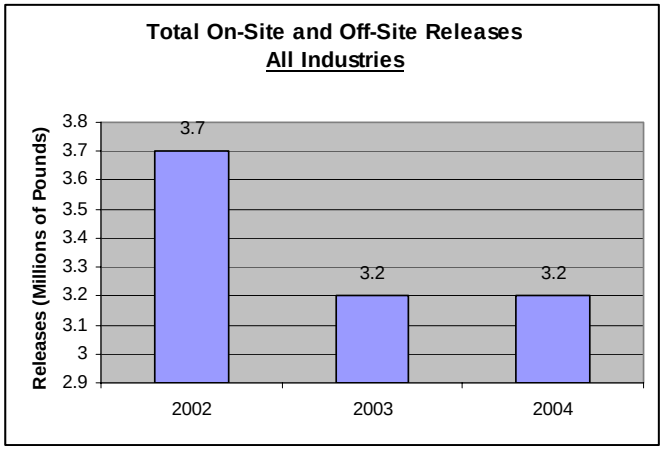
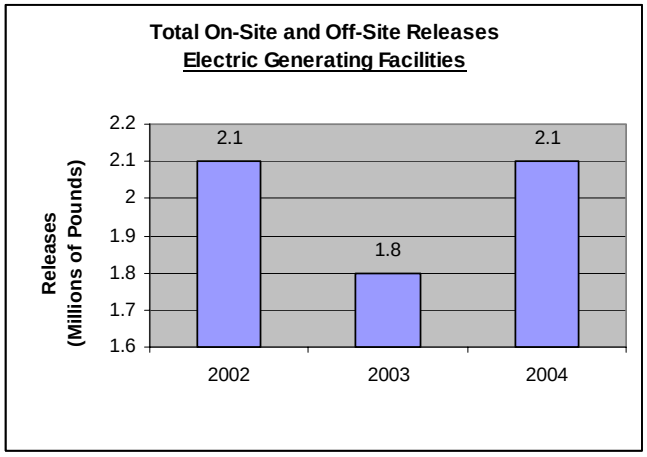
Hawaii Report: 2004 Toxics Release Inventory

April 2006

U.S. EPA Region 9
Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations

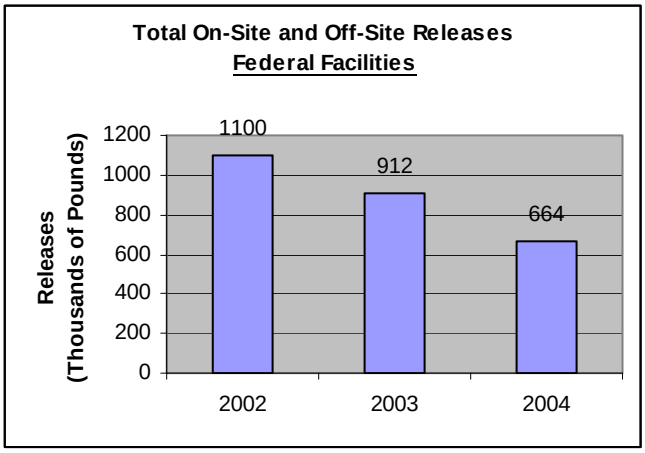
Toxic Chemical Releases: 2002 – 2004*





Total Releases for Reporting Years 2002 – 2004

Year	Air	Water	On-Site Land	Under-ground Injection	Off-Site
2002	2,495,256	454,684	228,634	2,241	507,425
2003	2,131,957	364,067	249,267	2,670	415,095
2004	2,356,380	296,414	227,719	6,601	274,009



The 2004 Public Data Release

EPA has made public the 2004 data on toxic chemicals that were released to Hawaii's air, water and land. This information comes from the Toxics Release Inventory (TRI), a federal community right-to-know program. In Hawaii, 42 facilities reported a total of 3.2 million pounds of toxic chemical releases.

Facilities that meet certain criteria must report the amounts of toxic chemicals disposed of or otherwise released on-site to air, water, land and injected underground and the amounts of chemicals transferred off-site for disposal or release. Off-site disposal or release can include land disposal at permitted hazardous waste facilities.**

The data does not indicate whether a facility is violating environmental laws. Many of the facilities reporting under this program are subject to state and federal regulations designed to protect human health and the environment. For instance Resource Conservation and Recovery Act (RCRA) Subtitle C Landfills, a type of permitted hazardous waste facility,

** Year to year data comparisons do not reflect changes in reporting requirements.*
*** No adjustments were made to account for double counting that could occur as a result of off-site transfers of some TRI facilities also being reported as on-site releases at permitted hazardous waste landfills and other TRI facilities that receive the on-site transfers.*

must comply with stringent requirements for liners, leak detection systems, and groundwater monitoring. Disposal in underground injection wells is regulated by EPA's Underground Injection Control Program to provide safeguards so that injection wells do not endanger current and future underground sources of drinking water.

Releases and Risk

It is important to note that a release should not be directly equated with risk. To evaluate risk, release data must be combined with information about site-specific conditions, exposure, and chemical toxicity. TRI chemicals vary widely in toxicity. High volume releases of less toxic chemicals may pose less environmental risk than lower volume releases of highly toxic chemicals. Increases in on-site releases at permitted hazardous waste facilities may indicate a reduction in risk.

Industries

A facility is subject to TRI reporting requirements if it: has 10 or more full-time employees; is classified under a reportable Standard Industrial Classification (SIC) code; and manufactures, processes, or otherwise uses any of the listed toxic chemicals in amounts greater than the threshold quantities. For most chemicals (excluding Persistent Bioaccumulative and Toxic (PBT) chemicals) the thresholds are 25,000 pounds for manufactured or processed, and 10,000 pounds for otherwise used.

Manufacturing industries have been reporting their releases since 1987, and federal facilities started reporting in 1994. In 1998, an additional seven industry sectors began reporting their toxic chemical releases for the first time. These sectors are metal and coal mining, electricity generation, commercial hazardous waste treatment, solvent recovery, petroleum bulk terminals, and wholesale chemical distributors.

Hawaii's Releases

Hawaii's total reported on-site and off-site releases had less than a 1% change when compared to 2003 data. However, there was an 11% increase in reported releases to air (a 224 thousand pound change). The electric services industry reported the highest pounds of air releases and had the largest increase from 2003.

There was a 34% decrease in reported transfers off-site for disposal and other waste management (a 141 thousand pound change). This decrease was primarily due to one federal facility, U.S. Army Schofield Barracks/Wheeler Army Airfield, reporting 115 thousand fewer off-site transfers (nitrate compounds).

Releases to water decreased by 19%, nearly 68 thousand pounds. This decrease was primarily due to one federal facility, U.S. Navy Pearl Harbor Naval Complex, reporting 90 thousand fewer pounds of water releases (nitrate compounds).

Persistent, Bioaccumulative, and Toxic Chemicals

In the year 2000, TRI was expanded to include additional Persistent Bioaccumulative and Toxic (PBT) chemicals and to require reporting for these chemicals at lower thresholds, ranging from 0.1 grams to 100 pounds. PBT pollutants are toxic chemicals that persist in the environment and bioaccumulate in food chains, posing risks to human health and ecosystems.

In Hawaii, about 134 thousand pounds of total on-site and off-site releases of PBT chemicals were reported. This is a 24% increase from the previous year. The reported increase in lead and lead compounds is primarily responsible for this change.

In determining release quantities for metal compounds, facilities only consider the primary metal portion of the compound. For instance, a facility reporting for lead compounds only reports the lead portion of the lead compounds released. Hence, the table below gives combined values for lead and lead compound releases and mercury and mercury compound releases. The PBT chemicals are ranked by 2004 total releases. The data is in pounds for all chemicals except dioxin and dioxin compounds, which is in grams.

Table of PBT Chemical Releases in Hawaii

Releases of persistent, bioaccumulative and toxic (PBT) chemicals in pounds. Dioxin and dioxin-like compounds data are not in Toxicity Equivalence (TEQ).

Chemical	Total On- and Off-Site Releases		Percent Change
	2003	2004	
Lead and Lead Compounds (in pounds)	106,066.59	131,952.27	24 %
Polycyclic Aromatic Compounds (PACs) (in pounds)	1,533.37	1,780.21	16 %
Mercury and Mercury Compounds (in pounds)	203.43	187.37	- 8%
Benzo (g,h,i) Perylene (in pounds)	1.18	3.48	196 %
Dioxin and Dioxin-like Compounds (in grams)	5.1287	5.3913	5%

Lead and Lead Compounds

Starting in the year 2001, lead and lead compounds were reported as Persistent Bioaccumulative and Toxic (PBT) chemicals. While lead and lead compounds have been on the list of reportable chemicals since 1987, for the year 2001 the reporting threshold was drastically lowered (from 25,000 pounds manufactured or processed, and 10,000 pounds otherwise used to 100 pounds manufactured, processed or otherwise used). As a result, additional facilities are required to report releases of lead and lead compounds.

About 132 thousand pounds of total releases of lead and lead compounds were reported in Hawaii in 2004. The increase in lead and lead compound releases was primarily due to one federal facility, U.S. Army Schofield Barracks/Wheeler Army Airfield, reporting an increased 38 thousand pounds of on-site land disposal for lead and lead compounds.

There was an 8% or 410 pound reported decrease in lead and lead compound air releases. This is primarily due to one facility, the US Army Pohakuloa Training Area, reporting a 498 pound decrease in its lead and lead compound air releases.

Polycyclic Aromatic Compounds (PACs)

Electric generating facilities released to the air 73% of the total on-site and off-site PACs releases reported in 2004. One facility, Chevron Products Co. Hawaii Refinery in Kapolei, released all of the PACS to water, 270 pounds.

Other PBT Chemical Releases

The electric services industry released 78% (146 pounds) of all mercury and mercury compound releases and 96% (131 pounds) of all the mercury and mercury compound releases to air. It also released nearly 96% of dioxin and dioxin-like compounds reported in Hawaii in 2004.

Top Facilities for Releases

The top 10 facilities for total on-site and off-site releases, for all chemicals, in Hawaii are:

❶ Hawaiian Electric Co. Inc. Kahe Generating Station (Kapolei, Honolulu County) with 884 thousand pounds.
❷ Hawaiian Electric Co. Inc. Waiau Generating Station (Pearl City, Honolulu County) with 345 thousand pounds.
❸ U.S. Navy Pearl Harbor Naval Complex (Pearl Harbor, Honolulu County) with 291 thousand pounds.
❹ U.S. Army Schofield Barracks/Wheeler Army Airfield (Schofield Barracks, Honolulu County) with 283 thousand pounds.
❺ Hawaiian Electric Industries Inc. Kahului Generating Station (Kahului, Maui County) with 240 thousand pounds.
❻ Chevron Prods. Co. Hawaii Refinery. (Kapolei, Honolulu County) with 205 thousand pounds.
❼ Hawaii Electric Light Co. Inc. Hill Generating Station (Hilo, Hawaii County) with 170 thousand pounds.
❽ AES Hawaii Inc. (Kapolei, Honolulu County) with 162 thousand pounds.
❾ Tesoro Hawaii Refinery (Kapolei, Honolulu County) with 121 thousand pounds.
❿ Maalaea Generating Station (Kihei, Maui County) with 84 thousand pounds.

The top 10 facilities for total on-site and off-site releases, for PBT chemicals, in Hawaii are:

❶ U.S. Army Schofield Barracks/Wheeler Army Airfield (Schofield Barracks, Honolulu County) with 100 thousand pounds.
❷ U.S. Marine Corps Base Hawaii (MCBH Kaneohe Bay, Honolulu County) with 11 thousand pounds.
❸ U.S. Marine Corps Base Hawaii Puuloa Training Facility (EWA Beach, Honolulu County) with 10 thousand pounds.
❹ U.S. Army Pohakuloa Training Area – Range Facility (Hilo, Hawaii County) with 4.6 thousand pounds.
❺ Hilo Coast Power Co. (Pepeekeo, Hawaii County) with 1.6 thousand pounds.
❻ AES Hawaii Inc. (Kapolei, Honolulu County) with 1.4 thousand pounds.
❼ Hawaiian Electric Co. Inc. Kahe Generating Station (Kapolei, Honolulu County) with 1.4 thousand pounds.
❽ Maalaea Generating Station (Kihei, Maui County) with 1.3 thousand pounds.
❾ Chevron Products Co. Hawaii Refinery (Kapolei, Honolulu County) with 660 pounds.
❿ Hawaiian Electric Co. Inc. Waiau Generating Station (Pearl City, Honolulu County) with 602 pounds.

On-line Access

For national information on data releases, see:
http://www.epa.gov/tri

The TRI data is available through Envirofacts Warehouse, EPA's premier internet site for distributing environmental information at:
http://www.epa.gov/enviro

or the TRI Explorer tool:
http://www.epa.gov/triexplorer

For general information on the Toxics Release Inventory, including reporting requirements for businesses, go to:
http://www.epa.gov/region09/toxic/tri

For additional information on dioxin, go to:
http://www.epa.gov/ncea/dioxin.htm
For more information on the EPA's PBT Chemicals Program, go to:
http://www.epa.gov/opptintr/pbt/

Information and Assistance

We are happy to answer your questions and assist you in learning more about the TRI Program in Region 9.

U.S. EPA Region 9, TRI Program

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