



U.S. Environmental Protection Agency  
Pacific Southwest/Region 9



*Serving Arizona, California, Hawaii, Nevada, the Pacific Islands and 148 Tribes*

Communities and Ecosystem Division  
Toxics Office

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## Toxics Release Inventory 2011 Arizona Report

### Arizona's Releases

261 Arizona facilities reported a total of 98 million pounds of toxic chemical releases during 2011. Arizona's total reported on-site and off-site releases increased 22% (18 million pounds), when compared to 2010 data.

### What is a Release?

A TRI "release" is defined by the Federal reporting law 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; it is measured in pounds, unless stated otherwise.

#### Total Releases for Reporting Years 2009 – 2011

Year	Air	Water	On-Site Land	Under-ground Injection	Off-Site	Total Releases
2009	2,704,629	1,343	57,597,686	-	911,647	61,215,305
2010	2,873,179	1,619	75,951,824	5	1,099,110	79,925,736
2011	2,804,315	1,180	94,249,240	5	647,543	97,702,283

### Releases to the Environment

**Air:** Air releases decreased 2% (69 thousand pounds) since 2010.

**Water:** Water releases decreased 27% (439 pounds) since 2010.

**On-Site Land:** On-site land releases increased 24% (18 million pounds) since 2010.

**Underground Injection:** Underground Injection releases did not change since 2010.

**Off-Site Transfers:** Total off-site transfers have decreased 41% (452 thousand pounds) since 2010.

### Facilities with Largest Chemical Releases

The top ten facilities in Arizona for total on-site and off-site releases of all chemicals were the following:

	Facility Name	City	County	Total Releases
1	ASARCO LLC RAY COMPLEX/HAYDEN SMELTER & CONCENTRATOR	Hayden	Gila	44,293,087
2	FREEPORT-MCMORAN MIAMI INC.	Claypool	Gila	22,256,932
3	FREEPORT-MCMORAN MORENCI INC.	Morenci	Greenlee	4,794,635
4	SPRINGVILLE GENERATING STATION	Springerville	Apache	4,231,272
5	ASARCO LLC RAY MINE OPERATIONS	Kearny	Pinal	3,923,059
6	CORONADO GENERATING STATION	Saint Johns	Apache	3,064,467
7	FREEPORT-MCMORAN SIERRITA INC.	Green Valley	Pima	2,435,235
8	SALT RIVER PROJECT NAVAJO GENERATING STATION	Page	Coconino	2,149,357
9	ASARCO LLC MISSION COMPLEX	Sahuarita	Pima	1,921,558
10	MINERAL PARK INC.	Golden Valley	Mohave	1,801,374

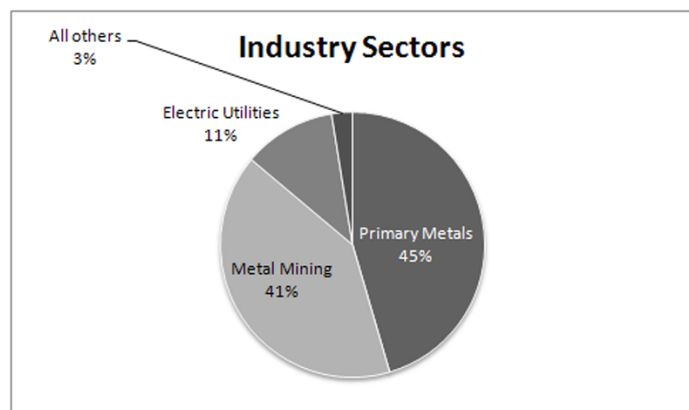
### Top 10 Released Chemicals

The top released chemicals based on total on-site and off-site releases in Arizona were the following:

Chemical	Total Releases (pounds)	Percentage of Total Releases
ZINC AND ZINC COMPOUNDS	34,812,935	36%
COPPER AND COPPER COMPOUNDS	25,857,715	26%
LEAD AND LEAD COMPOUNDS	16,060,218	16%
BARIUM AND BARIUM COMPOUNDS	8,664,632	9%
MANGANESE AND MANGANESE COMPOUNDS	3,510,317	4%
CHROMIUM AND CHROMIUM COMPOUNDS (EXCEPT CHROMITE ORE MINED IN THE TRANSVAAL REGION)	2,542,583	3%
NICKEL AND NICKEL COMPOUNDS	936,104	1%
ARSENIC AND ARSENIC COMPOUNDS	780,303	1%
ANTIMONY AND ANTIMONY COMPOUNDS	774,541	1%
SULFURIC ACID ("ACID AEROSOLS" ONLY)	680,880	1%

## Industry Breakdown

Primary metal manufacturing accounts for 45% of total releases in 2011; this category includes the following metals: iron, aluminum, copper, and non-ferrous metals.



## PBT Chemical Releases

Starting in 2000, EPA established more stringent reporting thresholds for persistent bioaccumulative toxic (PBT) chemicals originally on, or added to, the TRI chemical list. PBT chemicals are of particular concern not only because they are toxic, but also because they remain in the environment for long periods of time, are not readily destroyed, and build up or accumulate in body tissue. The TRI PBT chemicals include dioxin and dioxin-like compounds, lead and lead compounds, mercury and mercury compounds, polycyclic aromatic compounds (PACs), polychlorinated biphenyls (PCBs), and certain pesticides, among other chemicals.

In Arizona, 16 Million pounds of total (on-site and off-site) releases of PBT chemicals were reported in 2011. This is an increase of 3 million pounds or 24% since 2010. Lead and lead compounds top the list again in 2011. The PBT chemicals in the table are ranked in descending order for 2011.

Chemical	Total On-Site and Off-Site Releases in Pounds		Percent Change
	2010	2011	
LEAD & LEAD COMPOUNDS	12,876,872	16,060,218	25%
MERCURY & MERCURY COMPOUNDS	11,530	12,493	8%
POLYCHLORINATED BIPHENYLS (PCB's)	67,163	667	-99%
POLYCYCLIC AROMATIC COMPOUNDS	596	587	-2%
DIOXIN AND DIOXIN-LIKE COMPOUNDS	.032	.034	6%

\* Releases of most Persistent, Bioaccumulative and Toxic (PBT) chemicals are in pounds. Dioxin and dioxin-like compounds data are reported in grams but have been converted to pounds in the table above for consistency.

## Facilities with Largest PBT Releases

The top ten facilities in Arizona for total on-site and off-site releases of PBT chemicals are:

	Facility Name	City	County	Total Releases
1	ASARCO LLC RAY MINE OPERATIONS	Kearny	Pinal	3,176,932
2	FREEPORT-MCMORAN MORENCI INC.	Morenci	Arizona	3,001,680
3	ASARCO LLC RAY COMPLEX/ HAYDEN SMELTER & CONCENTRATOR	Hayden	Gila	1,961,090
4	MINERAL PARK INC.	Golden Valley	Mohave	1,646,264
5	FREEPORT-MCMORAN MIAMI INC.	Claypool	Gila	1,543,067
6	FREEPORT-MCMORAN SIERRITA INC.	Green Valley	Pima	1,541,670
7	ASARCO LLC MISSION COMPLEX	Sahuarita	Pima	1,239,654
8	FREEPORT-MCMORAN SAFFORD INC.	Safford	Graham	1,190,082
9	FREEPORT-MCMORAN BAGDAD INC.	Bagdad	Yavapai	561,742
10	SPRINGVILLE GENERATING STATION	Springerville	Apache	49,867

## For More Information

For more information, see [www.epa.gov/tri](http://www.epa.gov/tri) for national TRI information or [www.epa.gov/region09/tri](http://www.epa.gov/region09/tri) for Regional TRI information, or contact Lily Lee, Toxic Release Inventory Coordinator, US EPA Region 9, at [lee.lily@epa.gov](mailto:lee.lily@epa.gov) or 415-947-4187.

*Release data alone are not sufficient to determine exposure or to calculate potential risks to human health and the environment. TRI data, in conjunction with other information, such as the toxicity of the chemical, the release medium (e.g., air), and site-specific conditions, can be used as a starting point in evaluating exposures that may result from releases of toxic chemicals.*