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Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

Trends from the Toxic Release Inventory,
Biennial Reporting System, and the Hazardous
Waste Constituent Survey

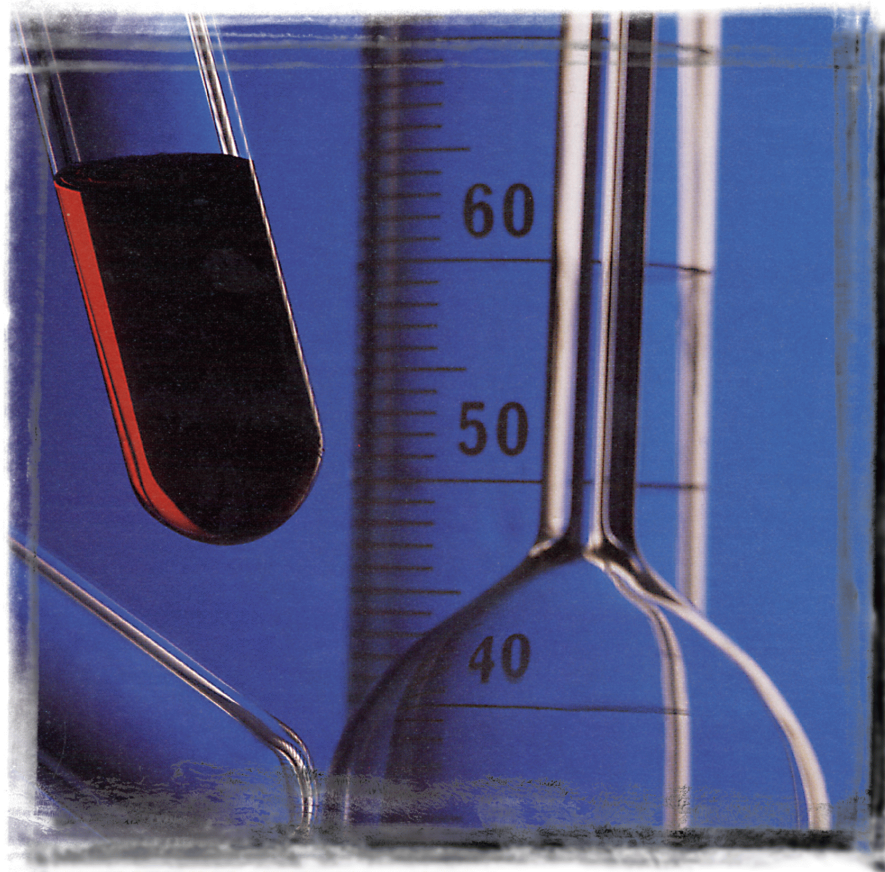


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Executive Summary

This report is an attempt to quantify the presence of persistent, bioaccumulative, and toxic (PBT) chemicals in hazardous waste streams. Within the year, EPA headquarters is scheduled to publish an expanded list of PBT chemicals for the agency. In the absence of a comprehensive PBT list, the chemicals selected for this report represent Region 10-specific priority chemicals that exhibit at least some PBT attributes. This report uses the November 9, 1998 Federal Register (63 FR 60332) as a basis for determining priority chemicals, with the least persistent, bioaccumulative, and toxic chemicals excluded from analysis.

To create this report, Region 10 used the Toxic Release Inventory, Biennial Reporting System, and National Hazardous Waste Constituent Survey databases. All measurements in this report focus on the Government Performance and Results Act (GPRA) goal of reducing PBT chemicals in hazardous waste streams 50% by 2005, using a baseline of 1991. When interpreting

the results of these measurements, it is important to keep in mind the limitations of the data. For example, the Biennial Reporting System reports gross tons of hazardous waste with no measurement of the concentration of PBT constituents. Similarly, since the Toxic Release Inventory (TRI) has such a high reporting threshold, the usage or release of PBT chemicals by small and medium sized companies is generally not reported. For these reasons, this report is intended only as a starting point for discussion with states, tribes, local governments, environmental groups, and facilities interested in voluntary pollution prevention. Lastly, this report examines facilities in the RCRA high priority corrective action and permitting universes. When EPA Headquarters publishes a final list of PBT chemicals, Region 10 will work with our state partners to determine the best means of providing pollution prevention technical assistance.

Toxic Release Inventory (TRI) Results:

In 1991, twelve facilities reported at least one PBT chemical in their waste. These chemicals were lead, cadmium, pentachlorophenol, and naphthalene. By 1997, seven of the twelve facilities met the 50% reduction goal for at least one PBT chemical.

Facility	Constituent	Percentage change	Met GPRA 50% reduction goal
ALASKA			
No facilities reporting PBT constituents in waste to TRI			
IDAHO			
Blount CCI	Lead	17%	
FMC	Cadmium	-14%	

Facility	Constituent	Percentage change	Met GPRA 50% reduction goal
OREGON			
Taylor Lumber	Pentachlorophenol	123%	
J.H. Baxter	Pentachlorophenol	-66%	/
Oregon Steel Mills	Lead	-38%	
WASHINGTON			
Boeing -- Everett	Lead	-100%	/
	Cadmium	-100%	/
Cascade Pole and Lumber	Pentachlorophenol	-100%	/
Texaco Refining	Lead	-100%	/
Arco Products	Lead	-100%	/
	Naphthalene	-29%	
Bay Zinc	Lead	-3%	
Shell Oil	Lead	-100%	/
Seafab Metals	Lead	-100%	/

By 1997, due to expanded TRI reporting requirements, a total of seventeen facilities reported at least one PBT chemical in their waste since the 1991 baseline reporting year. Also, the reporting of polycyclic aromatic hydrocarbons such as naphthalene and anthracene increased since the 1991 GPRA baseline reporting year.

Biennial Reporting System (BRS) Results:

A total of fifty-two high priority corrective action and permitting facilities reported possible PBT wastes to BRS. Of these facilities, twenty-five reduced their persistent, bioaccumulative, and toxic on-site production waste streams to meet the 50% reduction target. Washington had the greatest number of facilities meeting the GPRA goal (13 out of 25), followed by Alaska (5 out of 8), Oregon (5 out of 13), and Idaho (2 out of 6).

GPRA Progress as Measured by the Biennial Reporting System 1991-1997

State	# of GPRA baseline facilities	# of facilities reporting generation of possible PBT waste	# of facilities meeting 50% PBT reduction target	% of facilities meeting 50% PBT reduction target
Alaska	9	8	5	63%
Idaho	13	6	2	33%
Oregon	28	13	5	38%
Washington	47	25	13	52%
Region 10	97	52	25	48%

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National Hazardous Waste Constituent Survey Results:

Since the National Hazardous Waste Constituent Survey contains only a small subset of facilities, it is not possible to draw broad regional conclusions. However, the amount of RCRA exempt wastewater reported in the National Hazardous Waste Constituent Survey does illustrate the complexity of pollution prevention. Efforts to reduce waste managed under RCRA have the potential to transfer contaminants to other media, such as water or air. In the case of persistent, bioaccumulative, and toxic chemicals, these potential cross media transfers could be dramatic.

Background and Purpose

Under the Government Performance and Results Act (GPRA), the Environmental Protection Agency (EPA) committed to the following goal:

GPRA Subobjective 4a: By 2005, reduce the most persistent, bioaccumulative, and toxic chemicals in our nation's hazardous waste streams by 50% as compared with a baseline year of 1991.

In the fiscal year 2001 Beginning of Year Plan (BYP), an internal EPA planning document, the EPA Headquarters Office of Solid Waste urges "Regions and States to work directly with TSD facilities that generate and manage PBT wastes during the permitting process to find ways to reduce the generation and management of these wastes." In addition to voluntary waste minimization during the permitting process, the EPA Headquarters Office of Solid Waste suggests working with facilities in the corrective action program who still generate persistent, bioaccumulative, and toxic (PBT) wastes in their current industrial processes.

A key impetus for the creation of this report is to determine if the voluntary waste minimization strategy stated in the BYP would be effective in Region 10. Many of the facilities, within the permitting and corrective action universe, are poor candidates for waste minimization. Sites in the corrective action and/or post-closure permit track are often inactive facilities. These facilities no longer generate RCRA

waste aside from remediation residuals. Additionally, facilities in the operating permit track are often in the business of collecting and managing hazardous waste from other commercial entities. For these facilities, such as Safety-Kleen, there is little financial incentive for waste minimization. However, there are facilities within the corrective action and permitting universe that generate waste from ongoing industrial or service operations, such as military bases. These are the facilities that have potential for voluntary waste minimization activities.

This report is the second effort by Region 10 to measure PBT chemical usage and release in Alaska, Idaho, Oregon, and Washington. The previous report released by the Office of Waste and Chemicals is entitled *Region 10: Persistent, Bioaccumulative, and Toxic Chemical Summary Report: Toxic Release Inventory Trends 1991-1997*. This report can be found as an Adobe Acrobat PDF file at the following Internet address:

<http://yosemite.epa.gov/R10/OWCM.NSF/c248ff3760df43e1882565000062b83c/1d36cf8cfaca33c48825693e0079106e?OpenDocument>

Waste Minimization and Pollution Prevention Activity in Region 10

EPA Region 10 supports pollution prevention through grants and 2.5 full-time employees, however most direct pollution prevention technical assistance is done by state and local governments. Both Oregon and Washington are environmental leaders with respect to pollution prevention. Oregon's Toxic Use Reduction Act, passed in 1989, requires hazardous waste generators to create toxic use reduction plans aimed at source reduction. Similarly, Washington State's 1990 Hazardous Waste Reduction Act requires pollution prevention planning for facilities that generate in excess of 2,640 pounds of hazardous waste per year or report under the Toxics Release Inventory. Both programs provide pollution prevention (P2) technical assistance and engage in significant sector and geographic based education programs.

In addition to hazardous waste pollution prevention programs, both Washington and Oregon have draft PBT strategies similar to the national EPA PBT strategy. With a few state-specific modifications, both state PBT strategies target chemicals based on the Level 1 PBT chemicals cited in the US-Canada Binational Strategy (BNS). Upon final publication in the Federal Register of an expanded voluntary pollution prevention PBT chemical list, Region 10 hopes that both Washington and Oregon will consider broadening their focus to include other

chemicals that exhibit PBT characteristics. For more information about the effort to develop an expanded PBT list for the purpose of voluntary waste minimization please see (<http://www.epa.gov/wastemin/>).

Lack of regulatory authority and financial resources hinder waste minimization efforts in Alaska. Since Alaska is not authorized for the RCRA program, EPA Region 10 is the direct implementer of RCRA permitting and corrective action. It is Region 10 policy that all permit writers, when reviewing a permit, comment on waste minimization with respect to the requirements of RCRA Section 3005(h). However, since there are few regulatory citations in the Code of Federal Regulations defining the requirements of RCRA Section 3005(h), these waste minimization requirements pale in comparison to the pollution prevention and toxic use reduction plans required in Washington and Oregon. Until recently, EPA Region 10 Office of Waste and Chemicals partially funded pollution prevention and technical assistance work done by the Alaska Department of Environmental Conservation (ADEC). Last year, due to increased emphasis on meeting corrective action goals, Region 10 dedicated this funding entirely to support cleanup. However, Region 10 was pleased to secure grant money from the Office of Pollution Prevention and Toxics to research PBT

contamination in tribal subsistence food sources. Region 10 hopes, as the EPA PBT Initiative matures, more grant funding will be made available for regional, state, and local implementation projects.

Resources are also a constraint in Idaho. Unlike Washington and Oregon which have statutory authority and funding to support pollution prevention, Idaho has no equivalent Hazardous Waste Reduction or Toxics Use Reduction law. RCRA 3011 grant funding, the money allocated to authorized states by Congress to help support RCRA activities, has declined in real dollar terms. Due to these two factors, the Idaho State Waste Management and Remediation Office concentrates effort on the core basics necessary to maintain an effective authorized RCRA program. However, in 1999 and 2000, the Idaho Department of Environmental Quality (IDEQ) substantially increased the number of hazardous waste technical assistance visits.

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Region 10 High Priority Permitting and Corrective Action Facilities

FACILITY	RCRA ID (Last 4 digits)	LEAD AGENCY	GPRA UNIVERSE CA = Corrective Action, PC = Post Closure OP = Operating Permit
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ALASKA

Alaska Railroad Corp	AK7403	EPA	CA
Drift River Terminal	AK1811	EPA	CA
Tesoro	AK9682	EPA	CA/PC
USDOT CG Kodiak	AK0742	EPA	CA/PC
Univ. of AK Fairbanks	AK9567	EPA	CA/OP
BP Exploration	AK3239	EPA	OP
USAF Elemendorf	AK8649	EPA	OP
USArmy Ft. Richardson	AK2157	EPA	OP
USArmy Ft. Wainwright	AK2426	EPA	OP

IDAHO

Blount CCI	ID6481	ID	CA
FMC	ID9518	EPA	CA/OP/PC
Pacificorp	ID2631	ID	CA/PC
Safety-Kleen (ID2026)	ID2026	ID	CA
Safety-Kleen (ID1270)	ID1270	ID	CA
ESII-B	ID4654	ID	OP/PC
Safety-Kleen (ID0498)	ID0498	ID	OP
USAF Mtn. Home	ID4557	ID	OP
USDOE INEEL	ID8952	ID	OP
Boise Locomotive	ID6831	ID	PC
Dart Industries	ID7332	ID	PC
ESII-A	ID3952	ID	PC
Pressure Treated Timber	ID1018	ID	PC

OREGON

Baron Blakeslee	OR3384	OR	CA
Boeing of Portland	OR4481	EPA	CA
Chemical Waste Management	OR2353	OR	CA/OP/PC
Columbia Helicopters	OR3609	OR	CA/PC
Willamette Valley (Velco)	OR4400	EPA	CA
Northwest Industries	OR0835	OR	CA/PC
Permapost	OR1187	OR	CA/PC

FACILITY	RCRA ID (Last 4 digits)	LEAD AGENCY	GPRA UNIVERSE CA = Corrective Action, PC = Post Closure OP = Operating Permit
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Safety-Kleen (OR5481)	OR5481	OR	CA/PC
Taylor Lumber	OR2532	EPA	CA/PC
Van Waters & Rogers	OR7398	EPA	CA
Wah Chang	OR5848	OR/EPA	CA/OP
Safety-Kleen (OR6124)	OR6124	OR	OP
Safety-Kleen (OR2067)	OR2067	OR	OP
Tektronix	OR0231	OR	OP/PC
USA Umatilla	OR0917	OR	OP
Western Compliance Svcs	OR1682	OR	OP
Bergsoe Metal	OR1460	OR	PC
Cascade Wood	OR4351	OR	PC
Evanite Fiber	OR3466	OR	PC
J.H. Baxter	OR2400	OR	PC
Lockheed Martin	OR1025	OR	PC
Marion Cty. Pub Wks	OR2437	OR	PC
Mew Data Arms	OR5355	OR	PC
Oregon Coast Sanitation	OR9664	OR	PC
Oregon Steel Mills	OR6055	OR	PC
Pacific Fabricators	OR3267	OR	PC
Potter Mfg.	OR9545	OR	PC
Roseburg Forest Products	OR6716	OR	PC

WASHINGTON

BFG Kalama Chemical	WA9574	WA	CA/OP/PC
Boeing -- Everett	WA5464	WA	CA/OP
Boeing D & SG Tukwila	WA9946	WA	CA
Boeing Plant 2	WA6819	EPA	CA
Boeing Renton	WA2171	WA	CA
Burlington Env. Tacoma	WA7945	WA	CA/OP
Burlington Env. Pier 91	WA2917	WA	CA/OP
Burlington Env. Washougal	WA0250	WA	CA/OP
Burlington Env. Georgetown	WA2909	EPA	CA/OP
Cameron Yakima	WA7175	WA	CA/PC
Cascade Pole and Lumber	WA8357	WA	CA
Cleancare	WA8512	WA	CA/OP
General Electric	WA8706	WA	CA
International Paper	WA5917	WA	CA/PC
Northwest Enviroservice	WA7152	EPA	CA/PC
NW Petrochem (Tecnal)	WA4347	EPA	CA
OCC Tacoma	WA2314	WA	CA
TOXGON (Penberthy)	WA9644	WA	CA/OP
Pendleton Woolen Mills	WA5502	EPA	CA

FACILITY	RCRA ID (Last 4 digits)	LEAD AGENCY	GPRA UNIVERSE
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			CA = Corrective Action, PC = Post Closure OP = Operating Permit
Reichhold Chemicals	WA2891	EPA	CA/OP/PC
Rhone-Poulenc	WA2302	EPA	CA
Lilyblad	WA3032	WA	CA
Texaco Refining	WA6197	WA	CA/OP/PC
Tosco Ferndale Refinery	WA0366	WA	CA/OP/PC
USA HQ I Ft. Lewis	WA3465	WA	CA/OP
USDOE Hanford	WA8967	WA	CA/OP/PC
Van Waters & Rogers (spok)	WA6811	EPA	CA
Arco Products	WA8154	WA	OP/PC
Bay Zinc	WA0526	WA	OP
Boeing Auburn	WA7130	WA	OP
BEI Kent	WA1767	WA	OP
Shell Oil (Tesoro)	WA5082	WA	OP/PC
Sol Pro	WA9110	WA	OP
US Army Yakima	WA3995	WA	OP
US Navy Keyport	WA3419	WA	OP
US Navy PSNS	WA3418	WA	OP
USDOE Boneville	WA6349	WA	OP
Van Waters & Rogers (Kent)	WA8966	WA	OP
BSB Diversified (Hytek)	WA5182	WA	PC
Columbia River SVC	WA1074	WA	PC
Fuel Processors	WA2503	WA	PC
Okanogan Airport	WA0273	WA	PC
Schwerin Concaves	WA2216	WA	PC
Seafab Metals	WA1316	WA	PC
Siemens Power	WA8402	WA	PC
WA UW Tacoma Br.	WA4718	WA	PC
Western Farm Service WW	WA5420	WA	PC

Toxic Release Inventory Measurement and Methodology

The United States Congress created the Toxic Release Inventory following the 1984 chemical disaster in Bhopal, India, in which several thousand people died from a release of methyl isocyanate. The resulting Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986, mandated that a Toxics Release Inventory (TRI) be made public. TRI provides citizens with annual information about potentially hazardous chemicals and their use. Section 313 of EPCRA requires manufacturers to report releases of more than 600 designated toxic chemicals to the environment.

Manufacturing facilities that have the equivalent of 10 or more full-time employees and meet the established thresholds for manufacture, processing, or "otherwise use" of listed chemicals (i.e., manufactures or processes over 25,000 pounds of the approximately 600 designated chemicals or 28 chemical categories specified in the regulations, or uses more than 10,000 pounds of any designated chemical or category) must report their releases and other waste management quantities (including quantities transferred off-site for further waste management). Manufacturing facilities are defined as facilities in Standard Industrial Classification (SIC) codes 20-39, which include, among others: chemicals, petroleum refining, primary metals, fabricated metals, paper, plastics, and transportation equipment. Federal facilities have been required to report since 1994, regardless of their SIC classification. For more information about the Toxic Release Inventory please refer to (<http://www.epa.gov/tri/>).

In analyzing trends from the Toxic Release Inventory, it is important to keep in mind both the power of the database and its limitations. Due to reporting limitations, such as the 10,000 pound usage threshold, facility size, and SIC code requirements, the Toxic Release Inventory captures only a subset of total pollution prevention opportunities in the region. Furthermore, many important persistent, bioaccumulative, and toxic chemicals are not reported in TRI. However, EPA is taking steps to improve the quality and usefulness of TRI as a pollution prevention tool. In the 1998 reporting cycle, seven new industrial sectors were required to report under TRI:

- Metal mining (SIC code 10, except for SIC codes 1011,1081, and 1094)
- Coal mining (SIC code 12, except for 1241 and extraction activities)
- Electrical utilities that combust coal and/or oil (SIC codes 4911, 4931, and 4939)
- Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste treatment and disposal facilities (SIC code 4953)
- Chemicals and allied products wholesale distributors (SIC code 5169)
- Petroleum bulk plants and terminals (SIC code 5171)
- Solvent recovery services (SIC code 7389)

Beginning in the year 2000 reporting cycle, TRI will include the following previously

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unreported chemicals exhibiting persistent, bioaccumulative, and toxic characteristics:

- benzo(g,h,i)perylene
- benzo(j,k)fluorene (fluoranthene) (as a member of the PAC category)
- 3-methylcholanthrene (as a member of the PAC category)
- octochlorostyrene
- pentachlorobenzene
- tetrabromobisphenol A
- vanadium (except when contained in an alloy)
- vanadium compounds
- dioxin and dioxin-like compounds

Also in the year 2000, EPA lowered the reporting thresholds for the following PBT chemicals to provide more complete tracking and pollution prevention information (in pounds unless noted otherwise):

• Aldrin	100
• Benzo(g,h,i)perylene	10
• Chlordane	10
• Dioxin and dioxin-like compounds category	0.1 grams
• Heptachlor	10
• Hexachlorobenzene	10
• Isodrin	10
• Methoxychlor	100
• Octachlorostyrene	10
• Pendimethalin	100
• Pentachlorobenzene	10
• Polycyclic aromatic compounds category	100
• Polychlorinated biphenyl (PCBs)	10
• Tetrabromobisphenol A	100
• Toxaphene	10
• Trifluralin	100
• Mercury	10
• Mercury compounds	10

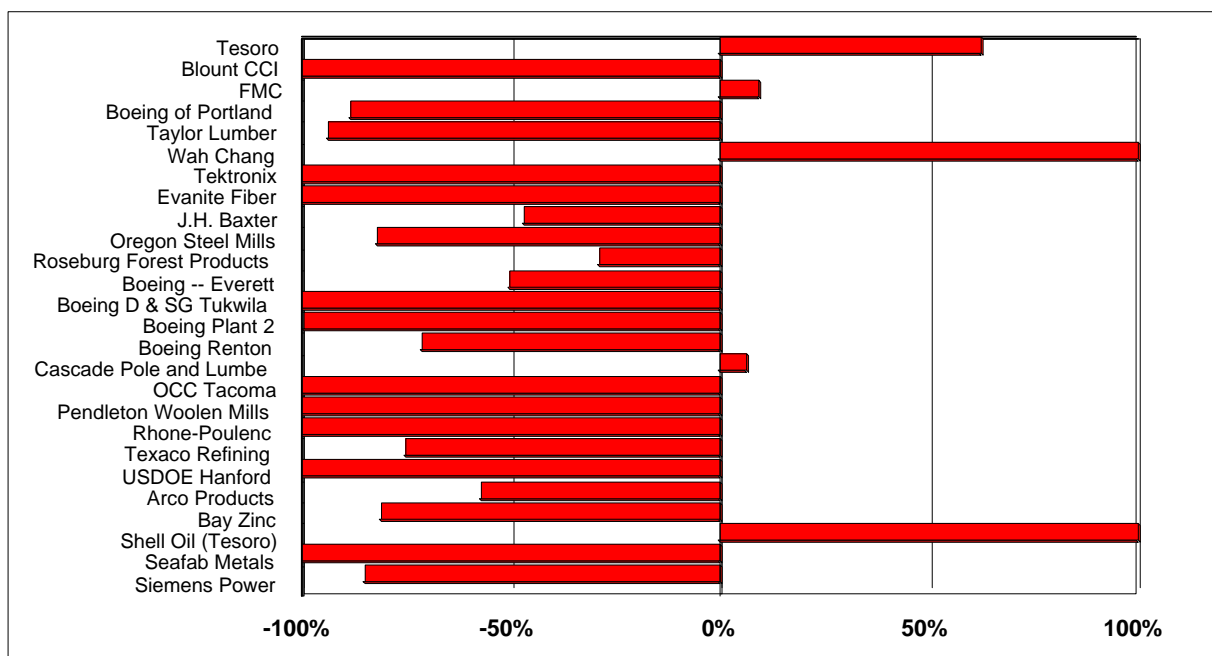
TRI information for this report was collected using the *Right to Know Network* database, which can be accessed on their website located at (<http://www.rtk.net>). All facility information was cross referenced by RCRA ID number for accuracy.

Toxic Release Inventory Trends 1991-1997

Of the total ninety-eight (98) facilities in the high priority corrective action and permitting universes, twenty-six (26) reported to the Toxic Release Inventory in 1991. Five of the twenty-six facilities that originally reported in 1991 did not report to TRI in 1997. These facilities are: Evanite Fiber (#ORD00903466), Boeing D & SG Tukwila (#WAD093639946), OCC Tacoma, Rhone-Poulenc, and Seafab Metals.

Total Releases

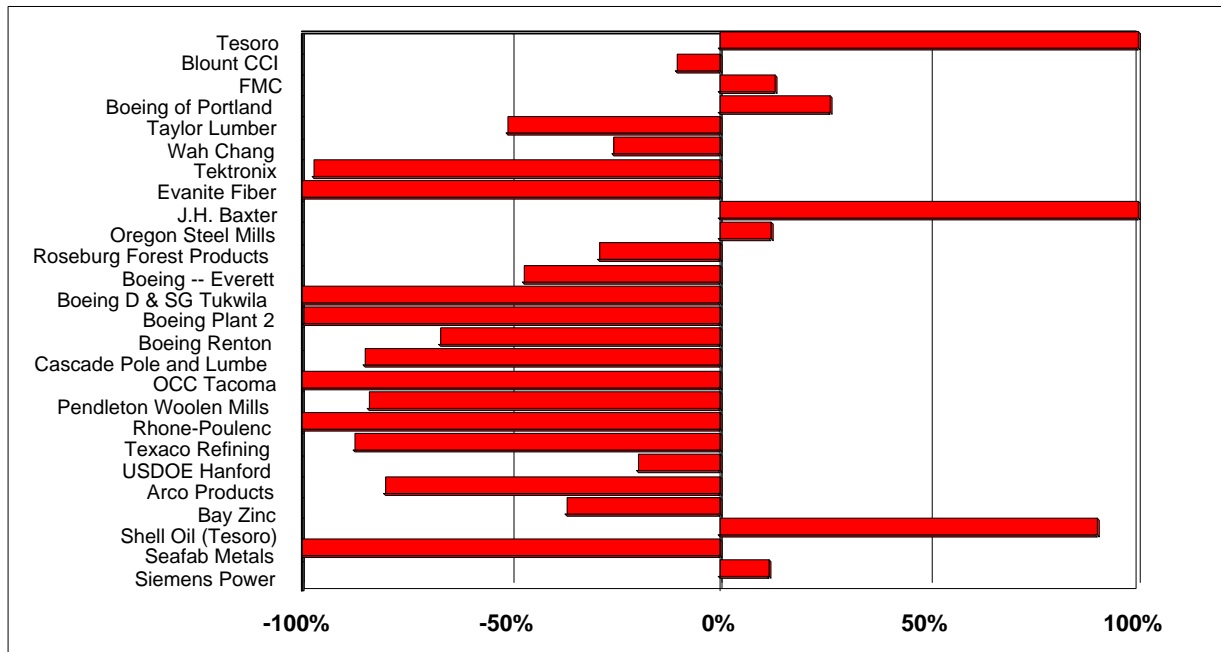
The graph below shows the change in total releases reported to TRI for the twenty-six (26) facilities that reported in 1991. The TRI category “total releases” is defined as on-site releases to all media: land, water, and air. All trends are shown as a percentage change from 1991 levels, with reductions shown as a negative percentage and increases shown as a positive percentage. Percentage change above one hundred percent (Wah Chang 218% and Shell Oil 105%) is not shown in the graph below. Also percentage change for the five facilities which did not report in the 1997 TRI reporting year is recorded as a 100% reduction.



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Total Reported TRI Waste

The graph below shows the change in total waste for all reported TRI chemicals between the 1991 and 1997 reporting years. Like the previous graph, reductions since 1991 are shown as a negative percentage and increases as a positive percentage. Waste increases above one hundred percent (>100%) are not shown in this graph (Tesoro 122%, J.H. Baxter 4684%).



Chemicals with PBT Characteristics Reported to the Toxic Release Inventory

None of the Binational Strategy Level 1 chemicals (Aldrin/Dieldrin, Benzo(a)pyrene, Chlordane, DDT, Hexachlorobenzene, Alkyl-Lead, Mercury, Mirex, Octachlorostyrene, PCBs, Dioxins, Furans, and Toxaphene) were reported under the Toxic Release Inventory by Region 10 high priority permitting and corrective action universe facilities. The chemicals shown in the following graphs, although not part of the Binational Strategy list of Level 1 persistent, bioaccumulative, and toxic chemicals do exhibit some PBT characteristics. For this reason, they are good candidates for potential voluntary pollution prevention efforts. Region 10 selected these chemicals from the *Notice of Availability of Draft RCRA Waste Minimization PBT Chemical List* as published in the November 9, 1998 Federal Register. This list has not been finalized, therefore Region 10 is tentatively using the draft list as a starting point for voluntary pollution prevention. For more information about the creation of this list and on-going efforts by the EPA to expand, refine, and research the list of other potential PBT chemicals, please refer to (<http://www.epa.gov/wastemin/>).

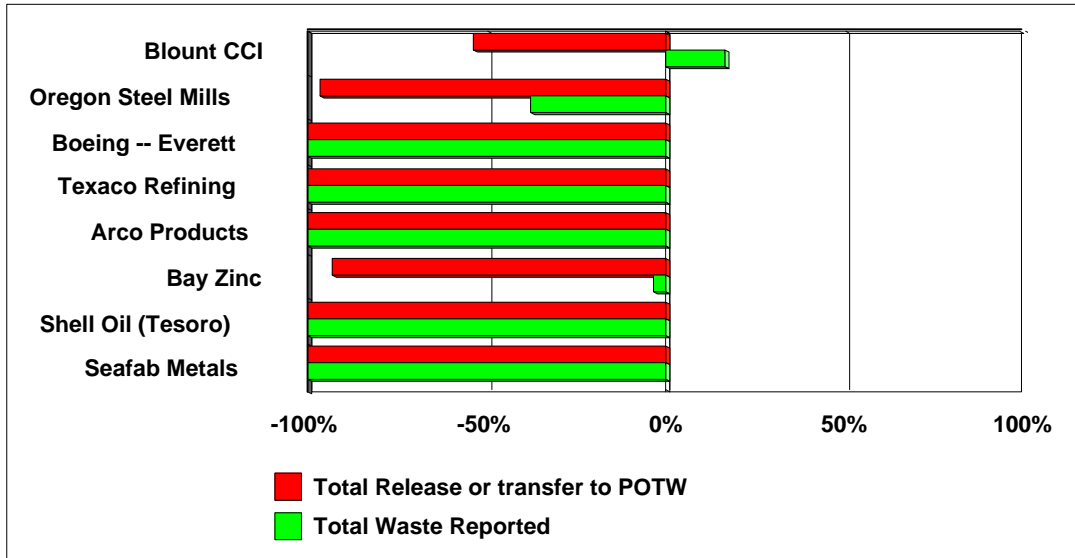
The graphs on the following pages show the percentage change in quantity reported to the Toxic Release Inventory between the 1991 and 1997 reporting years.

The red bar represents the percentage change in the sum of two TRI data fields, on-site releases and transfers to POTWs. The data field on-site releases includes all production-related and accidental releases to air, water, and land. The data field “transfers to POTWs” (publicly owned treatment works) measures the quantity of the chemical sent to municipal wastewater treatment plants. Because of the persistent quality of PBT chemicals, transfers to municipal wastewater treatment plants could result in release to the environment or additional burden to the POTW.

The green bar represents the percentage change in quantity of the chemical reported in production waste between 1991 and 1997. Chemical reductions since the 1991 reporting year are shown as negative percentages and increases since 1991 are shown as positive percentages. Percentage change bar graphs are only shown for those facilities that reported in the 1991 baseline year. However, release and production waste quantity information is shown for all facilities in the table beneath each graph.

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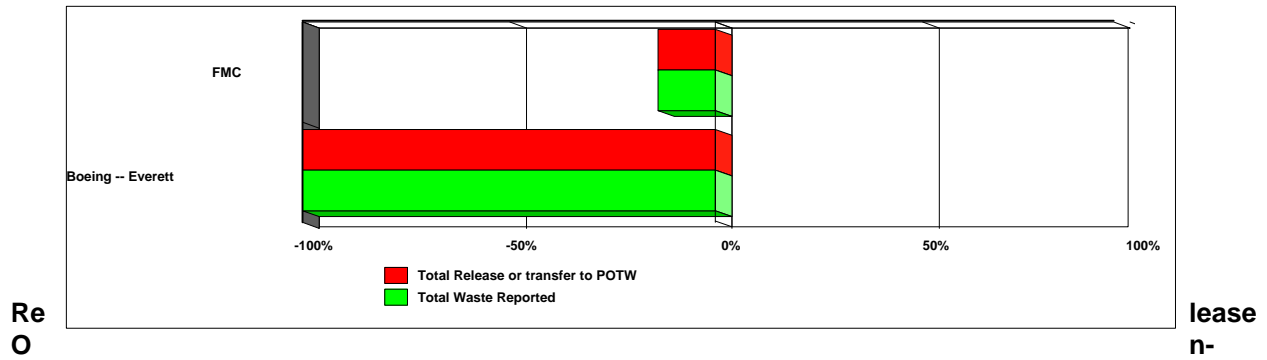
Lead and Lead Compounds



	Release On-site & Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
Blount CCI	330	154	-53%	146,345	170,932	17%
Oregon Steel Mills	13,250	514	-96%	461,000	287,500	-38%
Boeing -- Everett	755	0	-100%	4,110	0	-100%
Texaco Refining	255	0	-100%	2,431	0	-100%
Arco Products	1,026	0	-100%	1,100	0	-100%
Bay Zinc	3,130	229	-93%	54,100	52,230	-3%
Shell Oil (Tesoro)	5	0	-100%	75	0	-100%
Seafab Metals	495	0	-100%	21,000,495	0	-100%
USDOE INEEL	0	3,549	-	0	214,430	-
US Navy PSNS	0	1,005	-	0	35,000	-

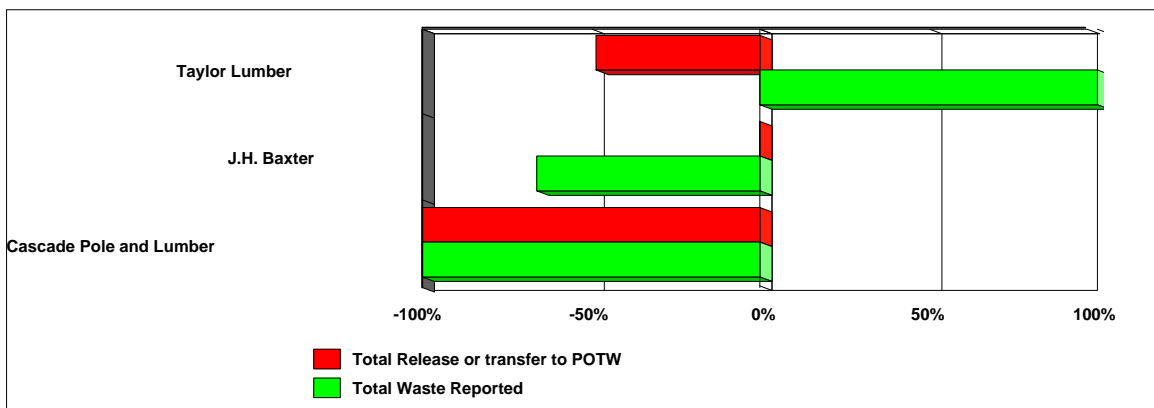
Note: Beginning in the 1994 reporting year, federal facilities were required to report under the Toxic Release Inventory. The US Navy PSNS reported lead releases and lead waste generation in the 1997 reporting year, however they were not required to report in 1991. Since no 1991 reporting year information is available for this facility, it is excluded from the percentage change graph above. Also excluded, from the percentage change graph shown above, is the U.S. Department of Energy site INEEL which did report to TRI in 1991, but did not file a report for lead or lead compounds that year.

Cadmium and Cadmium Compounds



site	Release On-site & Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
FMC	317,049	272,853	-14%	317,084	272,923	-14%
Boeing -- Everett	510	0	-100%	29,280	0	-100%

Pentachlorophenol

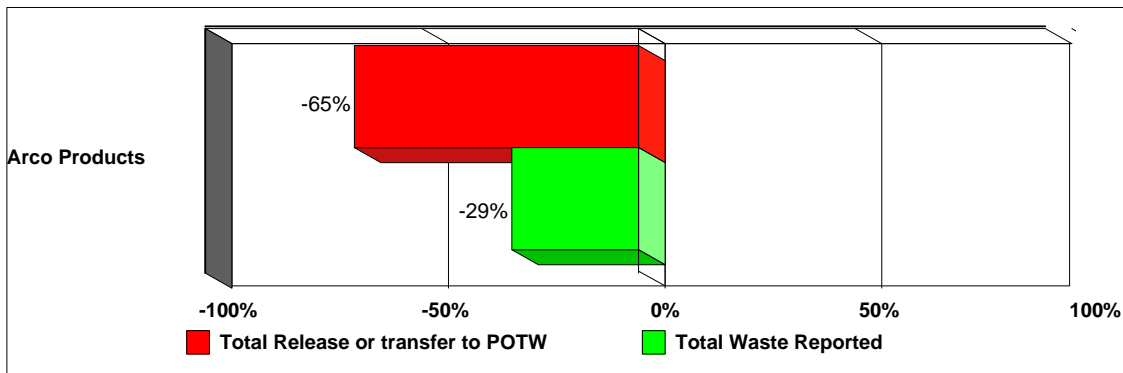


site	Release On-site & Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
Taylor Lumber	510	265	-48%	1,310	2,924	123%
J.H. Baxter	260	260	0%	320	109	-66%
Cascade Pole and Lumber	15	0	-100%	237	0	-100%
Permapost	-	<500	-	-	<500	-

Note: The Permapost facility did not report to TRI in 1991. In 1997, the Permapost facility filed a certification that releases and waste for pentachlorophenol were less than 500 pounds.

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Naphthalene



	Release On-site & Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
Boeing Plant 2	0	250	-	0	15	-
Texaco Refining	0	20	-	0	290,498	-
Tosco Ferndale Refinery	0	800	-	0	11,100	-
Arco Products	3,445	1,200	-65%	101,974	72,208	-29%
Shell Oil (Tesoro)	0	2400	-	0	21,340	-

Anthracene

	Release On-site & Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
Tosco Ferndale Refinery	0	12	-	0	12	-

Note: the Tosco Ferndale facility did not report for the chemical anthracene in the 1991 TRI reporting year, therefore no percentage change graph for this chemical is included.

Polycyclic Aromatic Hydrocarbon Group

	Release On-site& Transfer to POTW			Total Reported Waste		
	1991	1997	% Change	1991	1997	% Change
Shell Oil (Tesoro)	unreported	420	-	unreported	100,445	-

Note: the polycyclic aromatic hydrocarbon group of chemicals (PAHs), as defined by TRI, was added to TRI reporting in the 1995 reporting year. Since no 1991 baseline information is available for this chemical, no percentage change graph is included.

Biennial Reporting System (BRS) Data Measurement and Methodology

This section of the report presents hazardous waste quantity data for each of the high priority permitting and corrective action universe facilities, as measured by the Biennial Reporting System (BRS). EPA collects BRS data every two years under the mandate of the Resource Conservation and Recovery Act (RCRA). Individuals can access BRS data using the EPA Envirofacts database (<http://www.epa.gov/enviro/html/qmr.html>).

The most straightforward BRS information comes from the waste codes identifying toxicity characteristic wastes, as defined in the Code of Federal Regulations (40 CFR 261.24). The facility lists these wastes as hazardous because they contain specific toxic constituents that exceed regulatory limits for the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP measures the ability of toxic constituents to percolate out of a given waste. Since TCLP testing can be expensive, there is an incentive for facilities to preemptively declare their waste hazardous even though it may not exceed regulatory levels for a given toxin. Also, aside from determining if a waste exceeds regulatory limits for a specific toxin, there is no requirement to measure or report the concentration of the toxin in the waste. Therefore, a single ton of waste listed in BRS as D009 could contain 99% pure mercury or could contain concrete debris contaminated with trace amounts of mercury. For this reason, BRS data is merely a starting point for identifying pollution prevention opportunities, rather than an absolute tool for measuring progress. Listed below are the RCRA characteristic wastes that exhibit persistent, bioaccumulative, and toxic attributes.

Waste Code (from 40 CFR 261.24)	Toxic constituent
D006	Cadmium
D008	Lead
D009	Mercury
D012	Endrin
D014	Methoxychlor
D015	Toxaphene
D020	Chlordane
D031	Heptachlor

Waste Code (from 40 CFR 261.24)	Toxic constituent
D032	Hexachlorobenzene
D033	Hexachlorobutadiene
D034	Hexachloroethane
D037	Pentachlorophenol
D041	2,4,5-Trichlorophenol

In addition to the toxicity characteristic wastes defined in 40 CFR 261.24, there are a number of other hazardous wastes defined in the RCRA regulations, beginning with 40 CFR 261.30. The draft US EPA *Chemical Waste Crosswalk (1998)* identifies possible chemical constituents for each of the RCRA hazardous waste codes. A copy of this draft can be found at the following address: (<http://www.epa.gov/epaoswer/hazwaste/minimize/chemlist/crosswk.pdf>). Since these regulated wastes, F and K listed wastes, are identified through a specific industrial process, the actual toxic constituents are not readily apparent. The crosswalk is only a starting point for identifying waste codes that may contain a persistent, bioaccumulative, and toxic attributes.

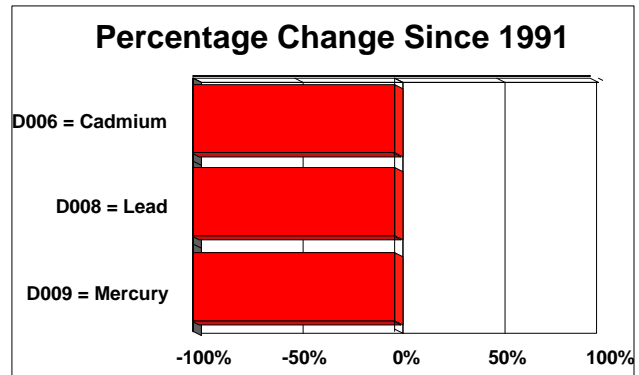
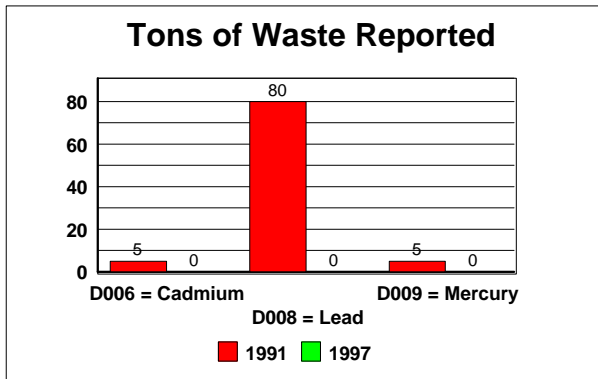
According to the *Chemical Waste Crosswalk*, the waste codes listed below have the potential to contain some persistent, bioaccumulative, and toxic chemical constituents. The table below shows only those waste codes found at specific sites in Region 10. Other listed F and K wastes, in addition to the wastes listed below, may contain PBT chemical constituents.

Waste Code (from 40 CFR 261.31 and 261.32)	Possible toxic constituent
K001	Polycyclic Aromatic Hydrocarbons (PAHs)
K049	Polycyclic Aromatic Hydrocarbons (PAHs)
K050	Polycyclic Aromatic Hydrocarbons (PAHs)
K051	Polycyclic Aromatic Hydrocarbons (PAHs)
K052	Polycyclic Aromatic Hydrocarbons (PAHs)
F037	Polycyclic Aromatic Hydrocarbons (PAHs)

Biennial Reporting System (BRS) Results

ALASKA

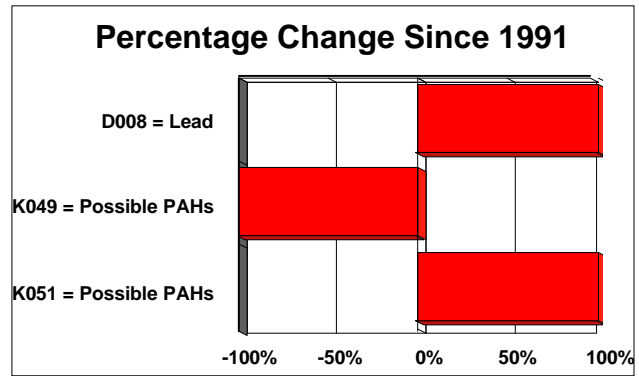
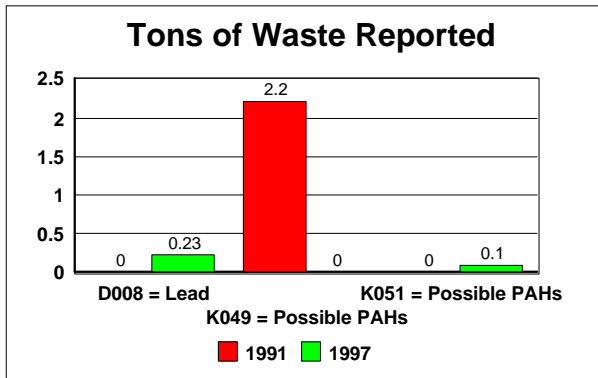
Alaska Railroad Corp



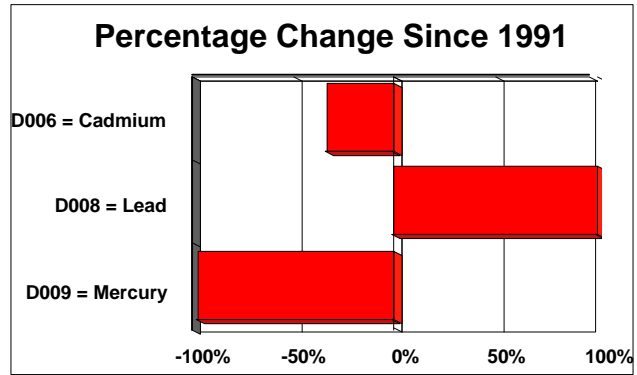
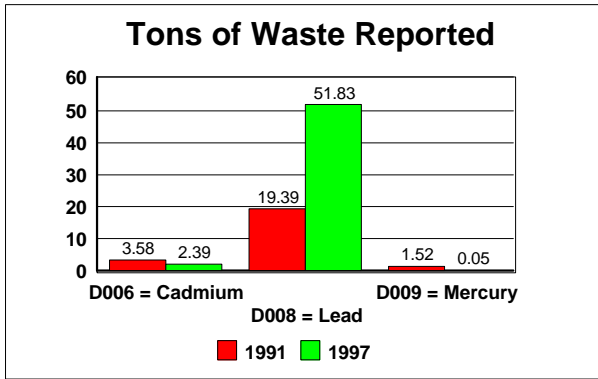
Drift River Terminal

No BRS report for years 1991 or 1997 listed for ID number

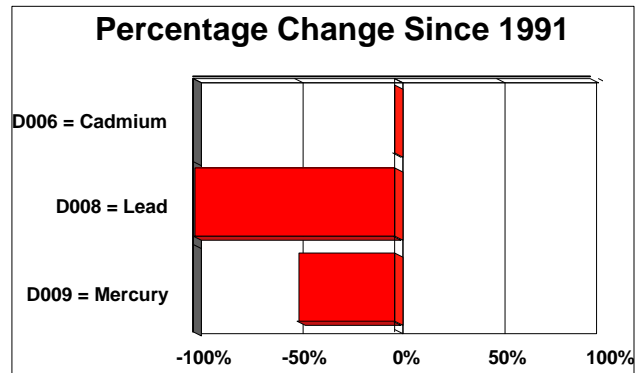
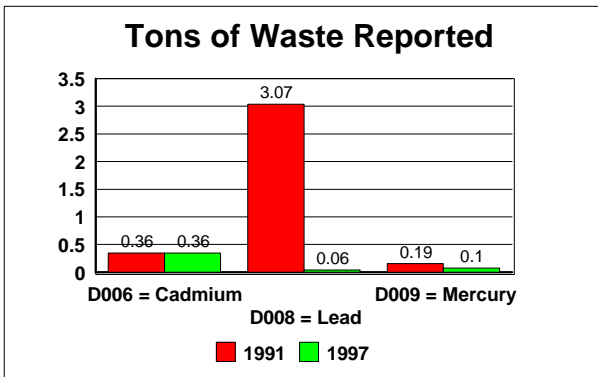
Tesoro



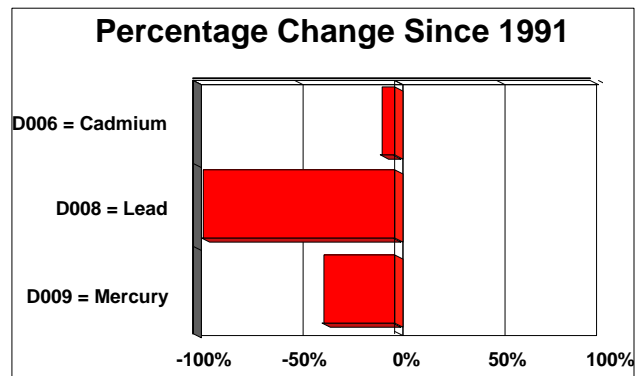
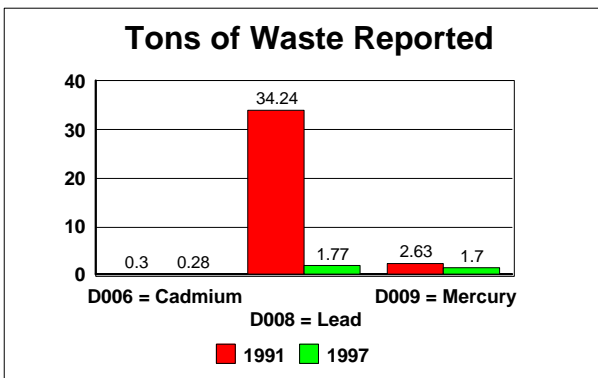
USDOT CG Kodiak



Univ. of AK Fairbanks

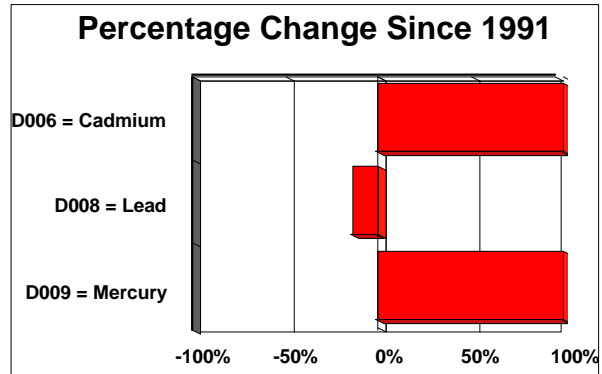
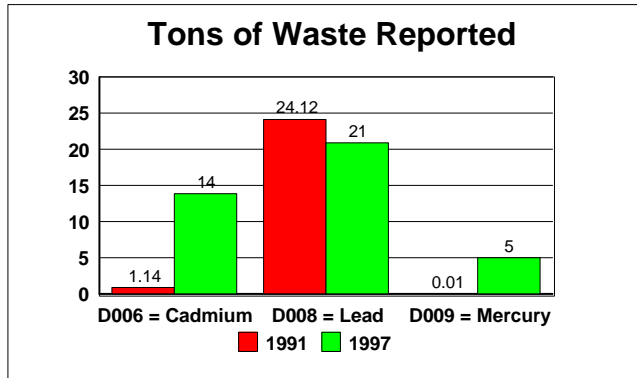


BP Exploration

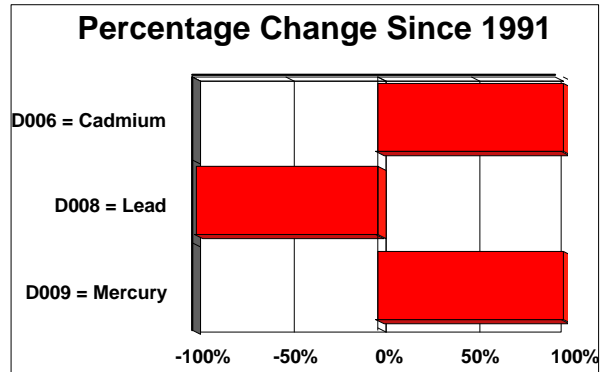
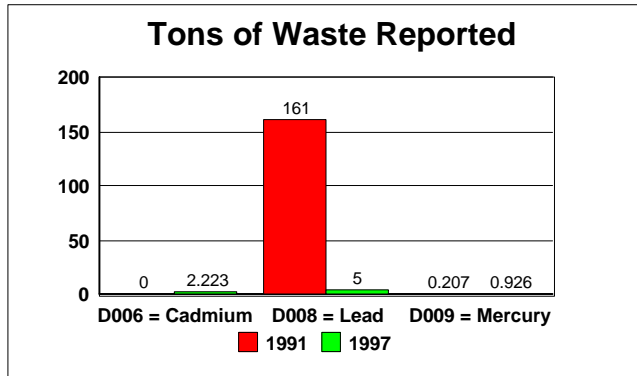


Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

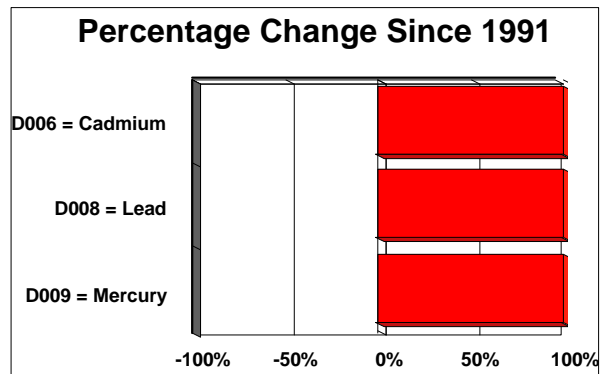
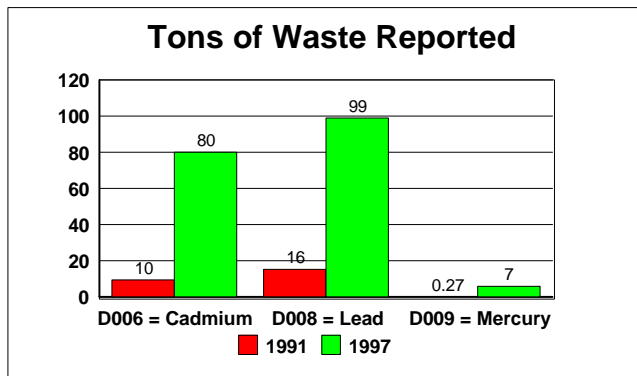
USAF Elemendorf



USArmy Ft. Richardson

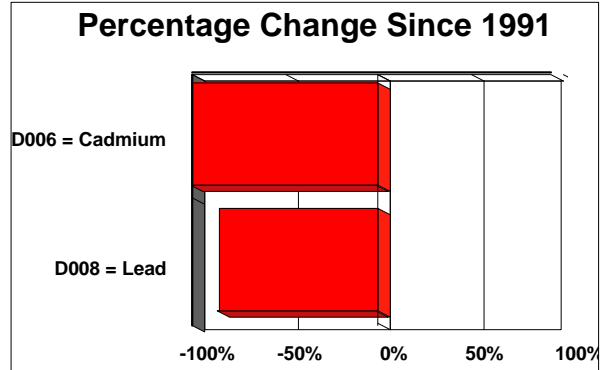
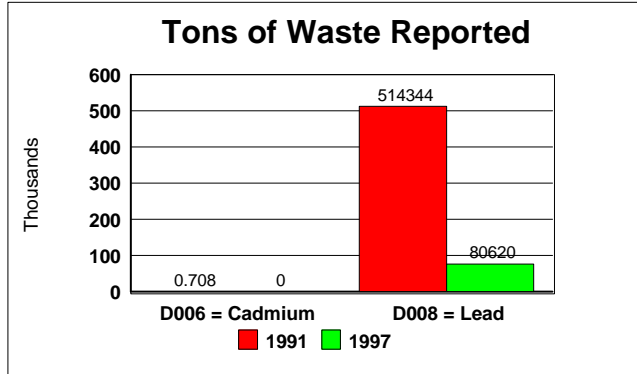


USArmy Ft. Wainwright

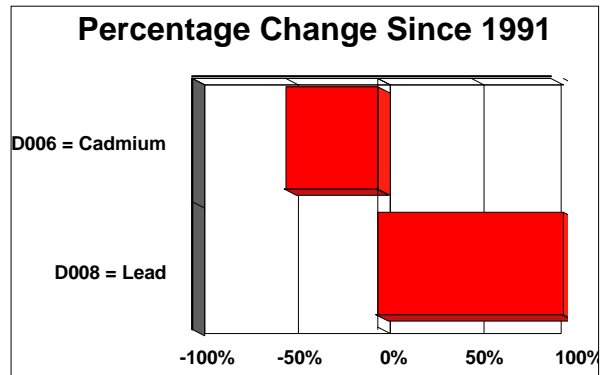
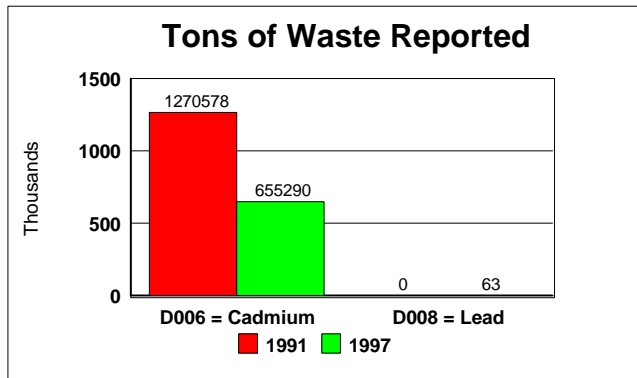


IDAHO

Blount CCI



FMC



Pacificorp

No PBT wastes reported to BRS

Safety-Kleen (ID2026)

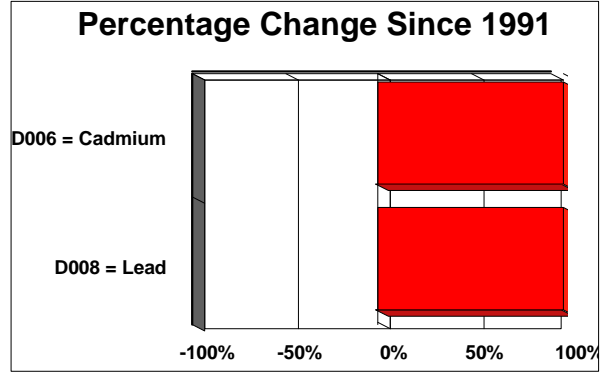
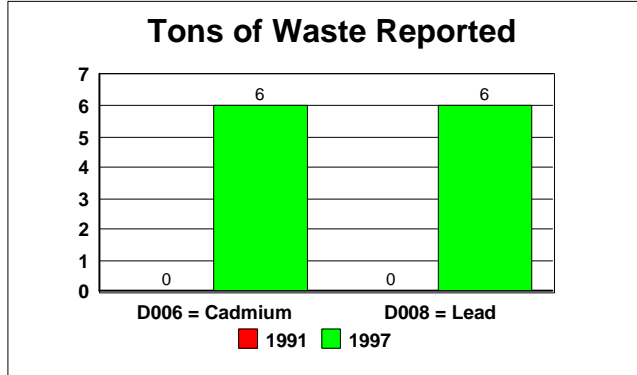
No PBT wastes reported to BRS

Safety-Kleen (ID1270)

No PBT wastes reported to BRS

Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

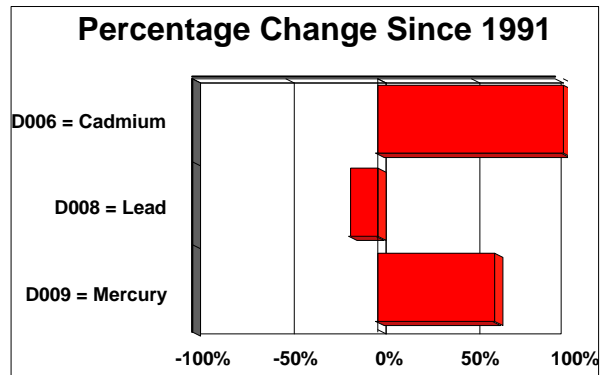
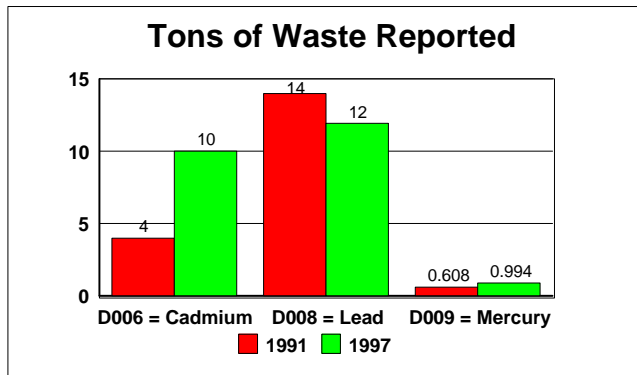
ESII-B



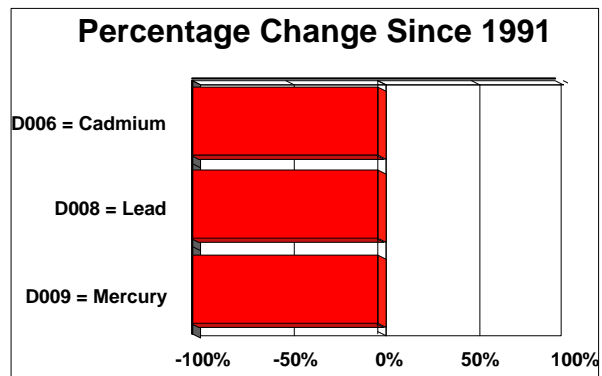
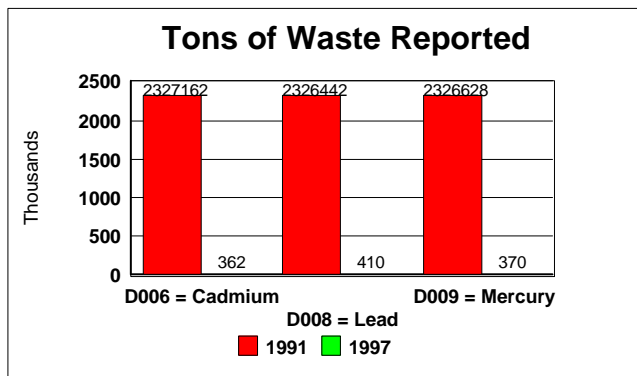
Safety-Kleen (ID0498)

No production wastes generated

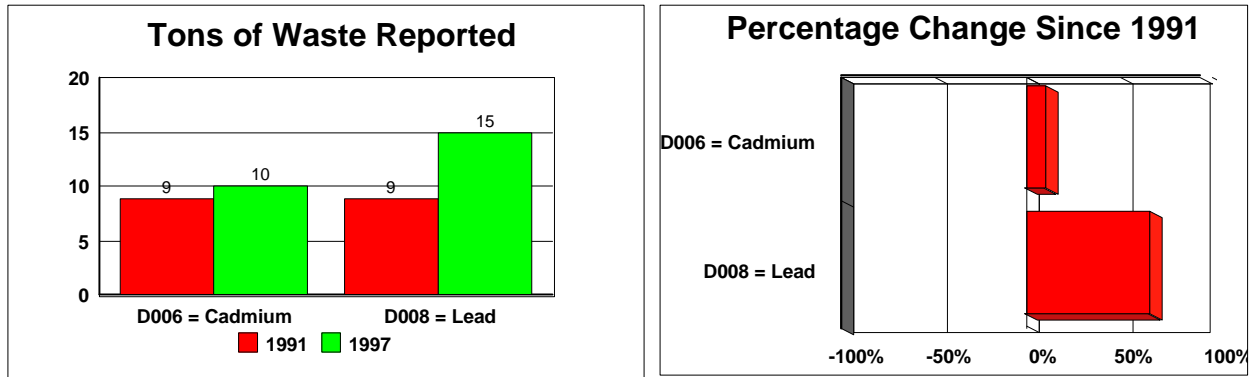
USAF Mtn. Home



USDOE INEEL



Boise Locomotive



Dart Industries

No reported production wastes generated onsite

ESII-A

No reported production wastes generated onsite

Pressure Treated Timber

No reported production wastes generated onsite

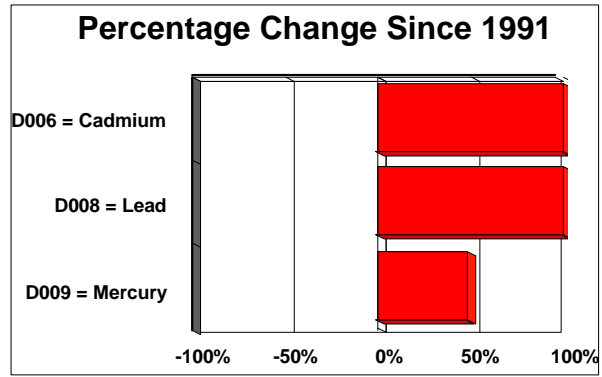
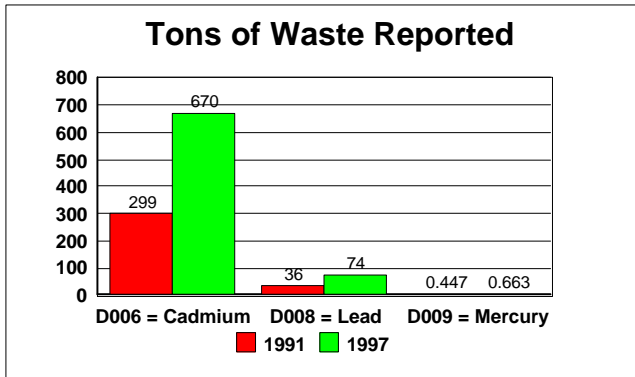
**Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority
Corrective Action and Permitting Universe Facilities**

OREGON

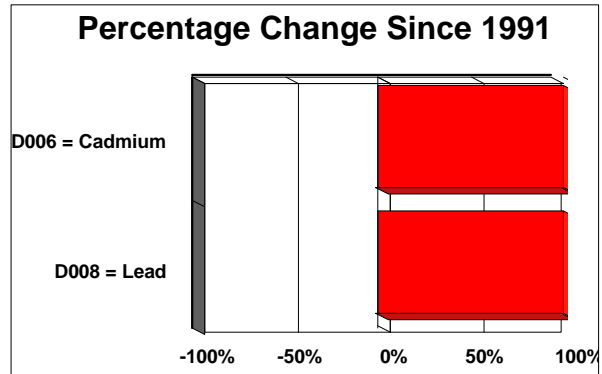
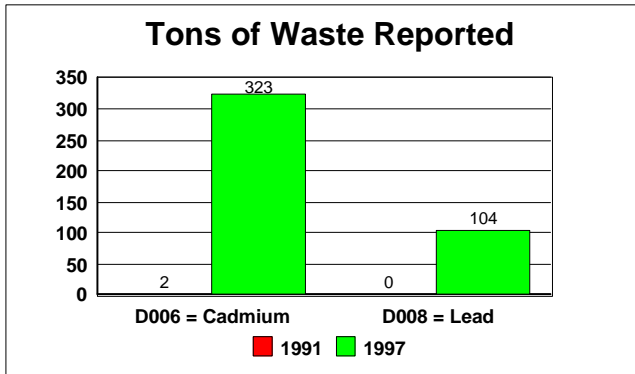
Baron Blakeslee

No production wastes generated onsite

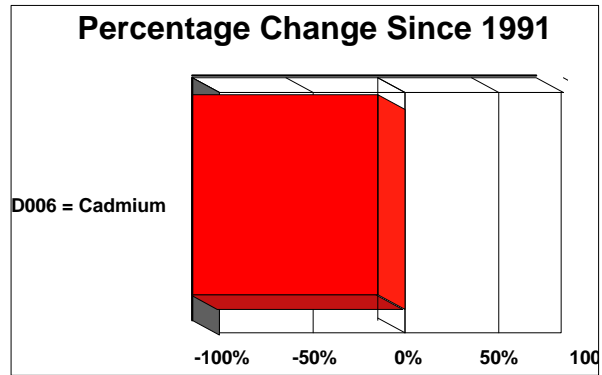
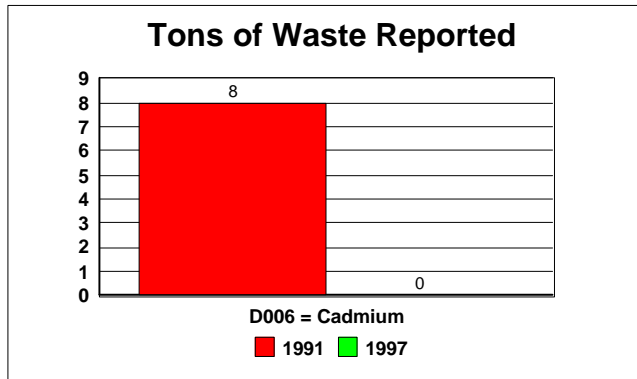
Boeing of Portland



Chemical Waste Management



Columbia Helicopters



Willamette Valley (Velco)

No production wastes generated onsite

Northwest Industries

No production wastes generated onsite

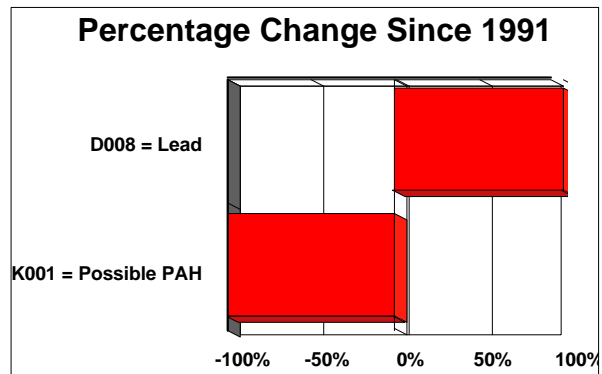
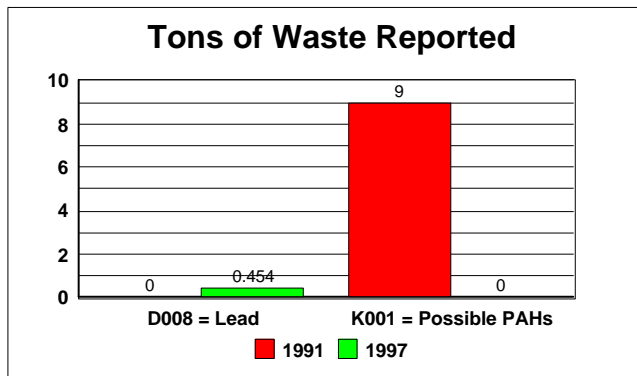
Permapost

No PBT production wastes generated onsite

Safety-Kleen (OR5481)

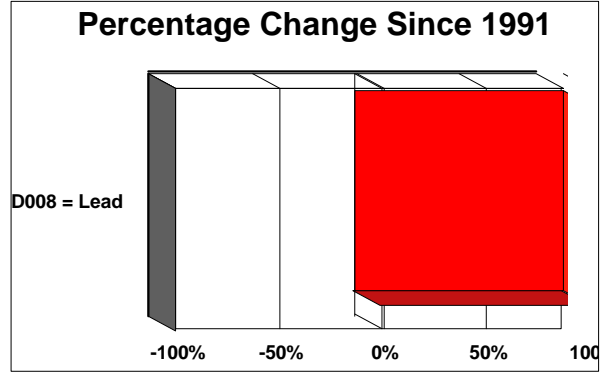
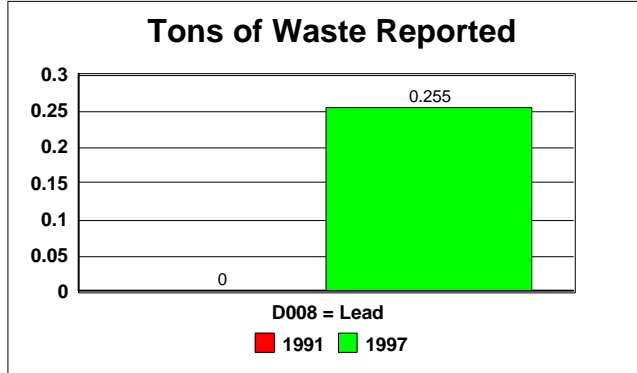
No production wastes generated onsite

Taylor Lumber

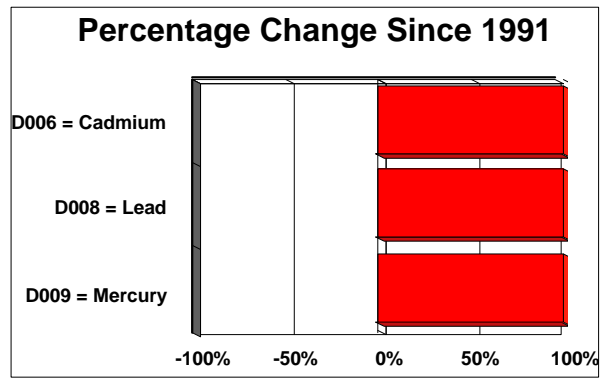
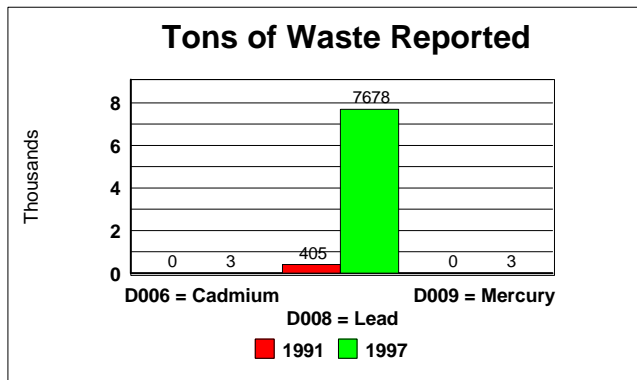


Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

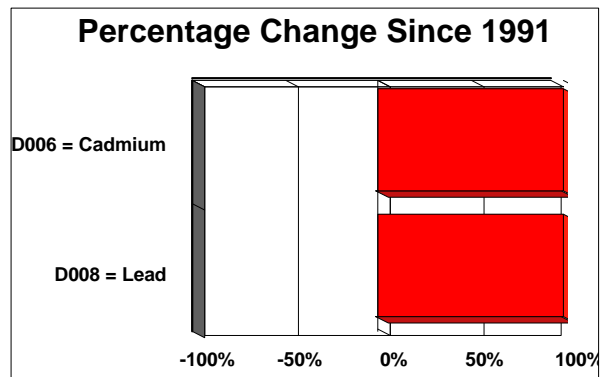
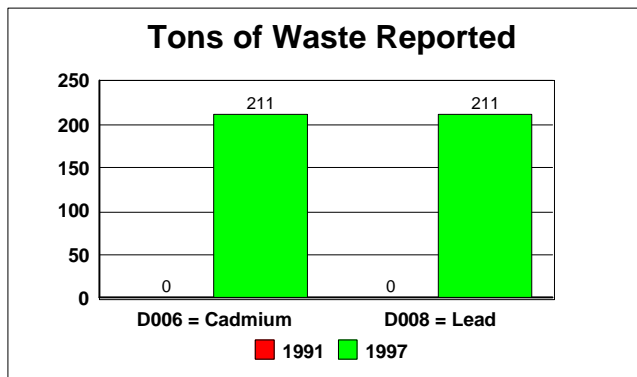
Van Waters & Rogers



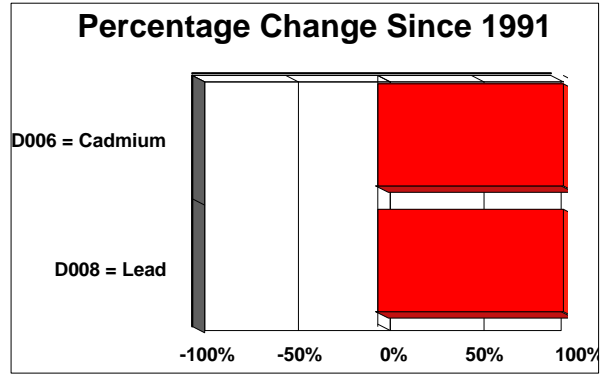
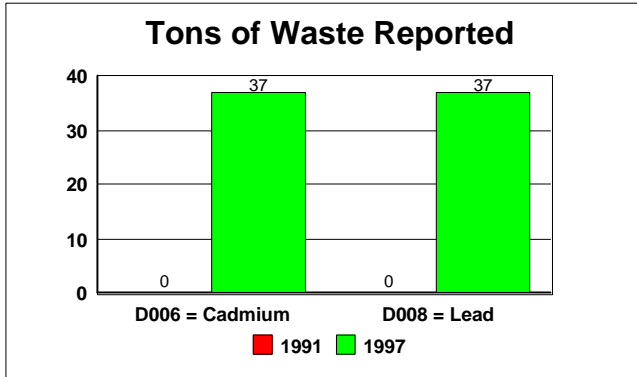
Wah Chang



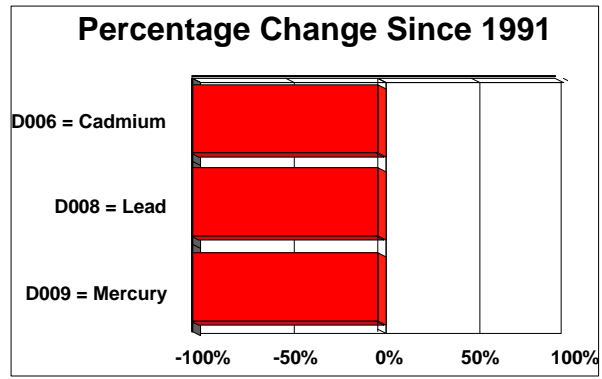
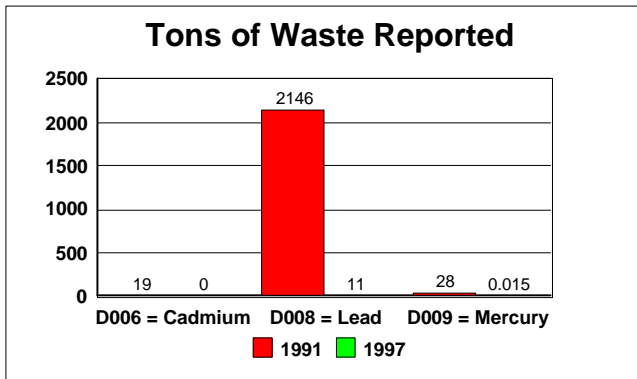
Safety-Kleen (OR6124)



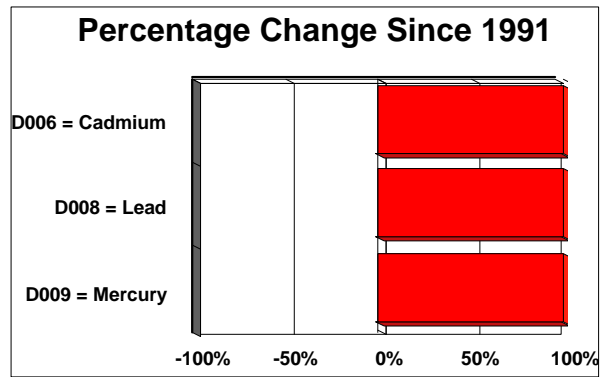
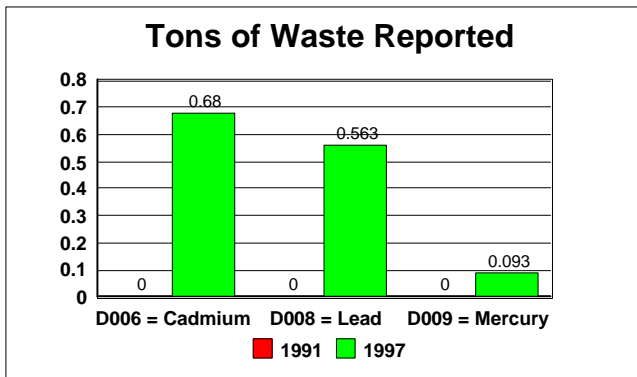
Safety-Kleen (OR2067)



Tektronix

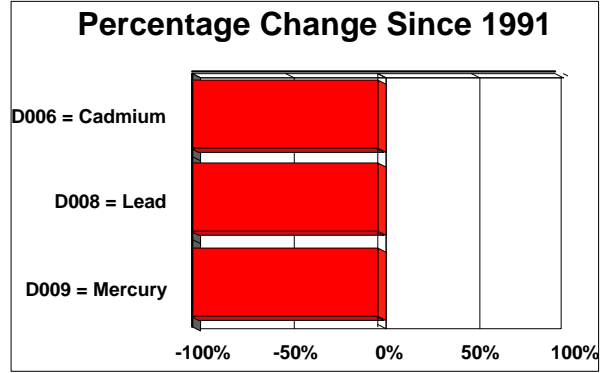
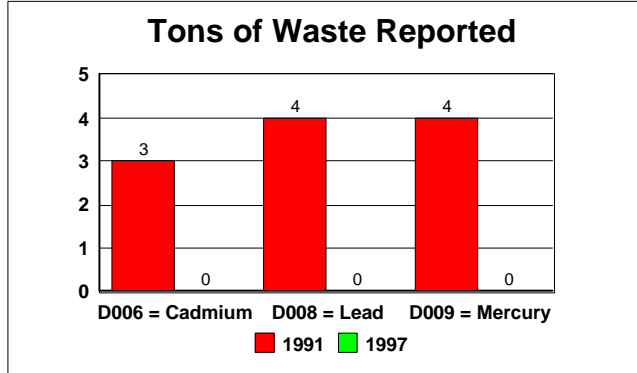


USA Umatilla



Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

Western Compliance Svcs



Bergsoe Metal

No reported production waste generated onsite

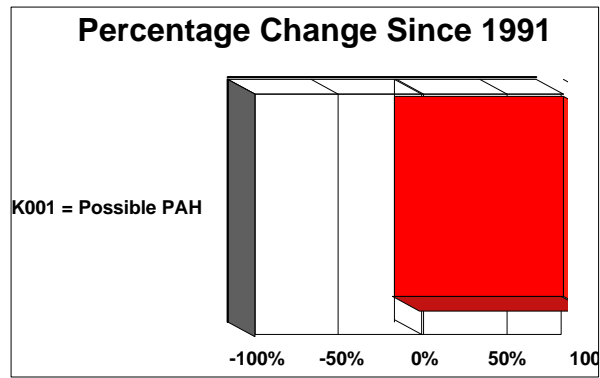
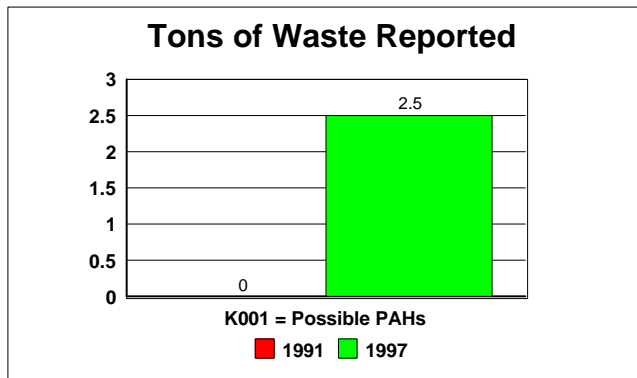
Cascade Wood

No reported PBT waste generated onsite

Evanite Fiber

No reported PBT waste generated onsite

J.H. Baxter



Lockheed Martin

No reported production waste generated onsite

Marion Cty. Pub Wks

No reported production waste generated onsite

Mew Data Arms

No reported production waste generated onsite

Oregon Coast Sanitation

No reported production waste generated onsite

Oregon Steel Mills

No reported PBT production waste generated onsite

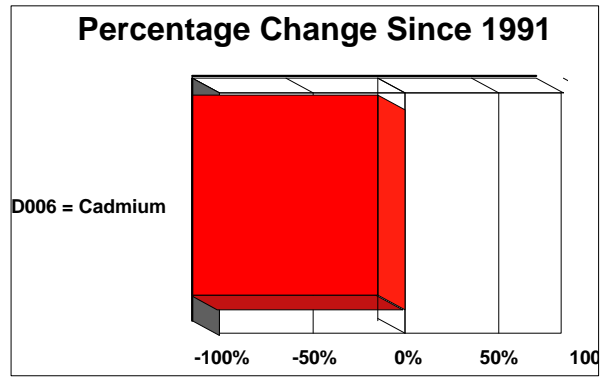
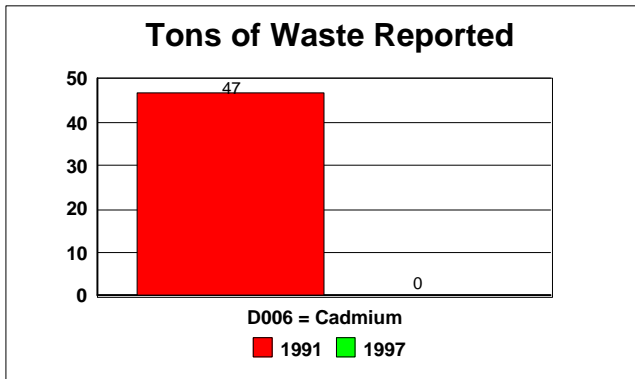
Pacific Fabricators

No reported production waste generated onsite

Potter Mfg.

No reported production waste generated onsite

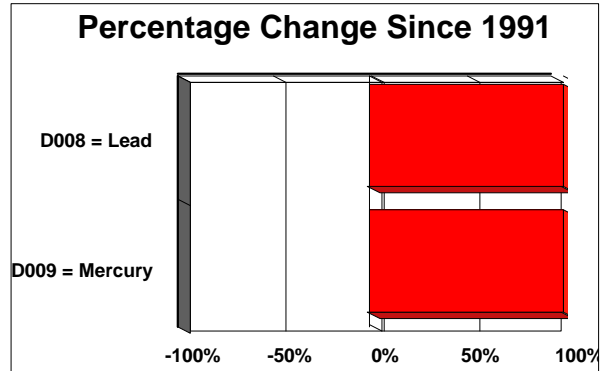
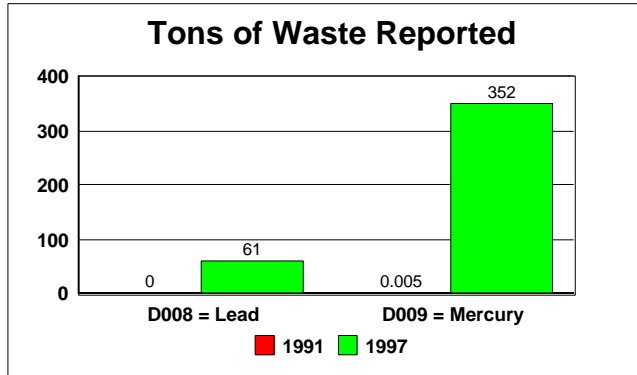
Roseburg Forest Products



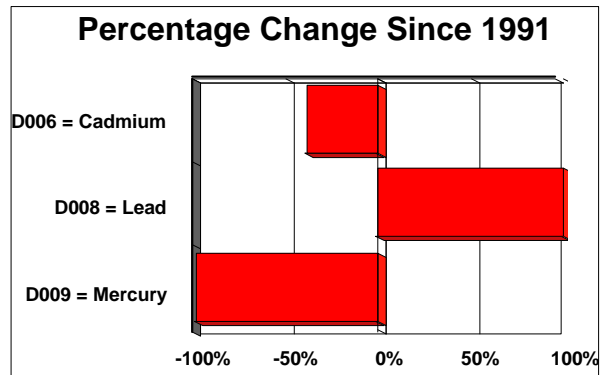
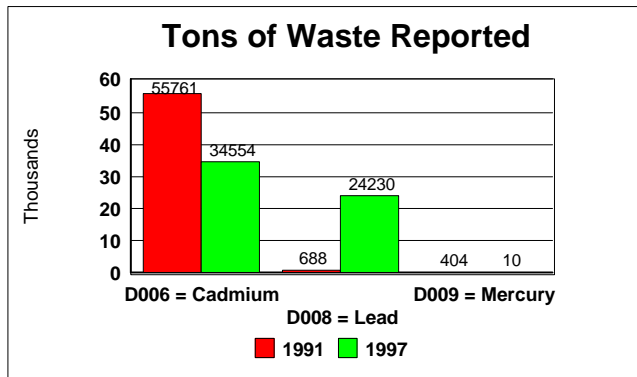
Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

WASHINGTON

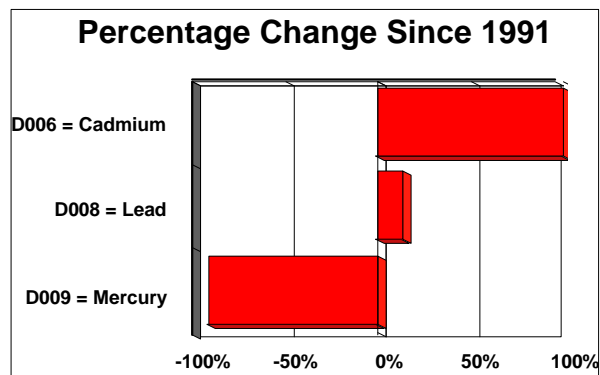
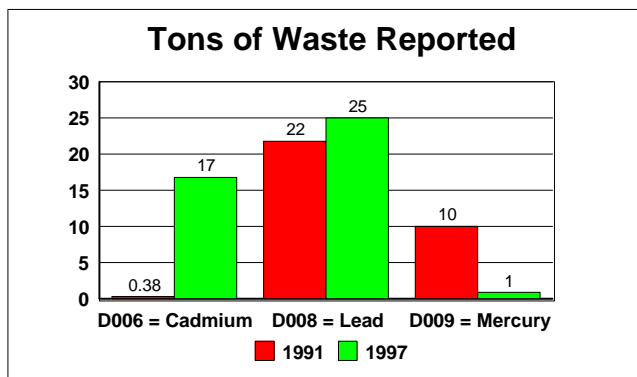
BFG Kalama Chemical



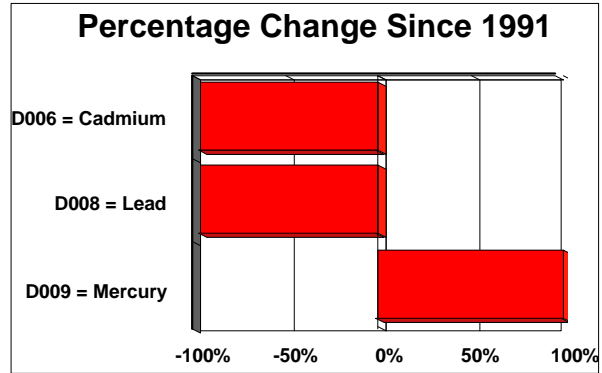
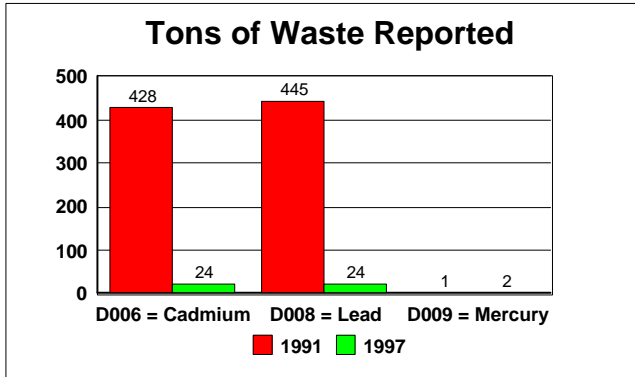
Boeing -- Everett



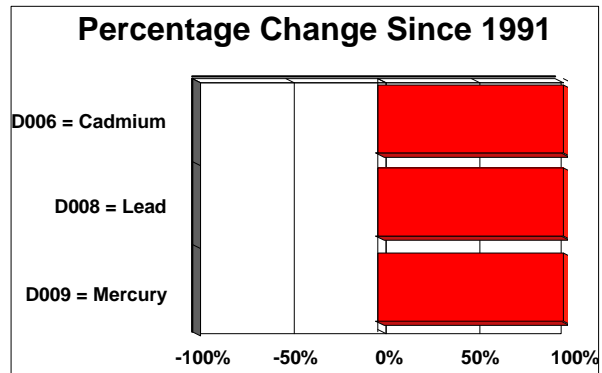
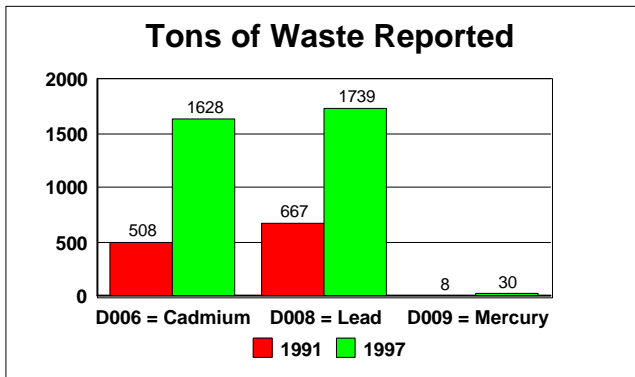
Boeing D & SG Tukwila



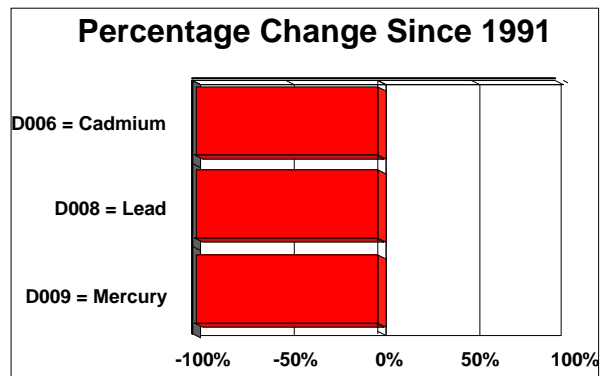
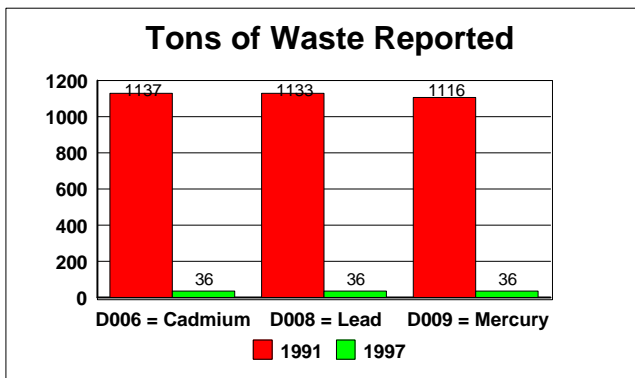
Boeing Plant 2



Boeing Renton



Burlington Env. Tacoma



Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

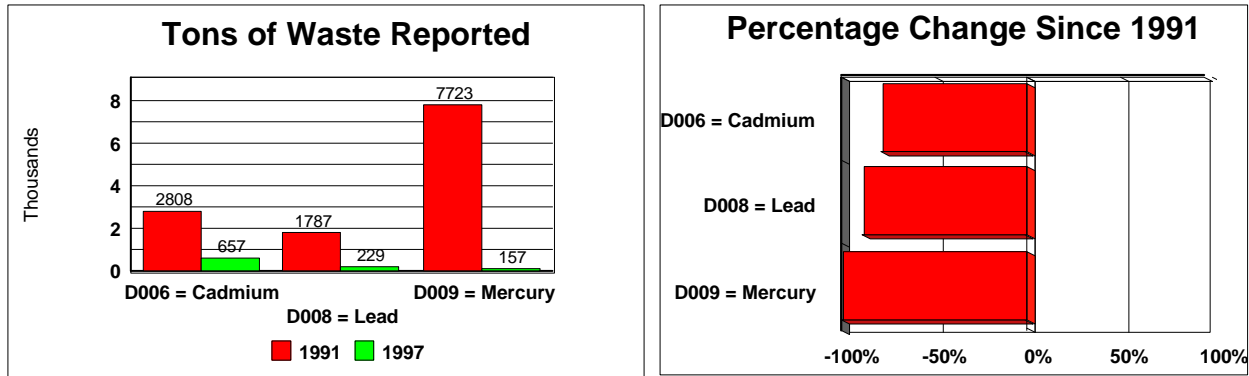
Burlington Env. Pier 91

No reported production waste generated onsite

Burlington Env. Washougal

No reported PBT production waste generated onsite

Burlington Env. Georgetown



Cameron Yakima

No reported production waste generated onsite

Cascade Pole and Lumber

No reported PBT production waste generated onsite

Cleancare

No reported production waste generated onsite

General Electric

No reported production waste generated onsite

International Paper

No reported production waste generated onsite

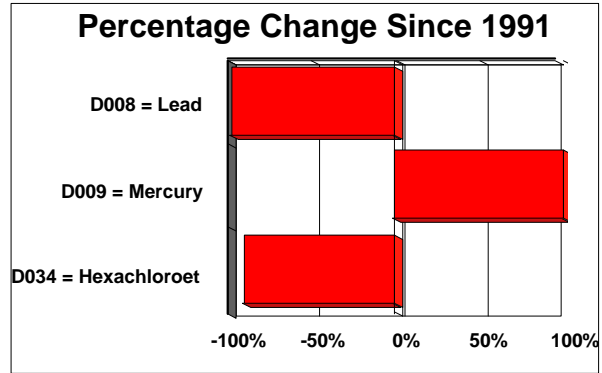
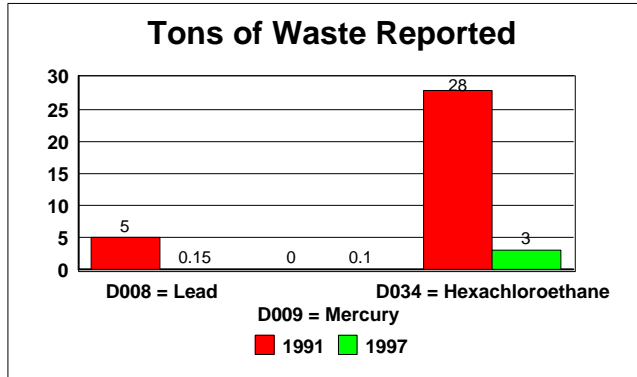
Northwest Enviroservice

No reported PBT production waste generated onsite

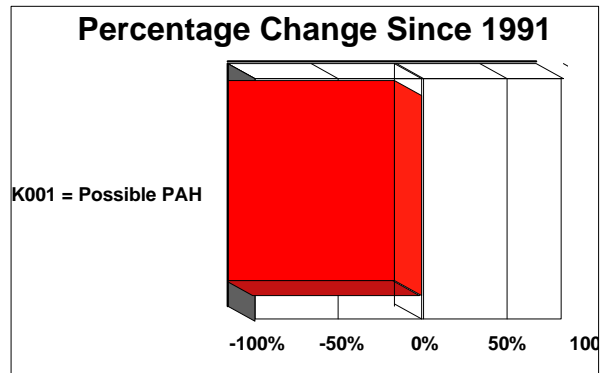
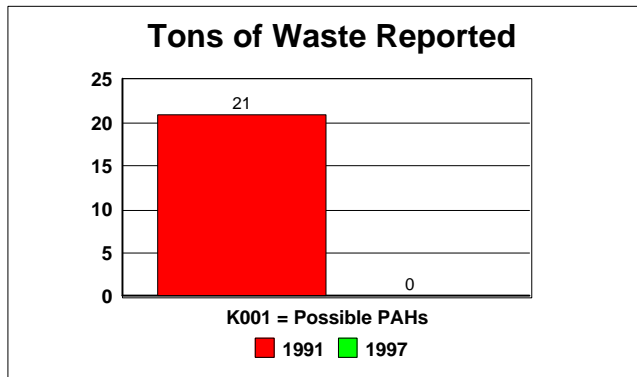
NW Petrochem (Tecnal)

No reported production waste generated onsite

OCC Tacoma



TOXGON (Penberthy)



Pendleton Woolen Mills

No reported production waste generated onsite

Reichhold Chemicals

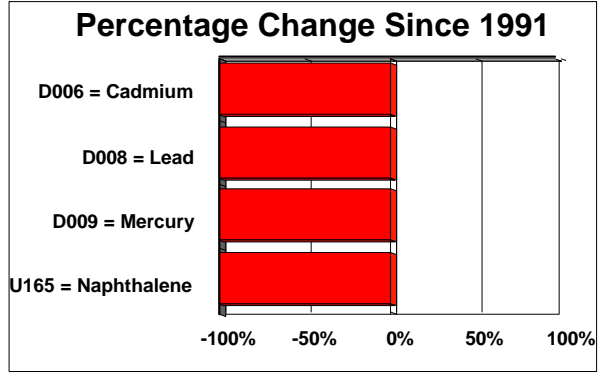
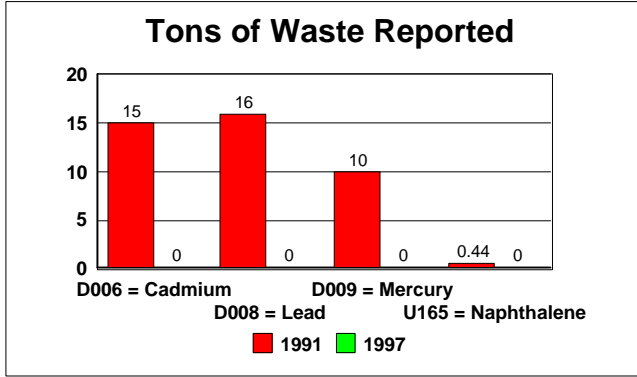
No reported PBT production waste generated onsite

Rhone-Poulenc

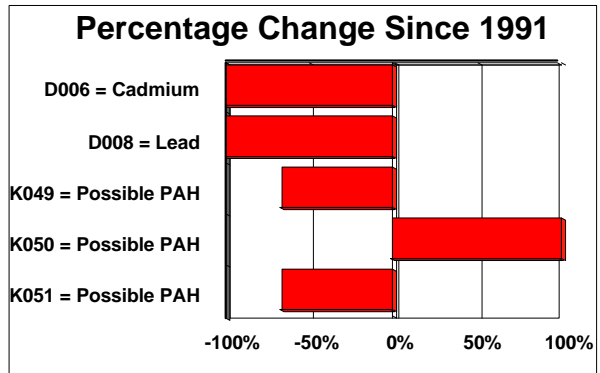
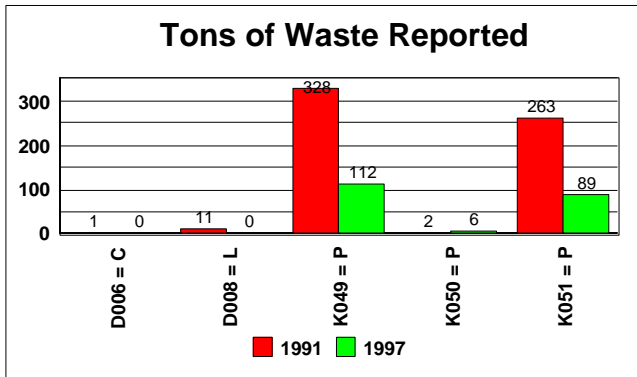
No reported PBT production waste generated onsite

Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

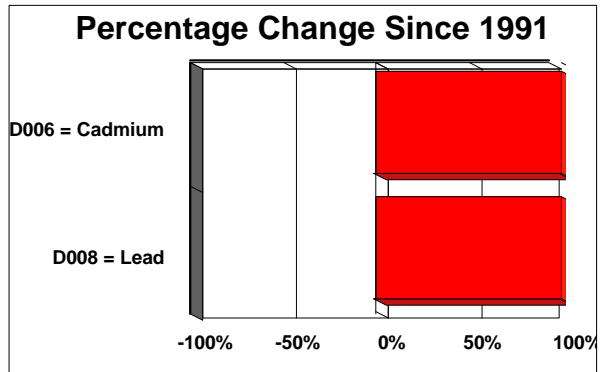
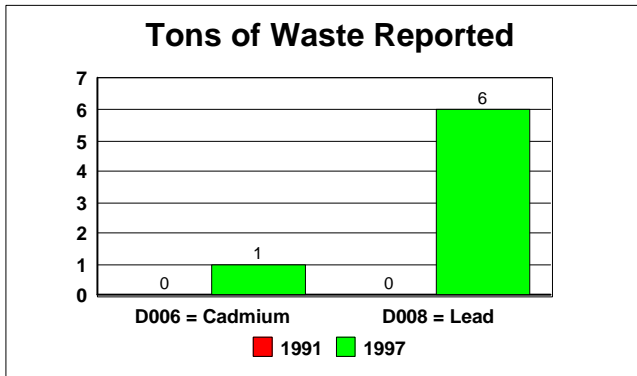
Lilyblad



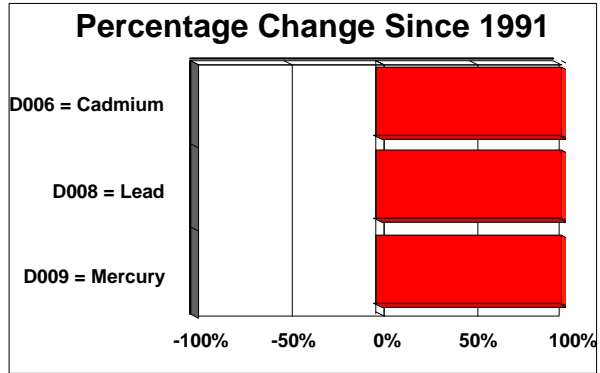
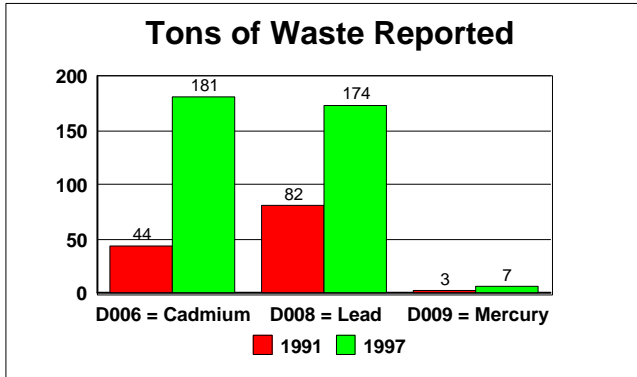
Texaco Refining



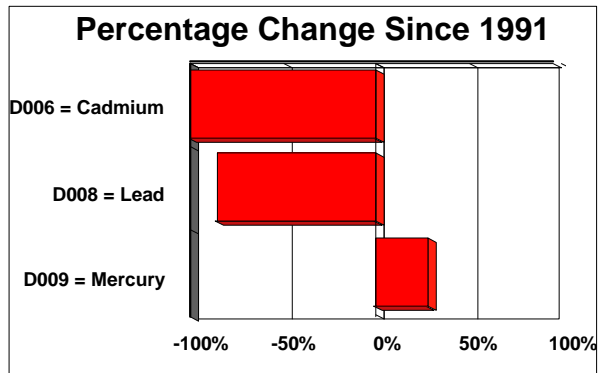
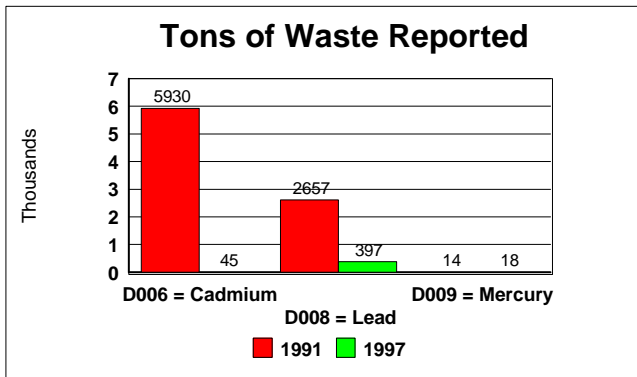
Tosco Ferndale Refinery



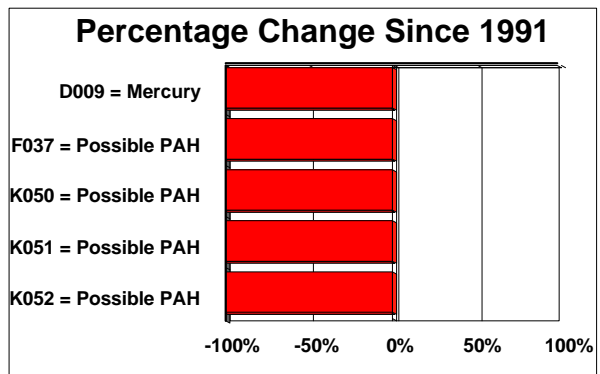
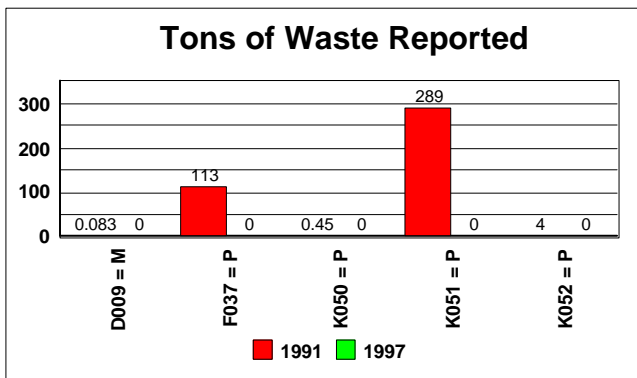
USA HQ - Ft. Lewis



USDOE Hanford

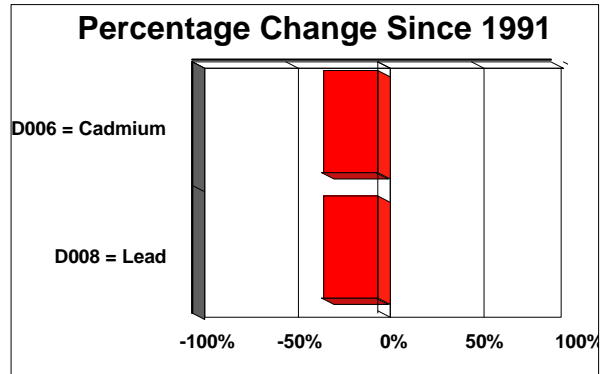
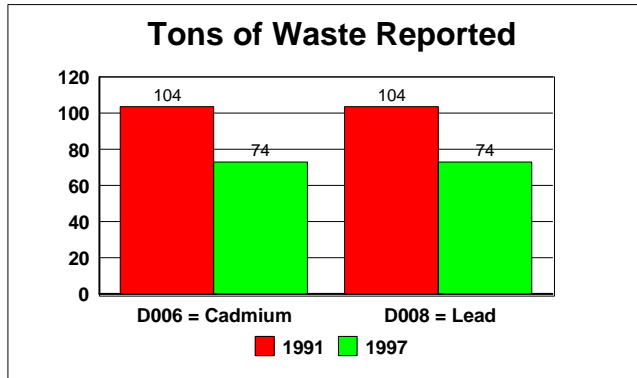


Arco Products

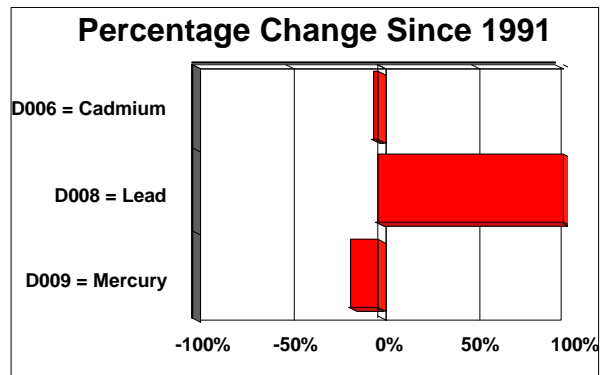
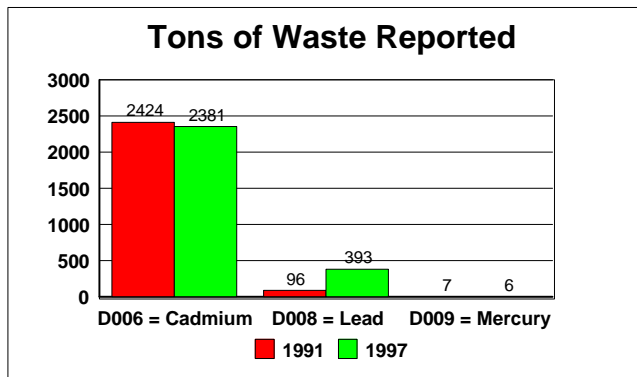


Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

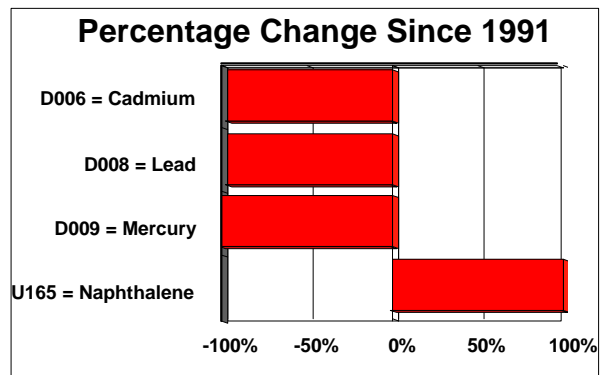
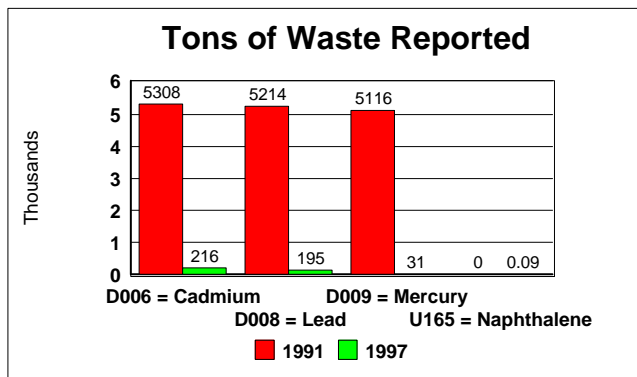
Bay Zinc



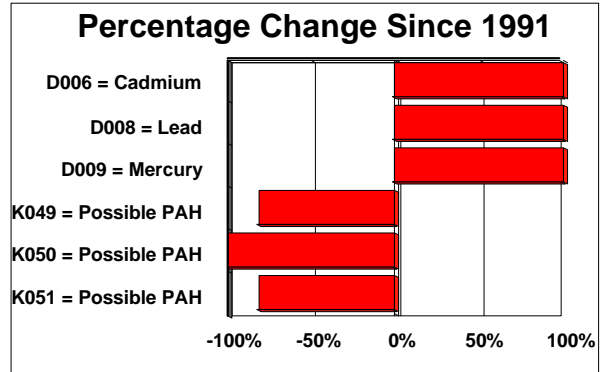
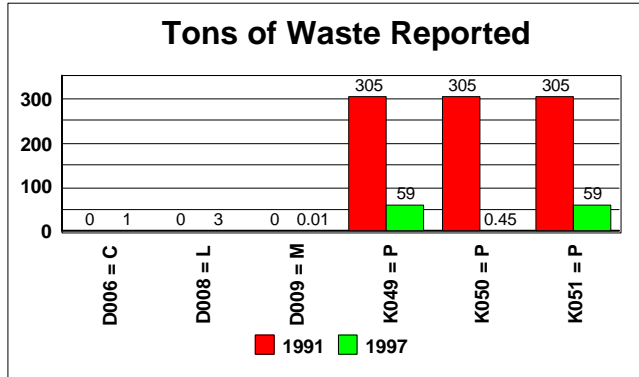
Boeing Auburn



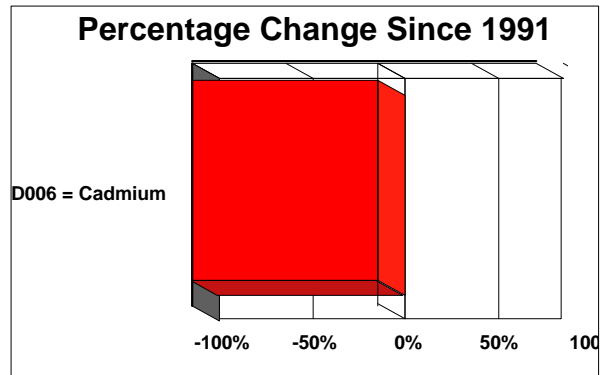
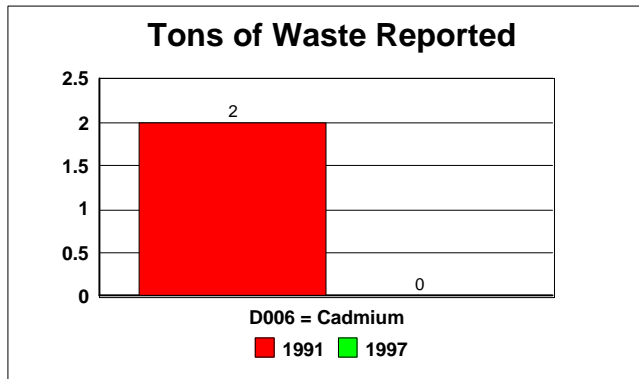
BEI Kent



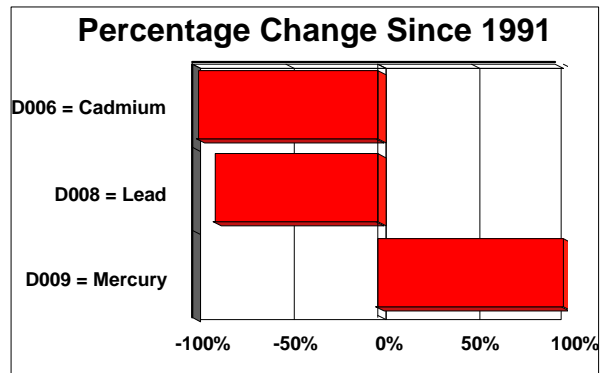
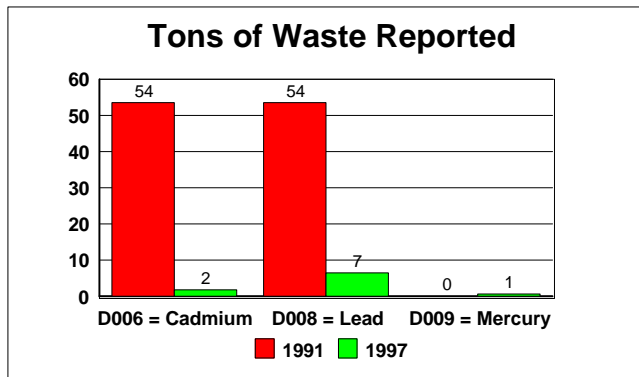
Shell Oil (Tesoro)



Sol Pro

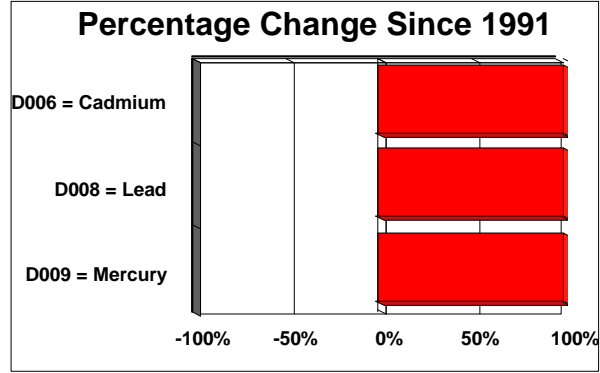
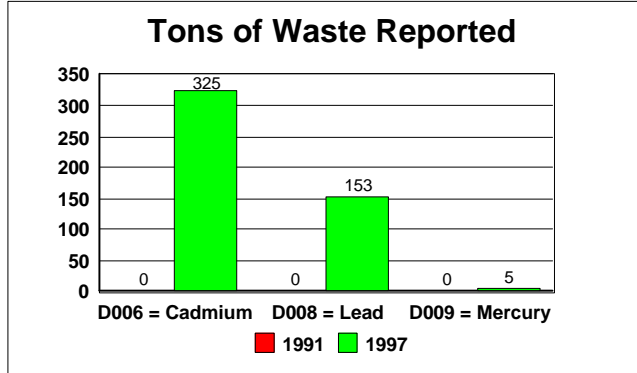


US Army Yakima

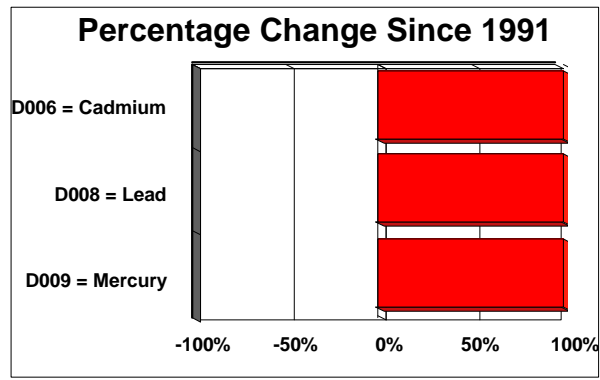
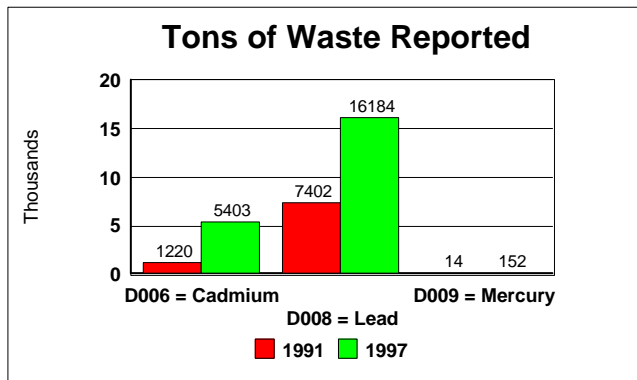


Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority Corrective Action and Permitting Universe Facilities

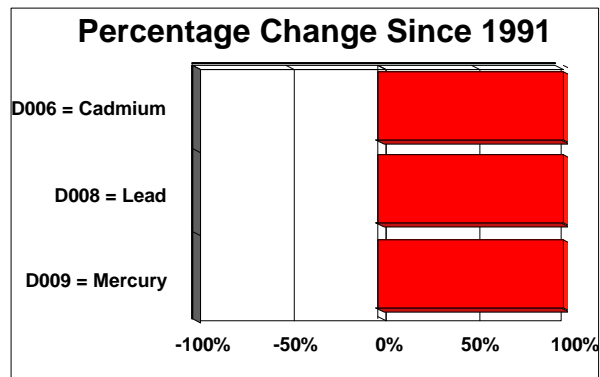
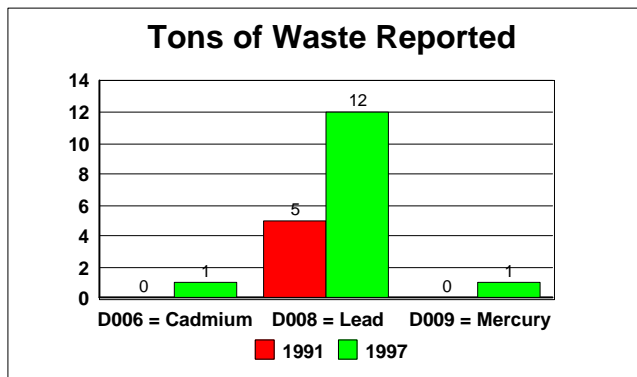
US Navy Keyport



US Navy PSNS



USDOE Boneville



Van Waters & Rogers (Kent)

No reported PBT production waste generated onsite

BSB Diversified (Hytek)

No reported PBT production waste generated onsite

Columbia River SVC

No reported PBT production waste generated onsite

Fuel Processors

No reported PBT production waste generated onsite

Okanogan Airport

No reported PBT production waste generated onsite

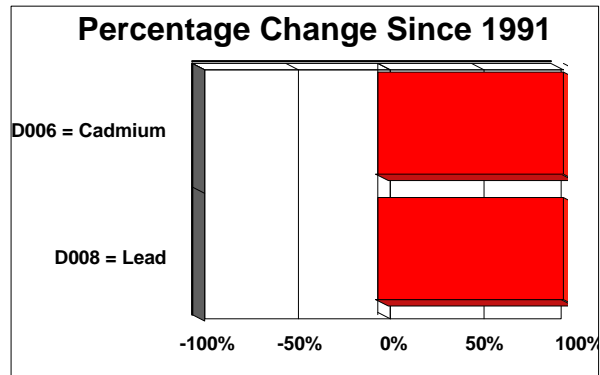
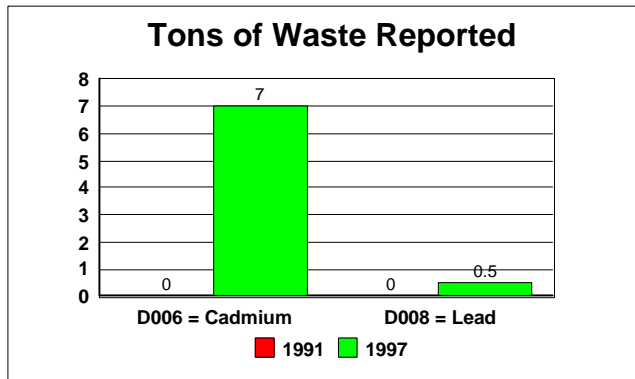
Schwerin Concaves

No reported PBT production waste generated onsite

Seafab Metals

No reported PBT production waste generated onsite

Siemens Power



WA UW Tacoma Br.

No reported PBT production waste generated onsite

Western Farm Service WW

No reported PBT production waste generated onsite

National Hazardous Waste Constituent Survey Database and Results

The 1996 National Hazardous Waste Constituent Survey (NHWCS) was a voluntary survey created by the EPA Office of Solid Waste. This survey collected industrial waste stream information from 156 of the nation's largest hazardous waste treatment, storage, disposal, and recycling facilities. The resulting database, which records the survey results, provides detailed physical and chemical constituent information. For more information about the National Hazardous Waste Constituent Survey, please see the following website:

(<http://www.epa.gov/epaoswer/hazwaste/id/hwirwste/economic.htm>)

Of the 156 facilities that participated in the survey, seven are Region 10 facilities. These facilities are : BLOUNT INC CCI OPER (IDD009066481), FMC CORP PHOSPHORUS CHEMICALS (IDD070929518), TEKTRONIX INC BEAVERTON CAMPUS (ORD009020231), SHELL OIL COMPANY (WAD009275082), FABRICATION DIVISION AUBURN SITE [Boeing] (WAD041337130), ENVIROSAFE SERVICES OF IDAHO, INC (IDD073114654), and CHEMICAL WASTE MANAGEMENT OF THE NW (ORD089452353).

Blount, FMC, Tektronix, and Boeing (Auburn) all reported as on-site generators of hazardous waste in the National Hazardous Waste Constituent Survey. This report details waste and constituent information for these facilities. Neither Envirosafe Services of Idaho, Inc. nor Chemical Waste Management of the Northwest reported generating on-site production waste. Therefore, this report does not analyze the waste minimization potential for waste received and processed at these two facilities. Lastly, although Shell Oil (Tesoro) did participate in the National Hazardous Waste Constituent Survey, the facility provided no constituent information for the wastes they generated. The only constituent information comes from the waste name provided in the survey, "PROCESS WASTEWATER CONTAINING 3PPM BENZENE." Based on constituent information from other facilities in the same SIC code (2911) as Shell Oil (Tesoro), other chemicals such as polycyclic aromatic hydrocarbons may also be present in the waste, in addition to benzene.

BLOUNT INC CCI OPER
 IDD009066481

D008 -- NON CN WASTEWATER

Quantity of Waste Reported in 1993 BRS: 386,576 [Tons]
 Generated On Site Wastewater Y RCRA Exempt Y

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Lead	250	96.6407

D008F007F009 -- CN WASTEWATER

Quantity of Waste Reported in 1993 BRS: 107,781 [Tons]
 Generated On Site Wastewater Y RCRA Exempt Y

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Cyanides	53	5.7122
Lead	42	4.5266

**Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority
Corrective Action and Permitting Universe Facilities**

**FMC CORP PHOSPHORUS CHEMICALS
IDD070929518**

D006 -- MEDUSA SCRUBBER BLOWDOWN FROM QUENCHING OF FUGITIVE

Quantity of Waste Reported in 1993 BRS: 264,570 [Tons]
Generated On Site Wastewater Y RCRA Exempt N

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Vanadium Pentoxide	0.7200	0.1905
Lead	1.0700	0.2831
Mercury	0.0011	0.0003
Nickel	0.0810	0.0214
Silver	0.9500	0.2513
Thallium	0.1400	0.0370
Antimony	1.5000	0.3968
Arsenic	0.4700	0.1243
Barium	0.1100	0.0291
Beryllium	0.0280	0.0074
Cadmium	6.7000	1.7726
Chromium	1.2000	0.3175
Zinc	310.0000	82.0141
Selenium	1.2000	0.3175

D006-- PRECIPITATOR SLURRY RESULTING FROM SLURRYING WITH WATER

Quantity of Waste Reported in 1993 BRS: 177,523 [Tons]
Generated On Site Wastewater N RCRA Exempt N

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Vanadium Pentoxide	60.0000	10.6510
Cyanides	42.0000	7.4557
Lead	130.0000	23.0772
Mercury	0.5000	0.0888
Nickel	11.0000	1.9527
Silver	0.5000	0.0888
Thallium	650.0000	115.3860
Antimony	28.0000	4.9705

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Arsenic	5.0000	0.8876
Barium	18.0000	3.1953
Beryllium	0.2000	0.0355
Cadmium	1300.0000	230.7720
Chromium	60.0000	10.6510
Zinc	11000.0000	1952.6859
Selenium	8.0000	1.4201

D006-FURNACE WASHDOWN CONSISTING OF WASHDOWN OF FURNACE BUILD

Quantity of Waste Reported in 1993 BRS: 337,306 [Tons]

Generated On Site Wastewater Y RCRA Exempt N

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Vanadium Pentoxide	1.3000	0.4385
Cyanides	49.0196	16.5340
Lead	4.6000	1.5516
Mercury	0.0022	0.0007
Nickel	0.2800	0.0944
Silver	2.7400	0.9242
Thallium	0.4000	0.1349
Antimony	2.5300	0.8534
Arsenic	0.4400	0.1484
Barium	0.2600	0.0877
Beryllium	0.0270	0.0091
Cadmium	41.0000	13.8291
Chromium	1.5000	0.5059
Zinc	640.0000	215.8686
Selenium	0.5900	0.1990

**Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority
Corrective Action and Permitting Universe Facilities**

**TEKTRONIX INC BEAVERTON CAMPUS
ORD009020231**

**D002D004D005D006 -- CORROSIVE WASTEWATERS FROM CLEANING, PLATING
AND PREP**

Quantity of Waste Reported in 1993 BRS: 97,478 [Tons]
Generated On Site Wastewater Y RCRA Exempt Y

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Arsenic	0.1524	0.0148
Barium	1.1429	0.1112
Cadmium	0.7619	0.0741

**D002D011 -- CORROSIVE WASTEWATERS FROM ELECTRONICS
MANUFACTURING.**

Quantity of Waste Reported in 1993 BRS: 40,111 [Tons]
Generated On Site Wastewater Y RCRA Exempt Y

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Silver	0.0476	0.0019

FABRICATION DIVISION AUBURN SITE
WAD041337130

D007 -- WATER CONTAMINATED WITH HEAVY METALS FROM CONVERSION COA

Quantity of Waste Reported in 1993 BRS: 1,209,300 [Tons]
Generated On Site Wastewater Y RCRA Exempt N

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Chromium	5.0000	6.0465

D006F009 -- WATER CONTAMINATED WITH CYANIDE FROM CONVERSION COATING

Quantity of Waste Reported in 1993 BRS: 2,068 [Tons]
Generated On Site Wastewater Y RCRA Exempt N

Constituent	Waste Concentration (parts per million)	Chemical Mass of Constituent in Waste [Tons]
Cyanides	10.0000	0.0207
Lead	0.5000	0.0010
Nickel	5.0000	0.0103
Silver	0.5000	0.0010
Cadmium	12.5000	0.0258
Chromium	2.5000	0.0052

**Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority
Corrective Action and Permitting Universe Facilities**

GPRRA Goal Progress

The tables below show Region 10 facility progress towards meeting the Government Performance and Results Act persistent, bioaccumulative, and toxic chemical reduction goal. Region 10 measured progress towards the goal using the Biennial Reporting System and the Toxic Release Inventory. In several cases, the two databases have conflicting information concerning attainment of the GPRRA reduction target. These conflicting results are reasonable considering the two databases differ in the type of information collected.

GPRRA Progress as Measured by the Biennial Reporting System 1991-1997

State	# of GPRRA baseline facilities	# of facilities reporting generation of PBT waste	# of facilities meeting 50% PBT reduction target	% of facilities meeting 50% PBT reduction target
Alaska	9	8	5	63%
Idaho	13	6	2	33%
Oregon	28	13	5	38%
Washington	47	25	13	52%
Region 10	97	52	25	48%

GPRRA Progress as Measured by the Toxics Release Inventory 1991-1997

State	# of GPRRA baseline facilities	# of facilities reporting generation of PBT waste	# of facilities meeting 50% PBT reduction target	% of facilities meeting 50% PBT reduction target
Alaska	9	0	-	-
Idaho	13	2	0	0%
Oregon	28	3	1	33%
Washington	47	7	5	71%
Region 10	97	12	6	50%

Facility Specific GPRA Progress as Measured by the Biennial Reporting System 1991-1997
 (Lists only facilities reporting wastes with possible PBT constituents)

Facility	RCRA ID (last 4 digits)	Met GPRA 50% reduction goal for PBT wastes
ALASKA		
Alaska Railroad Corp	AK7403	/
Tesoro	AK9682	/
USDOT CG Kodiak	AK0742	
Univ. of AK Fairbanks	AK9567	/
BP Exploration	AK3239	/
USAF Elemendorf	AK8649	
USArmy Ft. Richardson	AK2157	/
USArmy Ft. Wainwright	AK2426	
IDAHO		
Blount CCI	ID6481	/
FMC	ID9518	
ESII-B	ID4654	
USAF Mtn. Home	ID4557	
USDOE INEEL	ID8952	/
Boise Locomotive	ID6831	
OREGON		
Boeing of Portland	OR4481	
Chemical Waste Management	OR2353	
Columbia Helicopters	OR3609	/
Taylor Lumber	OR2532	/
Van Waters & Rogers	OR7398	
Wah Chang	OR5848	
Safety-Kleen (OR6124)	OR6124	
Safety-Kleen (OR2067)	OR2067	
Tektronix	OR0231	/
USA Umatilla	OR0917	
Western Compliance Svcs	OR1682	/
J.H. Baxter	OR2400	
Roseburg Forest Products	OR6716	/

**Region 10: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals at High Priority
Corrective Action and Permitting Universe Facilities**

Facility Specific GPRA Progress as Measured by the Biennial Reporting System 1991-1997
(Lists only facilities reporting wastes with possible PBT constituents)

Facility	RCRA ID (last 4 digits)	Met GPRA 50% reduction goal for PBT wastes
WASHINGTON		
BFG Kalama Chemical	WA9574	
Boeing -- Everett	WA5464	
Boeing D & SG Tukwila	WA9946	
Boeing Plant 2	WA6819	/
Boeing Renton	WA2171	
Burlington Env. Tacoma	WA7945	/
Burlington Env. Georgetown	WA2909	/
OCC Tacoma	WA2314	/
TOXGON (Penberthy)	WA9644	/
Lilyblad	WA3032	/
Texaco Refining	WA6197	/
Tosco Ferndale Refinery	WA0366	
USA HQ I Ft. Lewis	WA3465	
USDOE Hanford	WA8967	/
Arco Products	WA8154	/
Bay Zinc	WA0526	
Boeing Auburn	WA7130	
BEI Kent	WA1767	/
Shell Oil (Tesoro)	WA5082	/
Sol Pro	WA9110	/
US Army Yakima	WA3995	/
US Navy Keyport	WA3419	
US Navy PSNS	WA3418	
USDOE Boneville	WA6349	
Siemens Power	WA8402	

Facility Specific GPRA Progress as Measured by the Biennial Reporting System 1991-1997
 (Lists only facilities reporting waste with PBT constituents)

Facility	Constituent	Percentage change	Met GPRA 50% reduction goal
ALASKA			
None			
IDAHO			
Blount CCI	Lead	17%	
FMC	Cadmium	-14%	
OREGON			
Taylor Lumber	Pentachlorophenol	123%	
J.H. Baxter	Pentachlorophenol	-66%	/
Oregon Steel Mills	Lead	-38%	
WASHINGTON			
Boeing -- Everett	Lead	-100%	/
	Cadmium	-100%	/
Cascade Pole and Lumber	Pentachlorophenol	-100%	/
Texaco Refining	Lead	-100%	/
Arco Products	Lead	-100%	/
	Naphthalene	-29%	
Bay Zinc	Lead	-3%	
Shell Oil	Lead	-100%	/
Seafab Metals	Lead	-100%	/