	0	150	0	174
1	5	Minnesota	0	0	0	243	0	0	0	0	0	0
SIC 3843-- Dental equipment and supplies												
1	3	Delaware	0	0	0	3,320	0	3,327	0	28,100	0	6,089
1	5	Michigan	0	0	0	6,300	0	6,600	0	2,500	0	2,500
SIC 3845-- Electromedical equipment												
1	4	Florida	0	0	0	0	0	0	0	267	0	0
SIC 9199-- General government												
1	10	Oregon	0	0	0	275	0	0	0	0	0	0
SIC 9999-- Nonclassifiable Establishment												
1	4	North Carolina	0	0	0	0	0	0	0	158	0	0

Methoxychlor

Chemical Information
Methoxychlor is an organochlorine used as a general insecticide. It is a pale- yellow powder with a slightly fruity or musty odor. However, it is available in many forms, including powders, emulsifiable concentrates, granules, and an aerosol. Methoxychlor is similar in structure to dichlorodiphenyltrichloroethane (DDT), but it is less toxic.
CAS Number - 72-43-5
Alternate Names - 2,2-bis(p-methoxyphenyl)-1,1,1-trichloroethane
General Uses - This chemical is used to kill insects such as flies, mosquitoes, cockroaches, chiggers, etc. Methoxychlor also is used on agricultural crops, livestock, grain storage, home gardens, and pets. EPA has approved the use of methoxychlor as a pesticide and fumigant on more than 85 crops such as fruits, vegetables, forage crops, and shade trees. It may also be applied to large areas such as beaches, estuaries, and marshes for control of flies and mosquito larvae and may be used for spray treatment of barns, grain bins, mushroom houses, other agricultural premises, and garbage and sewage areas. (EPA 2000/2001 TRI Public Data Release Report)
Potential Hazards - This chemical is highly toxic; it may be fatal if inhaled, swallowed or absorbed through the skin.

Summary Analysis– Methoxychlor
- No PC quantity of methoxychlor was reported in 2003. In 2000 - 2002, only small quantities were reported, with 17 pounds the largest quantity reported in 2000. Only 3 facilities reported methoxychlor in 2000; one facility in 2001 and 2002.
- In 2000, the year in which the largest quantity of methoxychlor was reported, most of this chemical was treated.
- One facility in Region 7 (Kansas) reported a quantity of methoxychlor in each year, 2000-2002. Aside from this facility, 1 other facility in Region 7 (Missouri) and a facility in Region 8 (Colorado) also reported methoxychlor in 2000.
- Two of the 3 facilities that reported a PC quantity of methoxychlor in 2000-2003, were in SIC 2879 (Pesticides and agricultural chemicals, nec); the remaining facility was in SIC 2899 (Chemical preparations, nec).

National Trends – Methoxychlor. Exhibit 4.153 presents the total PC quantity (pounds) of methoxychlor in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. No quantity of methoxychlor was reported in 1999 or 2003. In 2000 -2002, only small quantities were reported, with 17 pounds the largest quantity reported in 2000. Only 3 facilities reported methoxychlor in 2000; one facility in 2001 and 2002. In 2000, most of the methoxychlor was treated.

Exhibit 4. 153. National-Level Information for Methoxychlor (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999--2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	0	3	1	1	0	NA	
Disposal Quantity (lbs.)	0	2	0	1	0	NA	NA
Energy Recovery Quantity (lbs.)	0	0	0	0	0	NA	NA
Treatment Quantity (lbs.)	0	16	0	0	0	NA	NA
Priority Chemical Quantity (lbs.)	0	17	1	1	0	NA	
Recycling Quantity (lbs.)	0	0	0	0	0	NA	

EPA Region Trends- Methoxychlor. Exhibit 4.154 shows the quantity (pounds) of methoxychlor reported by facilities in 2 EPA Regions in 1999 to 2003. One facility in Region 7 reported a quantity of methoxychlor in each year, 2000-2002. Aside from this facility, 1 other facility in Region 7 and a facility in Region 8 reported methoxychlor in 2000. The increased reporting of methoxychlor in 2000 may have occurred due to the lower TRI reporting threshold for this chemical that became effective in 2000.

Exhibit 4. 154. Quantity of Methoxychlor Reported by EPA Regions (1999-2003)

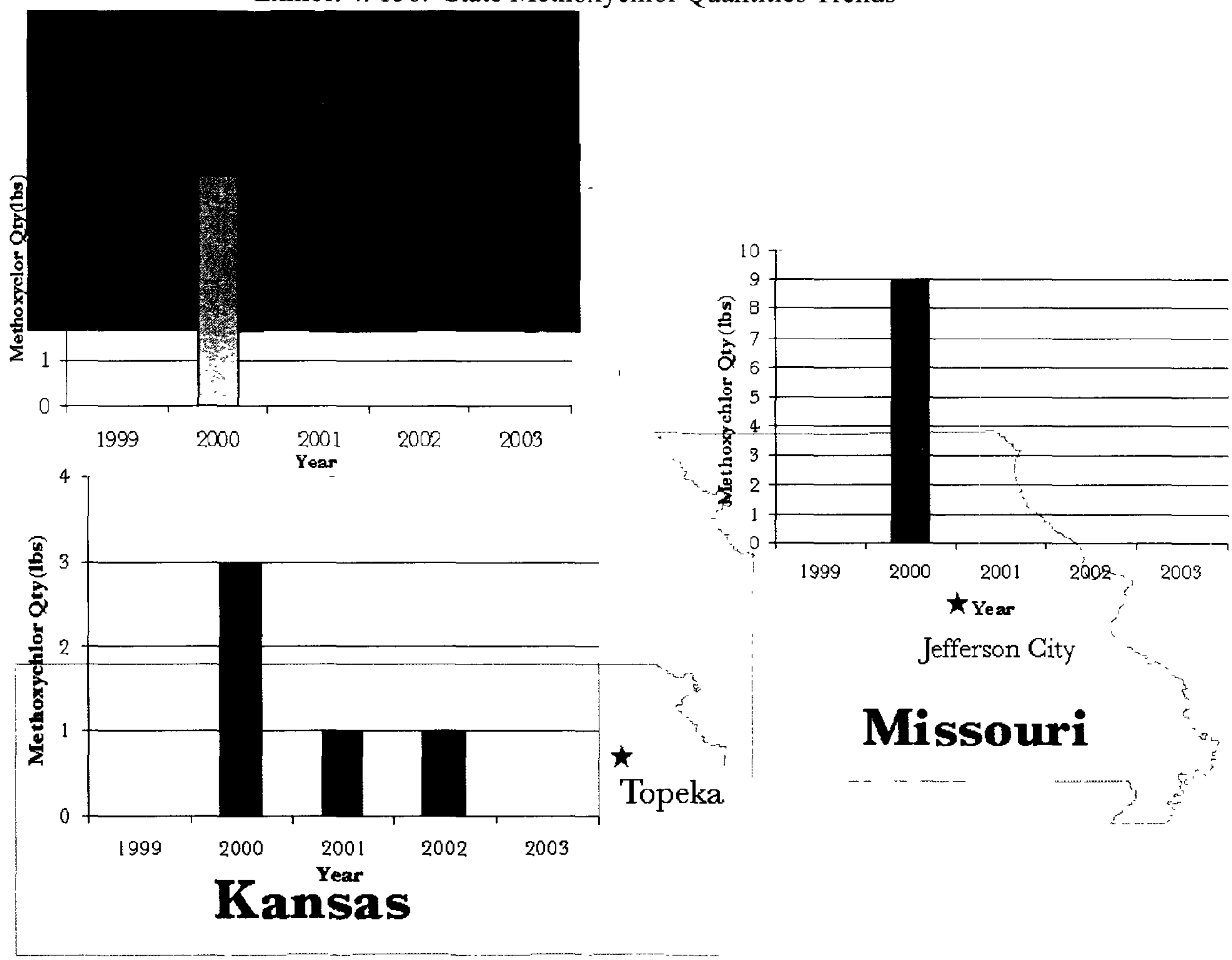
EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
7	0	12	1	1	0	NA	NA
8	0	5	0	0	0	NA	NA
Total	0	17	1	1	0	NA	

State Trends- Methoxychlor. Since 1999, only 3 facilities reported methoxychlor -- one facility each in Colorado, Kansas, and Missouri (Exhibits 4.155 and 4.156). Only the Kansas facility reported methoxychlor in multiple years, 2000 -2002. None of the facilities reported methoxychlor in 2003.

Exhibit 4. 155. State-Level Information for Methoxychlor (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Colorado	0	5	0	0	0	0	NA	NA
Kansas	0	3	1	1	0	0	NA	NA
Missouri	0	9	0	0	0	0	NA	NA

Exhibit 4. 156. State Methoxychlor Quantities Trends



Industry Sector (SIC) Trends- Methoxychlor. Exhibit 4.157 shows the PC quantity (pounds) of methoxychlor reported by 3 facilities in 2000-2003, by industry sector. Two of the 3 facilities were in SIC 2879 (Pesticides and agricultural chemicals, nec). One facility was in SIC 2899 (Chemical preparations, nec).

Exhibit 4. 157. Industry Sector-Level Information for Methoxychlor (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2879	Pesticides and agricultural chemicals, nec	0	0	8	1	1	0	0	NA	NA

Naphthalene

Chemical Information
CAS Number - 91-20-3
Alternate Names - naphthalin, tar camphor, white tar
General Uses - This chemical is used to make products like mothballs that repel and keep moths away. It is also used to make dyes, leather goods, and insecticide.
Potential Hazards - This chemical is flammable/combustible. In addition, exposure to large doses of Naphthalene may damage or destroy red blood cells.

Summary Analysis– Naphthalene

- In 2003, the 10,399,334 pounds of naphthalene made it the third largest quantity of all the PCs, comprising about 13 percent of the total quantity. In 2003, there was a 25 percent decrease in the total quantity of naphthalene, compared to the quantity reported in 1999.
- In 2003, naphthalene was managed primarily by treatment (52.5%), followed by energy recovery (41.7%), and disposal (5.8%). Recycling of naphthalene decreased in 1999-2001 but then dramatically increased in 2002 and 2003, with almost 18.5 million pounds recycled in 2003.
- Of the 450 facilities that reported naphthalene in 2003, 27 facilities accounted for almost 63 percent of the total quantity of this chemical.
- In 2003, over 90 percent of the naphthalene was reported by facilities in Regions 3, 4, 5, and 6.
- Facilities in 8 states accounted for over 80 percent of the total PC quantity of naphthalene in 2003. Two of the states, Texas and Indiana, accounted for 51 percent of the total quantity.
- Facilities in 8 industry sectors (SIC codes) reported over 80 percent of this chemical in 2003; about 55 percent of the naphthalene was reported by facilities SIC 3479 (Metal coating and allied services), SIC 2869 (Industrial organic chemicals, nec), and SIC 2911 (Petroleum Refining).

National Trends – Naphthalene. Exhibit 4.158 presents the total PC quantity (lbs.) of naphthalene reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, naphthalene was the third largest quantity of all the PCs with 10,399,334 pounds, representing 13.1 percent of the total quantity. In 2003, there was a 25 percent decrease in the total quantity of naphthalene, compared to the quantity reported in 1999. There also was a slight increase (14.2%) in the number of facilities reporting this chemical, from 394 facilities in 1999 to 450 facilities in 2003.

Since 1999, the relative use of disposal, treatment, and energy recovery to manage naphthalene has remained relatively consistent. In 2003, the naphthalene was managed primarily by treatment (52.5%), energy recovery (41.7%), and disposal (5.8%). Recycling of naphthalene decreased in 1999-2001 but then dramatically increased in 2002 and 2003, with almost 18.5 million pounds recycled in 2003.

Exhibit 4. 158. National-Level Information for Naphthalene (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	394	417	416	423	450	14.2%	
Disposal Quantity (lbs.)	780,214	619,281	481,138	424,071	603,061	-22.7%	5.8%
Energy Recovery Quantity (lbs.)	5,980,831	5,074,338	5,801,984	5,361,161	4,341,343	-27.4%	41.7%
Treatment Quantity (lbs.)	7,109,098	8,813,389	4,057,233	5,419,234	5,454,930	-23.3%	52.5%
Priority Chemical Quantity (lbs.)	13,870,144	14,507,008	10,340,355	11,204,466	10,399,334	-25.0%	
Recycling Quantity (lbs.)	13,437,824	12,231,088	6,310,310	25,677,936	18,495,107	37.6%	

Exhibit 4.159 shows the number of facilities that reported naphthalene within various quantity ranges. Of the 450 facilities that reported naphthalene in 2003, 27 facilities accounted for almost 63 percent of the total quantity of this chemical. About one-fourth of the facilities (125) reported almost 95 percent of the total PC quantity of naphthalene in 2003.

Exhibit 4. 159. Distribution of Facilities that Reported Quantities for Naphthalene (2003)

Naphthalene (10,399,334 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	42	less than 0.1%
between 11 - 100 pounds	52	less than 0.1%
between 101 -1,000 pounds	104	0.4%
between 1,001 - 10,000 pounds	127	4.8%
between 10,001 - 100,000 pounds	98	32.2%
between 100,001 - 1 million pounds	27	62.5%
> 1 million pounds	0	0.0%

EPA Region Trends- Naphthalene. Exhibit 4.160 shows the quantity (pounds) of naphthalene reported by facilities in each EPA Region in 1999 to 2003. In 2003, over 90 percent of the naphthalene was reported by facilities in Regions 3, 4, 5, and 6. Overall, facilities in 6 Regions reported a decreased quantity in 2003, compared to 1999. However, facilities in Region 3 reported more than twice the quantity reported in 1999. Exhibit 4.161 shows the regional distribution of naphthalene quantities and their respective facilities in 2003.

Exhibit 4. 160. Quantity of Naphthalene Reported by EPA Regions (1999-2003)

EPA REGION	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
6	7,670,899	9,107,898	4,259,858	4,814,930	4,448,958	-42.0%	42.8%
5	2,958,777	2,363,200	1,817,386	3,101,114	2,657,672	-10.2%	25.6%
3	613,420	727,688	2,224,159	1,184,495	1,328,025	116.5%	12.8%
4	1,758,881	1,322,322	1,173,147	1,125,888	985,178	-44.0%	9.5%
2	270,629	378,957	422,639	467,921	438,339	62.0%	4.2%
9	251,270	207,186	146,215	201,544	231,491	-7.9%	2.2%
7	199,377	176,702	139,813	155,030	158,280	-20.6%	1.5%
10	35,750	43,317	56,875	81,817	93,034	160.2%	0.9%
1	37,399	98,486	84,422	65,479	50,171	34.2%	0.5%
8	73,742	81,252	15,841	6,249	8,187	-88.9%	0.1%
Total	13,870,144	14,507,008	10,340,355	11,204,466	10,399,334	-25.0%	

Exhibit 4. 161. Distribution of Facilities Reporting Naphthalene in 2003 & Quantity of Naphthalene Reported in 2003 by Region

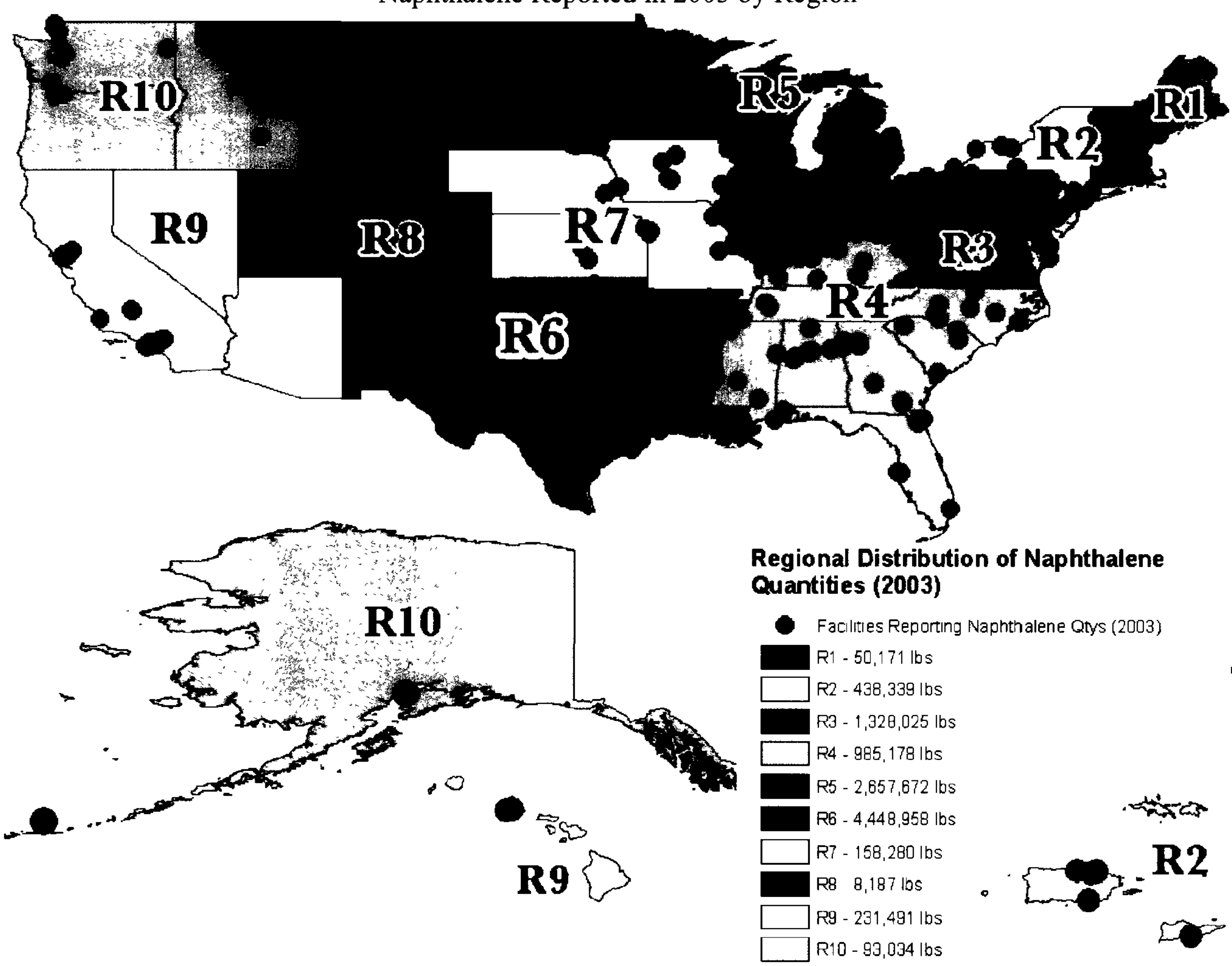


Exhibit 4.162 shows how naphthalene was managed by facilities in 2003. About 53 percent of the naphthalene was treated (primarily onsite). Energy recovery (both onsite and offsite) was used for about 42 percent of the total quantity. Region 6 facilities reported almost 87 percent of the recycling of naphthalene in 2003.

Exhibit 4. 162. Management Methods for Naphthalene, By EPA Region (2003)

	Disposal		Energy Recovery		Treatment		Recycling	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
1	0	302	46,369	1,326	0	2,174	0	2,800
2	0	1,372	6,202	258,130	156,355	16,281	64,789	7
3	12	73,684	501,306	116,701	454,022	182,300	152,696	64,722
4	929	25,730	224,429	99,746	616,611	17,732	840,668	7,464
5	3,212	74,766	451,335	436,716	1,675,402	16,241	1,127,842	63,665
6	147,841	231,299	844,382	1,055,421	1,900,404	269,611	4,298,866	11,709,943
7	6	17,686	60,205	10,847	36,873	32,664	10,582	85
8	263	1,528	1,671	1,287	2,535	903	19,233	409
9	11	24,337	139,875	14,994	42,782	9,491	12,000	11,082
10	58	26	68,608	1,794	17,278	5,271	98,489	9,765

State Trends- Naphthalene. Exhibit 4.163 shows the quantity of naphthalene that was reported between 1999 and 2003 in 8 states where facilities accounted for over 80 percent of the total PC quantity of naphthalene in 2003. Facilities in Texas and Indiana (Exhibit 4.164), reported 51 percent of the total quantity. Compared to the quantity reported in 1999, only Texas facilities reported a decrease (-50.2 %) in the total quantity of naphthalene in 2003.

Exhibit 4. 163. State-Level Information for Naphthalene (1999-2003)

State	**1999**	**2000**	**2001**	**2002**	**2003**	**Change in Quantity (1999-2003)**	**Percent Change in Quantity (1999-2003)**	**Percent of Total Quantity of this Priority Chemical (2003)**
Texas	6,940,912	8,241,033	3,282,625	3,558,203	3,454,587	-3,486,325	-50.2%	33.2%
Indiana	1,260,068	1,219,795	843,029	1,522,028	1,831,607	571,539	45.4%	17.6%
Louisiana	497,091	695,668	629,883	798,651	768,509	271,418	54.6%	7.4%
West Virginia	183,828	184,046	1,529,958	463,919	683,120	499,292	271.6%	6.6%
Pennsylvania	357,263	482,895	514,200	513,066	505,740	148,477	41.6%	4.9%
Illinois	366,159	537,553	528,845	502,868	474,777	108,618	29.7%	4.6%
New Jersey	261,309	372,436	334,688	458,297	428,517	167,208	64.0%	4.1%
Georgia	158,156	187,368	185,462	199,472	234,268	76,112	48.1%	2.3%

Exhibit 4. 164. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Indiana and Texas

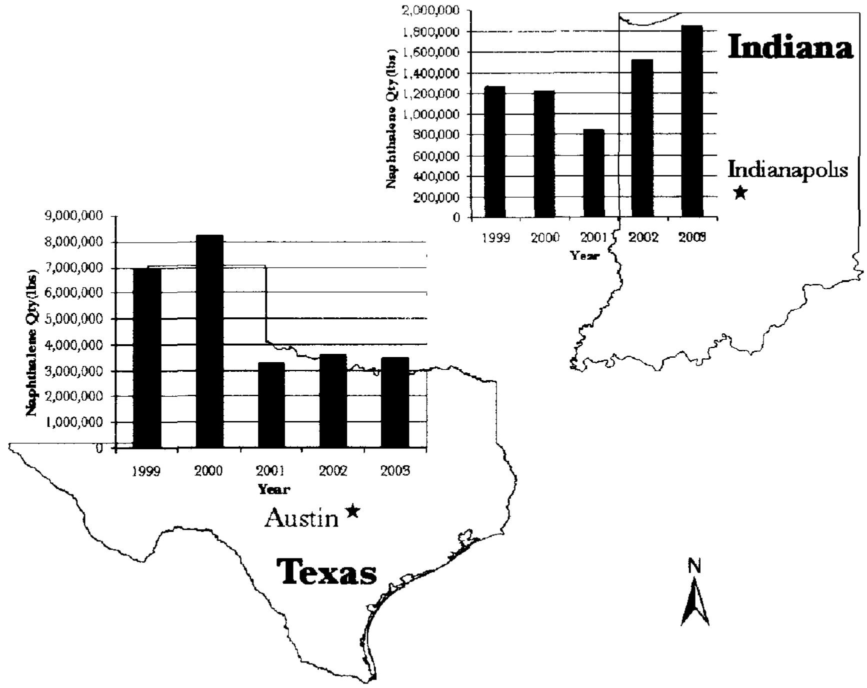
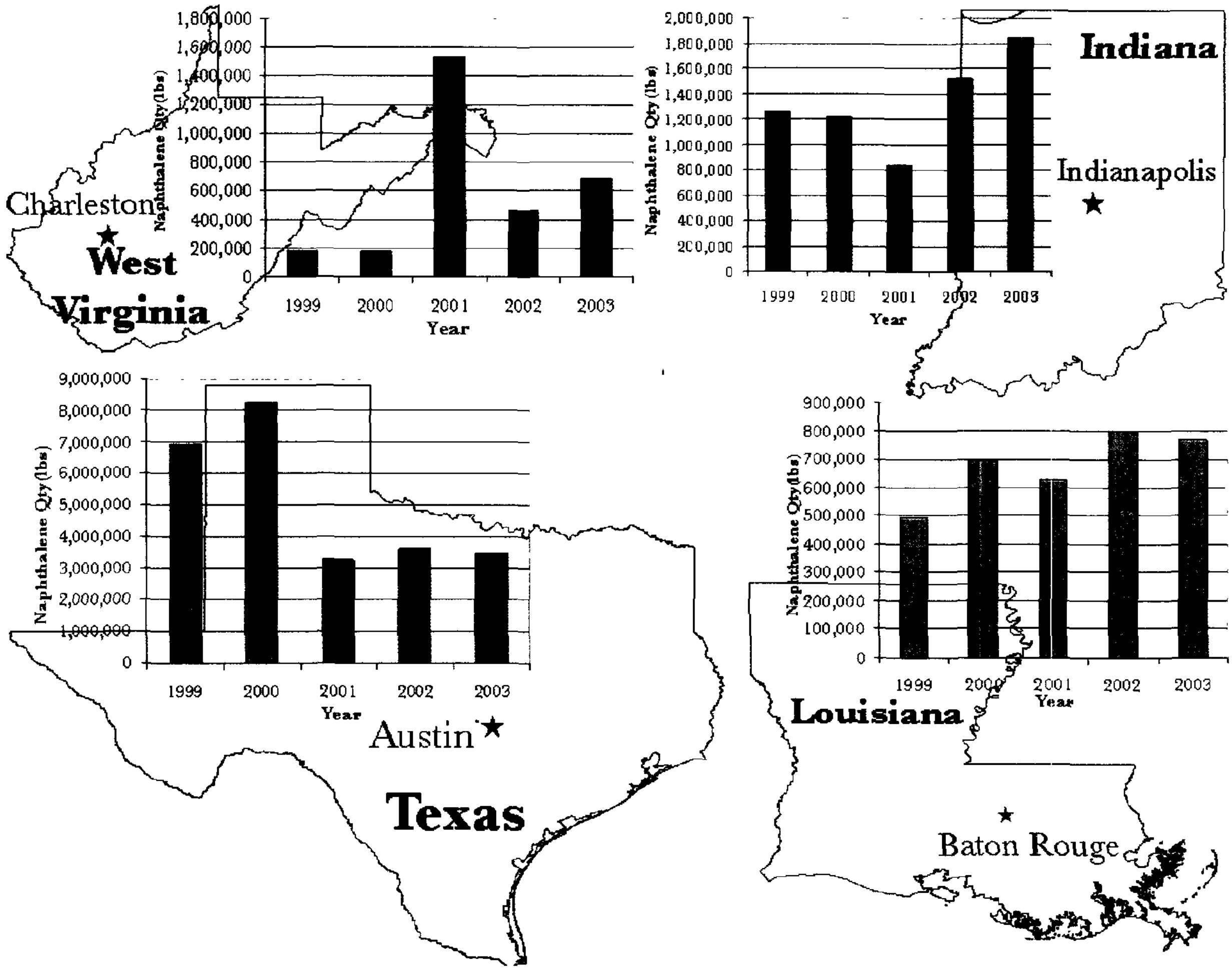


Exhibit 4.165 shows how naphthalene was managed by facilities in these 8 states in 2003. Most of the naphthalene was treated, primarily onsite. Onsite and offsite energy recovery was used for about 39 percent of the naphthalene. Less than 10 percent was land disposed. In 2003, the majority of recycled naphthalene was reported by facilities in Texas, Louisiana, and Illinois.

Exhibit 4. 165. Management of Naphthalene in States with 80 Percent of Total Quantity (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Texas	3,454,587	141,321	167,842	674,385	860,057	1,380,618	230,365	1,985,598	11,692,526
Indiana	1,831,607	0	47	268,370	272,615	1,288,770	1,805	92,377	1,734
Louisiana	768,509	1,069	61,712	140,522	12,855	513,699	38,652	2,023,204	17,250
West Virginia	683,120	11	29,988	281,641	5,588	235,512	130,380	0	5,520
Pennsylvania	505,740	1	43,548	195,165	107,710	122,185	37,131	140,473	54,043
Illinois	474,777	600	46,893	69,854	99,930	251,368	6,132	948,905	22,579
New Jersey	428,517	0	569	0	255,970	155,921	16,057	0	5
Georgia	234,268	0	0	1,850	7,821	221,186	3,411	17,680	0

Exhibit 4. 166. Trends Analysis of States Reporting 4 Largest Quantities of Naphthalene (2003)



Industry Sector (SIC) Trends- Naphthalene. Exhibit 4.167 shows the PC quantity (pounds) of naphthalene reported in 8 industry sectors where facilities accounted for over 80 percent of this chemical in 2003. Facilities in three of these industry sectors: SIC 3479 (Metal coating and allied services), SIC 2869 (Industrial organic chemicals, nec), and SIC 2911 (Petroleum Refining) reported more than 55 percent of the total PC quantity of naphthalene reported in 2003. In 2003, the largest increase, compared to the quantity reported in 1999, was reported by facilities in SIC 3479 -- an increase of over 1 million pounds of naphthalene. Five of the 8 industry sectors reported decreased quantities in 2003. Of particular note, facilities in SIC 2911 reported a decrease of over 3 million pounds of naphthalene; a Texas facility accounted for most of this decrease.

Exhibit 4. 167. Industry Sector-Level Information for Naphthalene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3479	Metal coating and allied services	31	1,461,664	1,769,687	1,582,663	2,304,761	2,542,643	1,080,979	24.5%
2869	Industrial organic chemicals, nec	46	1,409,364	1,362,180	1,126,888	2,003,120	1,882,383	473,019	18.1%
2911	Petroleum refining	100	4,406,285	5,412,899	1,254,886	1,319,246	1,341,211	-3,065,074	12.9%
2865	Cyclic crudes and intermediates	12	1,474,913	786,566	592,369	1,549,766	1,002,559	-472,354	9.6%
2821	Plastics materials and resins	26	810,771	662,107	398,380	635,225	605,237	-205,534	5.8%
2879	Pesticides and agricultural chemicals, nec	13	47,977	92,901	1,382,053	143,629	330,336	282,359	3.2%
4925	Gas production and/or distribution	1	810,448	628,055	270,467	197,741	324,962	-485,486	3.1%
2812	Alkalies and chlorine	2	728,071	667,041	706,949	534,539	296,755	-431,316	2.9%

Exhibit 4.168 shows how naphthalene was managed by facilities in these 8 industry sectors. Most of the naphthalene reported by facilities in SICs 3479 and 2911 was managed by onsite treatment. Facilities in SIC 2869 used a combination of both onsite/offsite energy treatment and treatment for their naphthalene. Facilities in SIC 2865 reported using land disposal for about 26 percent of their quantity of naphthalene; the remaining quantity was managed using energy recovery (over 48%) and treatment (almost 26%). Onsite energy recovery was used for most of the naphthalene reported by facilities in SICs 2879 and 2812.

Exhibit 4. 168. Management of Naphthalene in Industry Sectors (SIC Codes) with 80 Percent of Total Quantity (2003)

SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3479	Metal coating and allied services	0	0	386,867	73,162	2,075,615	6,998	7,353	32,143
2869	Industrial organic chemicals, nec	2,171	17,641	199,887	732,531	702,176	227,977	921,387	11,666,016
2911	Petroleum refining	5,268	27,177	2,142	17,916	1,255,735	32,973	4,349,161	2,408
2865	Cyclic crudes and intermediates	132,512	130,846	200,894	283,836	107,526	146,946	840,420	0
2821	Plastics materials and resins	1	13,451	267,779	231,206	76,068	16,732	38,375	9,252
2879	Pesticides and agricultural chemicals, nec	16	35	281,641	2,800	9,598	36,246	3,919	0
4925	Gas production and/or distribution	0	47	0	246,910	77,230	775	91,226	0
2812	Alkalies and chlorine	807	0	216,273	0	79,603	72	0	0

Recycling. Exhibit 4.169 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of naphthalene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 169. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 2491 --Wood preserving												
1	1	Connecticut	0	0	1,998	0	1,888	0	3,464	0	3,360	0
SIC 2754 -- Commercial printing, gravure												
1	4	Georgia	1,167,339	4,624	1,056,359	10,052	1,037,812	7,996	0	0	0	0
SIC 2851 -- Paints and allied products												
1	5	Indiana	3,564	0	0	0	0	0	0	0	0	0
1	6	Arkansas	0	0	3,320	0	2,033	0	1,137	0	5,719	0
1	9	California	0	1,170	0	1,680	0	510	0	0	0	0
SIC 2865 -- Cyclic crudes and intermediates												
1	4	South Carolina	0	0	0	0	1,000	0	0	0	0	0
1	4	Alabama	0	0	0	0	0	0	1,000	0	1,000	0
SIC 2869 --Industrial organic chemicals, nec												
1	6	Louisiana	0	6,688	0	0	0	0	0	0	0	0
2	6	Texas	0	500,000	0	6,300,000	0	7,600,000	0	400	0	0
SIC 2899 -- Chemical preparations												
1	6	Louisiana	290	0	0	0	0	0	0	0	0	0
SIC 2911 -- Petroleum Refining												
1	5	Illinois	0	1,043	0	0	0	0	0	0	0	0
1	6	Louisiana	0	0	0	0	0	0	0	1,438	0	1,600
1	6	Texas	0	469	0	715	0	29	0	25	0	0
1	6	New Mexico	6,937	0	3,297	0	0	0	0	0	0	0
1	8	Montana	0	0	0	0	0	0	0	0	1,500	0
1	8	Wyoming	17,793	0	13,778	0	13,221	0	18,507	0	11,944	0
SIC 2992-- Lubricating oils and greases												
1	4	Georgia	0	0	0	530	0	436	0	562	0	0
SIC 3312-- Blast furnaces and steel mills												
1	4	Alabama	0	0	0	0	0	0	52,301	0	99,207	0
1	5	Michigan	0	0	0	0	0	0	0	0	0	2,933
SIC 3321-- Gray and ductile iron foundries												
1	5	Ohio	0	61,737	0	12	0	12	0	9	0	6
SIC 3353-- Aluminum sheet, pl;ate, and foil												
1	4	Tennessee	0	300	0	252	0	0	0	0	0	0
SIC 3411-- Metal cans												
1	5	Indiana	0	0	0	1,705	0	0	0	3,727	0	0
1	5	Illinois	0	0	0	3,291	0	1,049	0	493	0	5
SIC 3466-- Crowns and closures												
1	3	West Virginia	0	850	0	0	0	0	0	0	0	0
SIC 3589-- Service industry machinery												
1	4	Kentucky	0	0	0	0	0	0	0	0	1,497	0
SIC 3711-- Motor vehicles and car bodies												
1	7	Missouri	0	0	0	0	0	0	0	27,000	0	0
SIC 3721-- Aircraft												
1	4	Alabama	0	1,622	0	2,020	0	0	0	0	0	0
SIC 3722-- Boat building and repairing												
1	6	Arkansas	0	0	0	0	0	4,342	0	0	0	0
SIC 5169-- Chemicals and allied products, nec												

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
1	6	Texas	0	0	0	0	0	0	100	0	0	0
SIC 5171-- Petroleum bulk stations and terminals												
1	1	Connecticut	0	0	0	0	0	0	0	1,400	0	2,953
1	2	New Jersey	0	0	0	0	0	2,697	0	0	0	0
1	2	New York	0	0	0	953	0	0	0	0	0	0
10	3	Pennsylvania	0	4,196	0	207	0	28,279	0	51,272	0	54
2	3	Virginia	0	647	0	2,139	48	3	0	180	0	160
1	5	Ohio	0	0	0	8	0	50	0	117	0	0
1	5	Michigan	0	0	0	1,253	0	0	0	0	0	0
1	6	Texas	0	0	0	0	0	0	4	0	350	0
1	8	Wyoming	0	19,241	0	0	0	0	0	0	0	0
SIC 97111-- National Security												
1	2	New Jersey					1,200	3,000				

Pendimethalin

Chemical Information
Pendimethalin is a orange-yellow crystalline solid and is formulated in liquid, solid, and granular forms, and also as an emulsifiable concentrate.
CAS Number - 40487-42-1
Alternate Names - 3, 4-xylidine, benzenamine, penoxalin
General Uses - Pendimethalin is used as a pre-emergence and postemergence herbicide on cotton, dry onions, dry bulb shallots, edible beans, corn, legumes, garlic, grain, nonbearing fruit, nut crops, peanuts, potatoes, rice, soybeans, sugar cane, sunflowers, sweet corn, and sweet lupine. It is also used for pre-emergence control of many annual grasses and certain broadleaf weeds. Pendimethalin is applied by broadcasting, directed spray, and soil treatment.
Potential Hazards - This chemical is considered to have low acute toxicity and was added to the TRI based on liver toxicity. It is slightly toxic via exposure to it by eating or drinking contaminated food or water.

Summary Analysis– Pendimethalin

- In 2003, 8 facilities reported 429,551 pounds of pendimethalin. This quantity comprised 0.5 percent of the total quantity of PCs. In 2003, there was about a 95 percent increase in the total quantity of pendimethalin, compared to the quantity reported in 1999.
- In 1999-2003, land disposal was increasingly used to manage pendimethalin.
- Of the 8 facilities that reported pendimethalin in 2003, 1 facility accounted for over 65 percent of the total quantity of this chemical. Five of the 8 facilities reported almost 98 percent of the total PC quantity.
- In 2003, over 94 percent of the pendimethalin was reported by facilities in Regions 4 and 7. The quantity of pendimethalin reported in both these Regions increased significantly, compared to the quantities reported in 1999. In 2003 alone, Region 4 facilities reported an increase of over 73 percent, compared to the previous year. Facilities in Region 7 reported a decrease of almost 17 percent in 2003, compared to the previous year.
- Facilities in only 4 states reported a quantity of pendimethalin in 2003. Facilities in Missouri and Florida reported 93 percent of the total quantity of pendimethalin in 2003. Facilities in both these states reported a significant increase in 2003, compared to quantities reported in 1999.
- In 2003, only 8 facilities in 3 industry sectors reported pendimethalin. Facilities in both SIC 2879 (Pesticides and agricultural chemicals, nec) and SIC 2062 (Cane sugar refining) reported an increase of over 100,000 pounds of pendimethalin, compared to quantities reported in 1999. In 2003, SIC 2879 facilities reported a 17 percent decrease compared to the quantity reported in 2002.

National Trends – Pendimethalin. Exhibit 4.170 presents the total PC quantity (pounds) of pendimethalin reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 429,551 pounds of pendimethalin represented 0.5 percent of the total quantity of PCs. In 2003, there was more than a 95 percent increase in the total quantity of pendimethalin, compared to the quantity reported in 1999. There also was a slight increase in the number of facilities reporting this chemical, with 8 facilities reporting a PC quantity of pendimethalin in 2003.

In 1999-2003, land disposal was increasingly used to manage pendimethalin. In 2003, the quantity of pendimethalin disposed almost doubled, compared to the previous two years. The use of treatment to manage pendimethalin in 1999-2003 was somewhat variable, ranging from a low of 129,625 pounds in 2001 to a high of 649,602 pounds in 2000. In 2003, almost 290,000 pounds of pendimethalin were treated. No energy recovery for pendimethalin was reported. Aside from over 41,000 pounds of pendimethalin recycled in 2002, less than 6,000 pounds was recycled in any given year since 1999.

Exhibit 4. 170. National-Level Information for Pendimethalin (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	6	8	12	11	8	33.3%	
Disposal Quantity (lbs.)	5,406	24,529	70,570	72,404	139,764	2485.3%	32.5%
Energy Recovery Quantity (lbs.)	0	0	0	0	0	NA	0.0%
Treatment Quantity (lbs.)	214,385	649,602	129,625	349,423	289,787	35.2%	67.5%
Priority Chemical Quantity (lbs.)	219,791	674,131	200,195	421,827	429,551	95.4%	
Recycling Quantity (lbs.)	4,000	2,000	6,000	41,401	4,360	9.0%	

Exhibit 4.171 shows the number of facilities that reported pendimethalin within various quantity ranges. Of the 8 facilities (Exhibit 4.178) that reported pendimethalin in 2003, 1 facility accounted for over 65 percent of the total quantity of this chemical. Five of the 8 facilities reported almost 98 percent of the total PC quantity of pendimethalin in 2003.

Exhibit 4. 171. Distribution of Facilities that Reported Quantities for pendimethalin (2003)

Pendimethalin (429,551 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	3	2.3%
between 10,001 - 100,000 pounds	4	32.5%
between 100,001 - 1 million pounds	1	65.2%
> 1 million pounds	0	0.0%

EPA Region Trends- Pendimethalin. Exhibit 4.172 shows the quantity (pounds) of pendimethalin reported in 6 EPA Regions by facilities in 1999 to 2003. In 2003, facilities in Regions 4 and 7 reported about 94 percent of the pendimethalin. The quantity of pendimethalin reported by facilities in both these Regions increased significantly, compared to the quantities reported in 1999. In 2003 alone, Region 4 facilities reported an increase of over 73 percent, compared to the quantity reported in 2002. Facilities in Region 7, despite a 58 percent increase since 1999, reported a decrease of almost 17 percent in 2003, compared to the previous year.

In 2003, no pendimethalin was reported by facilities in 3 of these Regions that had previously reported a quantity in 1999-2002. Facilities in Region 5 reported 25,550 pounds – about 21 percent less than the quantity reported in 1999 but more than double the quantity reported in 2002.

Exhibit 4. 172. Quantity of Pendimethalin Reported by EPA Regions (1999-2003)

EPA REGION	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
2	0	6,316	346	665	0	NA	0.0%
4	4,096	20,342	69,555	68,909	119,470	2816.7%	27.8%
5	32,405	13,082	7,984	11,246	25,505	-21.3%	5.9%
6	2,785	0	0	0	0	-100.0%	0.0%
7	180,505	634,391	122,181	341,007	284,576	57.7%	66.2%
9	0	0	129	0	0	NA	0.0%
Total	219,791	674,131	200,195	421,827	429,551	95.4%	

Exhibit 4. 173. Distribution of Facilities Reporting Pendimethalin in 2003 & Quantity of Pendimethalin Reported in 2003 per Region

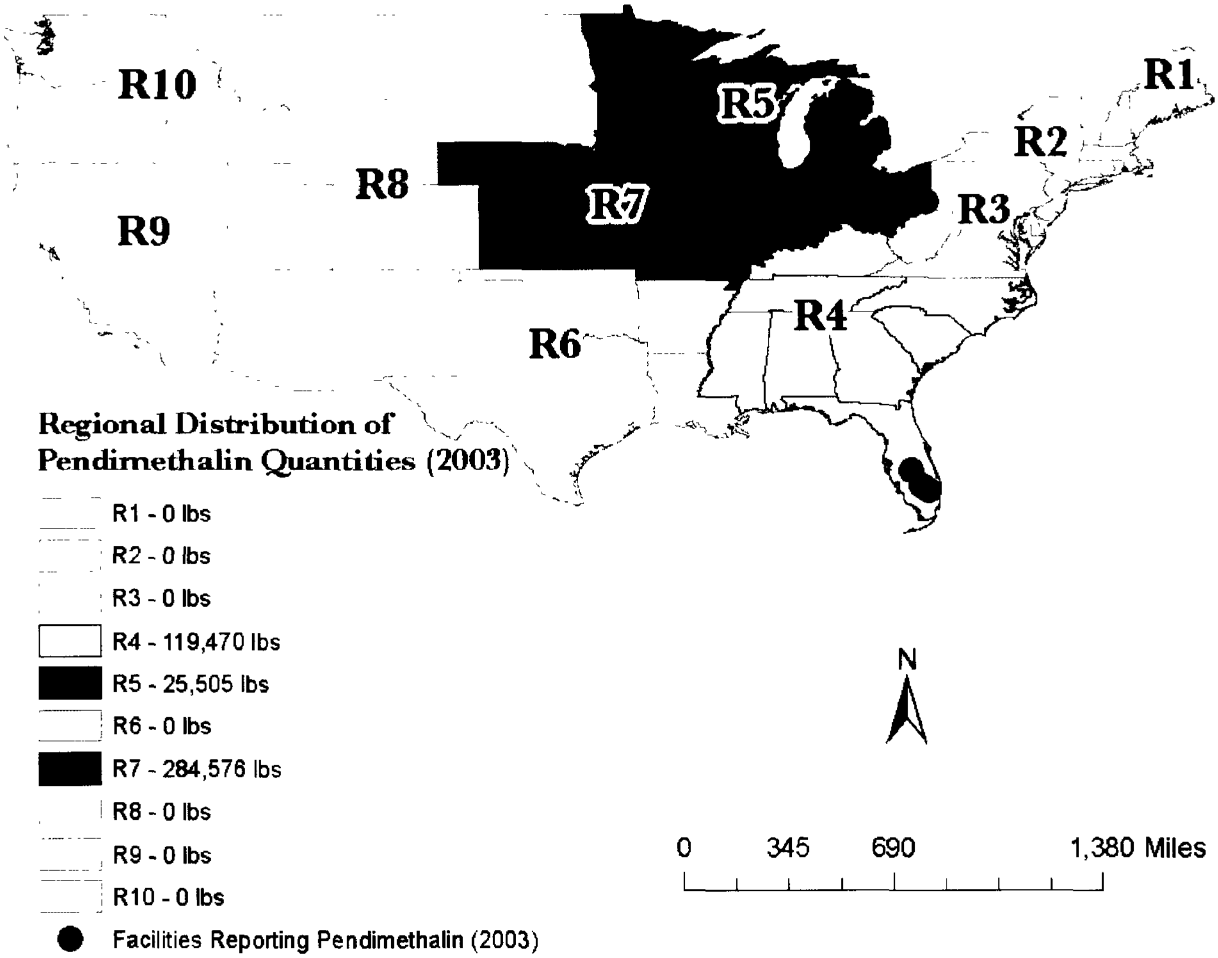


Exhibit 4.174 shows how pendimethalin was managed by facilities in the 3 Regions in 2003. About 68 percent of the pendimethalin was treated (primarily onsite); land disposal (primarily onsite) was used for about 32 percent of the pendimethalin. In 2003, some recycling of pendimethalin was reported by facilities in Regions 4 and 5.

Exhibit 4. 174. Management Methods for Pendimethalin, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
4	101,961	17,509	0	0	0	0	624	0
5	0	20,293	0	0	0	5,212	3,736	0
7	1	0	0	0	270,000	14,575	0	0

State Trends- Pendimethalin. Exhibit 4.175 shows the quantity of PC quantity of pendimethalin that was reported by facilities in 10 states between 1999 and 2003. In 2003, only 4 state facilities reported a quantity of pendimethalin (Exhibits 4.176 and 4.177); facilities in Missouri and Florida reported 93 percent of the total quantity.

Exhibit 4. 175. State-Level Information for Pendimethalin (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Missouri	174,005	630,401	111,401	339,641	280,131	106,126	61.0%	65.2%
Florida	4,096	20,342	61,613	57,219	119,470	115,374	2816.7%	27.8%
Ohio	32,405	13,082	7,984	11,246	25,505	-6,900	-21.3%	5.9%
Iowa	6,500	3,990	10,780	1,350	4,445	-2,055	-31.6%	1.0%
Alabama	0	0	418	640	0	0	NA	0.0%
Arkansas	2,785	0	0	0	0	-2,785	-100.0%	0.0%
California	0	0	129	0	0	0	NA	0.0%
Georgia	0	0	7,524	11,050	0	0	NA	0.0%
Nebraska	0	0	0	16	0	0	NA	0.0%
New Jersey	0	6,316	346	665	0	0	NA	0.0%

Exhibit 4. 176. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Florida and Ohio

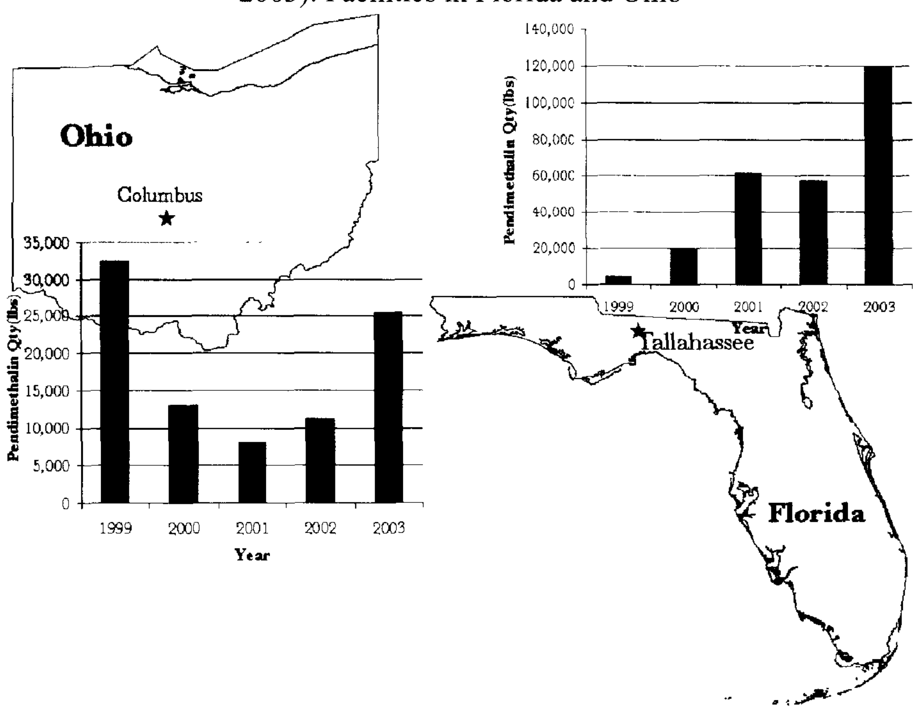


Exhibit 4. 177. Trends Analysis of States Reporting 4 Largest Quantities of Pendimethalin (2003)

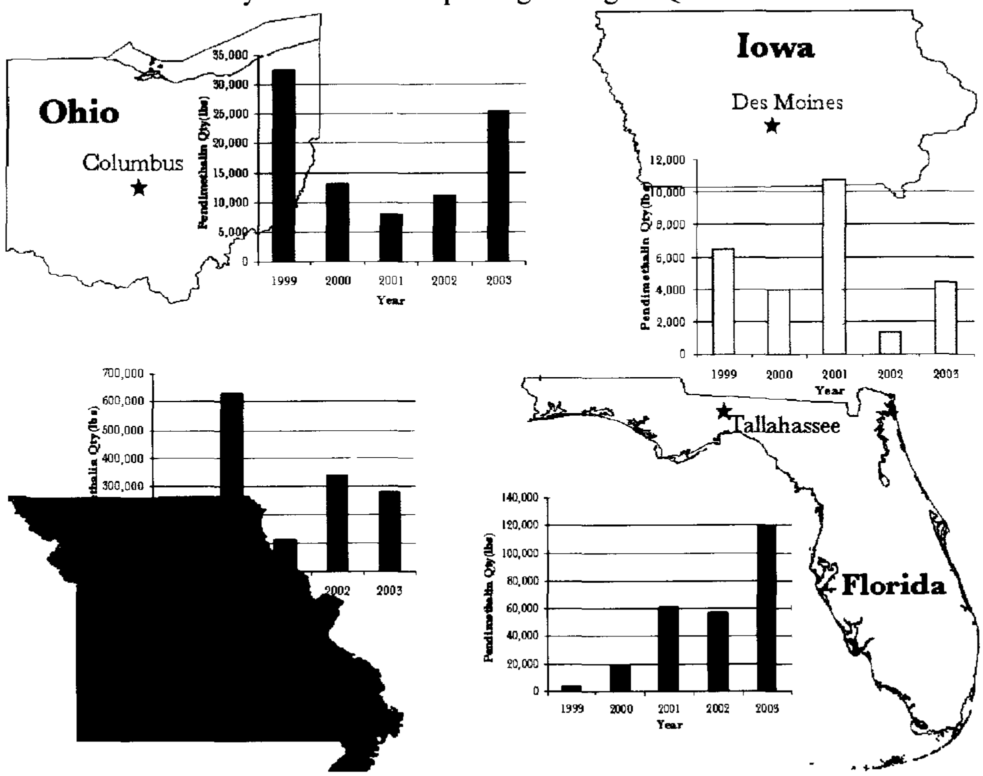


Exhibit 4.178 shows how pendimethalin was managed by 8 facilities in these 4 states in 2003. The facility in Missouri treated (mostly onsite) virtually 100 percent of their pendimethalin. Three facilities in Florida used disposal (primarily onsite). One facility in Ohio used offsite treatment while the other Ohio facility disposed their pendimethalin offsite. Both Iowa facilities used offsite treatment.

Exhibit 4. 178. Management of Pendimethalin in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Missouri	280,131	1	0	0	0	270,000	10,130	0	0
Florida	119,470	101,961	17,509	0	0	0	0	624	0
Ohio	25,505	0	20,293	0	0	0	5,212	3,736	0
Iowa	4,445	0	0	0	0	0	4,445	0	0

Industry Sector (SIC) Trends- Pendimethalin. Exhibit 4.179 shows the PC quantity (pounds) of pendimethalin by industry sectors (SIC codes) where facilities reported a PC quantity of pendimethalin in 1999-2003. In 2003, only 8 facilities in 3 industry sectors reported pendimethalin. Facilities in both SIC 2879 (Pesticides and agricultural chemicals, nec) and SIC 2062 (Cane sugar refining) reported an increase of over 100,000 pounds of pendimethalin, compared to quantities reported in 1999. In 2003, SIC 2879 facilities reported a 17 percent decrease compared to the previous year quantity. Facilities in SIC 2062 initially reported this chemical in 2001and their quantity has increased steadily since then – to almost 102,000 pounds in 2003.

Exhibit 4. 179. Industry Sector-Level Information for Pendimethalin (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2879	Pesticides and agricultural chemicals, nec	3	180,505	640,375	122,342	341,007	284,576	104,071	57.7%	66.2%
2062	Cane sugar refining	2	0	0	20,889	56,499	101,961	101,961	NA	23.7%
2875	Fertilizers, mixing only	3	36,501	13,082	56,650	23,656	43,014	6,513	17.8%	10.0%
2061	Raw cane sugar	0	0	20,342	0	0	0	0	NA	0.0%
2869	Industrial organic chemicals, nec	0	0	332	185	665	0	0	NA	0.0%
2874	Phosphatic fertilizers	0	0	0	129	0	0	0	NA	0.0%
5191	Farm supplies	0	2,785	0	0	0	0	-2,785	-100.0%	0.0%

Exhibit 4.180 shows how pendimethalin was managed in 3 industry sectors where 8 facilities reported this PC in 2003. Onsite treatment was the primary method used by facilities in SIC 2879. The two facilities in SIC 2062 used onsite land disposal for 100 percent of their pendimethalin. Offsite land disposal was used by 2 facilities in SIC 2875 for the entire quantity of their pendimethalin; one other facility in this industry sector used offsite treatment. In 2003, 2 of the SIC 2875 facilities reported some recycling of pendimethalin

Exhibit 4. 180. Management of Pendimethalin in Industry Sectors (SIC Codes) (2003)

SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2879	Pesticides and agricultural chemicals, nec	1	0	0	0	270,000	14,575	0	0
2062	Cane sugar refining	101,961	0	0	0	0	0	0	0
2875	Fertilizers, mixing only	0	37,802	0	0	0	5,212	4,360	0

Recycling. Exhibit 4.181 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of pendimethalin in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 181. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 2874 --Phosphatic fertilizers												
1	9	California	2,000	0	2,000	0	0	0	0	0	0	0

Pentachlorobenzene

Chemical Information
CAS Number - 608-93-5
Alternate Names - 1,2,3,4,5-Pentachlorobenzene
General Uses - This chemical is used to make pentachloronitrobenzene, a fungicide. In addition, it has been and is currently used as a fire retardant.
Potential Hazards - Short-term exposure to this chemical can affect the central nervous system. Long-term exposure can affect the liver and kidneys and can cause tissue lesions.

Summary Analysis– Pentachlorobenzene

- In 2003, the 484,733 pounds of pentachlorobenzene comprised about 0.6 percent of the total quantity of PCs. Since 2000, there has been over a 100 percent increase in the quantity of pentachlorobenzene.
- Virtually the entire PC quantity of pentachlorobenzene was treated. In 2003, there was a dramatic increase in the recycling of pentachlorobenzene.
- Of the 5 facilities that reported pentachlorobenzene in 2003, 2 facilities accounted for over 92 percent of the total quantity.
- In 2003, almost 100 percent of the pentachlorobenzene was reported by facilities in Region 6. Three facilities in Louisiana reported over 93 percent of the total quantity.
- Five industry sectors reported this chemical in 2003. One facility in SIC 2812 (Alkalies and chlorine) reported 68 percent of the total quantity of pentachlorobenzene.

National Trends – Pentachlorobenzene. Exhibit 4.182 presents the total PC quantity (pounds) of pentachlorobenzene reported in 2000 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. Please note that data for 1999 is not included for pentachlorobenzene because this chemical only was reported to TRI beginning in 2000. In 2003, the 484,733 pounds of pentachlorobenzene comprised about 0.6 percent of the total quantity of PCs. There has been over a 100 percent increase in the quantity of pentachlorobenzene reported from 2000 to 2003. Since 2000, virtually the entire quantity of pentachlorobenzene was treated. In 2003, there was a dramatic increase in the recycling of pentachlorobenzene.

Exhibit 4. 182. National-Level Information for Pentachlorobenzene (2000-2003)

	2000	2001	2002	2003	Percent Change (2000-2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	5	4	6	5	0.0%	
Disposal Quantity (lbs.)	13	1	3	26	97.8%	0.0%
Energy Recovery Quantity (lbs.)	0	0	0	0	NA	0.0%
Treatment Quantity (lbs.)	239,838	487,718	311,153	484,707	102.1%	100.0%
Priority Chemical Quantity (lbs.)	239,852	487,719	311,156	484,733	102.1%	
Recycling Quantity (lbs.)	1	770	210	18,111	1811000.0%	

Exhibit 4.183 shows the number of facilities that reported pentachlorobenzene within various

quantity ranges. Of the 5 facilities that reported pentachlorobenzene in 2003, 2 facilities accounted for over 92 percent of the total quantity of this chemical.

Exhibit 4. 183. Distribution of Facilities that Reported Quantities for Pentachlorobenzene (2003)

Pentachlorobenzene (484,733 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	0	0.0%
between 1,001 - 10,000 pounds	1	0.7%
between 10,001 - 100,000 pounds	1	6.9%
between 100,001 - 1 million pounds	2	92.4%
> 1 million pounds	0	0.0%

EPA Region Trends- Pentachlorobenzene. Exhibit 4.184 shows the quantity (pounds) of pentachlorobenzene reported by facilities in each EPA Region in 2000 to 2003. In 2003, almost 100 percent of the pentachlorobenzene was reported by facilities in Region 6. Less than 100 pounds was reported by a facility in Region 5. In Region 6, the quantity of pentachlorobenzene has increased more than 100 percent since 2000.

Exhibit 4. 184. Quantity of Pentachlorobenzene Reported by EPA Regions (2000-2003)

EPA REGION	2000	2001	2002	2003	Percent Change in Quantity (2000-2003)	Percent Of the Total Priority Chemical quantity (2003)
4	8	0	0	0	-100.0%	0.0%
5	76	66	103	93	22.4%	0.0%
6	239,768	487,483	310,983	484,640	102.1%	99.9%
8	0	170	70	0	NA	0.0%

In 2003, only 5 facilities in 2 EPA Regions reported pentachlorobenzene. Exhibit 4.185 shows how pentachlorobenzene was managed by these facilities in 2003. Almost 100 percent of the pentachlorobenzene was managed using treatment. The Region 5 facility sent their entire quantity of pentachlorobenzene to offsite treatment. Facilities in Region 6 used onsite treatment for most of their pentachlorobenzene. Most of the recycling of pentachlorobenzene was done onsite by facilities in Region 6.

Exhibit 4. 185. Management Methods for Pentachlorobenzene, By EPA Region (2003)

	Disposal		Energy Recovery		Treatment		Recycling	
EPA Region	**Onsite Disposal**	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
5	0	0	0	0	0	93	0	0
6	22	3	0	0	483,971	643	18,111	0

State Trends- Pentachlorobenzene. Facilities in only 6 states reported a PC quantity of pentachlorobenzene in 2000-2003. In 2003, facilities in only 3 of these states reported this chemical (Exhibits 4.186 and 4.187). In 2003, 3 facilities in Louisiana reported over 93 percent of the total quantity of. A facility in Texas reported most of the remaining 7 percent, with an Illinois facility reporting less than 100 pounds. The Louisiana facilities reported an almost 300 percent increase of pentachlorobenzene since 2000, including more than a 93 percent increase since 2002. Since 2000, the Texas facility reported a decrease of about 72 percent in the quantity of pentachlorobenzene.

Exhibit 4. 186. State-Level Information for Pentachlorobenzene (2000-2003)

State	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	118,629	407,918	233,271	451,249	332,620	280.4%	93.09%
Texas	121,138	79,565	77,701	33,391	-87,747	-72.4%	6.89%
Illinois	76	66	103	93	17	22.4%	0.02%
Arkansas	0	0	11	0	0	NA	0.00%
Colorado	0	170	70	0	0	NA	0.00%
Kentucky	8	0	0	0	-8	-100.0%	0.00%

Exhibit 4. 187. Distribution of Facilities Reporting Pentachlorobenzene in 2003 & Quantity of Pentachlorobenzene Reported in 2003 per state

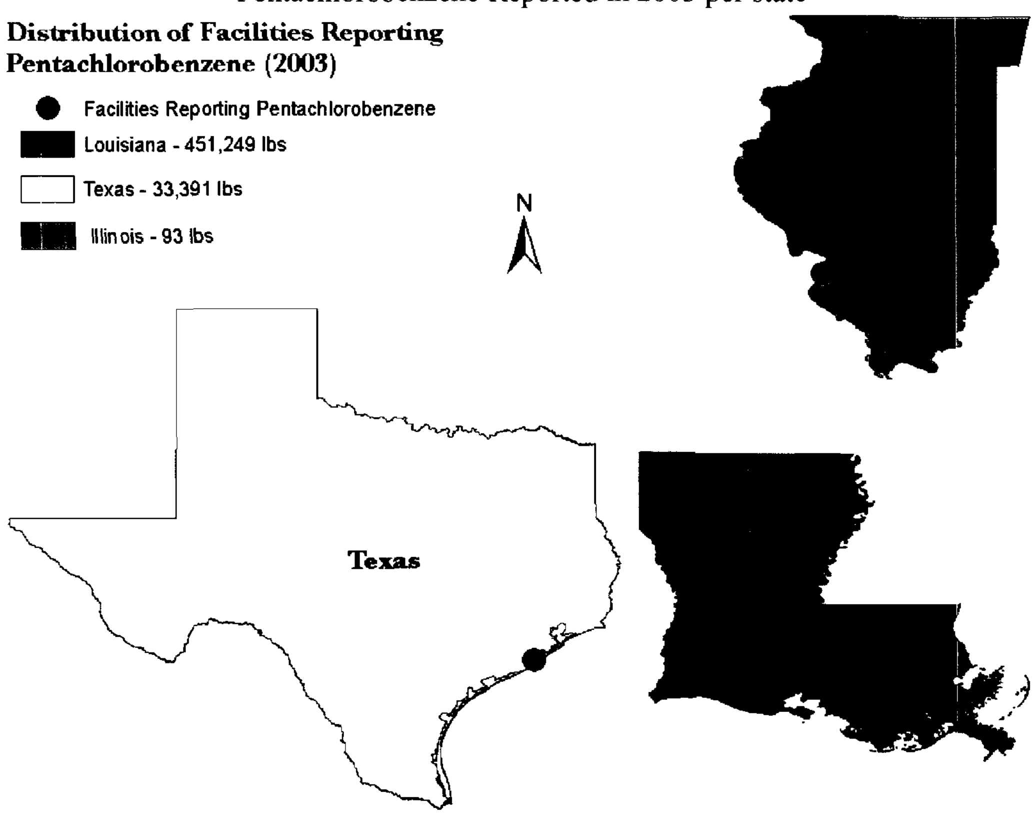


Exhibit 4.188 shows how pentachlorobenzene was managed by the 5 facilities in the 3 states that reported a quantity of this PC in 2003. Overall, most of the pentachlorobenzene was treated. Louisiana facilities primarily used onsite treatment. Likewise, the facility in Texas treated most of their pentachlorobenzene onsite. The Illinois facility relied on offsite treatment. Relatively small quantities of pentachlorobenzene were land disposed. In 2003, only the Texas facility reported recycling of this chemical.

Exhibit 4. 188. Management of Pentachlorobenzene in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	451,249	1	3	0	0	451,211	33	0	0
Texas	33,391	21	0	0	0	32,760	610	18,111	0
Illinois	93	0	0	0	0	0	93	0	0

Industry Sector (SIC) Trends- Pentachlorobenzene. Exhibit 4.189 shows the PC quantity (pounds) of pentachlorobenzene by 5 industry sectors (SIC codes) where facilities reported this chemical in 2003. The facility in SIC 2812 (Alkalies and chlorine) reported the highest quantity, accounting for 68 percent of the total PC quantity of pentachlorobenzene reported in 2003. Compared to the quantity reported by this facility in 2000, there was a 37.5 percent increase in quantity. Three facilities in SIC 2869 (Industrial organic chemicals, nec) reported 32 percent of the total quantity. A facility in SIC 2865 (Cyclic crudes and intermediates) reported less than 100 pounds.

The large increase that occurred in 2003 for the SIC 2869 facilities is misleading. For the 2003 reporting year, 2 facilities (1 in Louisiana, 1 in Texas) changed their primary SIC code from 2812 to 2869. The quantity of pentachlorobenzene reported by these two facilities accounted for almost 98 percent of the total quantity for this SIC in 2003.

Exhibit 4. 189. Industry Sector-Level Information for Pentachlorobenzene (2000-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2812	Alkalies and chlorine	1	239,768	487,483	307,772	329,626	89,858	37.5%	68.0%
2869	Industrial organic chemicals, nec	3	8	0	3,200	155,014	155,006	1937578.8%	32.0%
2865	Cyclic crudes and intermediates	1	76	66	103	93	17	22.4%	0.0%
2819	Industrial inorganic chemicals, nec	0	0	170	70	0	0	NA	0.0%
9511	Air, water, and solid waste management	0	0	0	11	0	0	NA	0.0%

Exhibit 4.190 shows how pentachlorobenzene was managed by the 5 facilities in the 3 industry sectors that reported this PC in 2003. As noted above, in 2003, most of the pentachlorobenzene was treated. Nearly 100 percent of the pentachlorobenzene reported by facilities in SICs 2812 and 2869 was treated onsite. The facility in SIC 2865 sent their pentachlorobenzene to offsite treatment.

Exhibit 4. 190. Management of Pentachlorobenzene in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2812	Alkalies and chlorine	329,626	0	3	0	0	329,589	33	0	0
2869	Industrial organic chemicals, nec	155,014	22	0	0	0	154,382	610	18,111	0
2865	Cyclic crudes and intermediates	93	0	0	0	0	0	93	0	0

Recycling. Exhibit 4.191 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of pentachlorobenzene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 191. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2819 --Industrial inorganic chemicals, nec												
2	8	Colorado	0	0	0	400	0	0	0	0	0	1,585

Pentachlorophenol

Chemical Information
CAS Number - 87-86-5
Alternate Names - 2,3,4,5,6-Pentachlorophenol
General Uses - This chemical was used as a biocide to kill small organisms and is now used as a wood preservative to protect wood from decay and insect attack.
Potential Hazards - This chemical is toxic; inhalation, ingestion, or skin contact may cause severe injury or death.

Summary Analysis– Pentachlorophenol

- In 2003, the 160,760 pounds of pentachlorophenol accounted for 0.4 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was a 24.5 percent decrease in the quantity of pentachlorophenol; however, compared to the quantities reported in 2000-2002, there was a significant increase.
- Nineteen facilities reported this chemical in 2003. One facility accounted for 83 percent of the total quantity.
- Although disposal of pentachlorophenol had been decreasing since 1999, a dramatic increase in the quantity managed via land disposal occurred in 2003, when over 77 percent of the total quantity was land disposed. Many facilities also used offsite treatment. Recycling of pentachlorophenol decreased from a high of 23,383 pounds in 1999 to a low of only 54 pounds in 2003.
- In 2003, facilities in 6 EPA Regions reported pentachlorophenol. Facilities in Region 6 reported the largest quantity of pentachlorophenol in 2003, accounting for 85 percent of the total quantity. The increased quantity for Region 6 was mostly reported by 1 facility in Louisiana. The facility in Region 7 also reported a significant increase. Facilities in the other Regions reported significant decreases of pentachlorophenol in 2003, including zero quantities in Regions 3 and 8. In Region 4, a decrease of about 130,000 pounds was reported in 2003 – more than an 87 percent reduction.
- Pentachlorophenol was reported by facilities in 12 states in 2003. Facilities in Louisiana accounted for over 83 percent of the total quantity of this chemical in 2003, with almost 100 percent of this quantity reported by 1 facility. Facilities in most of the other states reported a decreased or zero quantity in 2003.
- In 2003, 19 facilities in 3 industry sectors reported a PC quantity of pentachlorophenol. Facilities in the SIC 2491 (Wood Preserving) industry sector accounted for almost 100 percent of this chemical in 2003. One facility, located in Louisiana, reported about 84 percent of the total quantity reported by SIC 2491 facilities.

National Trends – Pentachlorophenol. Exhibit 4.192 presents the total PC quantity (pounds) of pentachlorophenol reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 160,760 pounds of pentachlorophenol accounted for 0.4 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was a 24.5 percent decrease in the quantity of pentachlorophenol; however, compared to the quantities reported in 2000-2002, there was a significant increase. The number of facilities that reported pentachlorophenol between 1999 and 2000 slightly declined, from 24 facilities in 1999 to 19 facilities reporting this chemical in 2003.

Although disposal of pentachlorophenol had been decreasing since 1999, a dramatic increase in the quantity managed via land disposal occurred in 2003, when about 77 percent of the total quantity was land disposed. Since 1999, treatment of pentachlorophenol decreased steadily but a slight increase occurred in 2003 when about 22 percent of the totals quantity was treated. The use of energy recovery decreased by 95 percent, compared to the quantity in 1999, but has remained relatively constant since 2000 and only used for about 1 percent of the pentachlorophenol. Recycling of pentachlorophenol decreased from a high of 23,383 pounds in 1999 to a low of only 54 pounds in 2003.

Exhibit 4. 192. National-Level Information for Pentachlorophenol (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999 -2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	24	24	25	20	19	-20.8%	
Disposal Quantity (lbs.)	15,615	1,573	2,198	112	123,951	693.8%	77.1%
Energy Recovery Quantity (lbs.)	41,907	4,019	5,017	4,319	2,153	-94.9%	1.3%
Treatment Quantity (lbs.)	155,473	64,198	47,123	32,425	34,656	-77.7%	21.6%
Priority Chemical Quantity (lbs.)	212,995	69,790	54,339	36,856	160,760	-24.5%	
Recycling Quantity (lbs.)	23,383	10,000	3,160	3,261	54	-99.8%	

Exhibit 4.193 shows the number of facilities that reported pentachlorophenol within various quantity ranges. Of the 19 facilities that reported pentachlorophenol in 2003, 1 facility accounted for 83 percent of the total quantity.

Exhibit 4. 193. Distribution of Facilities that Reported Quantities for Pentachlorophenol (2003)

Pentachlorophenol (160,760 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity (2003)**	**Percent of Total Quantity for this Priority Chemical (2003)**
up to 10 pounds	1	less than 0.1%
between 11 - 100 pounds	4	0.1%
between 101 -1,000 pounds	6	2.1%
between 1,001 - 10,000 pounds	7	14.8%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	1	83.0%
> 1 million pounds	0	0.0%

EPA Region Trends- Pentachlorophenol. Exhibit 4.194 shows the quantity (pounds) of pentachlorophenol reported by facilities in 8 EPA Regions in 1999 to 2003. In 2003, facilities in 6 of the Regions reported pentachlorophenol (Exhibit 4.195). Facilities in Region 6 reported the largest quantity of pentachlorophenol in 2003, accounting for 85 percent of the total quantity. Compared to previous years, the quantity reported in 2003 was a dramatic increase. This increase was attributed to 1 facility in Louisiana. The facility in Region 7 also reported a significant increase of pentachlorophenol in 2003, double the quantities reported in 2001 and 2002. Facilities in the other Regions reported significant decreases of pentachlorophenol in

2003, including zero quantities in Regions 3 and 8. In Region 4, a decrease of about 130,000 pounds was reported in 2003 – more than an 87 percent reduction.

Exhibit 4. 194. Quantity of Pentachlorophenol Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent of the Total Priority Chemical quantity (2003)
6	6,123	192	541	4,003	136,305	2126.1%	84.8%
4	149,576	17,278	26,337	28,263	19,360	-87.1%	12.0%
10	14,369	6,906	2,475	542	2,092	-85.4%	1.3%
7	6	2	637	726	1,459	24216.7%	0.9%
9	1,500	3,400	755	1,099	955	-36.3%	0.6%
5	704	0	2,697	953	589	-16.3%	0.4%
3	38,657	42,012	20,298	715	0	-100.0%	0.0%
8	2,060	0	599	555	0	-100.0%	0.0%

Exhibit 4. 195. Distribution of Facilities Reporting Pentachlorophenol in 2003 & Quantity of Pentachlorophenol Reported in 2003 by Region

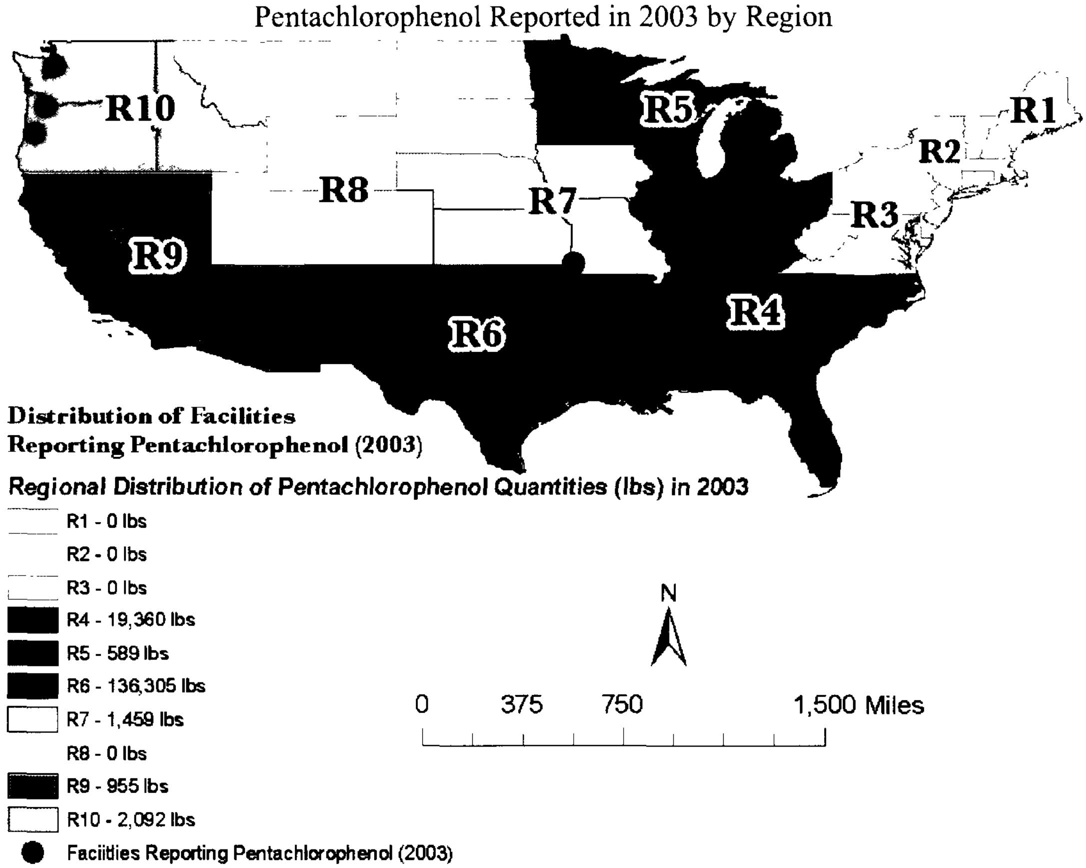


Exhibit 4.196 shows how pentachlorophenol was managed within by facilities in 6 EPA Regions in 2003. In 2003, about 77 percent of the PC quantity of pentachlorophenol was sent to offsite disposal, primarily by I facility in Louisiana. The Region 5 facility also primarily used offsite disposal for most of its pentachlorophenol. Otherwise, facilities in most of the other Regions, with one exception, primarily used offsite treatment for this chemical. The Region 7 facility managed most of its pentachlorophenol via offsite energy recovery.

Exhibit 4. 196. Management Methods for Pentachlorophenol, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
6	0	123,503	0	0	0	12,802	0	0
4	0	4	0	1,030	226	18,100	52	0
10	0	0	0	0	265	1,827	0	2
7	0	0	0	1,123	0	336	0	0
9	0	0	0	0	0	955	0	0
5	0	444	0	0	23	122	0	0

State Trends- Pentachlorophenol. Exhibit 4.197 shows the quantity of pentachlorophenol, between 1999 and 2003, that was reported by facilities in 15 states. Facilities in Louisiana accounted for over 83 percent of the total quantity of this chemical in 2003, with almost 100 percent of this quantity reported by 1 facility. Facilities in 12 of the 15 states reported a decreased or zero quantity in 2003.

Exhibit 4. 197. State-Level Information for Facilities Reporting Pentachlorophenol (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	12	90	33	59	133,535	133,523	1112692.3%	83.1%
Mississippi	54,571	3,026	6,753	18,505	10,861	-43,710	-80.1%	6.8%
South Carolina	37,049	2,358	13,025	5,511	6,186	-30,863	-83.3%	3.8%
Arkansas	6,111	102	508	3,944	2,770	-3,341	-54.7%	1.7%
Oregon	14,369	5,182	1,624	542	1,827	-12,542	-87.3%	1.1%
Missouri	6	2	637	726	1,459	1,453	24216.7%	0.9%
North Carolina	1,578	3,684	1,430	1,011	1,157	-421	-26.7%	0.7%
Nevada	1,500	1,400	445	1,099	955	-545	-36.3%	0.6%
Alabama	52,345	6,358	3,229	2,900	924	-51,421	-98.2%	0.6%
Minnesota	704	0	2,697	953	589	-115	-16.3%	0.4%
Washington	0	1,724	851	0	265	265	NA	0.2%
Georgia	4,033	1,852	1,900	336	232	-3,801	-94.2%	0.1%
California	0	2,000	310	0	0	0	NA	0.0%
Maryland	38,657	42,012	20,298	715	0	-38,657	-100.0%	0.0%
South Dakota	2,060	0	599	555	0	-2,060	-100.0%	0.0%

Exhibit 4. 198. Trends Analysis of States Reporting 4 Largest Quantities of Pentachlorophenol (2003)

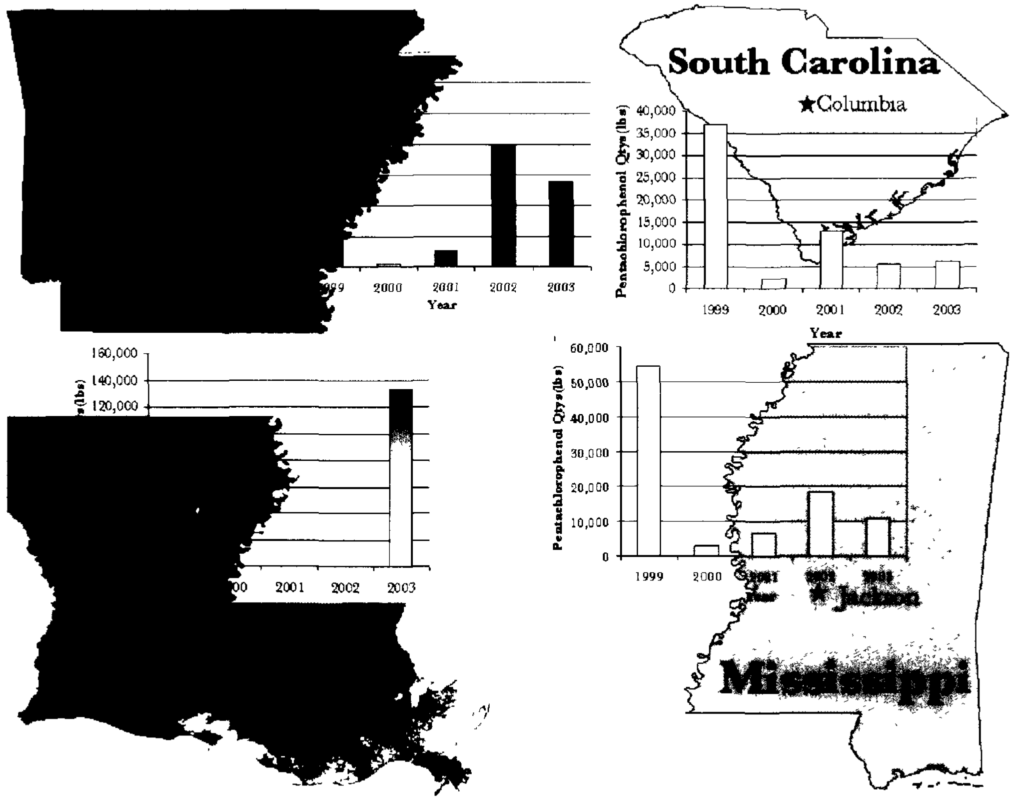


Exhibit 4. 199. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Louisiana and Alabama

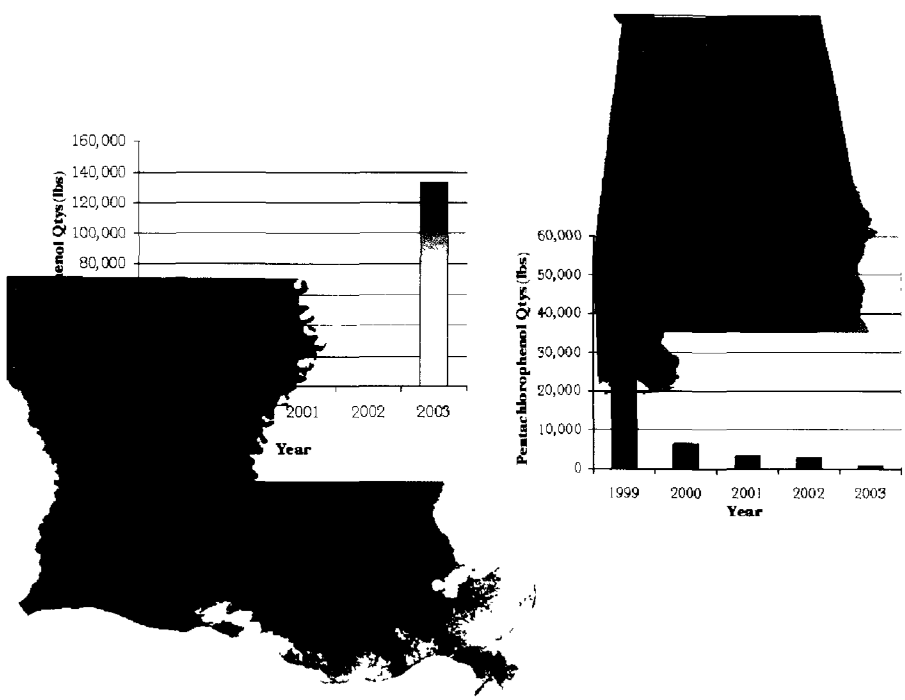


Exhibit 4.200 shows how pentachlorophenol was managed in 12 states where facilities reported quantities of this PC in 2003. In 2003, about 77 percent of pentachlorophenol was disposed offsite, primarily by 1facility in Louisiana. Otherwise, most facilities used treatment (primarily offsite) to manage their pentachlorophenol. Three facilities, 1 each in the states of Alabama, Georgia, and Missouri, managed the majority of their pentachlorophenol via offsite energy recovery. Very little recycling of pentachlorophenol was reported in 2003.

Exhibit 4. 200. Management of Pentachlorophenol in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	133,535	0	123,500	0	0	0	10,035	0	0
Mississippi	10,861	0	4	0	17	20	10,820	0	0
South Carolina	6,186	0	0	0	0	86	6,100	0	0
Arkansas	2,770	0	3	0	0	0	2,767	0	0
Oregon	1,827	0	0	0	0	0	1,827	0	2
Missouri	1,459	0	0	0	1,123	0	336	0	0
North Carolina	1,157	0	0	0	0	35	1,122	0	0
Nevada	955	0	0	0	0	0	955	0	0
Alabama	924	0	0	0	783	85	56	52	0
Minnesota	589	0	444	0	0	23	122	0	0
Washington	265	0	0	0	0	265	0	0	0
Georgia	232	0	0	0	230	0	2	0	0

Industry Sector (SIC) Trends- Pentachlorophenol. Exhibit 4.201 shows the PC quantity (pounds) of pentachlorophenol in 5 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. In 2003, 19 facilities in 3 industry sectors reported a PC quantity of pentachlorophenol. Facilities in the SIC 2491 (Wood Preserving) industry sector accounted for almost 100 percent of this chemical in 2003. One facility, located in Louisiana, reported about 84 percent of the total quantity reported by SIC 2491 facilities. The quantity of pentachlorophenol reported by this facility accounted for most of the increase that occurred in 2003, compared to quantities reported in 2000-2002.

Exhibit 4. 201. Industry Sector-Level Information for Pentachlorophenol (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2491	Wood preserving	17	174,338	27,336	34,016	36,116	160,486	-13,852	-7.9%	99.8%
9511	Air, water, and solid waste management	1	0	0	0	0	265	265	NA	0.2%
5169	Chemicals and allied products, nec	1	0	442	25	25	9	9	NA	0.0%
2869	Industrial organic chemicals, nec	0	38,657	42,012	0	0	0	-38,657	-100.0%	0.0%
2879	Pesticides and agricultural chemicals, nec	0	0	0	20,298	715	0	0	NA	0.0%

Exhibit 4.202 shows how pentachlorophenol was managed by the 19 facilities in the 3 industry sectors that reported a quantity of this PC in 2003. About 77 percent of the total quantity of pentachlorophenol was sent to offsite land disposal – primarily by 1 facility in SIC 2491. Treatment, primarily offsite, was used to manage about 22.5 percent of the pentachlorophenol. Only a small quantity of pentachlorophenol was recycled in 2003 –primarily by 1 facility in Alabama.

Exhibit 4. 202. Management of Pentachlorophenol in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2491	**Wood preserving**	**160,486**	**0**	**123,951**	**0**	**2,153**	**249**	**34,134**	**52**	**2**
9511	**Air, water, and solid waste management**	**265**	**0**	**0**	**0**	**0**	**265**	**0**	**0**	**0**
5169	**Chemicals and allied products, nec**	**9**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**

Recycling. Exhibit 4.203 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of pentachlorophenol in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 203. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		**2000**		**2001**		**2002**		**2003**	
Number of Facilities	**EPA Region**	**State**	***Onsite* Recycle**	***Offsite* Recycle**	***Onsite* Recycle**	***Offsite* Recycle**	***Onsite* Recycle**	***Offsite* Recycle**	***Onsite* Recycle**	***Offsite* Recycle**	***Onsite* Recycle**	***Offsite* Recycle**
SIC 2499 -- Wood products, nec												
1	7	Nebraska	760	0	760	0	0	0	0	0	0	0
SIC 5171 -- Petroleum bulk stations and terminals												

Phenanthrene

Chemical Information
CAS Number - 85-01-8
Alternate Names - PhenAnthracene
General Uses - This chemical is used to make dyes, plastics, pesticides, explosives and drugs. It has also been used to make bile acids, cholesterol and steroids.
Potential Hazards - This chemical may cause irritation to the skin and respiratory tract. It emits acrid smoke and fumes when heated to decomposition.

Summary Analysis– Phenanthrene

- In 2003, the 1,817,292 pounds of phenanthrene represented 2.3 percent of the total quantity of PCs. In 2003, there was more than a 275 percent increase in the total quantity of phenanthrene, compared to the quantity reported in 1999.
- Since 1999, there was about a 37 percent increase in the number of facilities reporting this chemical, with 52 facilities reporting a PC quantity of phenanthrene in 2003. Three facilities reported almost 92 percent of the total quantity of this chemical
- In 1999-2003, there was no apparent trend in how phenanthrene was managed. In 2003, treatment was used for almost 55 percent of the total quantity of phenanthrene; energy recovery for about 41 percent, and disposal for 4 percent. Since 1999, recycling of phenanthrene increased by over 100 percent..
- In 2003, almost 96 percent of the phenanthrene was reported by facilities in Regions 4, 5 and 6. The quantity of phenanthrene reported in Regions 4 and 6 increased significantly, compared to the quantities reported in 1999. In 2003, however, there was a 60 percent decrease in the quantity reported by Region 6 facilities, compared to the quantity reported in 2002. The quantity reported by facilities in Region 4 increased dramatically in 2003 – by over 741,000 pounds. Most of this increase was reported by a facility in Kentucky that had not reported this chemical in previous years.
- Facilities in 3 states (Texas, Kentucky, Indiana) accounted for almost 94 percent of the total quantity of phenanthrene in 2003. Compared to the quantities reported in 1999, facilities in all 3 of these states reported a significant increase. .
- Facilities in 6 industry sectors reported over 99 percent of the total quantity of phenanthrene in 2003. In 2003, facilities in SIC 3334 (Primary Aluminum) reported 41 percent of the total quantity of phenanthrene. A SIC 3334 facility, located in Kentucky, reported most of this quantity. In SIC 2819 (Industrial inorganic chemicals, nec), 1 facility, located in Texas, reported about 40 percent of the total quantity of phenanthrene.

National Trends – Phenanthrene. Exhibit 4.204 presents the total PC quantity (pounds) of phenanthrene reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 1,817,292 pounds of phenanthrene represented 2.3 percent of the total quantity of PCs. In 2003, there was more than a 275 percent increase in the total quantity of phenanthrene, compared to the quantity reported in 1999. However, compared to the quantity in 2002, there also was a 21 percent increase. Since 1999, there was about a 37 percent increase in the number of facilities reporting this chemical, with 52 facilities reporting a PC quantity of phenanthrene in 2003.

In 1999-2003, there was no apparent trend in how phenanthrene was managed. In 2002, the large increase in reported quantity of phenanthrene also translated into a large increase in the use of energy recovery. However, in 2003, there was a subsequent 21 percent decrease in the quantity that was managed via energy recovery. Although the total quantity of phenanthrene decreased in 2003, compared to 2002, the treatment quantity increased significantly – by almost 925,000 pounds.

In 2003, almost 55 percent of the total quantity of phenanthrene was treated; 41 percent was sent to energy recovery. Since 1999, recycling of phenanthrene increased by over 100 percent with 769,067 pounds of phenanthrene recycled in 2003.

Exhibit 4. 204. National-Level Information for Phenanthrene (1999-2003)

	1999	**2000**	**2001**	**2002**	**2003**	**Percent Change (1999-2003)**	**Management Method -- Percent of Quantity of this Chemical in 2003**
Number of Facilities	38	44	50	49	52	36.8%	
Disposal Quantity (lbs.)	116,214	20,094	74,673	42,529	72,752	-37.4%	4.0%
Energy Recovery Quantity (lbs.)	216,450	178,413	98,290	2,196,198	749,069	246.1%	41.2%
Treatment Quantity (lbs.)	151,305	818,821	63,249	70,548	995,471	557.9%	54.8%
Priority Chemical Quantity (lbs.)	483,969	1,017,328	236,212	2,309,275	1,817,292	275.5%	
Recycling Quantity (lbs.)	371,747	423,479	460,005	982,860	769,067	106.9%	

Exhibit 4.205 shows the number of facilities that reported phenanthrene within various quantity ranges. Of the 52 facilities that reported phenanthrene in 2003, 3 facilities reported almost 92 percent of the total quantity of this chemical. Two of these 3 facilities accounted for about 81 percent of the total quantity.

Exhibit 4. 205. Distribution of Facilities that Reported Quantities for Phenanthrene (2003)

Phenanthrene (1,817,292 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	7	less than 0.1%
between 11 - 100 pounds	8	less than 0.1%
between 101 -1,000 pounds	14	0.5%
between 1,001 - 10,000 pounds	17	3.6%
between 10,001 - 100,000 pounds	3	4.1%
between 100,001 - 1 million pounds	3	91.8%
> 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

EPA Region Trends- Phenanthrene. Exhibit 4.206 shows the quantity (pounds) of phenanthrene reported by facilities in 9 EPA Regions in 1999 to 2003. In 2003, almost 96 percent of the phenanthrene was reported by facilities in Regions 4, 5 and 6. The quantity of phenanthrene reported in Regions 4 and 6 increased significantly, compared to the quantities reported in 1999. In 2003, however, there was a 60 percent decrease in the quantity reported by Region 6 facilities, compared to the quantity reported in 2002. The quantity reported by facilities in Region 4 increased dramatically in 2003 – by over 741,000 pounds. Most of this increase was reported by a facility in Kentucky that had not reported this chemical in previous years. The quantity reported by Region 5 facilities decreased by over 18 percent. Quantities of phenanthrene reported in 4 other states also decreased in 2003.

Exhibit 4. 206. Quantity of Phenanthrene Reported by EPA Regions (1999-2003)

EPA REGION	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
6	172,760	798,299	119,911	1,900,205	768,548	344.9%	42.29%
4	1,992	6,140	1,850	3,982	745,198	37309.5%	41.01%
5	280,397	188,581	77,451	372,997	228,456	-18.5%	12.57%
3	15,711	9,793	31,682	25,603	64,569	311.0%	3.55%
9	13	47	1,133	1,244	5,213	40000.0%	0.29%
8	8,380	9,186	1,302	2,772	3,269	-61.0%	0.18%
10	2,184	2,142	1,273	1,091	1,246	-42.9%	0.07%
7	1,912	3,140	1,610	1,380	793	-58.5%	0.04%
1	620	0	0	0	0	-100.0%	0.00%

Exhibit 4. 207. Distribution of Facilities Reporting Phenanthrene in 2003 & Quantity of Phenanthrene Reported in 2003 by Region

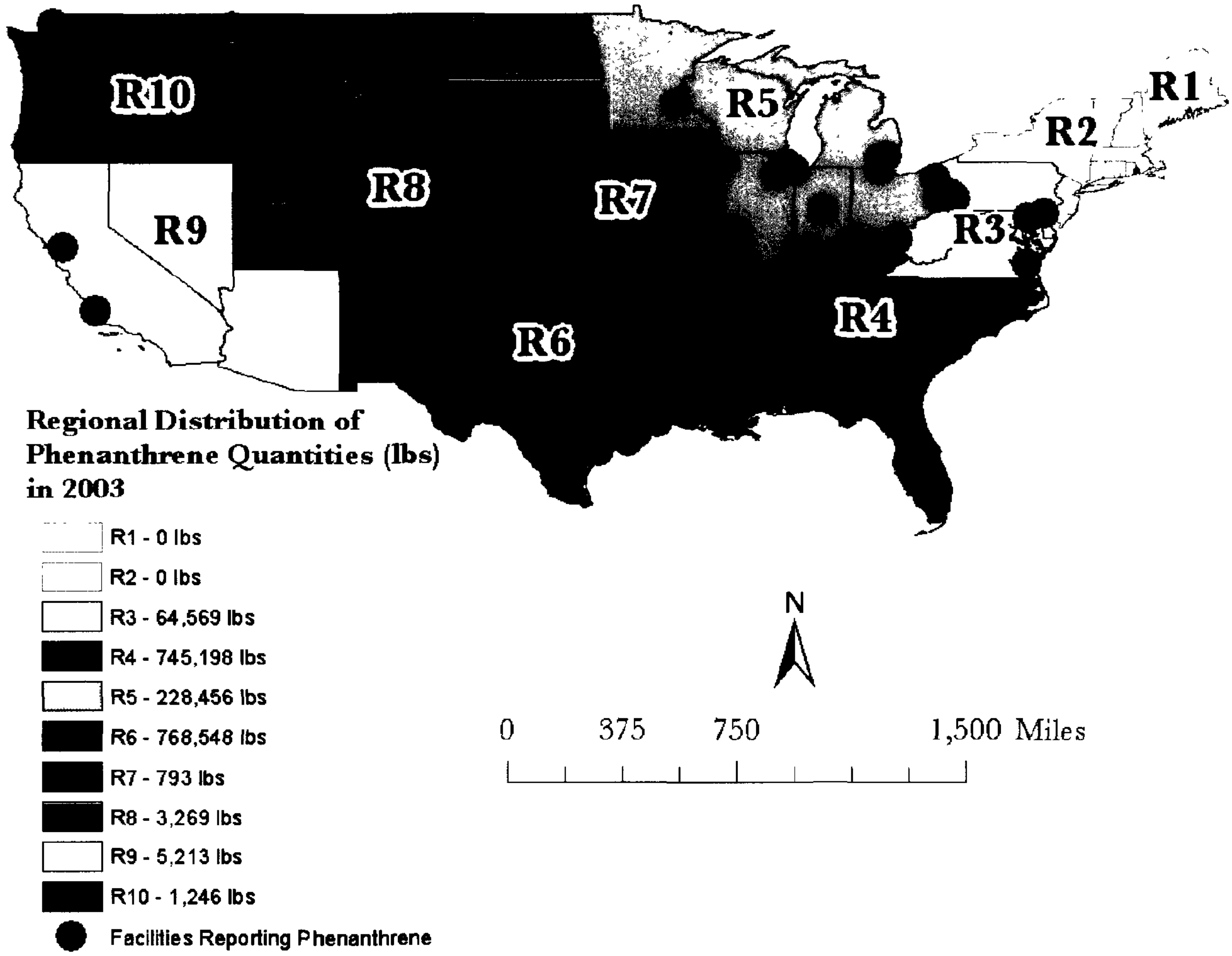


Exhibit 4.208 shows how phenanthrene was managed by facilities in the 8 Regions that reported this chemical in 2003. Region 6 facilities used energy recovery, primarily onsite, for their phenanthrene. Facilities in Regions 4, 5, 9, and 10 primarily used onsite treatment for most of their phenanthrene. Facilities in Regions 3 and 7 primarily used offsite disposal, although Region 3 facilities also used treatment for about 30 percent of their phenanthrene. In 2003, facilities in numerous EPA Regions reported significant recycling phenanthrene.

Exhibit 4. 208. Management Methods for Phenanthrene, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
6	983	1,243	728,631	16,245	8,466	12,980	0	616,983
4	0	5,811	0	3,050	735,986	351	23,794	0
5	2,396	14,717	0	85	210,503	755	69,995	2
3	0	45,036	0	901	4,634	13,998	25,463	29,000
9	0	135	0	0	4,970	108	0	10
8	1,637	1	0	98	1,531	2	1,017	4
10	0	0	59	0	1,031	156	2,799	0
7	0	793	0	0	0	0	0	0

State Trends- Phenanthrene. In 1999-2003, facilities in 26 states reported a PC quantity of phenanthrene. Exhibits 4.209 and 4.210 show the quantities of phenanthrene reported in 3 states (Texas, Kentucky, Indiana) where facilities accounted for almost 94 percent of the total quantity of this chemical in 2003. Compared to the quantities reported in 1999, facilities in all 3 of these states reported a significant increase. Facilities in both Texas and Kentucky reported about 41 percent of the total quantity. In 2003, the quantity reported by Texas facilities decreased almost 60 percent, compared to the previous year. The large increase in Kentucky resulted primarily from 1 facility that had not reported in previous years. Likewise, 1 facility accounted for the large increase in Indiana.

Exhibit 4. 209. State-Level Information for Phenanthrene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Texas	167,218	792,923	99,828	1,884,994	757,623	590,405	353.1%	41.7%
Kentucky	0	0	0	1,500	740,470	740,470	NA	40.7%
Indiana	19,612	17,064	5,395	27	200,451	180,839	922.1%	11.0%

Exhibit 4. 210. Trends Analysis of States Representing 94 Percent of the Total Quantity of Phenanthrene (2003)

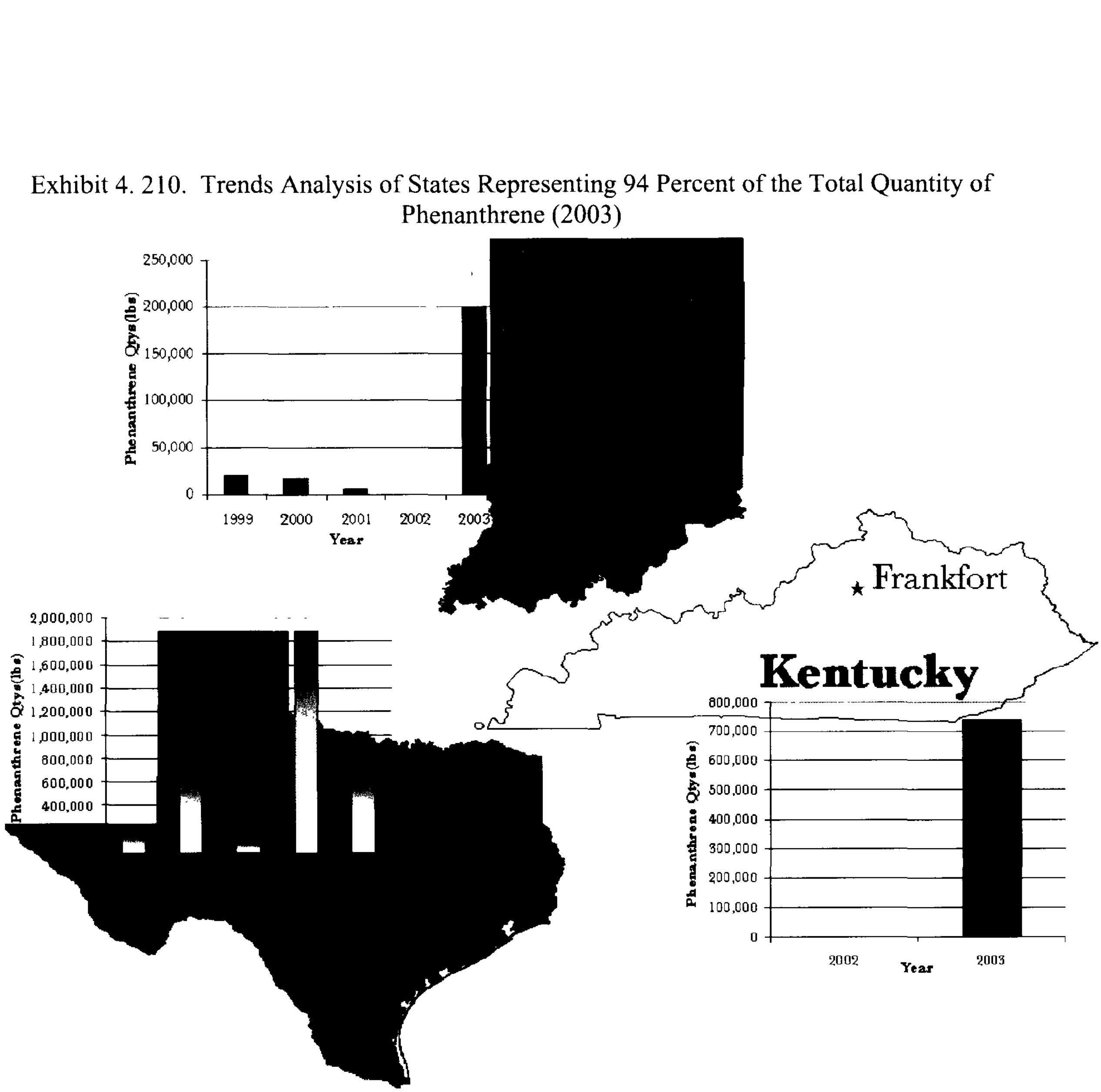


Exhibit 4.211 shows how phenanthrene was managed by 16 facilities in the 3 states that reported almost 94 percent of the total PC quantity of this chemical in 2003. In each of the 3 states, 1 facility dominated how the phenanthrene was managed in the state. Over 96 percent of the phenanthrene reported by Texas facilities was managed via onsite energy recovery – by 1 facility. Similarly, over 99 percent of the phenanthrene reported by 2 Kentucky facilities was treated onsite – by 1 facility. Over 99 percent of the phenanthrene reported by 2 Indiana facilities was treated onsite – by 1 facility. Facilities in both Texas and Indiana reported significant recycling of phenanthrene in 2003.

Exhibit 4. 211. Management of Phenanthrene in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Texas	757,623	973	231	728,631	15,470	527	11,791	0	616,983
Kentucky	740,470	0	3,984	0	250	735,986	250	0	0
Indiana	200,451	0	6	0	0	200,017	428	67,552	0

Industry Sector (SIC) Trends- Phenanthrene. In 1999-2003, facilities in 17 industry sectors (SIC codes) reported a PC quantity of phenanthrene. Exhibit 4.212 shows the quantities of phenanthrene reported by 6 industry sectors where facilities accounted for over 99 percent of the total quantity of this chemical in 2003. In 2003, facilities in SIC 3334 (Primary Aluminum) reported 41 percent of the total quantity of phenanthrene. One facility, located in Kentucky, reported most of this quantity. In SIC 2819 (Industrial inorganic chemicals, nec), 1 facility, located in Texas, reported about 40 percent of the total quantity of phenanthrene, representing a large increase for this industry sector, compared to previous years. However, this large increase that occurred in 2003 for the SIC 2819 is misleading. For the 2003 reporting year, this facility changed the primary SIC code from 2812 to 2819. The large increase reported in 2003 by SIC 2911 (Petroleum refining) facilities was primarily attributed to 1 facility in Indiana.

Facilities in SIC 2865 (Cyclic crudes and intermediates) and SIC 2869 (Industrial organic chemicals, nec) reported significant decreases of phenanthrene, -81.2 percent and – 71.0 percent, respectively.

Exhibit 4. 212. Industry Sector-Level Information for Phenanthrene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
3334	Primary aluminum	2	4,084	2,142	250	1,179	741,470	737,386	18055.5%	40.8%
2819	Industrial inorganic chemicals, nec	1	0	48,330	18,968	0	728,646	728,646	NA	40.1%
2911	Petroleum refining	24	80,645	28,725	8,701	16,516	221,246	140,601	174.3%	12.2%
2865	Cyclic crudes and intermediates	5	272,816	181,781	97,255	387,495	51,255	-221,561	-81.2%	2.8%
2869	Industrial organic chemicals, nec	7	117,000	747,185	83,624	66,903	33,886	-83,114	-71.0%	1.9%
3312	Blast furnaces and steel mills	4	4,447	3,452	3,165	2,023	29,682	25,235	567.5%	1.6%

Exhibit 4.213 shows how phenanthrene was managed by facilities in the 6 industry sectors that reported over 99 percent of this PC in 2003. Onsite treatment was the primary method used by facilities in SIC 3334 (Primary Aluminum) and SIC 2911 (Petroleum refining). For each of these industry sectors, 1 facility accounted for most of the treated quantity of phenanthrene. The facility in SIC 2819 (Industrial inorganic chemicals, nec) managed almost 100 percent of the phenanthrene via onsite energy recovery. About 71 percent of the phenanthrene reported by facilities in SIC 3312 (Blast Furnaces and steel mills) was sent to offsite disposal; offsite

treatment was used for the remaining quantity. Facilities in SIC 2869 (Industrial organic chemicals, nec) treated about 50 percent of their phenanthrene; about 46 percent was managed via offsite energy recovery and the remaining 4 percent was land disposed. The 1 facility in SIC 2865 (Cyclic crudes and intermediates) sent about 68 percent of the phenanthrene to offsite disposal; 25 percent to treatment and the remainder to offsite energy recovery. Some recycling of phenanthrene was reported by facilities in 5 of the 6 industry sectors. One facility in SIC 2869 accounted for 97 percent of the recycling reported for this industry sector.

Exhibit 4. 213. Management of Phenanthrene in Industry Sectors (SIC Codes) (2003)

SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3334	Primary aluminum	1,500	3,984	0	0	735,986	0	837	0
2819	Industrial inorganic chemicals, nec	0	0	728,631	0	14	1	0	0
2911	Petroleum refining	241	900	59	1,124	218,015	907	4,320	461
2865	Cyclic crudes and intermediates	0	34,932	0	3,700	7,748	4,875	1,205	0
2869	Industrial organic chemicals, nec	879	643	0	15,470	4,304	12,590	0	616,538
3312	Blast furnaces and steel mills	0	21,077	0	0	0	8,605	25,360	29,000

Recycling. Exhibit 4.214 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of phenanthrene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 214. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2491 -- Wood preserving												
1	1	Connecticut	0	0	4,022	0	3,800	0	6,973	0	6,764	0
SIC 2865 -- Cyclic crudes and intermediates												
1	4	Alabama	0	0	0	0	0	0	580	0	580	0
SIC 2869 -- Industrial organic chemicals, nec												
1	6	Texas	0	0	0	490,000	0	600,000	0	0	0	0
SIC 3312 -- Blast Furnaces and steel mills												
1	2	New York	7,500	0	8,610	0	9,196	0	8,786	0	8,493	0
3	3	Pennsylvania	152,000	0	401,953	0	480,283	0	53,000	25,109	45,000	0
2	4	Alabama	1,976	0	25,542	0	2,979	0	25,255	0	45,512	0
SIC 3334 --Primary aluminum												

Polycyclic Aromatic Compounds (PACs)

Chemical Information
Polycyclic Aromatic Compounds (PACs), also known as polycyclic aromatic hydrocarbons (PAHs), are a group of over 100 different chemicals that are characterized by hydrogen and carbon arranged in two or more fused benzene rings. PACs originate from both natural and anthropogenic sources. As pure chemicals, PACs generally exist as colorless, white, or pale yellow-green solids. Most PACs are found as a mixture of two or more PACs. The TRI PAC group includes the following chemicals: benzo(a)Anthracene, benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(j,k)fluorine, benzo(k)fluoranthene, benzo(rst)pentaphene, benzo(a)Phenanthrene, benzo(a)pyrene, dibenz(a,h)acridine, dibenz(a,j)acridine, dibenzo(a,h)Anthracene, dibenzo(c,g)carbazole, dibenzo(a,e)fluoranthene, dibenzo(a,e)pyrene, dibenzo(a,h)pyrene, dibenzo(a,l)pyrene, dimethylbenz(a)Anthracene, indeno[1,2,3-cd]pyrene, methylcholanthrene, methylchrysene, nitropyrene
General Uses - Most, if not all, PACs are byproducts of combustion or impurities and not created for use themselves. PACs may be formed as byproducts of both human and natural activities. They are produced or emitted during thermal processes such as the incomplete combustion of organic compounds, pyrolysis, or the processing of fossil fuels, bitumens, or nonfossil fuels. There are presently no known commercial uses for PACs. In the past, some PACs were produced in small quantities for research purposes or used in medicines or in the production of dyes, plastics, or pesticides. Other industrial contributors are the aerospace industry, coke ovens (various activities), petroleum refining, and primary aluminum production. PACs are used to conduct research, and to make dyes, plastics, pesticides and medicines.
Potential Hazards - PACs are harmful by ingestion, inhalation and skin absorption. In addition, most PACs emit toxic fumes when heated to decomposition. Many PACs have caused tumors in laboratory animals that were exposed to the chemicals through their food, from breathing contaminated air and when it was applied to their skin. Although there are no human data that specifically link exposure to PACs to human cancers, PACs are a component of mixtures that have been associated with human cancer. These include coal tar, soots, coke oven emissions and cigarette smoke.

Summary Analysis– Polycyclic Aromatic Compounds (PACs)

- In 2003, the 12,672,606 pounds of PACs represented 16 percent of the total quantity of PCs. In 2003, there was a 52 percent increase in the total quantity of PACs, compared to the quantity reported in 1999. Likewise, there was a 500 percent increase in the number of facilities that reported PACs. However, much of this increase in both quantity and number of reporting facilities may be due to the lower TRI reporting threshold that became effective for the PACs in 2000.
- The use of disposal to manage PACs decreased – to less than 8 percent in 2003. Use of energy recovery increased but has declined since 2002 – to about 47 percent in 2003. Since 1999, treatment of PACs has steadily increased to 46 percent of the total quantity in 2003. There was a steady decrease in the recycling of PACs – from almost 16.6 million pounds in 2000 to about 12.7 million pounds in 2003.
- Of the 661facilities that reported PACs in 2003, 6 facilities reported over 53 percent of the total quantity of this chemical. Twenty facilities reported 87 percent of the total quantity.

- PACs were reported by facilities in every Region. In 2003, over 53 percent of the PACs were reported by facilities in Regions 6. Facilities in Region 4 reported over 28 percent of the total quantity of PACs.
- In 2003, facilities in 7 of the 10 Regions reported a decreased quantity (almost 3.9 million pounds) of PACs, compared to the quantities reported in 2000.
- In 1999-2003, facilities in almost every State and territory reported a PC quantity of PACs. PACs reported by facilities in 10 states accounted for over 90 percent of the total quantity of this chemical in 2003. Facilities in Texas reported about 26 percent of the total quantity of PACs in 2003.
- In 1999-2003, facilities in 124 industry sectors (SIC codes) reported a PC quantity of PACs. In 2003, facilities in 86 of these industry sectors reported PACs. PACs reported by facilities in 11 industry sectors accounted for over 94 percent of the total quantity of this chemical in 2003.

National Trends - Polycyclic Aromatic Compounds (PACs). Exhibit 4.215 presents the total PC quantity (pounds) of PACs in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 12,672,606 pounds of PACs represented 16 percent of the total quantity of PCs. In 2003, there was a 52 percent increase in the total quantity of PACs, compared to the quantity reported in 1999. Likewise, there was a 500 percent increase in the number of facilities that reported PACs. However, much of this increase in both quantity and number of reporting facilities may be due to the lower TRI reporting threshold that became effective for the PACs in 2000. Since 2002, the number of reporting facilities remained relatively constant and there has been a 26 percent decrease in the quantity of PACs reported.

In 1999-2003, the use of disposal to manage PACs decreased – to less than 8 percent in 2003. Use of energy recovery increased but has declined since 2002 – to about 47 percent in 2003. Since 1999, treatment of PACs has steadily increased to 46 percent of the total quantity in 2003. There was a steady decrease in the recycling of PACs – from almost 16.6 million pounds in 2000 to about 12.7 million pounds in 2003.

Exhibit 4. 215. National-Level Information for PACs (1999-2003)

	1999	**2000**	**2001**	**2002**	**2003**	**Percent Change (1999-2003)**	**Management Method - - Percent of Quantity of this Chemical in 2003**
Number of Facilities	125	620	657	639	661	428.8%	
Disposal Quantity (lbs.)	2,314,949	3,219,148	1,608,663	723,233	965,512	-58.3%	7.6%
Energy Recovery Quantity (lbs.)	4,200,601	8,676,829	8,232,000	6,855,734	5,942,302	41.5%	46.9%
Treatment Quantity (lbs.)	1,838,629	4,673,183	4,260,409	5,192,596	5,764,792	213.5%	45.5%
Priority Chemical Quantity (lbs.)	8,354,179	16,569,160	14,101,072	12,771,563	12,672,606	51.7%	
Recycling Quantity (lbs.)	3,500,044	2,898,037	2,647,713	2,332,349	1,617,621	-53.8%	

Exhibit 4.216 shows the number of facilities that reported PACs within various quantity ranges. Of the 661facilities that reported PACs in 2003, 6 facilities reported over 53 percent of the total

quantity of this chemical. Twenty facilities reported 87 percent of the total quantity and 57 facilities accounted for over 97 percent of the totals quantity of PACs in 2003.

Exhibit 4. 216. Distribution of Facilities that Reported Quantities for PACs (2003)

Polycyclic Aromatic Compounds (12,672,606 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	216	less than 0.1%
between 11 - 100 pounds	167	0.1%
between 101 -1,000 pounds	137	0.4%
between 1,001 - 10,000 pounds	84	2.3%
between 10,001 - 100,000 pounds	37	10.2%
between 100,001 - 1 million pounds	14	33.7%
> 1 million pounds	6	53.3%

EPA Region Trends- Polycyclic Aromatic Compounds (PACs). Exhibit 4.217 shows the quantity (pounds) of PACs for facilities in each of the 9 EPA Regions that reported this PC in 1999 to 2003. PACs were reported by facilities in every Region. In 2003, over 53 percent of the PACs were reported by facilities in Regions 6. Facilities in Region 4 reported over 28 percent of the total quantity of PACs. As noted above, in 2000, a lower TRI reporting threshold became effective for the PACs. As such, changes are linked to the 2000 reporting year rather than 1999.

In 2003, facilities in 7 of the 10 Regions reported a decreased quantity (almost 3.9 million pounds) of PACs, compared to the quantities reported in 2000. For example, facilities in Region 4 reported 3 million less pounds of PACs in 2003 than in 2000 and Region 10 facilities reported 2 million less pounds. The quantity of PACs increased in Regions 1, 6, and 7. Most of the 1.4 million pounds increase reported by facilities in Region 6 was reported by 1 facility in Texas

Exhibit 4. 217. Quantity of PACs Reported by EPA Regions (1999-2003)

EPA REGION	**1999**	**2000**	**2001**	**2002**	**2003**	**Percent Change in Quantity (2000-2003)**	**Percent Of the Total Priority Chemical quantity (2003)**
6	1,106,580	5,307,807	5,220,598	7,625,930	6,723,497	26.7%	53.06%
4	4,488,951	6,592,650	4,724,594	2,088,124	3,576,054	-45.8%	28.22%
3	251,119	827,552	1,273,175	633,639	733,165	-11.4%	5.79%
5	768,399	1,122,189	995,992	974,765	695,527	-38.0%	5.49%
1	25,607	185,086	541,959	614,364	607,585	228.3%	4.79%
2	72,712	218,069	197,102	144,690	196,815	-9.7%	1.55%
8	745	156,567	127,706	54,714	62,894	-59.8%	0.50%
10	1,618,484	2,114,163	977,916	616,841	40,703	-98.1%	0.32%
7	2,910	26,634	28,108	13,079	32,320	21.3%	0.26%
9	18,672	18,443	13,921	5,417	4,046	-78.1%	0.03%
Total	**8,354,179**	**16,569,160**	**14,101,072**	**12,771,563**	**12,672,606**	**-23.5%**	

Exhibit 4. 218. Distribution of Facilities Reporting polycyclic aromatic compounds in 2003 & Quantities of polycyclic aromatic compounds Reported in 2003 per Region (note: The three facilities in AS and MP are not mapped)

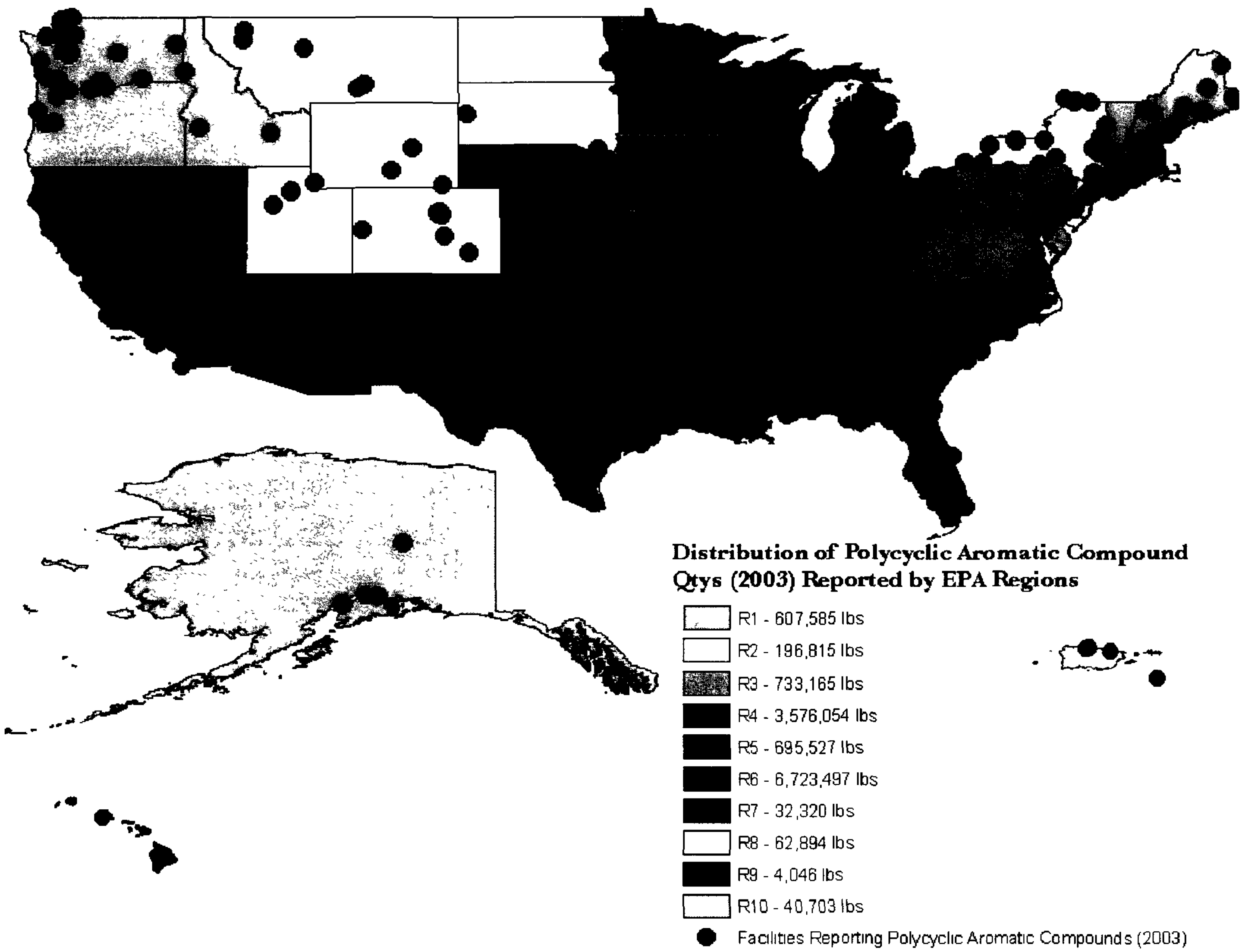


Exhibit 4.219 shows how PACs were managed by facilities in each of the 10 EPA Regions in 2003. Region 6 facilities used onsite energy recovery for about 52 percent of the PACs and treatment (primarily onsite) for another 44 percent of the PACs quantity. Region 4 facilities used onsite energy recovery for about 37 percent of the PACs and treatment (primarily onsite) for another 58 percent of the PACs quantity. Over 55 percent of the PACs in Region 3 were managed via offsite disposal; 35 percent by onsite energy recovery. Facilities in Region 7 used treatment (primarily onsite) for about 70 percent of the PACs; over 17 percent went to offsite land disposal and 9 percent to onsite energy recovery. Almost 97 percent of the PACs in Region 1 were managed using energy recovery (primarily onsite). In Region 2, facilities reported that treatment (primarily onsite) was used for about 76 percent of the PACs; 21 percent went to energy recovery (primarily onsite). About 87 percent of the PACs reported by facilities in

Region 8 went to energy recovery (primarily onsite). The PACs in Region 10 were managed by treatment (41 percent – mostly onsite), energy recovery (30 percent – mostly offsite), and land disposal (over 29 percent –mostly offsite). Over 76 percent of the PACs reported by facilities in Region 7 were treated, primarily onsite. Almost 64 percent of the PACs in Region 9 were land disposed (mostly onsite) and 35 percent was treated offsite. In 2003, recycling of PACs was reported in each Region with most of the recycling reported by facilities in Regions 3,4,5, and 6.

Exhibit 4. 219. Management Methods for PACs, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	**Offsite Disposal**	**Onsite Energy Recovery**	**Offsite Energy Recovery**	**Onsite Treatment**	**Offsite Treatment**	**Onsite Recycling**	**Offsite Recycling**
6	1,797	236,911	3,504,952	38,530	2,909,801	31,506	506,280	353,087
4	52,127	110,140	1,337,056	8,430	2,046,712	21,589	269,063	31,876
3	517	405,974	259,257	8,289	36,770	22,359	235,757	52,248
5	3,520	119,415	25,583	61,804	479,624	5,581	153,831	712
1	1,549	2,810	586,027	1,274	15,348	578	0	78
2	119	7,252	39,070	1,769	145,793	2,812	2,508	119
8	3,341	1,112	53,288	1,464	90	3,598	780	305
10	1,091	10,871	2,477	9,683	16,144	438	10,611	51
7	83	4,319	2,046	1,218	22,016	2,638	153	144
9	1,917	650	0	83	1	1,396	0	21
Total	66,061	899,451	5,809,757	132,545	5,672,299	92,493	1,178,982	438,639

State Trends- Polycyclic Aromatic Compounds (PACs). In 1999-2003, facilities in almost every State and territory reported a PC quantity of PACs. Exhibit 4.220 shows the quantities of PACs reported in 10 states where facilities accounted for over 90 percent of the total quantity of this chemical in 2003. Facilities in Texas reported about 26 percent of the totals quantity of PACs in 2003. As noted above, in 2000, a lower TRI reporting threshold became effective for the PACs. As such, changes are linked to the 2000 reporting year rather than 1999. A decreased quantity of PACs was reported in 2 of these 10 states, Tennessee (-3.6 million pounds) and North Carolina (- 110,000 pounds). The quantity of PACs increased in the other 8 states. Many of the increased quantities were substantial, including almost 912,000 pounds reported by Texas facilities and 806,000 pounds by facilities in Kentucky. An increase of more than 534,000 pounds was reported by facilities in Maine.

Exhibit 4. 220. State-Level Information for PACs (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Texas	403,577	2,401,010	2,435,035	3,403,118	3,312,688	911,677	38.0%	26.1%
Louisiana	36,262	1,954,173	1,928,611	2,175,615	2,271,946	317,773	16.3%	17.9%
Kentucky	192,649	727,411	709,038	865,554	1,533,399	805,988	110.8%	12.1%
Tennessee	4,163,305	4,843,397	3,223,956	555,317	1,274,029	-3,569,368	-73.7%	10.1%
Arkansas	622,457	811,269	630,017	749,267	824,374	13,105	1.6%	6.5%
Pennsylvania	72,506	112,944	350,488	306,730	567,362	454,418	402.3%	4.5%
Maine	0	1,146	474,454	541,375	525,393	524,247	45746.3%	4.1%
Indiana	44,794	397,740	365,449	440,966	460,268	62,528	15.7%	3.6%
North Carolina	9,000	495,362	231,354	221,772	385,129	-110,233	-22.3%	3.0%
Oklahoma	44,284	141,351	226,911	1,297,908	314,445	173,094	122.5%	2.5%

Exhibit 4. 221. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Texas and Tennessee

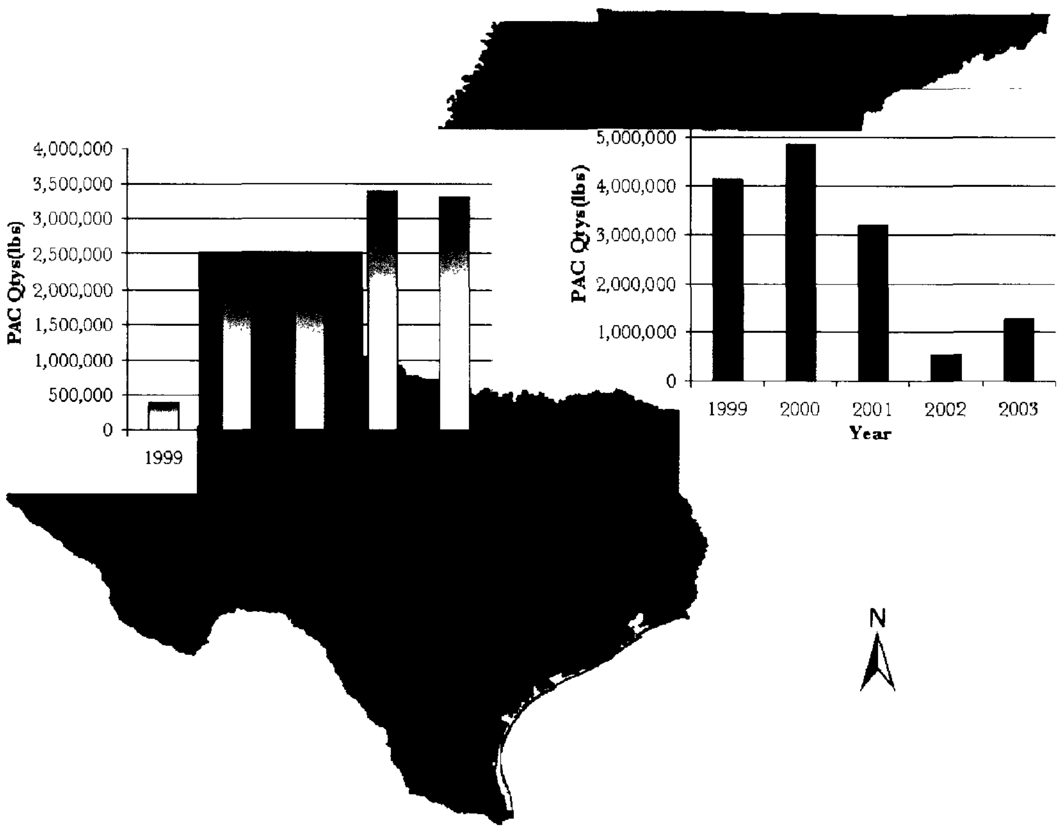


Exhibit 4.223 shows how PACs were managed by facilities in the 10 states that reported over 90 percent of the total PC quantity of this chemical in 2003. Most of the facilities in these states used onsite energy recovery and/or onsite treatment for the majority of the PACs. For example:

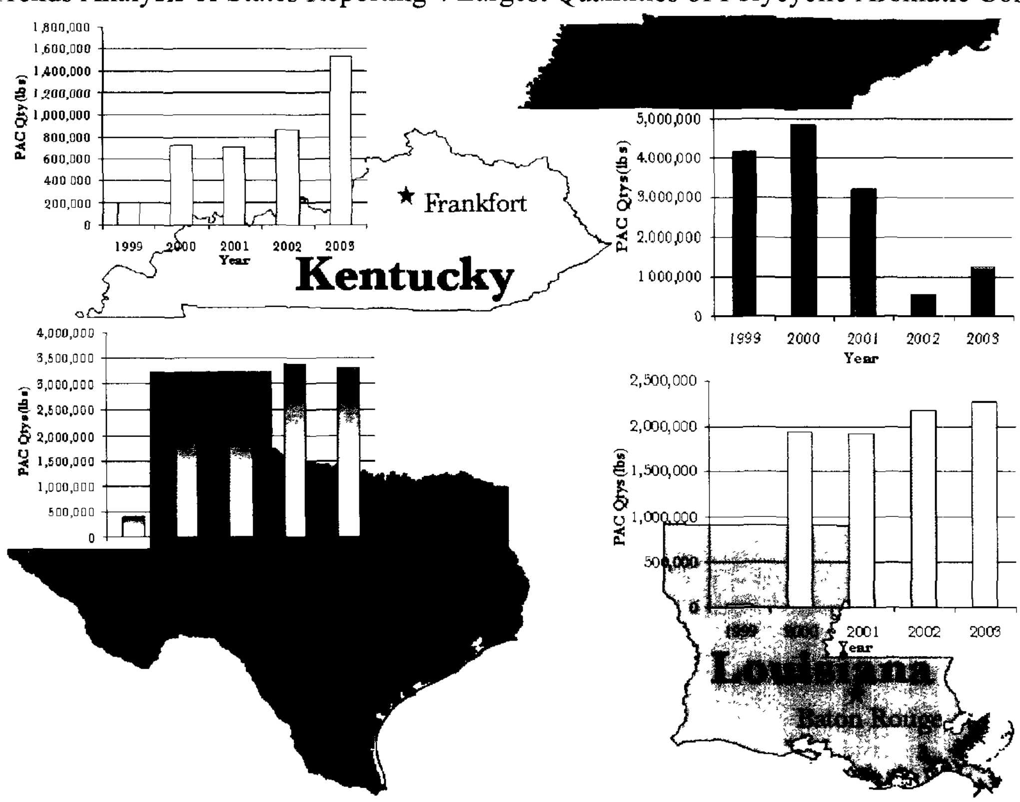
Onsite Energy Recovery

- Texas – 59.6 percent of PACs
- Louisiana – 62.9 percent of PACs
- Tennessee – 77.1 percent of PACs
- Maine – 99.7 percent of PACs
- Pennsylvania – 45.7 percent of PACs

Onsite Treatment

- Texas – 39.6 percent of PACs
- Kentucky – 82.9 percent of PACs
- Arkansas – 98.1 percent of PACs
- Louisiana – 33 percent of PACs
- Indiana – 98 percent of PACs
- North Carolina – 98.4 percent of PACs
- Tennessee – 19.7 percent of PACs

Exhibit 4.222. Trends Analysis of States Reporting 4 Largest Quantities of Polycyclic Aromatic Compounds (2003)



Facilities in Pennsylvania and Oklahoma used offsite disposal to manage a significant portion of their PACs—50 percent and 46.5 percent, respectively. Significant quantities of PACs were recycled in many of these states in 2003. Most of the recycled quantities were reported by facilities in Louisiana, Pennsylvania, Texas, Oklahoma, and Indiana.

Exhibit 4. 223. Management of PACs in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Texas	3,312,688	998	7,828	1,972,863	12,769	1,311,107	7,122	260,981	17,339
Louisiana	2,271,946	395	81,952	1,429,319	303	749,416	10,562	160,299	335,356
Kentucky	1,533,399	6	6,982	248,460	2,296	1,271,286	4,369	6,300	415
Tennessee	1,274,029	36,642	744	982,517	2,156	251,005	965	2,806	25,195
Arkansas	824,374	147	864	0	997	808,766	13,599	0	7
Pennsylvania	567,362	101	283,831	259,226	3,114	15,065	6,026	233,124	52,174
Maine	525,393	127	915	523,972	48	10	321	0	1
Indiana	460,268	2	8,876	0	5	450,956	428	80,514	1
North Carolina	385,129	141	5,304	0	341	378,989	353	0	135
Oklahoma	314,445	256	146,224	102,770	24,461	40,511	223	85,000	384

Industry Sector (SIC) Trends- Polycyclic Aromatic Compounds (PACs). In 1999-2003, facilities in 124 industry sectors (SIC codes) reported a PC quantity of PACs. In 2003, facilities in 86 of these industry sectors reported PACs. Exhibit 4.224 shows the quantities of PACs reported by 11 industry sectors where facilities accounted for over 94 percent of the total quantity of this chemical in 2003. Again, as noted previously, in 2000, a lower TRI reporting threshold became effective for the PACs. As such, observed changes are linked to the 2000 reporting year rather than 1999. In 2003, decreased quantities of PACs were reported by facilities in 3 of these 11 industry sectors: SIC 3624 --Carbon and graphite products (-3.7 million pounds), SIC 3334 – Primary Aluminum (-1.7 million pounds), and SIC 2865-Cyclic crudes and intermediates (-249,000 pounds). Increased quantities of PACs were reported for the other 8 industry sectors. Facilities in SIC 2911 (Petroleum refining) reported an increase of almost 1 million pounds. Large increase also were reported by facilities in SIC 3312 --Blast Furnaces and steel mills and SIC 2824—Organic fibers, noncellulosic.

Exhibit 4. 224. Industry Sector-Level Information for PACs (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (2000-2003)	Percent Change in Quantity (2000-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2895	Carbon black	19	0	3,708,379	3,417,056	3,879,720	4,008,847	300,468	8.1%	31.6%
3624	Carbon and graphite products	18	5,065,055	6,415,783	4,292,839	1,753,730	2,723,779	-3,692,004	-57.5%	21.5%
2911	Petroleum refining	84	101,353	656,112	878,206	2,663,901	1,649,830	993,718	151.5%	13.0%
3334	Primary aluminum	14	2,098,213	3,123,285	1,798,358	1,394,522	1,436,079	-1,687,206	-54.0%	11.3%
2992	Lubricating oils and greases	1	0	356,394	318,494	421,399	444,658	88,264	24.8%	3.5%
2037	Frozen fruits and vegetables	1	0	0	345,565	386,531	381,671	381,671	NA	3.0%
2491	Wood preserving	46	0	297,699	578,814	409,883	368,647	70,948	23.8%	2.9%
3312	Blast furnaces and steel mills	6	43,282	20,928	21,963	14,585	279,226	258,298	1234.2%	2.2%
3011	Tires and inner tubes	37	169,892	204,787	263,445	173,853	250,875	46,088	22.5%	2.0%
2865	Cyclic crudes and intermediates	10	395,391	488,224	414,759	518,982	239,008	-249,217	-51.0%	1.9%
2824	Organic fibers, noncellulosic	4	0	- 5,008	26,975	87,238	183,812	178,804	3570.3%	1.5%

Exhibit 4.225 shows how PACs were managed by facilities in the 11 industry sectors that reported over 94 percent of this PC in 2003. Most of the facilities in these states used onsite energy recovery and/or onsite treatment for the majority of the PACs.

For example:

Onsite Treatment

- SIC 3334 (Primary Aluminum) – 98.1 percent of PACs
- SIC 3624 (Carbon and graphite products) – 52.5 percent of PACs
- SIC 2911 (Petroleum refining) – 83.7 percent of PACs
- SIC 2992 (Lubricating oils and greases) – 100 percent of PACs
- SIC 2824 (Organic fibers, noncellulosic) – 55.4 percent of PACs

Onsite Energy Recovery

- SIC 2895 (Carbon Black) – 84.7 percent of PACs
- SIC 3624 (Carbon and graphite products) – 45.2 percent of PACs
- SIC 2037 (Frozen fruits and vegetables) – 100 percent of PACs
- SIC 2491 (Wood Preserving) – 69.8 percent of PACs
- SIC 2824 (Organic fibers, noncellulosic) – 44.6 percent of PACs

Offsite Disposal

- SIC 3312 (Blast Furnaces and steel mills) – 98.2 percent of PACs
- SIC 3011 (Tires and inner tubes) – 98.4 percent of PACs
- SIC 2865 (Cyclic crudes and intermediates) – 93.0 percent of PACs

Exhibit 4. 225. Management of PACs in Industry Sectors (SIC Codes) (2003)

SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2895	Carbon black	655	1,751	3,394,989	0	611,300	152	0	0
3624	Carbon and graphite products	36,588	18,697	1,230,988	1,729	1,430,923	4,854	265,384	25,476
2911	Petroleum refining	3,998	17,924	156,188	83,150	1,380,757	7,812	370,411	8,148
3334	Primary aluminum	2,429	23,167	0	0	1,408,576	1,907	136,874	0
2992	Lubricating oils and greases	0	0	0	0	444,658	0	0	0
2037	Frozen fruits and vegetables	0	0	381,671	0	0	0	0	0
2491	Wood preserving	0	33,402	257,257	28,778	7,630	41,580	18,830	0
3312	Blast furnaces and steel mills	0	274,218	0	0	5,007	1	223,516	51,000
3011	Tires and inner tubes	4	246,907	0	2,893	0	1,071	86,200	7,331
2865	Cyclic crudes and intermediates	0	222,276	2,076	215	1,010	13,431	5,211	0
2824	Organic fibers, noncellulosic	0	11	82,007	0	101,794	0	0	0

Recycling. Exhibit 4.226 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of PACs in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 226. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 2491 -- Wood preserving												
1	1	Connecticut	0	0	345	0	296	0	614	0	596	0
SIC 2865 -- Cyclic crudes and intermediates												
1	10	Oregon	150,000	0	0	0	0	0	0	0	0	0
SIC 2869 -- Industrial organic chemicals, nec												
1	6	Texas	0	0	0	39,000	0	48,000	0	48,000	0	47,900
SIC 2911 -- Petroleum refining												
1	6	Louisiana	0	0	0	4,122	0	0	0	7,777	0	47
2	9	California	0	0	0	1	0	508	0	0	11,000	0
SIC 2951 -- Asphalt paving mixtures and blocks												
1	1	Massachusetts	0	0	1,223	0	793	0	1,961	0	2,130	0
3	1	New Hampshire	0	0	0	0	125	0	778	0	229	0
2	4	North Carolina	0	0	255	0	0	0	0	0	161	0
1	4	Georgia	0	0	10,126	0	0	0	0	0	0	0
2	4	Florida	0	0	0	0	0	0	1,424	0	1,240	0
3	4	Tennessee	0	0	809	0	646	0	677	0	0	0
2	4	Mississippi	0	0	414	0	829	0	555	0	564	0
1	5	Ohio	0	0	0	117	0	96	0	170	0	193
1	6	Oklahoma	0	0	107	0	0	0	0	0	2	0
1	6	Texas	0	516	0	8	0	0	0	0	0	0
1	7	Kansas	0	0	278	0	0	0	0	0	0	0
SIC 2952 -- Asphalt felts and coatings												
1	3	Maryland	0	0	0	507	0	0	0	0	0	0
1	5	Indiana	0	0	0	0	0	0	0	486	0	330
1	5	Illinois	0	0	0	113	0	113	0	143	0	0
SIC 3011-- Tires and inner tubes												
2	4	South Carolina	0	0	0	0	0	0	2,200	22,151	0	0
2	4	Georgia	0	0	0	2,300	0	0	0	0	0	331
1	5	Ohio	0	0	0	380	0	0	0	0	0	0
SIC 3081-- Unsupported plastics, film, and sheet												
1	2	New Jersey	0	0	0	0	0	0	0	263	0	0
SIC 3312 -- Blast Furnaces and steel mills												
1	2	New York	12,000	0	13,801	0	14,740	0	14,083	0	13,613	0
1	3	Pennsylvania	12,000	0	19,160	0	455	0	521	0	658	0
1	4	Alabama	2,452	0	2,888	0	3,697	0	3,970	0	4,625	0
SIC 3334 --Primary aluminum												
1	8	Montana	0	0	2,008	0	0	0	0	0	0	0
SIC 3612 -- Transformers, except electronic												
1	6	Wisconsin	0	0	0	14,586	0	0	0	0	0	0
SIC 3645 --Residential lighting fixtures												
1	5	Ohio	0	0	0	200	0	0	0	0	0	0
SIC 5171-- Petroleum bulk stations and terminals												
1	1	Maine	0	0	0	463	0	0	0	0	0	0
2	2	New Jersey	59	576	0	0	2	576	0	240	0	3
1	2	New York	0	0	0	3,802	0	0	0	0	0	0
2	3	Virginia	0	0	0	3	0	0	0	22	0	160
1	4	Tennessee	0	0	0	291	0	0	0	0	0	0
1	6	Texas	0	0	0	0	462	0	481	0	303	0
1	6	New Mexico	0	0	0	0	0	121	0	133	0	0

Quintozene

Chemical Information
It is a white or colorless crystalline solid with a characteristic pleasant odor.
CAS Number - 82-68-8
Alternate Names - nitroPentachlorobenzene, quintobenzene, pentachloronitrobenzene
General Uses - Quintozene is used as a fungicide for seed treatment, soil application, and as a slime inhibitor in industrial waters. It is also used to prevent the growth of fungi on grass, lawn flowers, ornamental crops, shrubs and in gardens.
Potential Hazards - This chemical is harmful if swallowed, inhaled or absorbed through the skin. It may cause irritation. In addition, this chemical emits toxic fumes of chlorine, carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride gas and phosgene when heated to decomposition. Potential liver toxicity (EPA Integrated Risk Information System – IRIS).

Summary Analysis– Quintozene

- In 2003, the 604,434 pounds of quintozene accounted for 0.8 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was about a 166 percent increase in the quantity of quintozene. The number of facilities that reported quintozene between 1999 and 2000 remained relatively constant, with 6 facilities reporting this chemical in 2003. Two of these facilities reported nearly 99 percent of the total quantity.
- Since 1999, disposal of quintozene decreased by almost 84 percent – to less than 700 pounds in 2003. Except for a large increase in 2000, the use of energy recovery for quintozene remained relatively constant and was used for 37 percent of the total quantity of quintozene, or nearly 224,000 pounds in 2003. Treatment increased dramatically in 2003 when facilities treated over 380,000 pounds of quintozene. Since 1999, recycling of quintozene steadily decreased – only 105 pounds were recycled in 2003.
- Facilities in Regions 6 and 9 reported almost 99 percent of the total quantity of quintozene in 2003.
- A facility in Arkansas accounted for 61 percent of the total quantity of this chemical in 2003. One facility in California accounted for almost 38 percent of the total quantity.
- In 2003, 6 facilities in 2 industry sectors reported a PC quantity of quintozene. One facility in the SIC 9511 (Air, water, and solid waste management) industry sector accounted for 61percent of this chemical. Five facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) reported 39 percent of the quintozene.

National Trends – Quintozene. Exhibit 4.227 presents the total PC quantity (pounds) of quintozene reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 604,434 pounds of quintozene accounted for 0.8 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was about a 166 percent increase in the quantity of quintozene. The number of facilities that reported quintozene between 1999 and 2000 remained relatively constant, with 6 facilities reporting this chemical in 2003. Since 1999, disposal of quintozene decreased by almost 84 percent – to less than 700 pounds in 2003. Except for a large increase in 2000, the use of energy recovery for quintozene remained relatively constant. In 2003, energy recovery was used for 37 percent of the total quantity of quintozene, or nearly 224,000 pounds. Treatment of increased dramatically in 2001 and increased even more in 2003 when facilities treated over 380,000 pounds of quintozene. Since 1999, recycling of quintozene steadily decreased – only 105 pounds were recycled in 2003.

Exhibit 4. 227. National-Level Information for Quintozene (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	5	7	8	5	6	20.0%	
Disposal Quantity (lbs.)	4,257	4,999	6,025	21	693	-83.7%	0.1%
Energy Recovery Quantity (lbs.)	214,698	558,653	205,972	195,927	223,510	4.1%	37.0%
Treatment Quantity (lbs.)	8,126	6,361	279,101	216,282	380,231	4579.2%	62.9%
Priority Chemical Quantity (lbs.)	227,081	570,013	491,098	412,230	604,434	166.2%	
Recycling Quantity (lbs.)	2,371	2,299	2,365	184	105	-95.6%	

Exhibit 4.228 shows the number of facilities that reported quintozene within various quantity ranges. Of the 6 facilities that reported quintozene in 2003, 2 facilities reported nearly 99 percent of the total quantity.

Exhibit 4. 228. Distribution of Facilities that Reported Quantities for Quintozene (2003)

Quintozene (604,434 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	1	0.1%
between 1,001 - 10,000 pounds	2	1.2%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	2	98.7%
> 1 million pounds	0	0.0%

EPA Region Trends- Quintozene. Exhibit 4.229 shows the quantity (pounds) of quintozene reported by facilities in 5 EPA Regions in 1999 to 2003. In 2003, facilities in 4 of the Regions reported quintozene (Exhibit 4.230). Since 1999, facilities in Region 5 steadily decreased their quantity of quintozene – none was reported in 2002 or 2003. Facilities in Regions 6 and 9 reported almost 99 percent of the total quantity of quintozene in 2003. Facilities in Region 6 reported the largest quantity of quintozene in 2003, accounting for over 61 percent of the total quantity.

Exhibit 4. 229. Quantity of Quintozene Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
6	0	262,247	276,565	207,123	369,297	NA	61.1%
9	214,698	296,406	205,972	195,927	227,957	6.2%	37.7%
7	47	3,388	1,654	7,210	4,014	8440.4%	0.7%
4	2,443	751	931	1,970	3,166	29.6%	0.5%
5	9,893	7,221	5,976	0	0	NA	0.0%
Total	227,081	570,013	491,098	412,230	604,434	166.2%	

Exhibit 4. 230. Distribution of Facilities Reporting Quintozene in 2003 & Quantity of Quintozene Reported in 2003 per Region

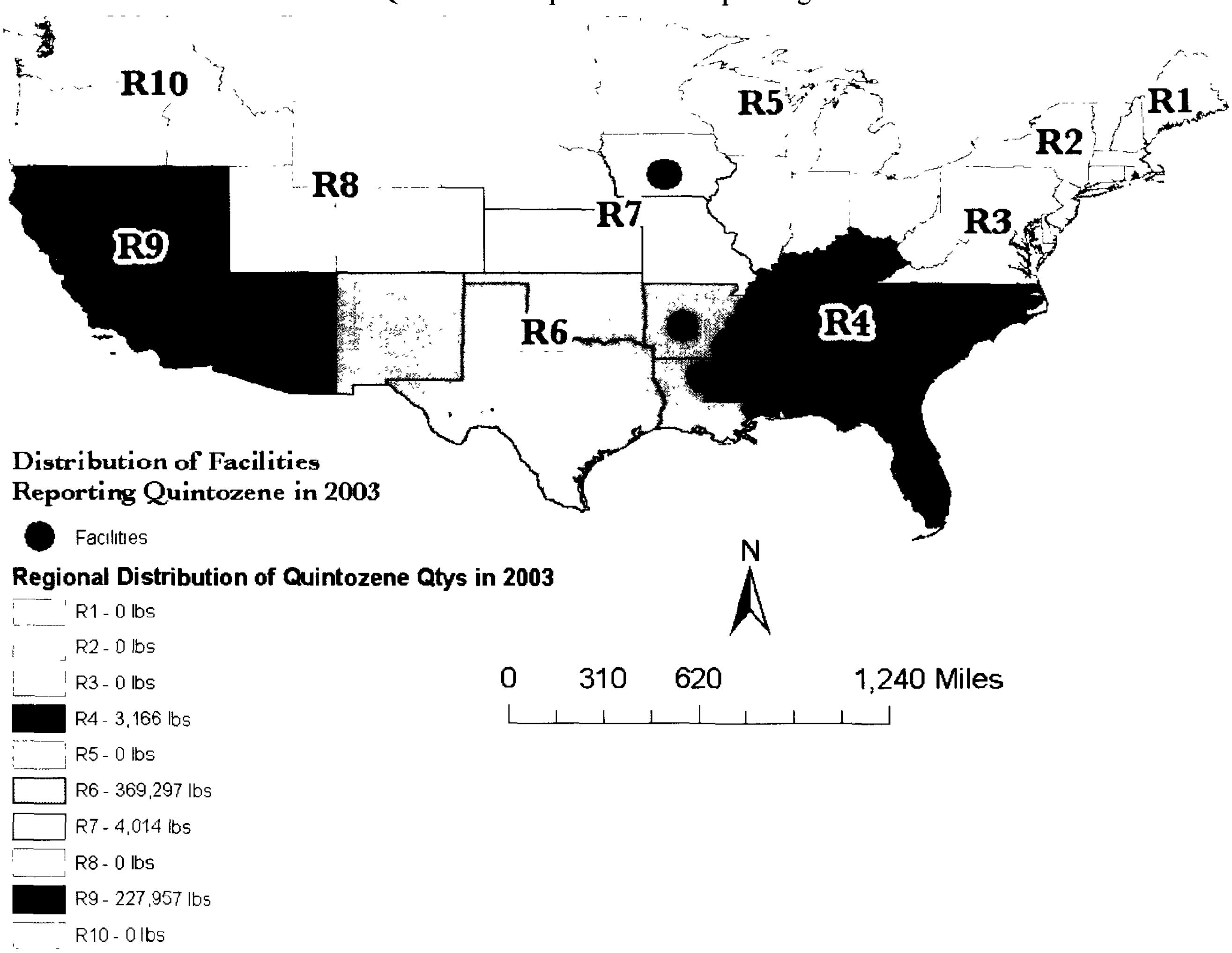


Exhibit 4.231 shows how quintozene was managed by facilities in 4 EPA Regions with facilities that reported this chemical in 2003. In 2003, about 63 percent of the PC quantity of quintozene was sent to offsite treatment, primarily by facilities in Regions 4, 6, and 7. Although the facility

in Region 9 also sent some of the quintozene to offsite treatment, over 98 percent was sent to offsite energy recovery. In 2003, very little recycling of quintozene was reported by facilities in these Regions.

Exhibit 4. 231. Management Methods for Quintozene, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
6	679	0	0	0	0	368,618	0	0
9	0	0	0	223,510	0	4,447	0	0
7	0	14	0	0	0	4,000	105	0
4	0	0	0	0	0	3,166	0	0

State Trends- Quintozene. Exhibit 4.232 shows the quantity of quintozene, between 1999 and 2003, that was reported by facilities in 6 states. One facility in Arkansas accounted for 61 percent of the total quantity of this chemical in 2003. One facility in California accounted for almost 38 percent of the total quantity. Since 1999, Arkansas facilities reported a significant increase of quintozene while facilities in Ohio no longer reported this chemical. (Exhibit 4.233). Except for facilities in Ohio, there were increased quantities reported by facilities in every other Region.

Exhibit 4. 232. State-Level Information for Facilities Reporting Quintozene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Arkansas	0	262,247	275,976	207,123	368,618	368,618	NA	61.0%
California	214,698	296,406	205,972	195,927	227,957	13,259	6.2%	37.7%
Georgia	2,443	751	931	1,970	3,166	723	29.6%	0.5%
Iowa	47	3,388	1,654	7,210	4,014	3,967	8440.4%	0.7%
Louisiana	0	0	589	0	679	679	NA	0.1%
Ohio	9,893	7,221	5,976	0	0	-9,893	-100.0%	0.0%

Exhibit 4. 233. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Arkansas and Ohio

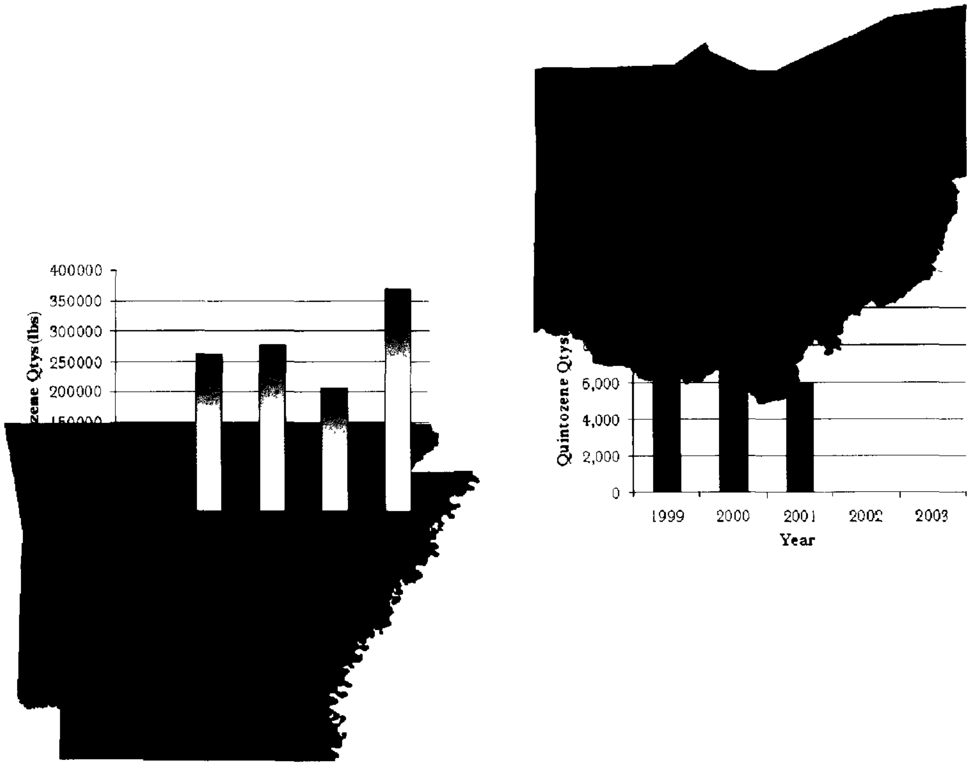
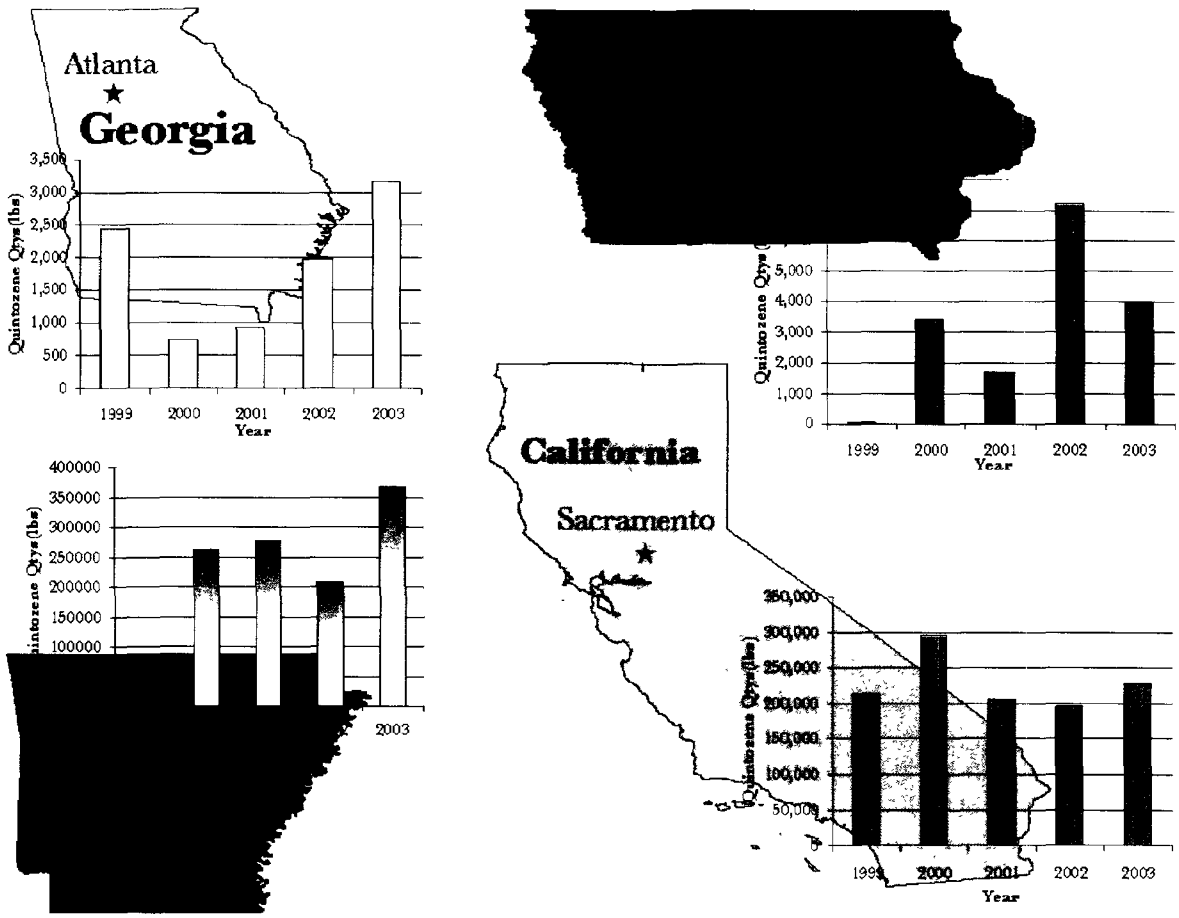


Exhibit 4.234 shows how quintozene was managed by facilities in the 5 states that reported a quantity of this PC in 2003. Virtually the entire quantity of quintozene reported by facilities in Arkansas, Georgia, and Iowa was sent to offsite treatment. Although the facility in California also sent some of the quintozene to offsite treatment, over 98 percent of the quantity was sent to offsite energy recovery. The entire quantity of quintozene reported by the facility in Louisiana was disposed onsite. Very little recycling of quintozene was reported in 2003.

Exhibit 4. 234. Management of Quintozene in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Arkansas	368,618	0	0	0	0	0	368,618	0	0
California	227,957	0	0	0	223,510	0	4,447	0	0
Georgia	3,166	0	0	0	0	0	3,166	0	0
Iowa	4,014	0	14	0	0	0	4,000	105	0
Louisiana	679	679	0	0	0	0	0	0	0

Exhibit 4. 235. Trends Analysis of States Reporting 4 Largest Quantities of Quintozene (2003)



Industry Sector (SIC) Trends- Quintozene. Exhibit 4.236 shows the PC quantity (pounds) of quintozene by 3 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. In 2003, 6 facilities in 2 industry sectors reported a PC quantity of quintozene. One facility in the SIC 9511 (Air, water, and solid waste management) industry sector accounted for 61percent of this chemical in 2003. Five facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) reported 39 percent of the quintozene in 2003. One facility, located in California, accounted for about 97 percent of the total quantity reported by facilities in the SIC 2879 industry sector.

Exhibit 4. 236. Industry Sector-Level Information for Quintozene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
9511	Air, water, and solid waste management	1	0	262,247	275,976	207,123	368,618	368,618	61.0%
2879	Pesticides and agricultural chemicals, nec	5	217,188	300,545	209,146	205,107	235,816	18,628	39.0%
2875	Fertilizers, mixing only	0	9,893	7,221	5,976	0	0	-9,893	0.0%

Exhibit 4.237 shows how quintozene was managed by the 6 facilities in the 2 industry sectors that reported a quantity of this PC in 2003. The entire quantity of quintozene reported by the facility in SIC 9511 was sent to offsite treatment. One facility used offsite energy recovery for the largest quantity of quintozene; 2 other facilities managed 100 percent of the quintozene via offsite treatment, and two facilities used disposal.

Exhibit 4. 237. Management of Quintozene in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
9511	Air, water, and solid waste management	0	0	0	0	0	368,618	0	0
2879	Pesticides and agricultural chemicals, nec	679	14	0	223,510	0	11,613	105	0

Recycling. Exhibit 4.238 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of quintozene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 238. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2875 -- Fertilizers, mixing only												
1	5	Ohio	0	0	0	0	0	0	6,365	0	0	0

Trifluralin

Chemical Information
Trifluralin is a yellow-orange crystalline solid
CAS Number - 1582-09-8
Alternate Names - 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-benzamine, benzeneamine
General Uses - Trifluralin is an herbicide used primarily on cotton and soybean crops. trifluralin is a yellow-orange crystalline solid. Production of trifluralin has declined since restrictions on product formulation were implemented in 1982 due to carcinogenicity and mutagenicity concerns. It is used on soybean crops, cotton, wheat, alfalfa, sunflowers and many other crops.
Potential Hazards - This chemical is an irritant of the eyes and skin. It emits toxic fumes of fluorine and nitrogen oxides when heated to decomposition. Potential liver toxicity and blood effects (EPA Integrated Risk System --IRIS).

Summary Analysis– Trifluralin

- The 56,826 pounds of trifluralin reported in 2003 accounted for 0.1 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was over a 35 percent decrease in the quantity of trifluralin.
- The number of facilities that reported trifluralin between 1999 and 2000 increased by 50 percent; 12 facilities reported this chemical in 2003. One facility reported nearly 56 percent of the total quantity. Seven of the facilities accounted for 97 percent of the total quantity.
- In 2003, about 90 percent of the trifluralin was treated. Since 1999, disposal of trifluralin decreased by almost 62 percent – to 5,634 pounds in 2003. In 1999-2003, energy recovery was only used for relatively small quantities of trifluralin and in 2003, no energy recovery was reported. Since 1999, recycling of trifluralin steadily decreased – only 159 pounds were recycled in 2003.
- In 2003, facilities in only 3 of the Regions reported trifluralin, with facilities in Region 7 reporting 83 percent of the total quantity. The quantity of trifluralin reported by Region 7 facilities has steadily decreased since 2000.
- In 2003, facilities in 3 states (Iowa, Missouri, and Texas) reported 90 percent of the total quantity of trifluralin. Facilities in Iowa reported almost 59 percent of the total quantity. One facility reported almost 96 percent of the quantity reported by facilities in Iowa.
- trifluralin was reported by facilities in 7 industry sectors in 1999-2003. In 2003, 12 facilities in 5 industry sectors reported a PC quantity of trifluralin. Eight of these 12 facilities, in SIC 2879 (Pesticides and agricultural chemicals, nec), reported over 90 percent of the trifluralin in 2003. Facilities in 5 of these industry sectors did not report trifluralin until 2000. This may be due to the lower TRI reporting threshold that became effective for trifluralin in 2000. Since 2000, these facilities, for the most part, reported a decrease or zero quantity of trifluralin in 2003.

National Trends – Trifluralin. Exhibit 4.239 presents the total PC quantity (pounds) of trifluralin reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 56,826 pounds of trifluralin accounted for 0.1 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was over a 35 percent decrease in the quantity of trifluralin. The number of facilities that reported trifluralin between 1999 and 2000 increased by 50 percent; 12 facilities reported this chemical in 2003.

Since 1999, most of the trifluralin was treated. Disposal of trifluralin decreased by almost 62 percent – to 5,634 pounds in 2003. Energy recovery was only used for relatively small quantities of trifluralin and in 2003, no energy recovery was reported. Since 1999, recycling of trifluralin steadily decreased – only 159 pounds were recycled in 2003.

Exhibit 4. 239. National-Level Information for Trifluralin (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999 -2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	8	16	17	16	12	50.0%	
Disposal Quantity (lbs.)	14,631	11,030	13,193	12,167	5,634	-61.5%	9.9%
Energy Recovery Quantity (lbs.)	0	228	626	1,011	0	NA	0.0%
Treatment Quantity (lbs.)	73,189	77,227	79,670	50,377	51,192	-30.1%	90.1%
Priority Chemical Quantity (lbs.)	87,820	88,485	93,489	63,555	56,826	-35.3%	
Recycling Quantity (lbs.)	2,000	2,000	2,001	5,675	159	-92.1%	

Exhibit 4.240 shows the number of facilities that reported trifluralin within various quantity ranges. Of the 12 facilities that reported trifluralin in 2003, 1 facility reported nearly 56 percent of the total quantity. Seven of the facilities accounted for 97 percent of the total quantity.

Exhibit 4. 240. Distribution of Facilities that Reported Quantities for Trifluralin (2003)

Trifluralin (56,826 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	2	0.2%
between 101 -1,000 pounds	3	2.8%
between 1,001 - 10,000 pounds	6	41.3%
between 10,001 - 100,000 pounds	1	55.7%
between 100,001 - 1 million pounds	0	0.0%
> 1 million pounds	0	0.0%

EPA Region Trends- Trifluralin. Exhibit 4.241 shows the quantity (pounds) of trifluralin reported in 7 EPA Regions by facilities in 1999 to 2003. In 2003, facilities in only 3 of the Regions reported trifluralin. Facilities in Region 7 reported 83 percent of the total quantity however, the reported quantity has steadily decreased since 2000. In 2003, the quantity reported by facilities in Regions 5 and 6 increased significantly. In 1999, facilities in Region 4 had the second largest quantity of trifluralin but none was reported in 2003.

Exhibit 4. 241. Quantity of Trifluralin Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
7	66,015	85,608	80,530	54,272	47,178	-28.5%	83.0%
6	0	228	627	1,013	6,522	NA	11.5%
5	2,255	1,159	713	1,886	3,126	38.6%	5.5%
2	0	0	206	0	0	NA	0.0%
4	19,550	872	10,415	5,764	0	-100.0%	0.0%
9	0	375	998	620	0	NA	0.0%
10	0	243	0	0	0	NA	0.0%
Total	87,820	88,485	93,489	63,555	56,826	-35.3%	

Exhibit 4. 242. Distribution of Facilities Reporting Trifluralin in 2003 & Quantity of Trifluralin Reported in 2003 per Region

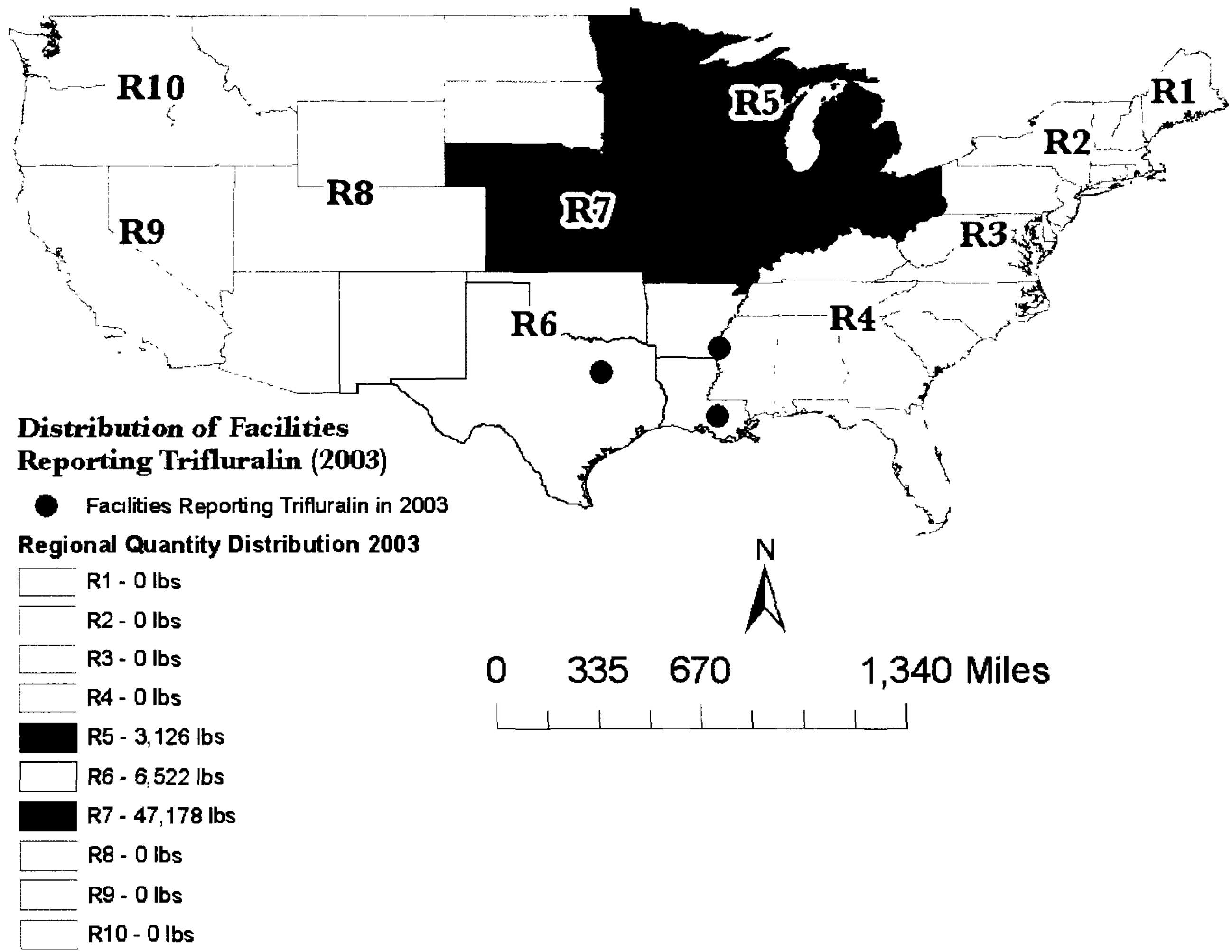


Exhibit 4.243 shows how trifluralin was managed by facilities in 3 EPA Regions in 2003. Overall, about 90 percent of the trifluralin was treated. In 2003, over 83 percent of the PC quantity of trifluralin was sent to offsite treatment, primarily by facilities in Regions 6 and 7.

Almost 95 percent of the trifluralin reported by Region 7 facilities was managed using offsite treatment; with the other 5 percent disposed onsite. Over 96 percent of the trifluralin reported by Region 5 facilities was sent to offsite disposal. Almost 97 percent of the trifluralin reported by Region 6 facilities was treated, approximately equally split between onsite and offsite treatment. In 2003, very little recycling of trifluralin was reported by facilities in these Regions.

Exhibit 4. 243. Management Methods for Trifluralin, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
7	2,400	0	0	0	700	44,078	0	0
6	0	220	0	0	3,102	3,200	0	0
5	0	3,014	0	0	103	9	159	0

State Trends- Trifluralin. Exhibit 4.244 shows the quantity of trifluralin, between 1999 and 2003, that was reported by facilities in 15 states. In 2003, facilities in 3 states (Iowa, Missouri, and Texas) reported 90 percent of the total quantity of trifluralin. Facilities in Iowa reported almost 59 percent of the total quantity. One facility reported almost 96 percent of the quantity reported by facilities in Iowa (Exhibit 4.245). Prior to 2003, only small quantities (no more than 2 pounds) of trifluralin were reported by facilities in Texas (Exhibit 4.245). In 2003, a facility in Texas reported over 11 percent of the total quantity of trifluralin. Facilities in a number of states did not report a quantity of trifluralin until 2000. This may be due to the lower TRI reporting threshold that became effective for trifluralin in 2000. Facilities in 5 states that had reported a quantity of trifluralin in 1999-2002 did not report any quantity in 2003.

Exhibit 4. 244. State-Level Information for Facilities Reporting Trifluralin (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Iowa	57,530	66,091	65,187	19,519	33,267	-24,263	-42.2%	58.5%
Missouri	8,485	11,493	6,543	25,953	11,511	3,026	35.7%	20.3%
Texas	0	0	1	2	6,320	6,320	NA	11.1%
Ohio	2,255	1,154	713	1,886	3,109	854	37.9%	5.5%
Kansas	0	7,800	8,800	8,800	2,400	2,400	NA	4.2%
Louisiana	0	0	0	0	202	202	NA	0.4%
Michigan	0	0	0	0	17	17	NA	0.0%
Arkansas	0	228	626	1,011	0	0	NA	0.0%
California	0	375	998	620	0	0	NA	0.0%
Georgia	7,450	0	10,335	5,586	0	-7,450	-100.0%	0.0%
Mississippi	12,100	872	80	178	0	-12,100	-100.0%	0.0%
Nebraska	0	224	0	0	0	0	NA	0.0%
New Jersey	0	0	206	0	0	0	NA	0.0%
Washington	0	243	0	0	0	0	NA	0.0%
Wisconsin	0	5	0	0	0	0	NA	0.0%

Exhibit 4. 245. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Texas and Iowa

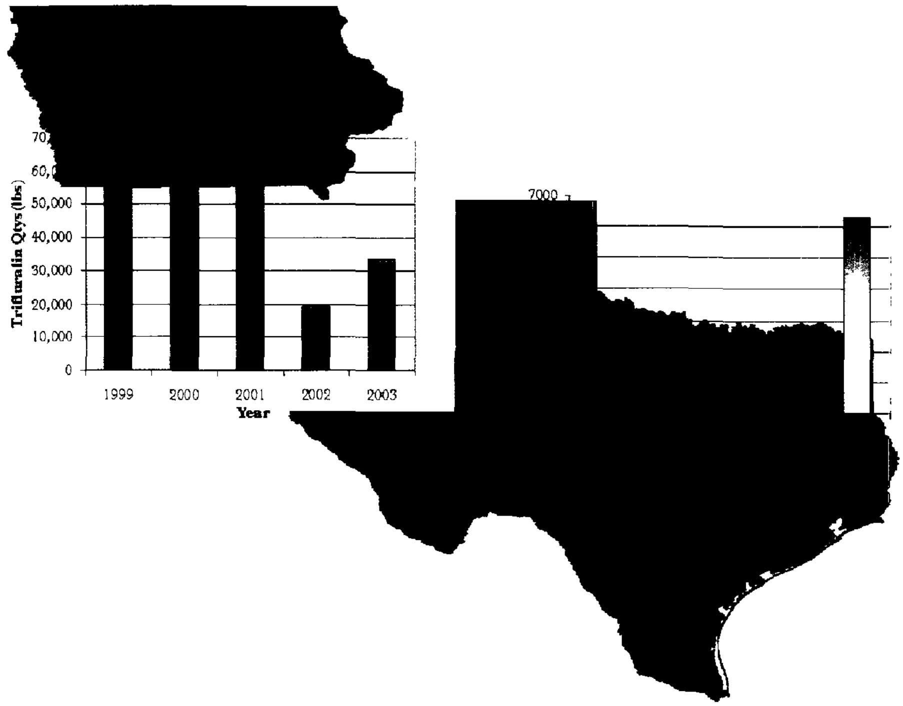


Exhibit 4. 246. Trends Analysis of States Reporting 4 Largest Quantities of Trifluralin (2003)

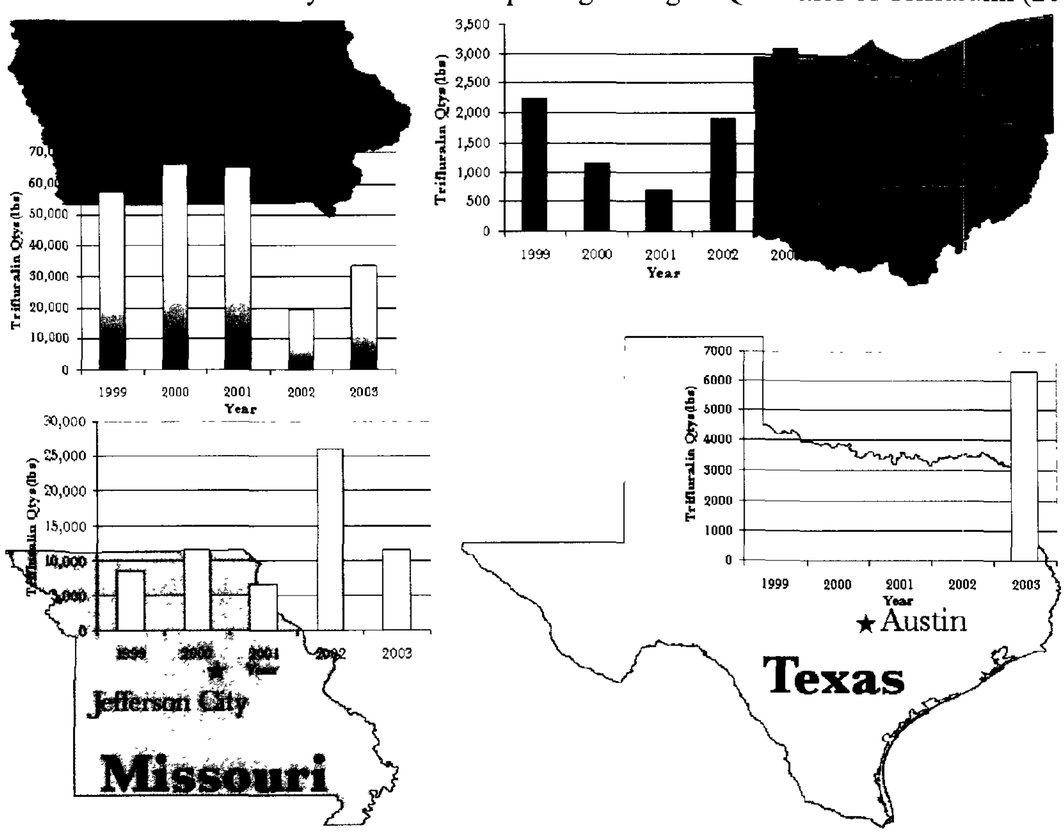


Exhibit 4.247 shows how trifluralin was managed by facilities in the 7 states that reported a quantity of this PC in 2003. Over 90 percent of the trifluralin was treated, including virtually the entire quantity of trifluralin reported by facilities in Iowa, Missouri, Texas, Louisiana, and Michigan. One facility in Ohio also used treatment (onsite and offsite) to manage the trifluralin. About 83 percent of the treatment was offsite. Approximately 10 percent of the trifluralin was land disposed. Two facilities, one each in Ohio and Kansas, disposed almost 100 percent of the trifluralin; offsite disposal by the Ohio facility and onsite disposal for the Kansas facility. Very little recycling of trifluralin was reported in 2003.

Exhibit 4. 247. Management of Trifluralin in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Iowa	33,267	0	0	0	0	0	33,267	0	0
Missouri	11,511	0	0	0	0	700	10,811	0	0
Texas	6,320	0	220	0	0	2,900	3,200	0	0
Ohio	3,109	0	3,014	0	0	86	9	159	0
Kansas	2,400	2,400	0	0	0	0	0	0	0
Louisiana	202	0	0	0	0	202	0	0	0
Michigan	17	0	0	0	0	17	0	0	0

Industry Sector (SIC) Trends- Trifluralin. Exhibit 4.248 shows the PC quantity (pounds) of trifluralin reported by 7 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. In 2003, 12 facilities in 5 industry sectors reported a PC quantity of trifluralin. Eight of these 12 facilities, in SIC 2879 (Pesticides and agricultural chemicals, nec), reported over 90 percent of the trifluralin in 2003. There was a 40 percent decrease in the quantity of trifluralin reported by SIC 2879 facilities, compared to the quantity reported in 1999. One facility in the SIC 2875 (Fertilizers, mixing only) industry sector reported an almost 34 percent increase since 1999.

Facilities in 5 of these industry sectors did not report trifluralin until 2000. This may be due to the lower TRI reporting threshold that became effective for trifluralin in 2000. Since 2000, these facilities, for the most part, reported a decrease or zero quantity of trifluralin in 2003.

Exhibit 4. 248. Industry Sector-Level Information for Trifluralin (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2879	Pesticides and agricultural chemicals, nec	8	85,565	78,589	82,373	50,677	51,300	-40.0%	90.28%
2875	Fertilizers, mixing only	1	2,255	1,186	1,067	2,636	3,014	33.7%	5.30%
2011	Meat packing plants	1	0	8,043	8,800	8,800	2,400	NA	4.22%
2032	Canned specialties	1	0	105	96	86	95	NA	0.17%
2869	Industrial organic chemicals, nec	1	0	0	206	0	17	NA	0.03%
3084	Plastics, pipe	0	0	334	321	345	0	NA	0.00%
9511	Air, water, and solid waste management	0	0	228	626	1,011	0	NA	0.00%

Exhibit 4.249 shows how trifluralin was managed by the 12 facilities in the 5 industry sectors that reported a quantity of this PC in 2003. More than 99 percent of the trifluralin reported by facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) was treated – mostly offsite. Likewise, the entire quantity of trifluralin reported by facilities in SIC 2032 (Canned specialties) and SIC 2869 (Industrial organic chemicals, nec) was treated, primarily onsite. Land disposal was used to manage the entire quantity of trifluralin reported by facilities in SIC 2875 (Fertilizers, mixing only) and SIC 2011 (Meat packing plants). Onsite recycling of a small quantity of trifluralin was reported by one facility in SIC 2875.

Exhibit 4. 249. Management of Trifluralin in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2879	Pesticides and agricultural chemicals, nec	0	220	0	0	3,802	47,278	0	0
2875	Fertilizers, mixing only	0	3,014	0	0	0	0	159	0
2011	Meat packing plants	2,400	0	0	0	0	0	0	0
2032	Canned specialties	0	0	0	0	86	9	0	0
2869	Industrial organic chemicals, nec	0	0	0	0	17	0	0	0

Recycling. Exhibit 4.250 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of trifluralin in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 250. Facilities reporting Recycling but not a PC quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	**EPA Region**	**State**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**	**Onsite Recycle**	**Offsite Recycle**
SIC 2874 -- Phosphatic Fertilizers												
1	9	California	2,000	0	0	0	0	0	6,865	0	0	0
SIC 3999 -- Manufacturing industries, nec												
1	5	Ohio	85,000	0	5,500	0	5,700	0				

Priority Chemicals not Reportable to TRI

Not all the PCs have TRI data. For these PCs (see Exhibit), no Trends analyses are presented in this Trends Report. EPA is evaluating the use of Hazardous Waste Biennial Report (BR) data for future trends analyses of these PCs. Information regarding these PCs, including CAS number, alternative names, general uses, and potential hazards is presented below.

Exhibit 4. 251. The Priority Chemicals Not Reported to TRI

Priority Chemicals Not Reported to TRI	
Acenaphthene	Fluorene
Acenaphthylene	Heptachlor epoxide (see Heptachlor above)
4-Bromophenyl phenyl ether	Pyrene
Endosulfan, beta-/Endosulfan, alpha	1,2,4,5-Tetrachlorobenzene

Acenaphthene

Chemical Information
Acenaphthene looks like a white crystal-like solid.
CAS Number - 83-32-9
Alternate Names - 1,2-dihydroacenaphthene, 1,2-dihydroacenaphthylene, 1,8-ethylenenaphthalene, ethylene naphthalene, naphthyleneethylene, peri-ethylenenaphthalene
General Uses - This chemical is used to make dyes, plastics and pesticides.
Potential Hazards - This chemical is harmful by inhalation, ingestion or skin absorption. It emits toxic fumes of carbon monoxide and carbon dioxide when heated to decomposition.

Acenaphthylene

Chemical Information
Acenaphthylene is one of a group of chemicals called polycyclic aromatic hydrocarbons, PAHs for short. PAHs are solid and range in appearance from colorless to white or pale yellow-green.
CAS Number - 208-96-8
Alternate Names - 1,2-dehydroacenaphthalene
General Uses - This chemical is used to make dyes, plastics and pesticides.
Potential Hazards - Many PAHs have caused tumors in laboratory animals that were exposed to the chemicals through their food, from breathing contaminated air and when it was applied to their skin. However, these effects have not been seen in humans.

4-Bromophenyl phenyl ether

Chemical Information
4-Bromophenyl phenyl ether is found in liquid form. No other information about its appearance is available.
CAS Number - 101-55-3
Alternate Names - 1-bromo-4-phenoxybenzene, 4-bromodiphenyl ether, p-bromodiphenyl ether, 4-bromophenoxybenzene, 4-bromophenyl phenyl ether

General Uses - This chemical is primarily used for research purposes. In the past it was used as a flame retardant.
Potential Hazards - This chemical is combustible. Fires involving this chemical should be extinguished with dry chemical, carbon dioxide, and/or halon extinguishers.

Endosulfan, beta-/Endosulfan, alpha

Chemical Information
Endosulfan looks like a brown-colored crystal and has an odor like turpentine.
Alpha CAS Number - 959-98-8, **Beta CAS Number** - 33213-65-9
Alternate Names - hexachloro-5-norbornene-2,3-dimethanol, cyclic sulfite
General Uses - This chemical is used as an insecticide on crops. It has not been produced in the United States since 1982, but it has been used to make other chemicals.
Potential Hazards - Breathing, eating or drinking high doses of endosulfan may cause convulsions and death.

Fluorene

Chemical Information
Fluorene is one of a group of chemicals called polycyclic aromatic hydrocarbons, PAHs for short. PAHs are solid and range in appearance from colorless to white or pale yellow-green.
CAS Number - 86-73-7
Alternate Names - 2,2'-methylenebiphenyl, 2,3-benzindene, o-biphenylenemethane, 9H-fluorene, alpha-diphenylenemethane-9H-fluorene, diphenylenemethane
General Uses - This chemical is used to make dyes, plastics and pesticides.
Potential Hazards - This chemical is not very flammable but any fire involving this compound may produce dangerous vapors.

Pyrene

Chemical Information

Pyrene is colorless crystal-like solid but can also look yellow.
CAS Number - 129-00-0
Alternate Names - benzo[def]phenanthrene, beta-pyrene
General Uses - This chemical is used to make dyes, plastics and pesticides. It is also used to make benzo(a)pyrene.
Potential Hazards - This chemical is toxic if absorbed through the skin. It emits acrid smoke and fumes when heated to decomposition.

1,2,4,5-Tetrachlorobenzene

Chemical Information
1,2,4,5-Tetrachlorobenzene is an odorless man-made substance that can range in appearance from a colorless crystal to a white flaky or chunky solid.
CAS Number - 95-94-3
Alternate Names - benzene tetrachloride, s-tetrachlorobenzene

General Uses - This chemical is used as an intermediate or building block to make herbicides, insecticides and defoliants. It is also used to make other chemicals such as 2,4,5-trichlorophenol and 2,4,5-trichlorophenoxyacetic acid.

Potential Hazards - Exposure to this chemical can cause eye and skin irritation and can affect ones ability to breathe.

Section 5 –
Federal Facilities Trends for the Priority Chemicals (1999-2003)

Introduction

This section presents data for the national, EPA Region, State, and industry sector quantities of 23 Priority Chemicals (PCs), reported to TRI by federal facilities. Within each of these levels, facility data is aggregated by the associated federal agency. For the purposes of this Trends Report, Government owned, Contractor operated (GOCO) Federal facilities also are included. Please note that only those federal facilities that reported one or more of the PCs to Toxics Release Inventory (TRI) and indicated they were either a federal or GOCO facility on the TRI Form R are included in this analysis. We made no attempt to identify federal facilities that did not indicate on the TRI Form R they were a federal or GOCO facility.

How Do the Priority Chemicals Relate to the Executive Order Priority Chemicals?

On April 21, 2000, Executive Order (EO) 13148 (Greening the Government through Leadership in Environmental Management) mandated, among other things, that federal facilities reduce the use of identified PCs by at least 50 percent by December 31, 2006 (see Section 503 of EO 13148). An Interagency Workgroup subsequently identified five chemicals (lead, cadmium, mercury, naphthalene, and PCBs) to meet the mandate of EO 13148. These five chemicals also are among the list of 31 PCs. It is important to note that the focus of the mandate in EO Section 503 is to reduce the "use" of the identified PCs – that is, specific uses of the PCs at federal facilities. Federal agencies collect information (regarding efforts to reduce use of the EO PCs) from each federal facility within their jurisdiction and submit an annual report to EPA.

This section of the PCs Trends Report shows trends regarding the generation and management of the 23 PCs that are reported to TRI. As previously noted, the purposes of the Trends Report (and database) are to 1) track progress made toward the Government Performance and Results Act (GPRA) goals to reduce the presence of the PCs in wastes and 2) provide data to assist efforts for identifying voluntary potential waste minimization opportunities that present source reduction and recycling as alternatives to land disposal, treatment, and energy recovery. The following discussion refers solely to the generation and management of PCs from the perspective and is separate from the EO mandate regarding the "use" of 5 of these chemicals.

Summary Analysis– Priority Chemicals at Federal Facilities

- In 2000 and, again in 2001, there were significant increases in both the quantity and number of reporting federal facilities, compared to 1999. In 2003, 191 federal facilities reported a total of more than 4.1 million pounds of PCs. This represents about 5 percent of the total quantity of PCs reported by all facilities (federal + non-federal) in 2003.
- In 2003, federal facilities reported 7 of the PCs. Lead and lead compounds comprised almost 97 percent of the total quantity reported (Exhibit 5.5).

- About 97 percent of the PCs reported in 2003 were land disposed, primarily onsite.
- In 2003, only 10 federal facilities accounted for almost 54 percent of the total quantity; 50 federal facilities accounted for almost 95 percent of the total quantity. Federal facilities in two agencies: the Department of Defense and Department of Energy reported 97 percent of the total quantity of lead and lead compounds, 100 percent of mercury and mercury compounds, and 100 percent of the PACs.
- Since 2001, PC quantities increased in 13 of the 16 states. The largest percent increases were reported by federal facilities in Nevada, Washington, Virginia, Missouri, and Colorado. Significant decreases were reported by federal facilities in California, Texas, and Hawaii. Federal facilities in Washington reported over 18 percent of the total quantity of PCs reported by federal facilities in 2003. One Department of Energy facility, located in Washington, accounted for 84 percent of the total quantity of PCs reported by federal facilities in Washington.
- Federal facilities in SIC 9711 (National Security) reported almost 98 percent of the total quantity of PCs reported by federal facilities in 2003.

Generation of the Priority Chemicals by Federal Facilities (1999-2003)

National Overview of Generation Trends. In 2003, about 4.1 million pounds of PCs were reported by 191 federal facilities. Both the number of reporting facilities and the total quantity of PCs were about 13 times greater than in 1999. Throughout this period, federal facilities primarily used land disposal to manage the PCs (Exhibit 5.1). In 2003, federal facilities reported about 5 percent of the total national quantity of PCs, including almost 11 percent of the lead and lead compounds (Exhibit 5.3).

A relatively small number of federal facilities reported much of the total quantity of PCs. For example, of the 191 federal facilities that reported a PC quantity in 2003, only 10 federal facilities accounted for almost 54 percent of the total quantity and 50 federal facilities accounted for almost 95 percent of the total quantity (Exhibit 5.4)

Since 2001, federal facilities annually have recycled about 1 million pounds of PCs (Exhibit 5.1). Lead and lead compounds accounted for most of the recycling.

Exhibit 5. 1. National-Level Information for Management of Priority Chemicals at Federal Facilities (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	15	36	149	175	191	1180.0%	
Disposal Quantity (lbs.)	284,482	262,885	2,359,494	3,086,693	3,988,750	1302.1%	96.5%
Energy Recovery Quantity (lbs.)	0	2,603	89,276	19,962	6,646	NA	0.2%
Treatment Quantity (lbs.)	3,168	3,514	42,848	358,522	137,012	4224.9%	3.3%
Priority Chemical Quantity (lbs.)	287,650	269,003	2,491,618	3,465,177	4,132,407	1336.6%	
Recycling Quantity (lbs.)	308,485	328,452	1,226,605	989,192	1,091,335	253.8%	

Exhibit 5. 2. Comparison of Quantity of Priority Chemicals Reported by Federal Facilities to the Total National Quantity of Priority Chemicals (2003).

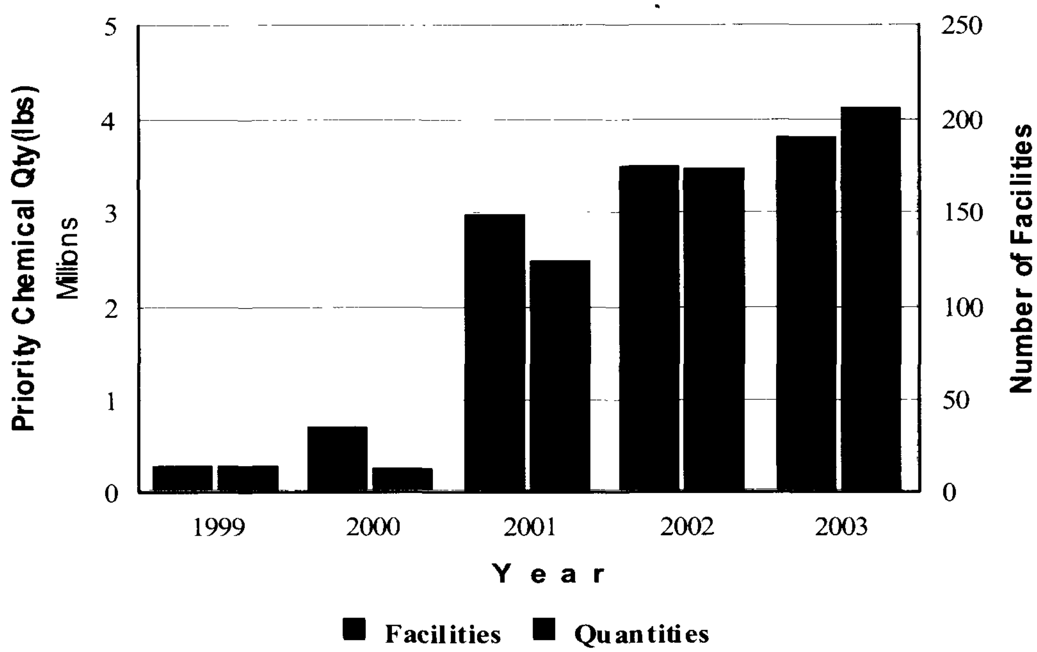


Exhibit 5. 3. Priority Chemicals Reported by Federal Facilities

Chemical Name	Total Quantity Reported by All Facilities (including Federal Facilities) in 2003	Quantity Reported by Federal Facilities in 2003	Percent of Total National Quantity of this Chemical Reported by Federal Facilities (2003)
Lead and Lead Compounds	36,667,276	3,985,762	10.9%
Polycyclic Aromatic Compounds	12,672,606	928	0.0%
Naphthalene	10,399,334	7,555	0.1%
Hexachloro-1,3-butadiene	5,566,299	0	0.0%
Hexachlorobenzene	4,272,727	0	0.0%
Hexachloroethane	2,734,341	91,255	3.3%
Phenanthrene	1,817,292	0	0.0%
1,2,4 - Trichlorobenzene	1,674,271	45,552	2.7%
Cadmium and Cadmium Compounds	817,579	0	0.0%
Quintozene	604,434	0	0.0%
Pentachlorobenzene	484,733	0	0.0%
Pendimethalin	429,551	0	0.0%
Anthracene	419,068	0	0.0%
Benzo(g,h,i)perylene	315,294	5	0.0%
Pentachlorophenol	160,760	0	0.0%

Chemical Name	Total Quantity Reported by All Facilities (including Federal Facilities) in 2003	Quantity Reported by Federal Facilities in 2003	Percent of Total National Quantity of this Chemical Reported by Federal Facilities (2003)
Dibenzofuran	75,605	0	0.0%
Trifluralin	57,290	0	0.0%
Mercury and Mercury Compounds	40,544	1,350	3.3%
2,4,5 - Trichlorophenol	22,857	0	0.0%
Dioxin and dioxin-like compounds	709	less than 1	0.0%
Lindane	71	0	0.0%
Heptachlor	54	0	0.0%
Methoxychlor	0	0	0.0%
Total	79,232,695	4,132,407	5.2%

Note: the national total quantity includes the quantity reported by federal facilities. Quantities of the PCs reported by federal facilities also are included in the PC trends analyses presented in Sections 2, 3, and 4.

Exhibit 5. 4. Distribution of Federal Facilities that Reported Quantities of Priority Chemicals (2003)

Quantity Reported by Federal Facilities	Number of Federal Facilities Reporting this quantity	Percent of Total Quantity for this Priority Chemical (2003)
up to 10 pounds	25	less than 0.1%
between 11 - 100 pounds	23	less than 0.1%
between 101 -1,000 pounds	38	0.5%
between 1,001 - 10,000 pounds	56	5.0%
between 10,001 - 100,000 pounds	40	40.6%
between 100,001 - 1 million pounds	10	53.9%
> 1 million pounds	0	0.0%

Exhibit 5. 5. Quantity of Priority Chemicals Recycled by Federal Facilities (1999-2003)

Chemical	1999	2000	2001	2002	2003
1,2,4 - Trichlorobenzene	0	0	0	0	0
Benzo(g,h,i)perylene	0	1	0	0	0
Dioxin and dioxin-like compounds	0	0	0	0	0
Hexachlorobenzene	0	0	0	0	0
Hexachloroethane	0	0	0	0	0
Lead and Lead Compounds	308,485	327,925	1,225,933	988,526	1,076,755
Mercury and Mercury Compounds	0	400	672	666	8,768
Naphthalene	0	0	0	0	5,812
Polycyclic Aromatic Compounds (PACs)	0	126	0	0	0
Total	**308,485**	**328,452**	**1,226,605**	**989,192**	**1,091,335**

Exhibits 5.6 and 5.7 show the total quantity of each PC reported from 1999 through 2003 as well as the number of federal facilities reporting these chemicals. Most of the increased quantity of PCs reported by federal facilities in 1999-2003 was reported by facilities in SIC 9711 (National Security), primarily military installations. Much of this increase was due to reporting of larger quantities of lead and lead compounds. This increased quantity was likely caused by:

1. A lower TRI reporting threshold for lead and lead compounds that took effect in 2001;
2. Guidance issued by the Department of Defense (DOD) in 2000 requiring its ranges to report under TRI (effective as of the 2001 TRI Reporting year); and
3. The increase in training and other activities at federal facilities in support of military and security operations to counter terrorism worldwide, including events in Afghanistan and Iraq.

Exhibit 5. 6. Quantity of Priority Chemicals Reported by Federal Facilities (1999-2003)

Chemical	**1999**	**2000**	**2001**	**2002**	**2003**	**Percent of Total Quantity Reported in 2003**
Lead and Lead Compounds	286,742	265,816	2,440,288	3,080,808	3,985,762	96.5%
Hexachloroethane	0	0	0	84,900	91,255	2.2%
1,2,4 - Trichlorobenzene	0	0	0	272,827	45,552	1.1%
Naphthalene	113	2,675	2,764	20,905	7,555	0.2%
Mercury and Mercury Compounds	795	446	48,537	5,721	1,350	0.0%
Polycyclic Aromatic Compounds (PACs)	0	54	0	16	928	0.0%
Benzo(g,h,i)perylene	0	1	0	0	5	0.0%
Dioxin and dioxin-like compounds	0	11	1	0	0	0.0%
Hexachlorobenzene	0	0	28	0	0	0.0%
Total	287,650	269,003	2,491,618	3,465,177	4,132,407	

Exhibit 5. 7. Number of Federal Facilities that Reported Each Priority Chemical (1999-2003)

Chemical	**1999**	**2000**	**2001**	**2002**	**2003**
1,2,4 - Trichlorobenzene	0	0	0	2	1
Benzo(g,h,i)perylene	0	1	0	0	1
Dioxin and dioxin-like compounds	0	3	1	4	0
Hexachlorobenzene	0	0	1	0	0
Hexachloroethane	0	0	0	1	1
Lead and Lead Compounds	11	15	135	142	149
Mercury and Mercury Compounds	2	14	9	8	12
Naphthalene	2	2	3	17	25
Polycyclic Aromatic Compounds (PACs)	0	1		1	2
Total	**15**	**36**	**149**	**175**	**191**

Priority Chemicals within Federal Agencies. Exhibit 5.8 shows the quantity of PCs, reported by federal agency, in 1999-2003. In 2003, federal facilities in only the Department of Defense and Department of Energy reported more than 1 of the PCs; these two agencies reported 97 percent of the total quantity of lead and lead compounds, 100 percent of mercury and mercury compounds, and 100 percent of the PACs.

Exhibit 5. 8. Quantity of Priority Chemicals Reported by Federal agency, 1999-2003

Priority Chemical	Agency	1999	2000	2001	2002	2003
1,2,4 - Trichlorobenzene	Department of Defense	0	0	0	272,827	45,552
Benzo(g,h,i)perylene	Department of Defense	0	0	0	0	5
	Department of Homeland Security	0	1	0	0	0
Dioxin and dioxin-like compounds	Environmental Protection Agency	0	11	1	0	0
Hexachlorobenzene	Department of Defense	0	0	28	0	0
Hexachloroethane	Department of Defense	0	0	0	84,900	91,255
Lead and Lead Compounds	Department of Agriculture	0	0	1,237	1,514	2,408
	Department of Defense	73,190	170,467	2,006,892	2,456,994	2,629,913
	Department of Energy	117,158	12,070	311,903	427,035	1,225,179
	Department of Homeland Security	96,394	83,279	108,692	152,536	118,967
	Department of Interior	0	0	2,933	1,583	797
	Department of Justice	0	0	0	477	249
	Department of Transportation	0	0	0	27,718	0
	Department of Treasury	0	0	0	297	122
	Environmental Protection Agency	0	0	2,971	4,477	3,397
	National Aeronautics and Space Administration	0	0	4,672	6,158	3,984
	Tennessee Valley Authority	0	0	988	2,019	746
Mercury and Mercury Compounds	Department of Defense	0	66	47,582	5,186	606
	Department of Energy	795	348	891	535	744
	Environmental Protection Agency	0	32	63	0	0
Naphthalene	Department of Defense	110	2,641	2,764	20,875	7,468
	Department of Energy	3	34	0	0	9
	Department of Health and Human Services	0	0	0	30	0
	National Aeronautics and Space Administration	0	0	0	0	78

Priority Chemical	Agency	1999	2000	2001	2002	2003
Polycyclic Aromatic Compounds (PACs)	Department of Defense	0	0	0	0	690
	Department of Energy	0	0	0	16	238
	Department of Homeland Security	0	54	0	0	0
	Total	**287,650**	**269,003**	**2,491,618**	**3,465,177**	**4,132,407**

Exhibit 5.9 shows how facilities in each federal agency managed their PCs in 2003. Facilities in the Department of Defense and Department of Energy reported about 97 percent of total recycled quantity in 2003.

Exhibit 5. 9. Management of Priority Chemicals by Federal Agency (2003)

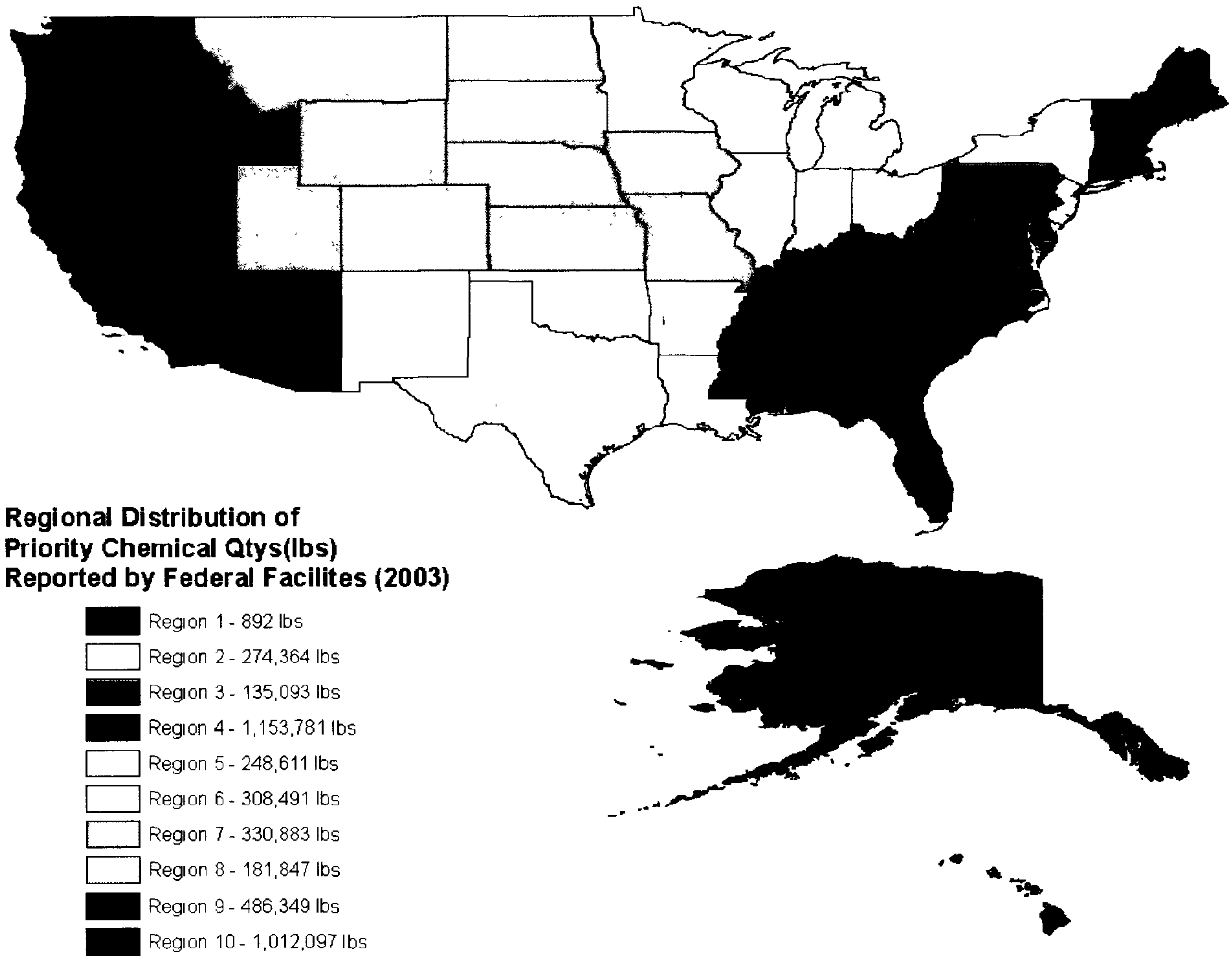
Agency	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Department of Agriculture	2,408	2,408	0	0	0	0	0	0	19
Department of Defense	2,775,488	2,565,979	66,175	2,315	4,172	134,372	2,475	202,297	210,394
Department of Energy	1,226,171	668,060	557,865	0	158	0	87	291,180	355,374
Department of Homeland Security	118,967	89,541	29,426	0	0	0	0	0	18,343
Department of Interior	797	797	0	0	0	0	0	0	0
Department of Justice	249	0	249	0	0	0	0	0	0
Department of Treasury	122	0	122	0	0	0	0	30	10,386
Environmental Protection Agency	3,397	3,397	0	0	0	0	0	0	0
National Aeronautics and Space Administration	4,061	3,962	21	0	0	0	78	0	1,513
Tennessee Valley Authority	746	0	746	0	0	0	0	0	1,800
Total	**4,132,407**	**3,334,144**	**654,605**	**2,315**	**4,331**	**134,372**	**2,640**	**493,507**	**597,828**

Regional (EPA Region) Overview of Generation and Management Trends. Federal facilities in Regions 4 and 10 reported over 52 percent of the total national quantity of PCs in 2003 (Exhibit 5.10). Exhibit 5.11 illustrates the regional distribution of PCs reported by federal facilities in 2003.

Exhibit 5. 10. Priority Chemical Quantities (pounds) Reported by Federal Facilities for each EPA Region (1999 – 2003)

EPA Region	1999	2000	2001	2002	2003	Percent change in Quantity (2001-2003)	Percent of Total Quantity Reported by Federal Facilities (2003)
4	137,215	129,678	826,909	1,245,439	1,153,781	39.5%	27.9%
10	120,152	41,513	198,818	309,781	1,012,097	409.1%	24.5%
9	24,263	44,385	567,791	685,665	486,349	-14.3%	11.8%
7	0	7,779	128,476	175,175	330,883	157.5%	8.0%
6	0	11,190	371,967	404,566	308,491	-17.1%	7.5%
2	0	106	124,521	298,388	274,364	120.3%	6.6%
5	1,767	28,029	161,755	154,021	248,611	53.7%	6.0%
8	2,284	3,844	58,226	88,651	181,847	212.3%	4.4%
3	1,969	2,424	51,995	93,315	135,093	159.8%	3.3%
1	0	54	1,161	10,177	892	-23.2%	0.0%
Total	287,650	269,003	2,491,618	3,465,177	4,132,407	65.9%	

Exhibit 5. 11. Quantity for each Priority Chemical reported by Federal Facilities, from 1999 to 2003, by EPA Region



Significant increases, compared to quantities reported in 2001

- Lead and Lead Compounds in Region 10 (+ 676,033 pounds)
- Lead and Lead Compounds in Region 4 (+ 324,648 pounds)
- Lead and Lead Compounds in Region 7 (+ 202,412 pounds)
- Lead and Lead Compounds in Region 2 (+ 149,844 pounds)

Significant decreases, compared to quantities reported in 2001

- Lead and Lead Compounds in Region 6 (-63,894 pounds)
- Mercury and Mercury Compounds in Region 9 (- 47,076 pounds)
- Lead and Lead Compounds in Region 8 (- 34,829 pounds)

In 2003, federal facilities in Region 4 reported zero quantity of 1,2,4 – Trichlorobenzene and Hexachloroethane – a significant decrease from the 160,000 pounds and 84,900 pounds, respectively, reported in 2002 (exhibit 5.12).

Exhibit 5. 12. Priority Chemical Quantities (pounds) Reported by Federal Facilities, by EPA Region (1999 – 2003)

EPA Region	Chemical	1999	2000	2001	2002	2003	Percent of Total Quantity of Priority Chemicals Reported by Federal Facilities (2003)
1	Benzo(g,h,i)perylene	0	1	0	0	0	0.0%
	Lead and Lead Compounds	0	0	698	865	870	0.0%
	Naphthalene	0	0	463	9,312	21	0.0%
	Polycyclic Aromatic Compounds (PACs)	0	54	0	0	0	0.0%
2	Lead and Lead Compounds	0	0	123,921	298,248	273,764	6.6%
	Mercury and Mercury Compounds	0	106	600	140	600	0.0%
3	Lead and Lead Compounds	1,969	2,424	51,986	93,284	134,930	3.3%
	Mercury and Mercury Compounds	0	0	9	0	83	0.0%
	Naphthalene	0	0	0	32	79	0.0%
4	1,2,4 - Trichlorobenzene	0	0	0	160,000	0	0.0%
	Dioxin and dioxin-like compounds	0	11	1	0	0	0.0%
	Hexachloroethane	0	0	0	84,900	0	0.0%
	Lead and Lead Compounds	136,307	126,972	824,325	998,882	1,148,973	27.8%
	Mercury and Mercury Compounds	795	53	354	239	37	0.0%
	Naphthalene	113	2,641	2,229	1,418	4,771	0.1%
5	Lead and Lead Compounds	1,767	28,023	161,672	152,133	246,888	6.0%
	Mercury and Mercury Compounds	0	6	10	0	0	0.0%
	Naphthalene	0		72	1,888	1,722	0.0%
6	Lead and Lead Compounds	0	10,980	371,967	396,155	308,072	7.5%
	Mercury and Mercury Compounds	0	210		156	50	0.0%
	Naphthalene	0	0	0	8,255	369	0.0%
7	Lead and Lead Compounds	0	7,726	128,471	175,174	330,883	8.0%
	Mercury and Mercury Compounds	0	53	5	1	0	0.0%
8	Benzo(g,h,i)perylene	0	0	0	0	5	0.0%
	Hexachlorobenzene	0	0	28	0	0	0.0%
	Lead and Lead Compounds	2,284	3,844	58,198	88,650	181,126	4.4%
	Mercury and Mercury Compounds	0	0	0	0	23	0.0%
	Naphthalene	0	0	0	1	4	0.0%
	Polycyclic Aromatic Compounds (PACs)	0	0	0	0	690	0.0%
	Lead and Lead Compounds	24,263	44,385	520,241	680,485	485,412	11.7%

EPA Region	Chemical	1999	2000	2001	2002	2003	Percent of Total Quantity of Priority Chemicals Reported by Federal Facilities (2003)
9	Mercury and Mercury Compounds	0	0	47,550	5,180	474	0.0%
	Naphthalene	0	0	0	0	463	0.0%
	1,2,4 - Trichlorobenzene	0	0	0	112,827	45,552	1.1%
10	Hexachloroethane	0	0	0	0	91,255	2.2%
	Lead and Lead Compounds	120,152	41,462	198,810	196,933	874,843	21.2%
	Mercury and Mercury Compounds	0	17	8	6	84	0.0%
	Naphthalene	0	34	0	0	125	0.0%
	Polycyclic Aromatic Compounds (PACs)	0	0	0	16	238	0.0%

Priority Chemicals within Federal Agencies, by EPA Region. In 2003, Department of Defense facilities in Regions 4 and 9 reported about 37 percent of the total quantity of PCs reported by federal facilities. Department of Energy facilities in Region 10 reported 18 percent of the total quantity. Exhibit 5.13 shows the PC quantities in each EPA Region, by federal agency, from 1999 to 2003.

Exhibit 5. 13. Priority Chemical Quantities (pounds) in EPA Regions, by Federal Agency (1999 – 2003)

EPA Region	Agency	1999	2000	2001	2002	2003	Percent of Total Quantity of Priority Chemicals Reported by Federal Facilities (2003)
1	Department of Defense	0	0	531	9,363	68	0.0%
	Department of Homeland Security	0	54	27	206	27	0.0%
	Department of Interior	0	0	603	607	797	0.0%
2	Department of Defense	0	0	83,742	109,502	105,289	2.5%
	Department of Energy	0	106	40,779	161,168	165,606	4.0%
	Department of Homeland Security	0	0	0	0	3,469	0.1%
	Department of Transportation	0	0	0	27,718	0	0.0%
3	Department of Agriculture	0	0	1,237	1,514	2,408	0.1%
	Department of Defense	1,969	2,424	49,678	90,839	130,722	3.2%
	Department of Health and Human Services	0	0	0	30	0	0.0%
	Department of Homeland Security	0	0	932	0	1,504	0.0%
	Department of Interior	0	0	148	161	0	0.0%
	Department of Justice	0	0	0	477	249	0.0%
	Department of Treasury	0	0	0	290	118	0.0%
	National Aeronautics and Space Administration	0	0	0	5	93	0.0%

EPA Region	Agency	1999	2000	2001	2002	2003	Percent of Total Quantity of Priority Chemicals Reported by Federal Facilities (2003)
4	Department of Defense	22,930	45,254	708,273	1,175,632	1,034,538	25.0%
	Department of Energy	17,891	12,081	22,378	23,421	42,387	1.0%
	Department of Homeland Security	96,394	72,299	90,624	38,900	72,572	1.8%
	Environmental Protection Agency	0	43	64	16	0	0.0%
	National Aeronautics and Space Administration	0	0	4,582	5,451	3,538	0.1%
	Tennessee Valley Authority	0	0	988	2,019	746	0.0%
5	Department of Defense	1,767	28,027	26,497	43,339	75,648	1.8%
	Department of Energy	0	2	135,258	110,681	172,963	4.2%
6	Department of Defense	0	0	324,654	251,882	256,632	6.2%
	Department of Energy	0	210	31,209	40,259	16,340	0.4%
	Department of Homeland Security	0	10,980	15,904	111,808	35,089	0.8%
	Department of Interior	0	0	199	0	0	0.0%
	Department of Treasury	0	0	0	5	0	0.0%
	National Aeronautics and Space Administration	0	0	0	612	431	0.0%
7	Department of Defense	0	7,779	128,467	175,149	330,875	8.0%
	Department of Energy	0	0	9	26	7	0.0%
8	Department of Defense	2,284	3,844	54,996	59,272	88,370	2.1%
	Department of Energy	0	0	3,108	29,376	93,473	2.3%
	Department of Interior	0	0	122	0	0	0.0%
	Department of Treasury	0	0	0	2	5	0.0%
9	Department of Defense	24,263	44,375	560,438	674,951	477,613	11.6%
	Department of Energy	0	10	5,382	9,809	8,736	0.2%
	Department of Homeland Security	0	0	20	0	0	0.0%
	Department of Interior	0	0	1,861	815	0	0.0%
	National Aeronautics and Space Administration	0	0	90	90	0	0.0%
10	Department of Defense	20,087	41,470	119,991	250,853	275,734	6.7%
	Department of Energy	100,065	43	74,671	52,846	726,660	17.6%
	Department of Homeland Security	0	0	1,185	1,622	6,307	0.2%
	Environmental Protection Agency	0	0	2,971	4,461	3,397	0.1%
	Total	**287,650**	**269,003**	**2,491,618**	**3,465,177**	**4,132,407**	

How Did Federal Agencies Manage Priority Chemicals Within the EPA Regions?
Exhibit 5.14 shows the methods used to manage the PCs in the EPA Regions, by federal agency, in 2003.

Disposal: In most of the Regions, Department of Defense facilities primarily used onsite disposal. Except in Region 10, Department of Energy facilities used offsite disposal for most of their PC quantity.

Treatment: A Department of Defense facility in Oregon reported virtually 100 percent of the total treatment quantity reported by federal facilities in 2003.

Energy Recovery: Department of Defense facilities in Regions 4 and 5 reported over 90 percent of the total quantity of PCs sent to energy recovery.
Recycling: Department of Defense and Department of Energy facilities in Regions 4 and 9 reported about 68 percent of the total quantity of recycled PCs.

Exhibit 5. 14. Management of Priority Chemicals in EPA Regions, by Federal Agency (2003)

EPA Region	Agency	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
1	Department of Defense	0	47	0	21	0	0	0	102,254
	Department of Homeland Security	0	27	0	0	0	0	0	4,300
	Department of Interior	797	0	0	0	0	0	0	0
2	Department of Defense	105,283	6	0	0	0	0	0	7
	Department of Energy	0	165,606	0	0	0	0	0	0
	Department of Homeland Security	1,877	1,592	0	0	0	0	0	0
3	Department of Agriculture	2,408	0	0	0	0	0	0	19
	Department of Defense	124,279	6,442	0	0	0	0	0	2,014
	Department of Homeland Security	1,504	0	0	0	0	0	0	6,300
	Department of Justice	0	249	0	0	0	0	0	0
	Department of Treasury	0	118	0	0	0	0	30	9,651
	National Aeronautics and Space Administration	0	15	0	0	0	78	0	1,080
4	Department of Defense	1,010,759	19,450	2,204	2,122	0	4	0	5
	Department of Energy	10,025	32,361	0	0	0	0	291,180	94,542
	Department of Homeland Security	54,029	18,543	0	0	0	0	0	7,743
	National Aeronautics and Space Administration	3,531	6	0	0	0	0	0	2
	Tennessee Valley Authority	0	746	0	0	0	0	0	1,800

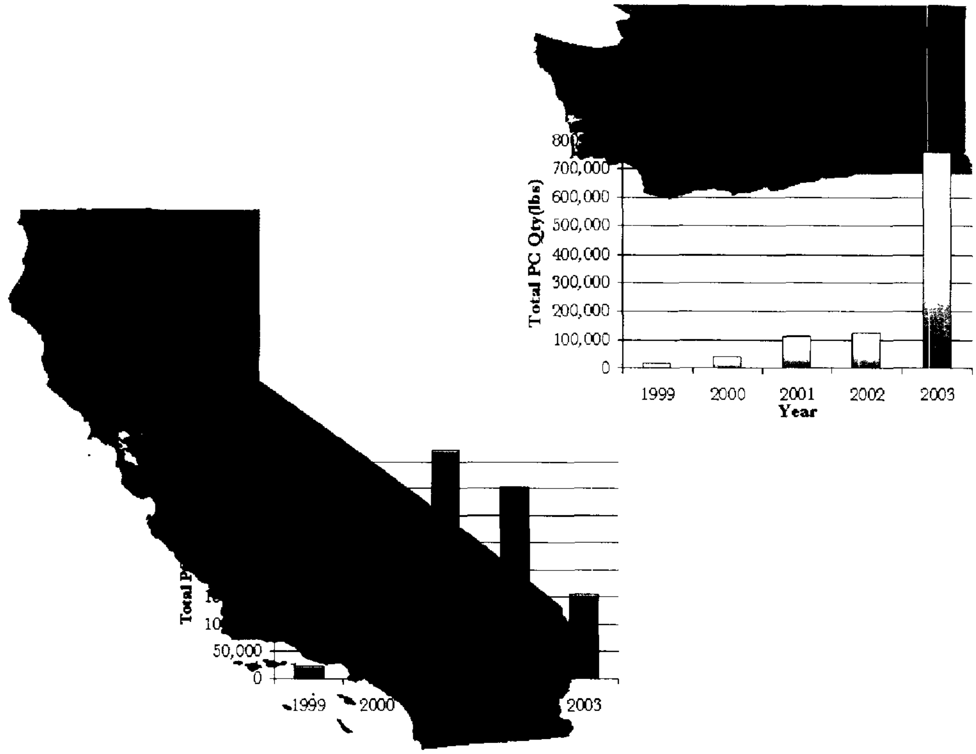
EPA Region	Agency	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
5	Department of Defense	73,896	56	0	1,696	0	0	0	1
	Department of Energy	0	172,963	0	0	0	0	0	3,619
6	Department of Defense	255,065	1,199	0	333	0	35	0	8,081
	Department of Energy	3,666	12,674	0	0	0	0	0	7,800
	Department of Homeland Security	32,131	2,958	0	0	0	0	0	0
	Department of Treasury	0	0	0	0	0	0	0	500
	National Aeronautics and Space Administration	431	0	0	0	0	0	0	431
7	Department of Defense	323,768	7,107	0	0	0	0	0	0
	Department of Energy	0	7	0	0	0	0	0	1,592
	Environmental Protection Agency	0	0	0	0	0	0	0	0
8	Department of Defense	79,773	8,595	0	0	0	1	197	85,411
	Department of Energy	0	93,473	0	0	0	0	0	96,232
	Department of Treasury	0	5	0	0	0	0	0	235
9	Department of Defense	474,426	3,187	0	0	0	0	202,100	12,622
	Department of Energy	3,026	5,710	0	0	0	0	0	136,373
10	Department of Defense	118,730	20,086	111	0	134,372	2,435	0	0
	Department of Energy	651,343	75,071	0	158	0	87	0	15,216
	Department of Homeland Security	0	6,307	0	0	0	0	0	0
	Environmental Protection Agency	3,397	0	0	0	0	0	0	0

State Overview of Generation and Management Trends. In 1999-2003, federal facilities in 48 states and Washington, D.C. reported a PC quantity. Exhibit 5.15 presents the PC quantities reported by federal facilities in the 16 states that accounted for over 90 percent of the total quantity reported by federal facilities in 2003. Since 2001, quantities increased in 13 of these 16 states. Federal facilities in Washington reported over 18 percent of the total quantity of PCs reported by federal facilities in 2003; one Department of Energy facility accounted for 84 percent of the quantity in Washington (Exhibit 5.17). Quantities reported by federal facilities in California decreased by 63% from 1999 – 2003 (Exhibit 5.16).

Exhibit 5. 15. Priority Chemical Quantity (pounds) by State (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (2001-2003)	Percent Change (2001-2003)	Percent of Total Quantity Reported by Federal Facilities (2003)	Percent of Total National Quantity of Priority Chemicals (2003)
Washington	20,087	40,485	109,771	126,357	760,643	650,873	592.9%	18.4%	1.0%
Georgia	96,394	72,299	280,815	208,052	353,761	72,947	26.0%	8.6%	0.4%
Missouri	0	7,748	91,825	175,022	297,466	205,641	223.9%	7.2%	0.4%
North Carolina	0	43	157,075	219,488	286,574	129,499	82.4%	6.9%	0.4%
Kentucky	0	0	162,571	148,467	281,114	118,543	72.9%	6.8%	0.4%
Nevada	0	3,909	10,175	224,099	226,422	216,248	2125.4%	5.5%	0.3%
New York	0	106	93,112	220,124	226,168	133,056	142.9%	5.5%	0.3%
Texas	0	199	250,388	166,204	186,113	-64,276	-25.7%	4.5%	0.2%
South Carolina	7,411	6,424	164,741	225,033	173,631	8,890	5.4%	4.2%	0.2%
Illinois	0	4	136,088	110,513	173,267	37,179	27.3%	4.2%	0.2%
Colorado	0	0	53,691	75,146	160,222	106,531	198.4%	3.9%	0.2%
California	24,263	40,476	420,856	352,999	155,755	-265,102	-63.0%	3.8%	0.2%
Oregon	0	0	0	112,838	140,537	140,537	NA	3.4%	0.2%
Virginia	1,969	2,424	32,619	86,491	118,430	85,811	263.1%	2.9%	0.1%
Hawaii	0	0	121,052	84,872	97,600	-23,452	-19.4%	2.4%	0.1%
Idaho	100,065	43	65,996	41,541	88,523	22,527	34.1%	2.1%	0.1%

Exhibit 5. 16. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Washington and California



Priority Chemicals within Federal Agencies, by State. Exhibit 5.17 shows the PC quantities reported by facilities in the indicated federal agency within the 16 States that accounted for over 90 percent of the total quantity reported by federal facilities in 2003.

Significant increases, compared to quantities reported in 2001:

- Department of Energy facilities in Washington (+ 629,809 pounds)
- Department of Defense facilities in Nevada (+211,.687 pounds)
- Department of Defense facilities (U.S. Army) in Missouri (+205,643 pounds)
- Department of Defense facilities (U.S. Army) in Oregon (+ 140,459 pounds)
- Department of Defense facilities (U.S. Marine Corps) in North Carolina (+ 129,563 pounds)
- Department of Energy facilities in New York (+ 124,827 pounds)
- Department of Defense facilities (U.S. Army) in Kentucky (+118,543 pounds)
- Department of Energy facilities in Colorado (+ 90,365 pounds)
- Department of Defense facilities in Georgia (+90,998 pounds)
- Department of Defense facilities in Virginia (+85.146 pounds)

Significant decreases, compared to quantities reported in 2001:

- Department of Defense facilities in California (-261,924 pounds)
- Department of Defense facilities in Texas (-61,976 pounds)

Exhibit 5. 17. Quantity (pounds) of Priority Chemicals Quantity by State and Federal agency (1999-2003)

State	Agency	1999	2000	2001	2002	2003	Percent of Total Quantity Reported by Federal Facilities (2003)
Washington	Department of Defense	20,087	40,485	98,121	110,589	115,034	2.8%
	Department of Energy	0	0	11,647	15,766	641,456	15.5%
	Department of Homeland Security	0	0	3	2	4,153	0.1%
	Total Quantity for Washington	20,087	40,485	109,771	126,357	760,643	18.4%
Georgia	Department of Defense	0	0	190,191	169,153	281,189	6.8%
	Department of Homeland Security	96,394	72,299	90,624	38,900	72,572	1.8%
	Total Quantity for Georgia	96,394	72,299	280,815	208,052	353,761	8.6%
Missouri	Department of Defense	0	7,748	91,816	174,996	297,459	7.2%
	Department of Energy	0	0	9	26	7	0.0%
	Total Quantity for Missouri	0	7,748	91,825	175,022	297,466	7.2%
North Carolina	Department of Defense	0	0	157,011	219,472	286,574	6.9%
	Environmental Protection Agency	0	43	64	16	0	0.0%
	Total Quantity for North Carolina	0	43	157,075	219,488	286,574	6.9%
Kentucky	Department of Defense	0	0	162,571	148,467	281,114	6.8%
	Total Quantity for Kentucky	0	0	162,571	148,467	281,114	6.8%
Nevada	Department of Defense	0	3,909	8,005	219,098	219,692	5.3%
	Department of Energy	0	0	710	4,616	6,730	0.2%
	Department of Interior	0	0	1,460	385	0	0.0%
	Total Quantity for Nevada	0	3,909	10,175	224,099	226,422	5.5%
New York	Department of Defense	0	0	52,333	58,956	60,562	1.5%
	Department of Energy	0	106	40,779	161,168	165,606	4.0%
	Total Quantity for New York	0	106	93,112	220,124	226,168	5.5%
Texas	Department of Defense	0	0	245,873	161,469	183,897	4.5%
	Department of Energy	0	199	4,316	4,730	2,216	0.1%
	Department of Interior	0	0	199	0	0	0.0%
	Department of Treasury	0	0	0	5	0	0.0%
	Total Quantity for Texas	0	199	250,388	166,204	186,113	4.5%
South Carolina	Department of Defense	0	0	152,341	214,076	139,972	3.4%
	Department of Energy	7,411	6,424	12,400	10,957	33,660	0.8%
	Total Quantity for South Carolina	7,411	6,424	164,741	225,033	173,631	4.2%
Illinois	Department of Defense	0	4	1,077	251	304	0.0%
	Department of Energy	0	0	135,012	110,262	172,963	4.2%
	Total Quantity for Illinois	0	4	136,088	110,513	173,267	4.2%

State	Agency	1999	2000	2001	2002	2003	Percent of Total Quantity Reported by Federal Facilities (2003)
Colorado	Department of Defense	0	0	50,583	45,768	66,745	1.6%
	Department of Energy	0	0	3,108	29,376	93,473	2.3%
	Department of Treasury	0	0	0	2	5	0.0%
	Total Quantity for Colorado	0	0	53,691	75,146	160,222	3.9%
California	Department of Defense	24,263	40,466	415,672	347,286	153,748	3.7%
	Department of Energy	0	10	4,673	5,193	2,006	0.0%
	Department of Homeland Security	0	0	20	0	0	0.0%
	Department of Interior	0	0	401	430	0	0.0%
	National Aeronautics and Space Administration	0	0	90	90	0	0.0%
	Total Quantity for California	24,263	40,476	420,856	352,999	155,755	3.8%
Oregon	Department of Defense	0	0	0	112,838	140,459	3.4%
	Department of Energy	0	0	0	0	78	0.0%
	Total Quantity for Oregon	0	0	0	112,838	140,537	3.4%
Virginia	Department of Defense	1,969	2,424	31,687	86,487	116,833	2.8%
	Department of Homeland Security	0	0	932	0	1,504	0.0%
	National Aeronautics and Space Administration	0	0	0	5	93	0.0%
	Total Quantity for Virginia	1,969	2,424	32,619	86,491	118,430	2.9%
Hawaii	Department of Defense	0	0	121,052	84,872	97,600	2.4%
	Total Quantity for Hawaii	0	0	121,052	84,872	97,600	2.4%
Idaho	Department of Energy	100,065	43	63,025	37,080	85,125	2.1%
	Environmental Protection Agency	0	0	2,971	4,461	3,397	0.1%
	Total Quantity for Idaho	100,065	43	65,996	41,541	88,523	2.1%

How Did Federal Agencies Manage Priority Chemicals Within States? Exhibit 5.18 shows the management methods employed by federal facilities for PCs in 2003 – by federal agency, in the 16 States that accounted for 90 percent of the total quantity of PCs in 2003. Federal facilities in these states land disposed about 96 percent of their PCs, with about 83 percent of the total quantity disposed onsite. Four Department of Energy facilities - one each in New York, Illinois, Colorado, and Idaho--reported most of the quantity of PCs that was sent to offsite land disposal. A Department of Defense facility (U.S. Army) in Oregon treated most of their PC quantity onsite. Department of Defense and Department of Energy facilities in California and South Carolina, respectively, reported about 68 percent of the total quantity of recycled PCs.

Exhibit 5. 18. Management Methods for Priority Chemicals by Federal Facilities in States with 90% of the Total Quantity in 2003

State	Agency	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Washington	Department of Defense	115,034	98,600	16,434	0	0	0	0	0	0
	Department of Energy	641,456	640,593	863	0	0	0	0	0	0
	Department of Homeland Security	4,153	0	4,153	0	0	0	0	0	0
	Washington Total	760,643	739,193	21,450	0	0	0	0	0	0
Georgia	Department of Defense	281,189	281,128	62	0	0	0	0	0	0
	Department of Homeland Security	72,572	54,029	18,543	0	0	0	0	0	7,743
	Georgia Total	353,761	335,157	18,605	0	0	0	0	0	7,743
Missouri	Department of Defense	297,459	290,352	7,107	0	0	0	0	0	0
	Department of Energy	7	0	7	0	0	0	0	0	1,592
	Missouri Total	297,466	290,352	7,114	0	0	0	0	0	1,592
North Carolina	Department of Defense	286,574	272,429	10,853	2,204	1,088	0	0	0	2
	North Carolina Total	286,574	272,429	10,853	2,204	1,088	0	0	0	2
Kentucky	Department of Defense	281,114	281,114	0	0	0	0	0	0	0
	Kentucky Total	281,114	281,114	0	0	0	0	0	0	0
Nevada	Department of Defense	219,692	219,692	0	0	0	0	0	0	0
	Department of Energy	6,730	1,156	5,574	0	0	0	0	0	126,573
	Nevada Total	226,422	220,849	5,574	0	0	0	0	0	126,573

State	Agency	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
New York	Department of Defense	60,562	60,562	0	0	0	0	0	0	7
	Department of Energy	165,606	0	165,606	0	0	0	0	0	0
	New York Total	226,168	60,562	165,606	0	0	0	0	0	7
Texas	Department of Defense	183,897	183,056	520	0	300	0	21	0	281
	Department of Energy	2,216	2,216	0	0	0	0	0	0	876
	Department of Treasury	0	0	0	0	0	0	0	0	500
	Texas Total	186,113	185,272	520	0	300	0	21	0	1,657
South Carolina	Department of Defense	139,972	139,972	0	0	0	0	0	0	0
	Department of Energy	33,660	5,738	27,921	0	0	0	0	265,180	94,087
	South Carolina Total	173,631	145,710	27,921	0	0	0	0	265,180	94,087
Illinois	Department of Defense	304	0	56	0	248	0	0	0	1
	Department of Energy	172,963	0	172,963	0	0	0	0	0	3,619
	Illinois Total	173,267	0	173,019	0	248	0	0	0	3,620
Colorado	Department of Defense	66,745	66,743	2	0	0	0	0	0	0
	Department of Energy	93,473	0	93,473	0	0	0	0	0	96,232
	Department of Treasury	5	0	5	0	0	0	0	0	235
	Colorado Total	160,222	66,743	93,479	0	0	0	0	0	96,467

State	Agency	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
California	Department of Defense	153,748	152,456	1,292	0	0	0	0	202,100	5,812
	Department of Energy	2,006	1,870	136	0	0	0	0	0	9,800
	California Total	155,755	154,326	1,429	0	0	0	0	202,100	15,612
Oregon	Department of Defense	140,459	0	3,652	0	0	134,372	2,435	0	0
	Department of Energy	78	0	78	0	0	0	0	0	1,024
	Oregon Total	140,537	0	3,730	0	0	134,372	2,435	0	1,024
Virginia	Department of Defense	116,833	113,505	3,328	0	0	0	0	0	2,014
	Department of Homeland Security	1,504	1,504	0	0	0	0	0	0	6,300
	National Aeronautics and Space Administration	93	0	15	0	0	0	78	0	1,080
	Virginia Total	118,430	115,009	3,343	0	0	0	78	0	9,394
Hawaii	Department of Defense	97,600	95,735	1,866	0	0	0	0	0	1,782
	Hawaii Total	97,600	95,735	1,866	0	0	0	0	0	1,782
Idaho	Department of Energy	85,125	10,749	74,131	0	158	0	87	0	14,192
	Environmental Protection Agency	3,397	3,397	0	0	0	0	0	0	0
	Idaho Total	88,523	14,146	74,131	0	158	0	87	0	14,192
	Total for These States	**3,726,226**	**2,976,595**	**608,639**	**2,204**	**1,794**	**134,372**	**2,621**	**467,280**	**373,752**

Industry Sector (SIC Code) Overview of Generation and Management Trends. In 2003, a PC quantity was reported by federal facilities in 26 different SIC codes. Exhibit 5.19 presents the PC quantities (from 1999-2003) for those 5 industry sectors (SICs) that accounted for 98 percent of the total quantity of PCs in 2003. Over 96 percent of this quantity was Lead and lead compounds. Federal facilities in SIC 9711 (National Security) reported almost 98 percent of the total quantity of PCs reported by federal facilities in 2003. In 2003, facilities in 4 of these 5 industry sectors reported a significant increase in the quantity of PCs, compared to the quantity reported in 2001.

Exhibit 5. 19. Quantity (pounds) of Priority Chemicals in the Industry Sectors (SICs) that Accounted for 98 Percent of the total Priority Chemical Quantity in 2003

Primary SIC Code	SIC Description	1999	2000	2001	2002	2003	Change in Quantity (2001-2003)	Percent Change in Quantity (2001-2003)	Percent of Total Quantity of Priority Chemicals Reported by Federal Facilities (2003)
9711	National security	71,331	163,013	2,062,716	2,430,393	2,787,601	724,885	35.1%	67.5%
9511	Air, water, and solid waste management	0	0	14,618	20,227	644,853	630,235	4311.4%	15.6%
8733	Noncommercial research organizations	100,065	53	203,419	153,940	426,647	223,228	109.7%	10.3%
9229	Public order and safety, nec	96,394	83,279	106,528	150,708	107,661	1,133	1.1%	2.6%
3489	Ordnance and accessories, nec	0	0	3,108	29,376	93,473	90,364	2907.4%	2.3%

Exhibit 5.20 shows the PC quantity reported by federal facilities for each PC, by industry sector, in 1999-2003. In 2003, nearly 97 percent of the total quantity of PCs was lead and lead compounds. About 64 percent of the lead and lead compounds were reported by facilities in SIC 9711- National Security.

Exhibit 5. 20. Quantity of Priority Chemical Reported by Federal Facilities, By Priority Chemical and Industry Sector (1999-2003)

Chemical	Primary SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity reported by Federal Facilities in 2003
1,2,4 - Trichlorobenzene	3795	Tanks and tank components	0	0	0	160,000	0	0.0%
	9711	National security	0	0	0	112,827	45,552	1.1%
Benzo(g,h,i)perylene	8221	Colleges and universities	0	1		0	0	0.0%
	9711	National security	0	0	0	0	5	0.0%
Dioxin and dioxin-like compounds	9999	Nonclassifiable establishment	0	11	1	0	0	0.0%
Hexachlorobenzene	9711	National security	0	0	28	0	0	0.0%
Hexachloroethane	3795	Tanks and tank components	0	0	0	84,900	0	0.0%
	9711	National security	0	0	0	0	91,255	2.2%

Chemical	Primary SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity reported by Federal Facilities in 2003
Lead and Lead Compounds	2754	Commercial printing, gravure	0	0	0	284	41	0.0%
	2819	Industrial inorganic chemicals, nec	7,408	6,422	246	419	0	0.0%
	2892	Explosives	1,969	2,424	9,084	73,538	21,312	0.5%
	3341	Secondary nonferrous metals	0	0	41	0	0	0.0%
	3469	Metal stampings, nec	0	0	0	13	81	0.0%
	3482	Small arms ammunition	0	7,726	7,586	771	948	0.0%
	3483	Ammunition, except for small arms, nec	0	0	233	259	225	0.0%
	3489	Ordnance and accessories, nec	0	0	3,108	29,376	93,473	2.3%
	3499	Fabricated metal products, nec	4,912	5,633	9,700	7,937	4,582	0.1%
	3731	Ship building and repairing	0	0	0	1,616	2,151	0.1%
	3761	Guided missiles and space vehicles	0	0	2	3	2	0.0%
	3764	Space propulsion units and parts	0	0		416	251	0.0%
	3795	Tanks and tank components	0	0	219	85,264	0	0.0%
	7999	Amusement and recreation, nec	0	0	122	0	0	0.0%
	8221	Colleges and universities	0	0	7,787	10,570	14,886	0.4%
	8731	Commercial physical research	4,773	5	0	4,340	4,129	0.1%
	8733	Noncommercial research organizations	100,065	10	203,419	153,925	425,799	10.3%
	8744	Facilities support services	0	0	176	40	0	0.0%
	8999	Services, nec	0	0	988	2,019	746	0.0%
	9199	General government, nec	0	0	1,237	1,514	2,408	0.1%
	9221	Police protection	0	0	15,630	25,625	249	0.0%
	9229	Public order and safety, nec	96,394	83,279	106,528	150,708	107,661	2.6%
	9411	Administration of educational programs	0	0	20	0	0	0.0%
	9511	Air, water, and solid waste management	0	0	14,618	20,227	644,853	15.6%
	9512	Land, mineral, wildlife conservation	0	0	1,152	1,198	797	0.0%
	9621	Regulation, admin. of transportation	0	0	1,185	27,721	3,469	0.1%
	9661	Space research and technology	0	0	4,672	6,158	3,984	0.1%
	9711	National security	71,221	160,317	2,012,356	2,291,324	2,642,108	63.9%
	9999	Nonclassifiable establishment	0	0	40,179	178,605	11,608	0.3%

Chemical	Primary SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity reported by Federal Facilities in 2003
Mercury and Mercury Compounds	2819	Industrial inorganic chemicals, nec	0	4	14	0	0	0.0%
	3341	Secondary nonferrous metals	0	0	9	0	0	0.0%
	3482	Small arms ammunition	0	22	5	1	0	0.0%
	3483	Ammunition, except for small arms, nec	0	199	0	0	0	0.0%
	3499	Fabricated metal products, nec	95	20	278	186	16	0.0%
	8731	Commercial physical research	700	0	0	0	0	0.0%
	8733	Noncommercial research organizations	0	9	0	0	600	0.0%
	9199	General government, nec	0	0	0	0	78	0.0%
	9711	National security	0	55	47,568	5,394	656	0.0%
	9999	Nonclassifiable establishment	0	138	663	140	0	0.0%
Naphthalene	2819	Industrial inorganic chemicals, nec	3	0	0	0	0	0.0%
	3795	Tanks and tank components	0	0	0		111	0.0%
	4581	Airports, flying fields, and services	0	0	0	27	21	0.0%
	8733	Noncommercial research organizations	0	34	0	0	9	0.0%
	9199	General government, nec	0	0	0	30	0	0.0%
	9661	Space research and technology	0	0	0	0	78	0.0%
	9711	National security	110	2,641	2,764	20,848	7,336	0.2%
Polycyclic Aromatic Compounds	8221	Colleges and universities	0	54	0	0	0	0.0%
	8733	Noncommercial research organizations	0	0	0	16	238	0.0%
	9711	National security	0	0	0		690	0.0%
Total Quantity			287,650	269,003	2,491,618	3,458,240	4,132,407	

How Did Federal Agencies Manage Priority Chemicals Within SIC Codes? Federal facilities in 5 SIC codes reported 98 percent of the PCs in 2003. Exhibit 5.21 shows how federal facilities in these 5 industry sectors managed PCs. Overall, these facilities used land disposal, primarily onsite, for most of the total quantity of PCs. Facilities in the SIC 8733 (Noncommercial research organizations) and SIC 3489 (Ordnance and accessories, nec) primarily used offsite disposal. Most recycling was reported by facilities in SIC 9711 (National security).

Exhibit 5. 21. Methods used by Federal Facilities to Manage Priority Chemicals, by Industry Sector, in 2003

Primary SIC Code	SIC Description	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
9711	National security	2,787,601	2,528,146	116,254	2,204	4,151	134,372	2,475	467,477	444,277
9511	Air, water, and solid waste management	644,853	643,991	863	0	0	0	0	0	0
8733	Noncommercial research organizations	426,647	13,565	412,836	0	158	0	87	0	27,611
9229	Public order and safety, nec	107,661	86,160	21,501	0	0	0	0	0	7,743
3489	Ordnance and accessories, nec	93,473	0	93,473	0	0	0	0	0	96,232

Exhibit 5.22 shows the method used by federal facilities to manage PCs, by federal agency and sector in 2003. Federal facilities in every Agency reported land disposal as the primary and often only method for managing PCs.

Exhibit 5. 22. Methods used to Manage Priority Chemicals, by Agency and Industry Sector, in 2003

Primary SIC Code	SIC Description	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Department of Agriculture										
9199	General government, nec	2,408	2,408	0	0	0	0	0	0	19
Department of Agriculture Total		2,408	2,408	0	0	0	0	0	0	19
Department of Defense										
9711	National security	2,728,368	2,519,244	65,922	2,204	4,151	134,372	2,475	202,297	208,801
2892	Explosives	19,096	19,096	0	0	0	0	0	0	0
8221	Colleges and universities	14,859	14,859	0	0	0	0	0	0	7
9999	Nonclassifiable establishment	11,608	11,608	0	0	0	0	0	0	0
3482	Small arms ammunition	948	948	0	0	0	0	0	0	0
3764	Space propulsion units and parts	251	0	251	0	0	0	0	0	0
3483	Ammunition, except for small arms, nec	225	225	0	0	0	0	0	0	0
3795	Tanks and tank components	111	0	0	111	0	0	0	0	0
4581	Airports, flying fields, and services	21	0	0	0	21	0	0	0	0
3761	Guided missiles and space vehicles	2	0	2	0	0	0	0	0	1,586
Department of Defense Total		2,775,488	2,565,979	66,175	2,315	4,172	134,372	2,475	202,297	210,394

Primary SIC Code		SIC Description	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling
Department of Energy										
9511	Air, water, and solid waste management	641,456	640,593	863	0	0	0	0	0	0
8733	Noncommercial research organizations	426,647	13,565	412,836	0	158	0	87	0	27,611
3489	Ordnance and accessories, nec	93,473	0	93,473	0	0	0	0	0	96,232
9711	National security	53,574	7,398	46,176	0	0	0	0	265,180	229,176
3499	Fabricated metal products, nec	4,598	4,287	311	0	0	0	0	0	0
8731	Commercial physical research	4,129	0	4,129	0	0	0	0	26,000	455
2892	Explosives	2,216	2,216	0	0	0	0	0	0	876
9199	General government, nec	78	0	78	0	0	0	0	0	1,024
Department of Energy Total		1,226,171	668,060	557,865	0	158	0	87	291,180	355,374
Department of Homeland Security										
9229	Public order and safety, nec	107,661	86,160	21,501	0	0	0	0	0	7,743
9711	National security	5,659	1,504	4,156	0	0	0	0	0	6,300
9621	Regulation, admin. of transportation	3,469	1,877	1,592	0	0	0	0	0	0
3731	Ship building and repairing	2,151	0	2,151	0	0	0	0	0	0
8221	Colleges and universities	27	0	27	0	0	0	0	0	4,300
Department of Homeland Security Total		118,967	89,541	29,426	0	0	0	0	0	18,343
Department of Interior										
9512	Land, mineral, wildlife conservation	797	797	0	0	0	0	0	0	0
Department of Interior Total		797	797	0	0	0	0	0	0	0
Department of Justice										
9221	Police protection	249	0	249	0	0	0	0	0	0
Department of Justice Total		249	0	249	0	0	0	0	0	0
Department of Treasury										
3469	Metal stampings, nec	81	0	81	0	0	0	0	0	9,884
2754	Commercial printing, gravure	41	0	41	0	0	0	0	30	502
Department of Treasury Total		122	0	122	0	0	0	0	30	10,386
Environmental Protection Agency										
9511	Air, water, and solid waste management	3,397	3,397	0	0	0	0	0	0	0
Environmental Protection Agency Total		3,397	3,397	0	0	0	0	0	0	0
National Aeronautics and Space Administration										
9661	Space research and technology	4,061	3,962	21	0	0	0	78	0	1,513
National Aeronautics and Space Administration Total		4,061	3,962	21	0	0	0	78	0	1,513

Primary SIC Code		SIC Description	Total Quantity of Priority Chemicals (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling
Tennessee Valley Authority										
8999	Services, nec	746	0	746	0	0	0	0	0	1,800
Tennessee Valley Authority Total		746	0	746	0	0	0	0	0	1,800
Total Quantity of Priority Chemicals		4,132,407	3,334,144	654,605	2,315	4,331	134,372	2,640	493,507	597,828

Exhibit 5.23 shows the methods used by federal facilities to manage PCs in 2003, by chemical and sector. Hexachloroethane and 1,2,4 - trichlorobenzene were treated (primarily onsite) by federal facilities in SIC 9711 -National security. Lead and lead compounds, mercury and mercury compounds, and benzo(g,h,i)perylene were land disposed by federal facilities in every sector. About 86 percent of the naphthalene was sent to Energy recovery – mostly by federal facilities in SIC 9711. Some naphthalene also was land disposed or treated. For the PACs, federal facilities in SIC 9711 used onsite land disposal; facilities in SIC 8733 (Noncommercial research organizations, nec) used offsite energy recovery or treatment. Lead and lead compounds and mercury and mercury compounds accounted for most of the recycling reported by federal facilities. Aside from these two metals, recycling was only reported for naphthalene – by federal facilities in SIC 9711.

Exhibit 5. 23. Methods used to Manage Priority Chemicals, by Chemical and Industry Sector, in 2003

Primary SIC Code	SIC Description	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
1,2,4 - Trichlorobenzene										
9711	National security	45,552	0	0	0	0	45,461	91	0	0
Benzo(g,h,i)perylene										
9711	National security	5	5	0	0	0	0	0	0	0
Hexachloroethane										
9711	National security	91,255	0	0	0	0	88,911	2,344	0	0
Lead and Lead Compounds										
9711	National security	2,642,108	2,527,001	115,107	0	0	0	0	466,680	431,518
9511	Air, water, and solid waste management	644,853	643,991	863	0	0	0	0	0	0
8733	Noncommercial research organizations	425,799	13,565	412,234	0	0	0	0	0	27,611
9229	Public order and safety, nec	107,661	86,160	21,501	0	0	0	0	0	7,743
3489	Ordnance and accessories, nec	93,473	0	93,473	0	0	0	0	0	96,232
2892	Explosives	21,312	21,312	0	0	0	0	0	0	876
8221	Colleges and universities	14,886	14,859	27	0	0	0	0	0	4,307
9999	Nonclassifiable establishment	11,608	11,608	0	0	0	0	0	0	0

Primary SIC Code	SIC Description	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
3499	Fabricated metal products, nec	4,582	4,282	300	0	0	0	0	0	0
8731	Commercial physical research	4,129	0	4,129	0	0	0	0	26,000	455
9661	Space research and technology	3,984	3,962	21	0	0	0	0	0	1,513
9621	Regulation, admin. of transportation	3,469	1,877	1,592	0	0	0	0	0	0
9199	General government, nec	2,408	2,408	0	0	0	0	0	0	19
3731	Ship building and repairing	2,151	0	2,151	0	0	0	0	0	0
3482	Small arms ammunition	948	948	0	0	0	0	0	0	0
9512	Land, mineral, wildlife conservation	797	797	0	0	0	0	0	0	0
8999	Services, nec	746	0	746	0	0	0	0	0	1,800
3764	Space propulsion units and parts	251	0	251	0	0	0	0	0	0
9221	Police protection	249	0	249	0	0	0	0	0	0
3483	Ammunition, except for small arms, nec	225	225	0	0	0	0	0	0	0
3469	Metal stampings, nec	81	0	81	0	0	0	0	0	9,884
2754	Commercial printing, gravure	41	0	41	0	0	0	0	30	502
3761	Guided missiles and space vehicles	2	0	2	0	0	0	0	0	1,586
3341	Secondary nonferrous metals	0	0	0	0	0	0	0	0	0
Mercury and Mercury Compounds										
9711	National security	656	9	647	0	0	0	0	797	6,947
8733	Noncommercial research organizations	600	0	600	0	0	0	0	0	0
9199	General government, nec	78	0	78	0	0	0	0	0	1,024
3499	Fabricated metal products, nec	16	6	11	0	0	0	0	0	0
Naphthalene										
9711	National security	7,336	442	499	2,204	4,151	0	40	0	5,812
3795	Tanks and tank components	111	0	0	111	0	0	0	0	0
9661	Space research and technology	78	0	0	0	0	0	78	0	0
4581	Airports, flying fields, and services	21	0	0	0	21	0	0	0	0
8733	Noncommercial research organizations	9	0	1	0	0	0	8	0	0
Polycyclic Aromatic Compounds										
9711	National security	690	690	0	0	0	0	0	0	0
8733	Noncommercial research organizations	238	0	1	0	158	0	79	0	0
Total Quantity		**4,132,407**	**3,334,144**	**654,605**	**2,315**	**4,331**	**134,372**	**2,640**	**493,507**	**597,828**

Trends Report - Appendices

Appendix A - List of States (including territories) within each EPA Region

EPA Region 1
- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

EPA Region 2
- New Jersey
- New York
- Puerto Rico
- Virgin Islands

EPA Region 3
- Delaware
- District of Columbia
- Maryland
- Pennsylvania
- Virginia
- West Virginia

EPA Region 4
- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

EPA Region 5
- Illinois
- Indiana
- Michigan
- Minnesota
- Ohio
- Wisconsin

EPA Region 6
- Arkansas
- Louisiana
- New Mexico
- Oklahoma
- Texas

EPA Region 7
- Iowa
- Kansas
- Missouri
- Nebraska

EPA Region 8
- Colorado
- Montana
- North Dakota
- South Dakota
- Utah
- Wyoming

EPA Region 9
- Arizona
- California
- Hawaii
- Nevada
- American Samoa, Guam
- Northern Mariana Islands (MP)

EPA Region 10
- Alaska
- Idaho
- Oregon
- Washington

Appendix B - SIC Codes vs. NAICS Codes

In this Priority Chemical Trends Report, the industry sector analyses are keyed only to the Standard Industrial Classification (SIC) codes – as currently reported on the TRI Form R. Facilities with the following SIC code designations (that meet all other applicable threshold criteria for TRI reporting) must report toxic chemical releases and other waste management quantities of toxic chemicals each year:

- SIC major group codes 10 (except 1011, 1081, and 1094)
- SIC major group codes 12 (except 1241)
- SIC major group codes 20 through 39
- SIC codes 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce); or 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis).

Although facilities in the above SIC codes are required to report to TRI, facilities in additional industry sectors also choose to report to TRI even though they are not necessarily required to do so. The database developed for use in this Trends Report includes all facilities, regardless of SIC code (except as noted in the methodology (see Appendix C), that reported a PC quantity to TRI for reporting years 1998-2003.

EPA is considering the eventual switch to the North American Industry Classification System (NAICS) for reporting on the Form R, as discussed in a proposed rule (68 FR 13872), published on March 21, 2003. A final rule is anticipated in late 2005 – early 2006. At such time that the NAICS codes must be reported for the TRI Form R, the industry sector analyses presented in this Trends Report will likewise commence to use the NAICS codes. NAICS codes are already used by facilities who must submit the RCRA Hazardous Waste Biennial Report.

SIC Codes and Descriptions

SIC Code	SIC Description
100	**Agricultural Production -- Crops**
111	Wheat
112	Rice
115	Corn
116	Soybeans
119	Cash grains, nec
131	Cotton
132	Tobacco
133	Sugar cane and sugar beets
134	Irish potatoes
139	Field crops, except cash grains, nec
161	Vegetables and melons
171	Berry crops

172	Grapes
173	Tree nuts
174	Citrus fruits
175	Deciduous tree fruits
179	Fruits and tree nuts, nec
181	Ornamental nursery products
182	Food crops grown under cover
191	General farms, primarily crops
200	**Agricultural Production -- Livestock**
211	Beef cattle feedlots
212	Beef cattle, except feedlots
213	Hogs
214	Sheep and goats
219	General livestock, nec
241	Dairy farms
251	Broiler, fryer, and roaster chickens
252	Chicken eggs
253	Turkeys and turkey eggs
254	Poultry hatcheries
259	Poultry and eggs, nec
271	Fur-bearing animals and rabbits
272	Horses and other equines
273	Animal aquaculture
279	Animal specialties, nec
291	General farms, primarily animal
700	**Agricultural Services**
711	Soil preparation services
721	Crop planting and protecting
722	Crop harvesting
723	Crop preparation services for market
724	Cotton ginning
741	Veterinary services, for livestock
742	Veterinary services, specialties
751	Livestock services, except veterinary
752	Animal specialty services
761	Farm labor contractors
762	Farm management services
781	Landscape counseling and planning
782	Lawn and garden services
783	Ornamental shrub and tree services
800	**Forestry**
811	Timber tracts
831	Forest products
851	Forestry services

900	**Fishing, Hunting, and Trapping**
912	Finfish
913	Shellfish
919	Miscellaneous marine products
921	Fish hatcheries and preserves
971	Hunting, trapping, game propagation
1000	**Metal Mining**
1011	Iron ores
1021	Copper ores
1031	Lead and zinc ores
1041	Gold ores
1044	Silver ores
1061	Ferroalloy ores, except vanadium
1081	Metal mining services
1094	Uranium, radium, vanadium ores
1099	Metal ores, nec
1200	**Coal Mining**
1221	Bituminous and lignite coal mining, surface, and bituminous coal preparation plants
1222	Bituminous coal - underground
1231	Anthracite mining
1241	Coal mining services
1300	**Oil and Gas Extraction**
1311	Crude petroleum and natural gas
1321	Natural gas liquids
1381	Drilling oil and gas wells
1382	Oil and gas exploration services
1389	Oil and gas field services, nec
1400	**Nonmetallic Minerals, except fuels**
1411	Dimension stone
1422	Crushed and broken limestone
1423	Crushed and broken granite
1429	Crushed and broken stone, nec
1442	Construction sand and gravel
1446	Industrial sand
1455	Kaolin and ball clay
1459	Clay and related minerals, nec
1474	Potash, soda and borate minerals
1475	Phosphate rock
1479	Chemical and fertilizer mining, nec
1481	Nonmetallic minerals services
1499	Miscellaneous nonmetallic minerals, nec
1500	**General Building Contractors**
1521	Single-family housing construction

1522	Residential construction, nec
1531	Operative builders
1541	Industrial buildings and warehouses
1542	Nonresidential construction, nec
1600	**Heavy Construction, excluding bulidings**
1611	Highway and street construction
1622	Bridge, tunnel, and elevated highway
1623	Water, sewer, and utility lines
1629	Heavy construction, nec
1700	**Special Trade contractors**
1711	Plumbing, heating, air conditioning
1721	Painting and paper hanging
1731	Electrical work
1741	Masonry and other stonework
1742	Plastering, drywall, and insulation
1743	Terrazzo, tile, marble, mosaic work
1751	Carpentry work
1752	Floor laying and floor work, nec
1761	Roofing, siding, and sheet metal work
1771	Concrete work
1781	Water well drilling
1791	Structural steel erection
1793	Glass and glazing work
1794	Excavation work
1795	Wrecking and demolition work
1796	Installing building equipment, nec
1799	Special trade contractors, nec
2000	**Food and kindred products**
2011	Meat packing plants
2013	Sausages and other prepared meats
2015	Poultry slaughtering and processing
2021	Creamery butter
2022	Cheese, natural and processed
2023	Dry, condensed, evaporated products
2024	Ice cream and frozen desserts
2026	Fluid milk
2032	Canned specialties
2033	Canned fruits and vegetables
2034	Dehydrated fruits, vegetables, soups
2035	Pickles, sauces, and salad dressings
2037	Frozen fruits and vegetables
2038	Frozen specialties, nec
2041	Flour and other grain mill products
2043	Cereal breakfast foods

2044	Rice milling
2045	Prepared flour mixes and doughs
2046	Wet corn milling
2047	Dog and cat food
2048	Prepared feeds, nec
2051	Bread, cake, and related products
2052	Cookies and crackers
2061	Raw cane sugar
2062	Cane sugar refining
2063	Beet sugar
2064	Candy and other confectionery products
2066	Chocolate and cocoa products
2067	Chewing gum
2068	Salted and roasted nuts and seeds
2074	Cottonseed oil mills
2075	Soybean oil mills
2076	Vegetable oil mills, nec
2077	Animal and marine fats and oils
2079	Edible fats and oils, nec
2082	Malt beverages
2083	Malt
2084	Wines, brandy, and brandy spirits
2085	Distilled and blended liquors
2086	Bottled and canned soft drinks
2087	Flavoring extracts and syrups, nec
2091	Canned and cured fish and seafood
2092	Fresh or frozen prepared fish
2095	Roasted coffee
2096	Potato chips and similiar products
2097	Manufactured ice
2098	Macaroni and spaghetti
2099	Food preparations, nec
2100	**Tobacco products**
2111	Cigarettes
2121	Cigars
2131	Chewing and smoking tobacco
2141	Tobacco stemming and redrying
2200	**Textile Mill products**
2211	Broadwoven fabric mills, cotton
2221	Broadwoven fabric mills, man-made
2231	Broadwoven fabric mills, wool
2241	Narrow fabric mills
2251	Women's hosiery, except socks
2252	Hosiery, nec

2253	Knit outerwear mills
2254	Knit underwear mills
2257	Weft knit fabric mills
2258	Lace and warp knit fabric mills
2259	Knitting mills, nec
2261	Finishing plants, cotton
2262	Finishing plants, man-made
2269	Finishing plants, nec
2273	Carpets and rugs
2281	Yarn spinning mills
2282	Throwing and winding mills
2284	Thread mills
2295	Coated fabrics, not rubberized
2296	Tire cord and fabrics
2297	Nonwoven fabrics
2298	Cordage and twine
2299	Textile goods, nec
2300	**Apparel and other textile products**
2311	Men's and boys' suits and coats
2321	Men's and boys' shirts
2322	Men's and boys' underwear and nightwear
2323	Men's and boys' neckwear
2325	Men's and boys' trousers and slacks
2326	Men's and boys' work clothing
2329	Men's and boys' clothing, nec
2331	Women's and misses' blouses and shirts
2335	Women's, juniors' and misses' dresses
2337	Women's and misses' suits and coats
2339	Women's and misses' outerwear, nec
2341	Women's and children's underwear
2342	Bras, girdles, and allied garments
2353	Hats, caps, and millinery
2361	Girls' and children's dresses, blouses
2369	Girls' and children's outerwear, nec
2371	Fur goods
2381	Fabric dress and work gloves
2384	Robes and dressing gowns
2385	Waterproof outerwear
2386	Leather and sheep lined clothing
2387	Apparel belts
2389	Apparel and accessories, nec
2391	Curtains and draperies
2392	House furnishings, nec
2393	Textile bags

2394	Canvas and related products
2395	Pleating and stitching
2396	Automotive and apparel trimmings
2397	Schiffli machine embroideries
2399	Fabricated textile products, nec
2400	**Lumber and wood products**
2411	Logging
2421	Sawmills and planing mills, general
2426	Hardwood dimension and flooring mills
2429	Special product sawmills, nec
2431	Millwork
2434	Wood kitchen cabinets
2435	Hardwood veneer and plywood
2436	Softwood veneer and plywood
2439	Structural wood members, nec
2441	Nailed wood boxes and shook
2448	Wood pallets and skids
2449	Wood containers, nec
2451	Mobile homes
2452	Prefabricated wood buildings
2491	Wood preserving
2493	Reconstituted wood products
2499	Wood products, nec
2500	**Furniture and fixtures**
2511	Wood household furniture
2512	Upholstered household furniture
2514	Metal household furniture
2515	Mattresses and bedsprings
2517	Wood TV and radio cabinets
2519	Household furniture, nec
2521	Wood office furniture
2522	Office furniture, except wood
2531	Public building and related furniture
2541	Wood partitions and fixtures
2542	Partitions and fixtures, except wood
2591	Drapery hardware and blinds and shades
2599	Furniture and fixtures, nec
2600	**Paper and allied products**
2611	Pulp mills
2621	Paper mills
2631	Paperboard mills
2652	Set-up paperboard boxes
2653	Corrugated and solid fiber boxes
2655	Fiber cans, drums, and similar products

2656	Sanitary food containers
2657	Folding paperboard boxes
2671	Paper coated and laminated, packaging
2672	Paper coated and laminated, nec
2673	Bags - plastics, laminated and coated
2674	Bags - uncoated paper and multiwall
2675	Die-cut paper and board
2676	Sanitary paper products
2677	Envelopes
2678	Stationery products
2679	Converted paper products, nec
2700	**Printing and publishing**
2711	Newspapers
2721	Periodicals
2731	Book publishing
2732	Book printing
2741	Miscellaneous publishing
2752	Commercial printing, lithographic
2754	Commercial printing, gravure
2759	Commercial printing, nec
2761	Manifold business forms
2771	Greeting cards
2782	Blankbooks and looseleaf binders
2789	Bookbinding and related work
2791	Typesetting
2796	Plate making services
2800	**Chemicals and allied products**
2812	Alkalies and chlorine
2813	Industrial gases
2816	Inorganic pigments
2819	Industrial inorganic chemicals, nec
2821	Plastics materials and resins
2822	Synthetic rubber
2823	Cellulosic man-made fibers
2824	Organic fibers, noncellulosic
2833	Medicinals and botanicals
2834	Pharmaceutical preparations
2835	Diagnostic substances
2836	Biological products, except diagnostic
2841	Soap and other detergents
2842	Polishes and sanitation goods
2843	Surface active agents
2844	Toilet preparations
2851	Paints and allied products

2861	Gum and wood chemicals
2865	Cyclic crudes and intermediates
2869	Industrial organic chemicals, nec
2873	Nitrogenous fertilizers
2874	Phosphatic fertilizers
2875	Fertilizers, mixing only
2879	Pesticides and agricultural chemicals, nec
2891	Adhesives and sealants
2892	Explosives
2893	Printing ink
2895	Carbon black
2899	Chemical preparations, nec
2900	**Petroleum and coal products**
2911	Petroleum refining
2951	Asphalt paving mixtures and blocks
2952	Asphalt felts and coatings
2992	Lubricating oils and greases
2999	Petroleum and coal products, nec
3000	**Rubber and miscellaneous plastic products**
3011	Tires and inner tubes
3021	Rubber and plastics footwear
3052	Rubber and plastics hose and belting
3053	Gaskets, packing and sealing devices
3061	Mechanical rubber goods
3069	Fabricated rubber products, nec
3081	Unsupported plastics, film and sheet
3082	Unsupported plastics, profile shapes
3083	Laminated plastics, plate and sheet
3084	Plastics, pipe
3085	Plastics, bottles
3086	Plastics, foam products
3087	Custom compound purchased resins
3088	Plastics, plumbing fixtures
3089	Plastics products, nec
3100	**Leather and leather products**
3111	Leather tanning and finishing
3131	Footwear, cut stock
3142	House slippers
3143	Men's footwear, except athletic
3144	Women's footwear, except athletic
3149	Footwear, except rubber, nec
3151	Leather gloves and mittens
3161	Luggage
3171	Women's handbags and purses

3172	Personal leather goods, nec
3199	Leather goods, nec
3200	**Stone, clay, and glass products**
3211	Flat glass
3221	Glass containers
3229	Pressed and blown glass, nec
3231	Products of purchased glass
3241	Cement, hydraulic
3251	Brick and structural clay tile
3253	Ceramic wall and floor tile
3255	Clay refractories
3259	Structural clay products, nec
3261	Vitreous plumbing fixtures
3262	Vitreous china table and kitchenware
3263	Semivitreous table and kitchenware

Appendix C - Methodologies for Calculating Quantities of Priority Chemicals and Measuring Trends

The 2008 GPRA Goal Measurement Methodology

To identify and collect data on Priority chemicals (PCs) reported to the TRI in 1998 through 2003, EPA undertook the following steps:

1. Extract Data Regarding PCs Reported to TRI;
2. Exclude selected TRI data;
3. Identify Relevant Releases and Waste Management Quantities to Calculate PC Quantities; and
4. Analyze Data and Measure Progress Made Toward the 2008 GPRA Goal

These steps are described below.

Step 1: Extract Data Regarding Priority Chemicals Reported to TRI

Twenty-three of the 31 PCs identified by OSW are reported to TRI. Using the Chemical Abstract System (CAS) numbers of these 23 PCs (Exhibit C-1 and C-2), data on these chemicals were extracted from the TRI for reporting years 1998 through 2003. These 23 chemicals include the 17 PCs from the original methodology plus the 6 additional PCs that were required to be reported to TRI beginning in 1995 or 2000. It should be noted that if a facility reported multiple SIC codes, the designated primary SIC code was used. In developing this report, the TRI data (for 1998 through 2003), frozen as of January 14, 2005, were used. This is the same data set used for the *2003 TRI Public Data Release* (May 11, 2005). However, we subsequently made some revisions to the data based on quality assurance (QA) activities. The extracted data were used to create a PC database for the 2008 GPRA goal. Exhibit C-2 lists the PCs included in the 2008 GPRA methodology.

Exhibit C- 1. List of Priority Chemicals Tracked for the OSW Goals

Priority Chemicals	
Priority Chemicals Reported to TRI (Used in Methodology)	
1,2,4 - Trichlorobenzene	Lindane
2,4,5 - Trichlorophenol	Mercury and Mercury Compounds
Anthracene	Methoxychlor
Benzo(g,h,i)perylene	Naphthalene
Cadmium and Cadmium Compounds	Pendimethalin
Dibenzofuran	Pentachlorobenzene
Dioxins and Dioxin-like compounds	Pentachlorophenol
Heptachlor	Phenanthrene
Hexachloro-1, 3-butadiene	*Polychlorinated biphenyls (PCBs)
Hexachlorobenzene	Polycyclic Aromatic Compounds (PACs)
Hexachloroethane	Quintozene
Lead and Lead Compounds	Trifluralin
Priority Chemicals Not Reported to TRI (Not Used in Methodology)	
1,2,4,5-Tetrachlorobenzene	Endosulfan, alpha, beta-
4-Bromophenyl phenyl ether	Fluorene
Acenaphthene	Heptachlor epoxide
Acenaphthylene	Pyrene
For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and Heptachlor and Heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single Priority Chemical in this report. For example, Lead and Lead Compounds are addressed as a single Priority Chemical. Only the weight of the metal portion of metal compounds is reported to TRI. *Polychlorinated biphenyls (PCBs) are on the list of PCs and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.	

Exhibit C- 2. List of Priority Chemicals Tracked for the OSW Goals

The Priority Chemicals	
Priority Chemicals Reported to TRI Since 1991 –included in both the 2005 and 2008 GPRA Goals	
Anthracene	Mercury and Mercury Compounds
Methoxychlor	Cadmium and Cadmium Compounds
Dibenzofuran	Lead and Lead Compounds
Naphthalene	Lindane
Heptachlor	Pentachlorophenol
Hexachloro-1, 3-butadiene	Quintozene
Hexachlorobenzene	1,2,4 - Trichlorobenzene
Hexachloroethane	2,4,5 - Trichlorophenol
Trifluralin	
Priority Chemicals for Which Reporting to TRI Began in 1995 or 2000 – only included in the 2008 GPRA Goal	
Pendimethalin (1995)	Benzo(g,h,i)perylene (2000)
Phenanthrene (1995)	Dioxins and Dioxin-like Compounds (2000)
Pentachlorobenzene (2000)	TRI Polycyclic Aromatic Compounds (PAC) category (1995)

Step 2: Exclude Selected TRI Data

The following TRI data were excluded from the analysis:

- Data associated with Bevill exempt materials. The PC measurement methodology is intended to identify facilities with PCs and to calculate the quantity of these PCs that are amenable to waste minimization. Under legislation, referred to as the Bevill Amendment, certain wastes from mining and beneficiation activities are excluded from regulation as RCRA hazardous wastes. EPA also assumes that these wastes offer little, if any, waste minimization opportunities at this time. Facilities that reported the following SIC codes as their primary SIC code were excluded from the analysis (see Exhibit C-3), as it was assumed that all PCs reported by these facilities were associated with Bevill exempt materials:

Exhibit C- 3. Primary SIC Codes Excluded Due to Associated Bevill Exempt Materials

SIC Code	Description
1021	Copper ores
1031	Lead and zinc ores
1041	Gold ores
1044	Silver ores
1061	Ferroalloy ores, except vanadium
1099	Metal ores, nec
1221	Bituminous and lignite coal mining, surface, and bituminous coal preparation plants
1222	Bituminous coal - underground
3331	Primary copper
3339	Primary nonferrous metals, nec
4911	Electric services
4931	Electric and other services combined
4939	Combination utilities, nec

In addition, all data reported by the following facilities (primary SIC code 2816 or 2819) were excluded, as they are associated with the Bevill exempt titanium dioxide (TiO_2) process:

- DuPont Edge Moor, DE (DED000800284)
- Kerr-McGee Pigments, GA (GAD003282803)
- Louisiana Pigment, LP, LA (LAD985185149)
- Millennium Inorganic Chemicals, Hawkins Point Plant, MD (MDD003093515)
- Kerr-McGee Chemical LLC Electrolytic Plant, MS (MSD007025117)
- DuPont Delisle Plant, MS (MSD096046792)
- DuPont Johnsonville Plant, TN (TND004044491)
- U.S. Borax, Inc., CA (CAD000630020)
- IMC Chemicals, Inc., CA (CAD048456941)

Finally, all data reported by the following facilities (primary SIC code 3312) were excluded, as they are associated with blast furnace and basic oxygen furnace wastes, including dust/sludge and slag:

- Granite City Steel, IL (ILD008873937)
- ACME Steel Co. Riverdale Plant, IL (ILD020952362)

- Bethlehem Steel Corp. Burns Harbor Div., IN (IND003913423)
- Ispat Inland Inc., IN (IND005159199)
- USS Gary Works, IN (IND005444062)
- LTV Steel, Co., IN (IND005462601)
- AK Steel Corp., KY (KYD005013032)
- Bethlehem Steel, MD (MDD053945432)
- National Steel Corp. Great Lakes Ops., MI (MID004320479)
- Wheeling-Pittsburgh Steel Corp. Steubenville North, OH (OHD000810382)
- LTV Steel Co., Inc. Cleveland Works, OH (OHD004218673)
- AK Steel Corp. OH (OHD004234480)
- WCI Steel, Inc., OH (OHD060409521)
- Wheeling-Pittsburgh Steel Corp., Mingo Junction, OH (OHD980618177)
- Republic Tech. Intl. Lorain Plant, OH (OHR000037713)
- Allegheny Ludlum Corp., PA (PAD004335154)
- USS Mon Valley Works Edgar Thomson Plant, PA (PAD060682606)
- Geneva Steel, L.L.C., UT (UTD009086133)
- Weirton Steel Corp., WV (WVD000068908)
- Wheeling-Pittsburgh Steel Corp. Steubenville East, WV (WVD004319539)

$ Data reported by waste treatment facilities. Facilities that reported the following SIC codes as their primary SIC code were excluded from the analysis in order to avoid double-counting of wastes reported by both generating and treatment facilities:

Exhibit C- 4. Primary SIC Codes Excluded to Avoid Double-Counting

SIC Code	Description
3241	Cement, hydraulic
4953	Refuse systems
7389	Business services, nec

Step 3: Identify Relevant Releases and Waste Management Quantities to Calculate Priority Chemical Quantities

The TRI collects information on quantities of chemicals in wastes that are reported under the categories of releases or waste management. However, not all of these quantities are associated with hazardous waste. Therefore, it is necessary to determine which quantities are most likely relevant to the measurement of PC quantities in wastes (see Exhibit C-5). Since the purpose of this methodology is to identify those quantities of the PCs that are amenable to waste minimization, it is necessary to identify the relevant sections of TRI Form R – those quantities of PCs that are land disposed, treated, or sent to energy recovery. The revised methodology also allows distinctions to be made between PCs contained in RCRA Subtitle C hazardous wastes versus non-Subtitle C (non-hazardous) wastes. The non-Subtitle C wastes are not hazardous wastes and for the purposes of this methodology and the resulting database, are termed Subtitle D industrial wastes (excluding the Bevill exempt materials described above). In order to make the distinction between Subtitle C and Subtitle D wastes containing PCs, the methodology identifies which sections of the TRI generally apply to Subtitle C wastes and which sections generally apply to Subtitle D wastes. Please note that, for the purposes of this Trends Report, no distinction is shown between Subtitle C and Subtitle D wastes containing the PCs. Quantities presented in the Trends Report are the total of these two categories. However, the facility specific data in the database does contain a breakout of quantities according to onsite and offsite disposal, treatment, and energy recovery for both the Subtitle C and Subtitle D categories.

In calculating PC quantities associated with on-site management methods, it is generally assumed that:

- If the generating facility has a valid RCRA identification number (ID), the wastes are regulated under Subtitle C; and
- If the generating facility does not have a valid RCRA ID number, the wastes are regulated under Subtitle D.

In calculating PC quantities associated with off-site management methods, it is generally assumed that:

$ If the generating facility and the off-site facility have valid RCRA ID numbers, the wastes are regulated under Subtitle C;

$ If the generating facility has a valid RCRA ID number, but the off-site facility does not have a valid RCRA ID number, the wastes are regulated under Subtitle D; and

$ If the generating facility does not have a valid RCRA ID number, the wastes are regulated under Subtitle D.

Based on the above information, generating facilities with valid RCRA ID numbers may have reported wastes regulated under Subtitle C and Subtitle D, while generating facilities without valid RCRA ID numbers will have reported wastes regulated under Subtitle D.

The equations used to calculate the PC quantities associated with Subtitle C activities are presented in Exhibit C-6. The equations used to calculate the PC quantities associated with Subtitle D activities are presented in Exhibit C-7.

As shown in Exhibits C-6 and C-7, the PC quantities are calculated using data reported in Sections 5 and 6 of TRI Form R. Please note that a number of changes were made to the TRI Form R in 2002 and 2003 concerning offsite management codes (see Exhibit C-8).

Note, however, that data reported in these sections include all releases and transfers, regardless of whether they arise from catastrophic, remedial, one-time, or routine process operations. Because the purpose of this methodology is to identify those quantities that are amenable to waste minimization, it is necessary to minimize the effect that releases arising from catastrophic, remedial, or one-time events (i.e., quantities reported in Section 8.8 of TRI Form R) may have on the PC quantities. The criteria used to account for these releases are presented in Exhibit C-9.

Exhibit C-10 shows the TRI data files and data elements used to develop the databases that implement the 2008 GPRA goal measurement methodology. Exhibit C-11 shows the adjustments that OSW staff made to the TRI data extracted for the PCs database -- based on follow-up quality assurance activities.

Step 4: Analyze Data to Measure Progress Made Towards the 2008 GPRA Goal and Perform Trends Analyses

Data derived from the revised methodology, for TRI reporting years 1998-2003, applicable to the 23 PCs, is used to:

- Measure progress toward the 2008 GPRA goal of a 10 percent reduction of the total aggregated quantity of the 23 PCs, using 2001 as the baseline year and
- Evaluate trends for the 23 PCs, using aggregated and non-aggregated quantities, at the national, EPA Region, State, Industry sector, and Federal Agency (for federal facilities) levels, for the most recent 5 years of available TRI data (1999-2003). While there may be several different ways to calculate changes between years, EPA uses an absolute-quantity-change approach for this report. The absolute-quantity-change approach is used to evaluate the difference in the total aggregated PC quantity (land disposal quantity + treatment quantity + energy recovery quantity) reported for the 23 PCs between any two years.

Exhibit C- 5. Description of TRI Form R Sections

Section of Form R	Data Element Description	Associated with Subtitle C	Associated with Industrial Subtitle D
5.1	Fugitive air	No--Not relevant to waste minimization	No--Not relevant to waste minimization
5.2	Point-source air	No--Not relevant to waste minimization	No--Not relevant to waste minimization
5.3	Surface-water discharge	No--Not relevant to waste minimization	No--Not relevant to waste minimization
5.4.1	Underground injection on-site to Class I wells	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
5.4.2	Underground injection on-site to Class II-V wells	No	Yes
5.5.1A	Disposal in RCRA Subtitle C landfills	Yes	No
5.5.1B	Other landfills	No	Yes
5.5.2	On-site land treatment	No	Yes
5.5.3	On-site surface impoundment	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
5.5.3A	Subtitle C surface impoundment	Yes	No
5.5.3B	Other surface impoundment	No	Yes
5.5.4	Other on-site disposal	No	Yes
6.1	Discharges to Publicly Owned Treatment Works (POTWs)	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
6.2	Transfers to Other Off-Site Locations	Yes, as specified in the equations presented in Exhibit 3	Yes, as specified in the equations presented in Exhibit 4
8.1	Total releases	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
8.2	On-site energy recovery	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
8.3	Off-site energy recovery	Yes, as specified in the equations presented in Exhibit 3	Yes, as specified in the equations presented in Exhibit 4
8.4	On-site recycle	Valid waste minimization method	Valid waste minimization method
8.5	Off-site recycle	Valid waste minimization method	Valid waste minimization method
8.6	On-site treatment	Yes, if generating facility has a valid RCRA ID number	Yes, if generating facility does **not** have a valid RCRA ID number
8.7	Off-site treatment	Yes, as specified in the equations presented in Exhibit 3	Yes, as specified in the equations presented in Exhibit 4
8.8	Remedial actions, catastrophic events, or one-time events	Not amenable to minimization	Not amenable to minimization

Exhibit C- 6. Equations[1] Used to Calculate Priority Chemical Quantities Associated with RCRA Subtitle C Activities

Equation	Comments
On-Site Disposal	
[5.4.1] + [5.5.1A] + [5.5.3] + [5.5.3A]	▪ The quantities reported in Sections 5.5.1A and 5.5.3A are by definition Subtitle C quantities; thus, it is not necessary to determine whether the generating facility has a valid RCRA ID number ▪ Only Section 5.4.1 and 5.5.3 quantities reported by generating facilities with a valid RCRA ID number are included in the calculation ▪ Section 5.5.3A was added to Form R for reporting year 2003
Off-Site Disposal	
[6.1(metals and metal compounds)] + [*Subtitle C Disposal Off-Site Transfers*]	▪ Only Section 6.1 quantities reported by generating facilities with a valid RCRA ID number are included in the calculation ▪ *Subtitle C Disposal Off-Site Transfers* consist of the following two components: – Quantities associated with disposal codes M41, M62, M63, M71, M72, M81, M90, M94, and M99 sent to off-site facilities with a valid RCRA ID number – Quantities associated with disposal codes M65 and M66. The quantities associated with these disposal codes are by definition Subtitle C quantities; thus, it is not necessary to determine whether the off-site facility has a valid RCRA ID number The above quantities are reported in Section 6.2 of TRI Form R ▪ Facilities began to report M63 and M65 quantities in reporting year 2002 ▪ Facilities began to report M66 and M81 quantities in reporting year 2003
On-Site Energy Recovery	
[8.2]	▪ Only Section 8.2 quantities reported by generating facilities with a valid RCRA ID number are included in the calculation
Off-Site Energy Recovery	
[8.3] – [*Subtitle D Energy Recovery Off-Site Transfers*]	▪ Equation applies to generating facilities with a valid RCRA ID number only *Subtitle D Energy Recovery Off-Site Transfers* consist of quantities associated with energy recovery codes M56 and M92 sent to off-site facilities without a valid RCRA ID number. These quantities are reported in Section 6.2 of TRI Form R
On-Site Treatment	
[8.6]	▪ Only Section 8.6 quantities reported by generating facilities with a valid RCRA ID number are included in the calculation
Off-Site Treatment	
[8.7] – [*Subtitle D Treatment Off-Site Transfers*]	▪ Equation applies to generating facilities with a valid RCRA ID number only ▪ *Subtitle D Treatment Off-Site Transfers* consist of quantities associated with treatment codes M40, M50, M54, M61, M69, and M95 sent to off-site facilities without a valid RCRA ID number. These quantities are reported in Section 6.2 of TRI Form R

[1] Equations refer to TRI Form R section numbers described in Exhibit C-5

Exhibit C- 7[2]. Equations Used to Calculate Priority Chemical Quantities Associated with RCRA Subtitle D Activities

Equation	Comments
On-Site Disposal	
[5.4.1] + [5.4.2] + [5.5.1B] + [5.5.2] + [5.5.3] + [5.5.3B] + [5.5.4]	▪ The quantities reported in Sections 5.4.2, 5.5.1B, and 5.5.3B are by definition Subtitle D quantities; thus, it is not necessary to determine whether the generating facility has a valid RCRA ID number ▪ The quantities reported in Sections 5.5.2 and 5.5.4 are assumed to be Subtitle D quantities ▪ Only Section 5.4.1 and 5.5.3 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation ▪ Section 5.5.3B was added to Form R for reporting year 2003
Off-Site Disposal	
[6.1(metals and metal compounds)] + [*Subtitle D Disposal Off-Site Transfers*]	▪ Only Section 6.1 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation ▪ *Subtitle D Disposal Off-Site Transfers* consist of the following two components: – Quantities associated with disposal codes M64, M67, and M82. The quantities associated with these disposal codes are by definition Subtitle D quantities; thus, it is not necessary to determine whether the off-site facility has a valid RCRA ID number – Quantities associated with disposal codes M73 and M79 are assumed to be Subtitle D quantities – Quantities associated with disposal codes M41, M62, M63, M71, M72, M81, M90, M94, and M99 sent to off-site facilities without a valid RCRA ID number The above quantities are reported in Section 6.2 of TRI Form R ▪ Facilities began to report quantities to disposal codes M63 and M64 in reporting year 2002 ▪ Facilities began to report quantities to disposal codes M67, M81, and M82 in reporting year 2003
On-Site Energy Recovery	
[8.2]	▪ Only Section 8.2 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation
Off-Site Energy Recovery	
[8.3] + [*Subtitle D Energy Recovery Off-Site Transfers*]	▪ Only Section 8.3 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation ▪ *Subtitle D Energy Recovery Off-Site Transfers* consist of quantities associated with energy recovery codes M56 and M92 sent to off-site facilities without a valid RCRA ID number. These quantities are reported in Section 6.2 of TRI Form R
On-Site Treatment	
[8.6]	▪ Only Section 8.6 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation
Off-Site Treatment	
[8.7] + [*Subtitle D Treatment Off-Site Transfers*]	▪ Only Section 8.7 quantities reported by generating facilities without a valid RCRA ID number are included in the calculation ▪ *Subtitle D Treatment Off-Site Transfers* consist of quantities associated with treatment codes M40, M50, M54, M61, M69, and M95 sent to off-site facilities without a valid RCRA ID number. These quantities are reported in Section 6.2 of TRI Form R

[2] Equations refer to TRI Form R section numbers described in Exhibit C-5

Exhibit C- 8. Changes to Offsite Management Method Codes on TRI Form R

A Note About Management Method Code Changes in the TRI for Reporting Years 2002 and 2003

For reporting year 2002, disposal code M72 (Landfills/Disposal Surface Impoundment) was retired and replaced with M63 (Surface Impoundment), M64 (Other Landfills), and M65 (RCRA Subtitle C Landfills).

For reporting year 2003, disposal code M63 (Surface Impoundment) was retired and replaced with M66 (RCRA Subtitle C Surface Impoundment) and M67 (Other Surface Impoundment). In addition, M71 was retired and replaced with M81 (Underground Injection Class I Wells) and M82 (Underground Injection Class II-V Wells).

A review of the TRI data for reporting years 2002 and 2003 showed that some facilities reported quantities for M72 in 2002 and 2003, despite the fact that it was retired. Likewise, some facilities reported quantities for M63 and M71 in 2003, despite the fact that they were retired. Note, however, that facilities either reported to a retired management method code or to the new management method codes (e.g., M72 or M63/M64/M65).

Exhibit C- 9. Criteria Used to Account for TRI Form R Section 8.8 Quantities When Calculating
Priority Chemical Quantities Associated with RCRA Subtitle C and D Activities

Criteria [a, b]		Revision to Priority Chemical Quantities
	[8.8] = 0	None
	[8.8] = [*Subtitle C and D Total*]	All PC quantities calculated using the equations in Exhibits 6 and 7 were updated to zero
	[8.8] > [*Subtitle C and D Total*]	None
[8.8] > 0	[8.8] < [*Subtitle C and D Total*] AND [8.8] = [5.1] + [5.2]	None
	[8.8] < [*Subtitle C and D Total*] AND [8.8] = [5.3]	None
	[8.8] < [*Subtitle C and D Total*] AND [8.8] = [5.1] + [5.2] + [5.3]	None
	[8.8] < [*Subtitle C and D Total*] AND [8.8] = [8.4]	None
	[8.8] < [*Subtitle C and D Total*] AND [8.8] = [8.5]	None
	All Remaining Records	PC quantities calculated using the equations in Exhibits 6 and 7 (i.e., original PC quantities) were updated by undertaking the following steps: 1. Estimate percentage of *Subtitle C and D Total* for each original PC quantity 2. Assign portion of Section 8.8 quantity to each PC quantity category (e.g., Subtitle C on-site disposal, Subtitle D on-site disposal) based on percentages estimated under Step 1 3. Update PC quantities by subtracting estimated Section 8.8 quantity (i.e., quantity estimated under Step 2) from original PC quantities

[a] Equations refer to TRI Form R section numbers described in Exhibit C-5.
[b] *Subtitle C and D Total* refers to the sum of all PC quantities calculated using the equations in Exhibits C-6 and C-7.

Exhibit C- 10. TRI Data Files and Data Elements Used in the Development of the Databases that Implement the 2008 GPRA Goal Measurement Methodology [a, b]

US_1_XXXX
FORM TYPE
REPORTING YEAR
TRIFID
FACILITY NAME
FACILITY STATE
PRIMARY SIC CODE
RCRA NR A
FEDERAL FACILITY IND
GOCO FACILITY IND
DOCUMENT CONTROL NUMBER
CAS NUMBER
CHEMICAL NAME
UNIT OF MEASURE
TOTAL AIR EMISSIONS
TOTAL SURFACE WATER DISCHARGE
TOTAL UGRND INJ ONSITE TO CL I WELLS - POUNDS
TOTAL UGRND INJ ONSITE TO CL II-V WELLS - POUNDS
TOTAL RCRA SUBTITLE C LANDFILLS
TOTAL OTHER ON-SITE LAND RELEASES
TOTAL LAND TREATMENT
TOTAL SURFACE IMPOUNDMENTS
TOTAL RCRA C SURFACE IMPOUNDMENTS
TOTAL OTHER SURFACE IMPOUNDMENTS
TOTAL OTHER DISPOSAL
TRANSFERS TO POTWS (METALS AND METAL COMPOUNDS)
US_2a_XXXX
DOCUMENT CONTROL NUMBER
UNIT OF MEASURE
ENERGY RECOVERY ONSITE CURRENT YEAR
ENERGY RECOVERY OFFSITE CURRENT YEAR
QUANTITY TREATED ONSITE CURRENT YEAR
QUANTITY TREATED OFFSITE CURRENT YEAR
CATASTROPHIC RELEASES OR OTHER ONE-TIME EVENTS
US_3a_XXXX
DOCUMENT CONTROL NUMBER
UNIT OF MEASURE
OFF-SITE RCRA ID NR
TOTAL XFERS OFF-SITE AMOUNT - SOLIDIFICATION/STABILIZATION (METALS) M41
TOTAL XFERS OFF-SITE AMOUNT - WASTEWATER TRTMT (METALS) M62
TOTAL UNDERGROUND INJECTION AMOUNT M71
TOTAL LANDFILLS/DISPOSAL SURFACE IMPOUNDMENT AMOUNT M72
SURFACE IMPOUNDMENT TOTAL AMOUNT M63
OTHER LANDFILLS TOTAL AMOUNT M64
RCRA SUBTITLE C LANDFILLS TOTAL AMOUNT M65
TOTAL LAND TREATMENT TOTAL AMOUNT M73

TOTAL OTHER LAND DISPOSAL AMOUNT M79
TOTAL OTHER OFF-SITE MANAGEMENT AMOUNT M90
TOTAL TRANSFER TO WASTE BROKER-DISPOSAL AMOUNT M94
TOTAL UNKNOWN AMOUNT M99
TOTAL XFERS OFF-SITE AMOUNT - SOLIDIFICATION/STABILIZATION M40
TOTAL XFERS OFF-SITE AMOUNT - INCINERATION/THERMAL TREATMENT M50
TOTAL XFERS OFF-SITE AMOUNT - INCINERATION/INSIGNIFICANT FUEL VALUE M54
TOTAL XFERS OFF-SITE AMOUNT - WASTEWATER TREATMENT M61
TOTAL XFERS OFF-SITE AMOUNT - OTHER WASTE TREATMENT M69
TOTAL XFERS OFF-SITE AMOUNT - TRANSFER TO WASTE BROKER-WASTE TREATMENT M95
TOTAL XFERS OFF-SITE AMOUNT - ENERGY RECOVERY M56
TOTAL XFERS OFF-SITE AMOUNT - TRANSFER TO WASTE-BROKERENERGY RECOVERY M92
RCRA SUBTITLE C SURFACE IMPOUNDMENTS TOTAL AMOUNT M66
OTHER SURFACE IMPOUNDMENT TOTAL AMOUNT M67
UNDERGROUND INJ. CLASS I WELLS TOTAL AMOUNT M81
UNDERGROUND INJ. CLASS II-V WELLS TOTAL AMOUNT M82

[a] In each of the TRI data file names, "XXXX" stands for the reporting year (e.g., 1998, 1999).
[b] Data elements in italics are primary keys for the data file.

Exhibit C- 11. Revisions to TRI Data (extracted for Priority Chemicals database) Based on OSW's Follow-up Quality Assurance Activities

Database Table	Facility Name	TRIFID	RCRA ID	Chemical Name	Data Element	Revised Data
2008 GPRA Methodology_Part 1_1998						
File Type 1	SANDERS LEAD CO INC	36081-SNDRS-HENDE	ALD046481032	LEAD	TOTAL_OTHER_ONSITE_LAND_RELEASES	1,030,193
File Type 1	SANDERS LEAD CO INC	36081-SNDRS-HENDE	ALD046481032	CADMIUM	TOTAL_OTHER_ONSITE_LAND_RELEASES	21,740
2008 GPRA Methodology_Part 2_1999						
File Type 2a	BAYER CROPSCIENCE	63111-RHNPL-133EK	MOD985771195	LINDANE	QUANTITY_TREATED_OFFSITE_CURRENT_YEAR	2,644
2008 GPRA Methodology_Part 3_2000						
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	HEXACHLORO-1,3-BUTADIENE	ENERGY_RECOVERY_ONSITE_CURRENT_YEAR	878
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	HEXACHLORO-1,3-BUTADIENE	ENERGY_RECOVERY_OFFSITE_CURRENT_YEAR	2,273,336
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	HEXACHLORO-1,3-BUTADIENE	QUANTITY_TREATED_ONSITE_CURRENT_YEAR	2,274,214
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	HEXACHLOROETHANE	ENERGY_RECOVERY_OFFSITE_CURRENT_YEAR	783,824
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	HEXACHLOROETHANE	QUANTITY_TREATED_ONSITE_CURRENT_YEAR	817,179

Database Table	Facility Name	TRIFID	RCRA ID	Chemical Name	Data Element	Revised Data
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	NAPHTHALENE	ENERGY_RECOVERY_ONSITE_CURRENT_YEAR	46,697
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	NAPHTHALENE	ENERGY_RECOVERY_OFFSITE_CURRENT_YEAR	16,934
File Type 2a	DOW CHEMICAL LOUISIANA DIV	70765-THDWC-HIGHW	LAD008187080	NAPHTHALENE	QUANTITY_TREATED_ONSITE_CURRENT_YEAR	63,631
2008 GPRA Methodology_Part 4_2001						
File Type 1	U.S. MARINE CORPS BASE HAWAII KANEOHE BAY TRAINING FACILITY	96863-SMRNC-MAGAZ	HI6170022762	ALL REPORTED CHEMICALS	RCRA NR A	HI6170022762
File Type 1	U.S MARINE CORPS AIR GROUND COMBAT CENTER	92278-SMRNC-BLDG1	CA0170090013	ALL REPORTED CHEMICALS	RCRA NR A	CA0170090013
File Type 3a	STRUCTURAL METALS INC	78156-STRCT-POBOX	TXD008119414	LEAD COMPOUNDS	TOTAL_LANDFILLS/DISPOSAL_SURFACE_IMPOUNDMENT_M72	245,015
File Type 3a	OLD BRIDGE CHEMICALS INC	08857-LDBRD-OLDWA	NJD052204864	LEAD COMPOUNDS	TOTAL_LANDFILLS/DISPOSAL_SURFACE_IMPOUNDMENT_M72 (VALID OFF-SITE RCRA ID? = 0)	240,391
File Type 3a	OLD BRIDGE CHEMICALS INC	08857-LDBRD-OLDWA	NJD052204864	LEAD COMPOUNDS	TOTAL_LANDFILLS/DISPOSAL_SURFACE_IMPOUNDMENT_M72 (VALID OFF-SITE RCRA ID? = 1)	121,069
File Type 1	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	ALL REPORTED CHEMICALS	RCRA NR A	KSD984990903
2008 GPRA Methodology_Part 5_2002						
File Type 1	U.S. MARINE CORPS BASE HAWAII KANEOHE BAY TRAINING FACILITY	96863-SMRNC-MAGAZ	HI6170022762	ALL REPORTED CHEMICALS	RCRA NR A	HI6170022762
File Type 1	U.S. MARINE CORPS AIR GROUND COMBAT CENTER	92278-SMRNC-BLDG1	CA0170090013	ALL REPORTED CHEMICALS	RCRA NR A	CA0170090013
File Type 2a	VULCAN MATERIALS CO CHEMICALS DIV	70734-VLCNM-ASHLA	LAD092681824	HEXACHLORO-1,3-BUTADIENE	QUANTITY_TREATED_ONSITE_CURRENT_YEAR	714,480
File Type 3a	P KAY METAL INC	90058-PKYMT-2448E	CAL000024110	LEAD	RCRA_SUBTITLE C_LANDFILLS_TOTAL_AMOUNT_M65	116,000
File Type 1	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	ALL REPORTED CHEMICALS	RCRA NR A	KSD984990903

Database Table	Facility Name	TRIFID	RCRA ID	Chemical Name	Data Element	Revised Data
File Type 2a	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	LEAD	QUANTITY_RECYCLED_ONSITE_CURRENT_YEAR	0 12
File Type 3a	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	LEAD	RCRA_SUBTITLE C_LANDFILLS_TOTAL_AMOUNT_M65	1 26
File Type 3a	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	LEAD	TOTAL_TRANSFER_BROKER_DISPOSAL_M94	3.23
2008 GPRA Methodology_Part 6_2003						
File Type 1	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	ALL REPORTED CHEMICALS	RCRA NR A	KSD984990903
File Type 2a	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	LEAD	QUANTITY_RECYCLED_ONSITE_CURRENT_YEAR	0.15
File Type 3a	NATIONAL PLASTICS COLOR INC	67147-NTNLP-2600W	KSD984990903	LEAD	RCRA_SUBTITLE C_LANDFILLS_TOTAL_AMOUNT_M65	1.63

The 2005 GPRA Goal Measurement Methodology

To identify and collect data on PCs reported to the TRI between 1991 and 2003, the following steps were taken for this methodology:

1. Extract Data Regarding PCs Reported to TRI;
2. Identify relevant facilities;
3. Exclude certain treatment facility data;
4. Exclude data associated with new TRI reporting thresholds; and
5. Identify Relevant Releases and Waste Management Quantities to Calculate PC Quantities
6. Analyze Data and Measure Progress Made Toward the 2005 GPRA Goal

These steps are described below.

Step 1: Extract Data Regarding Priority Chemicals Reported to TRI
The Chemical Abstract System (CAS) numbers of 17 of the PCs[3] (see list below) were compared to the list of TRI chemicals to identify the PCs reported to the TRI. Exhibit C-12 lists the PCs included in the 2005 GPRA methodology. These 17 PCs were included in this methodology because they were reported to TRI since 1991 – the designated baseline year for the 2005 GPRA goal. Data on these chemicals were extracted from the TRI for reporting years 1991 through 2003. It should be noted that if a facility reported multiple SIC codes, the designated primary SIC code was used. In developing this report, the TRI data (for 1991 through 2003), frozen as of January 14, 2005, were used. This is the same data set used for the *2003 TRI Public Data Release* (May 11, 2005). However, we subsequently made some revisions to the data based on quality assurance (QA) activities. The extracted data were used to create a PC database for the 2005 GPRA goal.

Exhibit C- 12. Priority Chemicals Examined in This Analysis

Priority Chemical Names and CAS Numbers	
Anthracene (120-12-7)	Mercury (7439-97-6) and Mercury Compounds (N458)
Cadmium (7440-43-9) and Cadmium Compounds (N078)	Methoxychlor (72-43-5)
Dibenzofuran (132-64-9)	Naphthalene (91-20-3)
Heptachlor (76-44-8)	Pentachlorophenol (87-86-5)
Hexachloro-1, 3-butadiene (87-68-3)	Quintozene (82-68-8)
Hexachlorobenzene (118-74-1)	1,2,4-Trichlorobenzene (120-82-1)
Hexachloroethane (67-72-1)	2,4,5-Trichlorophenol (95-95-4)
Lead (7439-92-1) and Lead Compounds (N420)	Trifluralin (1582-09-8)
Lindane (58-89-9)	

[3] For this report, EPA combined each of the three metals (cadmium, lead, and mercury) with its associated compounds and analyzed each of them as a single entity. For example, Lead (CAS No. 7439921) and Lead compounds (CAS No. N420) are addressed as a single entity, Lead and Lead compounds, in this report. It is important to note that the data reported to the TRI are data on specific chemicals in the waste, not on the total quantity of waste. Thus, when the word "waste" is used in the context of TRI data, it only refers to chemicals in the waste.

Step 2: Identify Relevant Facilities
To be included in the analysis, a facility was required to meet two criteria:

- The facility must have a RCRA identification (ID) number; and

- The facility must be in one of the "original" reporting industries (i.e., industries that reported to the TRI prior to 1998, the year in which the list of reporting sectors was expanded).

Data for facilities that do not meet the above criteria were excluded.

Facilities with a RCRA Identification Number

Not all facilities that report to the TRI are generators of hazardous wastes. However, facilities that generate hazardous wastes must obtain an EPA ID number, referred to as the RCRA ID number when reporting to the TRI. Therefore, the assumption was made that facilities with a RCRA ID number are likely to generate PC quantities potentially associated with hazardous wastes, and, thus, the analysis would be limited to those facilities.

Facilities in "Original" Reporting Industries

The TRI covers a wide variety of industry sectors. Facilities in the manufacturing sector (i.e., SIC codes 20 through 39) have been required to report to the TRI since its inception. Beginning with reporting year 1998, other seven industry sectors have also been required to report to the TRI.

SIC codes added to the TRI in 1998:		
1021	1221	4953
1031	1222	5169
1041	1231	5171
1044	4911	7389
1061	4931	
1099	4939	

The main objective of the measurement methodology is to measure progress made toward the 2005 GPRA goal, using 1991 as the baseline. Thus, in order to measure this progress, it is necessary to ensure that only industry sectors that reported to the TRI in 1991 are included in the analysis. For this reason, PC quantities are based on original facilities, as categorized by the TRI Program. The TRI categorizes facilities as "original" or "new" based on the following logic.

For reporting years 1991 through 1997, all facilities are categorized as "original." However, beginning with reporting year 1998 (i.e., the year in which the seven new SIC codes were added to the TRI), facilities were categorized as "original" or "new" as follows:

- Original facilities:
  - -- Facilities that did not report any new SIC codes; and
  - -- Facilities that reported both original and new SIC codes and reported to the TRI any reporting year between 1991 and 1997.

- New facilities:
  - -- Facilities that only reported new SIC codes; and

-- Facilities that reported both original and new SIC codes and did not report to the TRI between 1991 and 1997.

Note that the above categorization was applied to each reporting year, beginning with 1998. In addition, *all* SIC codes reported by the facilities were considered in the categorization process. This includes SIC codes reported for chemicals other than the PCs and SIC codes other than those for the manufacturing sector (i.e., SIC codes other than SIC code 20 through 39).

Step 3: Exclude Certain Treatment Facility Data
Facilities that reported certain SIC codes (see Exhibit C-13) as their primary SIC code were excluded from the analysis in order to avoid double-counting of wastes reported by both generating and treatment facilities:

Exhibit C- 13. Primary SIC Codes Excluded to Avoid Double-Counting

SIC Code	Description
3241	Cement, hydraulic
4953	Refuse systems
7389	Business services, nec

Step 4: Exclude Data Associated with New TRI Reporting Thresholds
In 2000 and 2001, the TRI reporting threshold changed for the following PCs:

- Heptachlor;
- Hexachlorobenzene;
- Lead/lead compounds;
- Mercury/mercury compounds;
- Methoxychlor; and
- Trifluralin.

The new reporting thresholds for the above chemicals (i.e., 10 or 100 pounds) are far smaller than the previous TRI thresholds of 25,000 pounds annually for manufacturing and processing, and 10,000 pounds annually for other uses. As such, the number of facilities reporting these chemicals to TRI has increased.

In order to continue to measure progress towards the 2005 GPRA goal on a consistent basis, a "core" group of facilities was established for each PC that had a threshold change. This core group consists of all facilities (tracked by TRIFID number) that reported that chemical in a year prior to the threshold change. All remaining facilities were considered "non-core" facilities. Once the core and non-core facilities were identified, the total quantity of the chemical reported by each facility (i.e., the sum of the quantities reported in Sections 8.1 through 8.7 of TRI Form R) was estimated.

To be included in the analysis, data for each PC that had a threshold change were required to meet one of the following criteria:

- The data must be reported by a core facility for the PC; OR

- The data must be reported by a non-core facility with 10,000 pounds or more of PC for the reporting year. Note that these facilities were included because it was assumed that the facilities would have had to report to TRI based on the "initial" TRI reporting threshold (i.e., the 1991 TRI reporting threshold).

Step 5: Identify Relevant Releases and Waste Management Quantities to Calculate Priority Chemical Quantities

The TRI collects information on quantities of chemicals in wastes that are reported under the categories of releases or waste management. However, not all of these quantities are associated with hazardous waste.[4] Since the purpose of this methodology is to identify those quantities of the PCs that are amenable to waste minimization, it is necessary to identify the relevant sections of TRI Form R – those quantities of PCs that are land disposed, treated, or sent to energy recovery (see Exhibit C-12). Data for reported chemical quantities that did not meet these criteria were not included in the PC quantities and were removed from the PC database. Recycling is considered a valid mechanism for minimizing the presence of PCs and, as such, recycled quantities are not included in PC quantities.

Note that the above criteria were applied to each reporting year, beginning with 1991. As shown in Exhibits C-14, the PC quantities were calculated using data reported in Sections 5 and 6 of TRI Form R. Please note that a number of changes were made to the TRI Form R in 2002 and 2003 concerning offsite management codes (see Exhibit C-15).

Step 6: Analyze Data and Measure Progress Made Toward the 2005 GPRA Goal

The 17 PCs, for which there is data since 1991, are used to measure progress toward the 2005 GPRA goal of 50 percent reduction, using 1991 as the baseline year. Changes in PC quantities, from 1991 through 2003, are used to measure progress made toward this goal. While there may be several different ways to calculate changes between two years, EPA uses an absolute-quantity-change approach for this report. The absolute-quantity-change approach is used to evaluate the difference in the total aggregated PC quantity (land disposal quantity + treatment quantity + energy recovery quantity) reported for the 17 PCs between two time periods.

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[4] The term "hazardous waste" as used in this Trends Report refers to wastes that are regulated under RCRA Subtitle C, which are listed in 40 CFR 261.20-24 (characteristics of ignitability, corrosivity, reactivity, or toxicity), 40 CFR 260.31 (non-specific source wastes), 40 CFR 260.32 (specific source wastes) or 40 CFR 260.33 (discarded commercial chemical products). It should be noted that chemicals that are released in air emissions or surface water discharge may not be RCRA Subtitle C hazardous wastes, but may be considered to be hazardous under other regulatory statutes.

Exhibit C- 14. Description of TRI Form R Sections

Section of Form R	Data Element Description	Included in Priority Chemical Quantity?	Reason for Inclusion or Exclusion
5.1	Fugitive air	No	Not relevant to RCRA
5.2	Point-source air	No	Not relevant to RCRA
5.3	Surface-water discharge	No	Not relevant to RCRA
5.4.1	Underground injection on site to Class I wells	Yes	Relevant to RCRA
5.4.2	Underground injection on site to Class II-V wells	No	Not relevant to RCRA
5.5.1A	Disposal in RCRA Subtitle C landfills	Yes	Relevant to RCRA
5.5.1B	Other landfills	No	Not relevant to RCRA
5.5.2	On-site land treatment	Yes	Relevant to RCRA
5.5.3	On-site surface impoundment	Yes	Relevant to RCRA
5.5.3A	RCRA Subtitle C surface impoundment	Yes	Relevant to RCRA
5.5.3B	Other surface impoundment	Yes	Relevant to RCRA
5.5.4	Other on-site disposal	Yes	Relevant to RCRA
6.1	Discharges to publicly owned treatment works (POTWs)	Yes	Relevant to RCRA
6.2	Transfers to other off-site locations	Yes, as specified in the equations in Exhibit 3	Relevant to RCRA
8.1	Total releases	Yes	Amenable to minimization
8.2	On-site energy recovery	Yes	Amenable to minimization
8.3	Off-site energy recovery	Yes	Amenable to minimization
8.4	On-site recycle	No	Not amenable to minimization
8.5	Off-site recycle	No	Not amenable to minimization
8 6	On-site treatment	Yes	Amenable to minimization
8.7	Off-site treatment	Yes	Amenable to minimization
8.8	Remedial actions, catastrophic events, or one-time events	No	Not amenable to minimization

Exhibit C- 15. Equations Used to Calculate Priority Chemical Quantities

Equation [a, b]	Comments
Land Disposal	
[8.1] – [5.1] – [5.2] – [5.3] – [5.4.2] – [5.5.1B] – [*Subtitle D Disposal Off-Site Transfers*]	▪ Equation applies to all generating facilities ▪ *Subtitle D Disposal Off-Site Transfers* consist of the following two components: – Quantities associated with disposal codes M63, M71, M72, and M81 sent to off-site facilities with a valid RCRA ID number – Quantities associated with disposal codes M64, M67, and M82. The quantities associated with these disposal codes are by definition Subtitle D quantities; thus, it is not necessary to determine whether the off-site facility has a valid RCRA ID number The above quantities are reported in Section 6.2 of TRI Form R ▪ Facilities began to report M63 and M64 quantities in reporting year 2002 ▪ Facilities began to report M67, M81, and M82 quantities in reporting year 2003 ▪ Section 8.1 was revised in reporting year 2003. Revised Section 8.1 consists of Sections 8.1a, 8.1b, 8.1c, and 8.1d
Energy Recovery	
[8.2] + [8.3]	▪ Equation applies to all generating facilities
Treatment	
[8.6] + [8.7]	▪ Equation applies to all generating facilities

[a] Equations refer to TRI Form R section numbers described in Exhibit C-14.
[b] Negative quantities were revised to zero.

Exhibit C- 16. Changes to Offsite Management Method Codes on TRI Form R

A Note About Management Method Code
Changes in the TRI for Reporting Years 2002 and 2003

For reporting year 2002, disposal code M72 (Landfills/Disposal Surface Impoundment) was retired and replaced with M63 (Surface Impoundment), M64 (Other Landfills), and M65 (RCRA Subtitle C Landfills).

For reporting year 2003, disposal code M63 (Surface Impoundment) was retired and replaced with M66 (RCRA Subtitle C Surface Impoundment) and M67 (Other Surface Impoundment). In addition, M71 was retired and replaced with M81 (Underground Injection Class I Wells) and M82 (Underground Injection Class II-V Wells).

A review of the TRI data for reporting years 2002 and 2003 showed that some facilities reported quantities for M72 in 2002 and 2003, despite the fact that it was retired. Likewise, some facilities reported quantities for M63 and M71 in 2003, despite the fact that they were retired. Note, however, that facilities either reported to a retired management method code or to the new management method codes (e.g., M72 or M63/M64/M65).

Appendix D – List of Exhibits

Executive Summary

Section 1

Section 2

Section 3

Section 4

Section 5

United States Environmental Protection Agency
Office of Solid Waste (5302W)
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