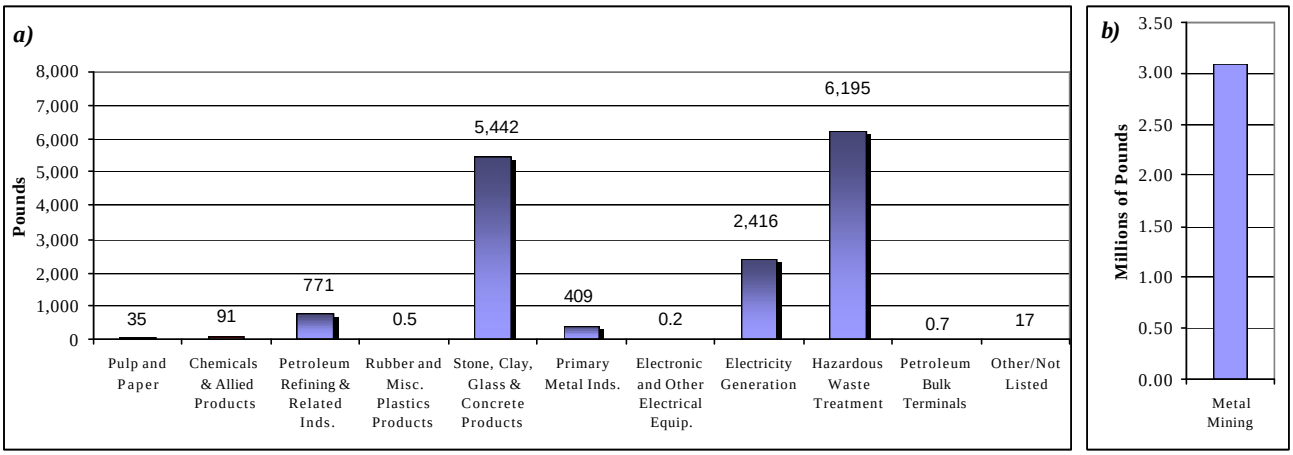
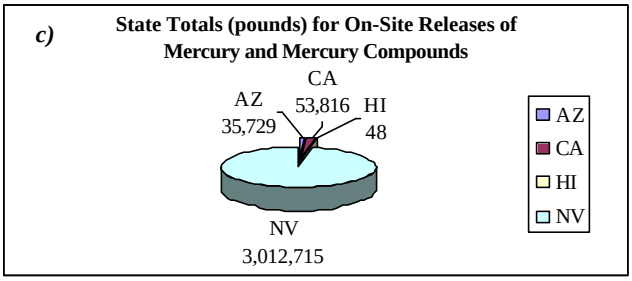
Mercury Report: 2000 Toxics Release Inventory

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

On-Site Releases of Mercury and Mercury Compounds by Industry



Note: On-site releases include amounts released to the air, water, land and underground injection at the location of the reporting facility. Chart **a** shows mercury releases (in pounds) for all industries excluding metal mines. Releases from metal mines are shown in millions of pounds in chart **b**. Charts **a** and **b** show combined totals for the entire region (AZ,CA, HI, NV, and the Pacific Islands. Chart **c** gives state totals for on-site mercury releases (in pounds).



Mercury and the 2000 TRI Data

EPA has just made public the 2000 data on toxic chemicals that were released* to the air, water and land within the Pacific Southwest region. This information comes from the Toxics Release Inventory (TRI), a federal community right-to-know program.

For the year 2000, the TRI was expanded to include additional persistent, bioaccumulative and toxic (PBT) chemicals, and required reporting for these chemicals at lower thresholds. PBT pollutants are chemicals that are toxic, persist in the environment and bioaccumulate in food chains and, thus, pose risks to human health and ecosystems. While mercury and mercury compounds have been on the list of reportable chemicals since 1987, for the year 2000 the reporting threshold was drastically lowered (to 10 pounds manufactured, processed, or otherwise used), and this change has resulted in more comprehensive release information for these compounds.

It is important to note that release cannot be directly equated with risk. To evaluate risk, release data must be combined with information about chemical toxicity,

**Release is defined as the amount of a toxic chemical released on-site (to air, water, underground injection, landfills and other land disposal), and the amount transferred off-site for disposal.*

site-specific conditions, and exposure. In addition, this data does not indicate whether a facility is violating environmental laws. Many of the substances reported through this program are subject to state and federal regulations designed to protect human health and the environment.

Releases

The TRI data for 2000 shows that, with the exception of Hawaii, Region 9 states rank higher than most states in the U.S. for releases of mercury and mercury compounds. In a state-by-state comparison Nevada, California, Arizona and Hawaii ranked 1, 5, 9 and 50, respectively for total on- and off-site releases of mercury and mercury compounds (no mercury releases were reported in Region 9's Pacific island territories). The table below gives the total pounds of mercury and mercury compounds reported in Region 9:

Releases by State

	On-Site Air	*On-Site Water*	*On-Site Land*	*Under-ground injection*	*Off-Site Disposal*	*Total On- and Off-Site*
AZ	2,101	0	33,628	0	205	35,933
CA	5,598	5	48,213	0.2	6,959	60,775
HI	39	4	0	6	52	101
NV	12,772	1	2,999,941	0.3	73	3,012,788

In *Region 9 states, reported on- and off-site releases in pounds.*

Industries

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

Reporting Industry Sectors–the 2000 Data

A review of the TRI data suggests that approximately 99% of mercury releases in the Region come from the metal mining industry. The other 1% is mostly attributed to hazardous waste treatment facilities, the stone, clay, glass and concrete products industry, electricity generators and petroleum refineries. A detailed summary of releases by industry sector is provided in the table at right.

Releases of Mercury and Mercury Compounds by Industry Sector

	On-Site Air	On-Site Water	On-Site Land	Off-Site Disposal	Total On- and Off-Site
Metal Mines	12,707	1	3,074,222	143	3,087,073
Hazardous Waste Treatment	13	0	6,183	7,863	14,058
Stone, Clay, Glass & Concrete Products	4,830	0	612	17	5,459
Electricity Generation	1,688	0.6	728	249	2,666
Petroleum Refining & Related Inds.	757	8	0	984	1,755
Primary Metal Inds.	409	0	0	13	422
Chemicals & Allied Products	72	0	19	50	141
Pulp and Paper	29	0	6	2	37
Other/Not Listed	5	0	12	12	29
Electronic and Electrical Equip.	0.2	0	0	25	25
Petroleum Bulk Terminals	0.7	0	0	0	0.7
Rubber and Misc. Plastics	0.5	0	0	0	0.5

Releases are given in pounds.

Metal Mining

In the Pacific Southwest Region, 33 metal mines reported 3 million pounds of on-site mercury and mercury compound releases, most of which was released on-site to land. Mercury and mercury compounds may be processed as a trace constituent in metal ores or recovered as a by-product from gold ores. Many mines extract, move, store, process, and dispose of large amounts of waste rock and ore--materials which often contain low concentrations of naturally occurring metals. The vast majority of this material is placed in surface impoundments or on the land, and the metals are reported as on-site releases to land. This previously buried material is exposed to potential leaching by rain, snow, and acid mine

drainage, and must be carefully managed and monitored to prevent any surface water or groundwater contamination.

There are also air releases from ore processing and metal refining operations. For air releases of mercury and mercury compounds, five copper mines reported a total of 142 pounds; two silver mines reported 281 pounds, and 26 gold mines reported a total of 12,284 pounds.

Hazardous Waste Treatment

Seven hazardous waste treatment facilities reported disposing 6,183 pounds of mercury and mercury compounds into on-site landfills and 13 pounds to the air.

Cement Manufacturing

Mercury may be processed or otherwise used as a trace element in raw materials and fuels in the manufacture of Portland cement. Thirteen cement manufacturing facilities reported 5,395 pounds of on-site mercury and mercury compounds releases, of which 4,813 pounds were released to the air, and 582 pounds released on-site to land.

Electricity Generation

Nineteen electricity generating facilities reported 2,416 pounds of on-site mercury releases. Only facilities that burn coal or oil to generate electricity commercially need to report to the Toxics Release Inventory. Mercury compounds may be formed during the combustion process.

Refineries

Twenty-five petroleum refineries reported 770 pounds of on-site mercury releases. Mercury may be processed or otherwise used as trace components in crude oil.

Top Facilities for Releases in 2000 in Region 9

The top 10 facilities for on- and off-site releases in Region 9 are:

1: Barrick Goldstrike Mines Inc. (1,864,000 lbs) Elko, Nevada
2: Newmont Mining Corp. Twin Creeks Mine (501,000 lbs) Golconda, Nevada
3: Newmont Mining Corp. Lone Tree Mine (157,000 lbs) Valmy, Nevada
4: Newmont Mining Corp. Carlin South Area (153,000 lbs) Carlin, Nevada
5: Cortez Gold Mines Pipeline Processing Plant Mill #2 (120,000 lbs) Beowawe, Nevada
6: Getchell Gold Corp. (111,000 lbs) Golconda, Nevada
7: Newmont Mining Corp. (84,000 lbs) Carlin, Nevada
8: Jerritt Canyon Joint Venture (62,000 lbs) Elko, Nevada
9: Echo Bay Minerals Co McCoy/Cove Mine (47,000 lbs) Battle Mountain, Nevada
10: Coeur Rochester Inc. (44,000 lbs) Lovelock, Nevada

On-line Access

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

The TRI data is available through the 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 and associated risk, got to www.epa.gov/ncea/dioxin.htm

Information and Assistance

We will be more than happy to answer your questions and assist you in learning more about the Toxics Release Inventory program in Region 9.

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