



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 • February 2013

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## Toxics Release Inventory Update for Arizona-Mexico Border Reporting Years 2009-2011

### Border Releases

131 Arizona facilities within 100 km of the U.S.-Mexico Border area reported a total of 6 million pounds of toxic chemical releases during 2011. Arizona's total reported on-site and off-site releases increased 15% (about 760 thousand pounds), when compared to 2010 data.

**Total Releases for Reporting Years 2009 – 2011  
(in pounds)**

Year	Air	Water	On-Site Land	Off-Site	Total Releases
2009	343,455	0	4,658,709	10,170	5,012,334
2010	458,769	0	4,726,705	47,387	5,232,861
2011	492,765	126	5,406,065	98,493	5,997,450

### What is a Release?

A Toxics Release Inventory (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.

### Releases to the Environment

**Air:** A type of emission released by industrial facility air stacks or "fugitive" sources such as leaking valves, evaporation, spills, etc. Air releases increased 7% (34 thousand pounds) since 2010.

**Water:** An emission discharged into the ocean, streams, lakes, rivers and other bodies of ground water. This may occur from point sources such as leaking pipes and holding tanks, and non point sources such as storm water runoff. Water releases increased from zero to 126 pounds since 2010.

**On-Site Land:** 68% of 2011 reported on-site land releases were in surface impoundments (natural topographic depressions, man-made excavations and diked areas that primarily are made of earthen materials and which hold liquid wastes), and 32% of these releases were "other on-site land disposal," which are unspecified activities that could include placement in waste piles and spills or leaks. On-site land releases increased 14% (680 thousand pounds) since 2010.

**Off-Site Transfers:** The transfer of a toxic substance from a TRI facility to another location, sometimes for disposal. Total off-site transfers have increased 108% (51 thousand pounds) since 2010.

## Facilities with Largest Chemical Releases

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

	Facility Name	City	County	Total Releases (in pounds)
1	FREEMPORT-MCMORAN SIERRITA INC.	Green Valley	Pima	2,435,235
2	ASARCO LLC MISSION COMPLEX	Sahuarita	Pima	1,921,558
3	US MARINE CORPS BARRY M GOLDWATER RANGE (PART)	Yuma	Yuma	877,582
4	ARIZONA ELECTRIC POWER COOPERATIVE INC.	Cochise	Cochise	295,273
5	IRVINGTON GENERATING STATION	Tucson	Pima	148,131
6	APACHE NITROGEN PRODUCTS INC.	Saint David	Cochise	133,905
7	LEARJET INC.	Tucson	Pima	75,729
8	SOUTHWEST FIBERGLASS LLC	Tucson	Pima	26,876
9	US MARINE CORPS AIR STATION YUMA	Yuma	Yuma	26,252
10	SASOL NORTH AMERICA INC.	Tucson	Pima	11,420

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.

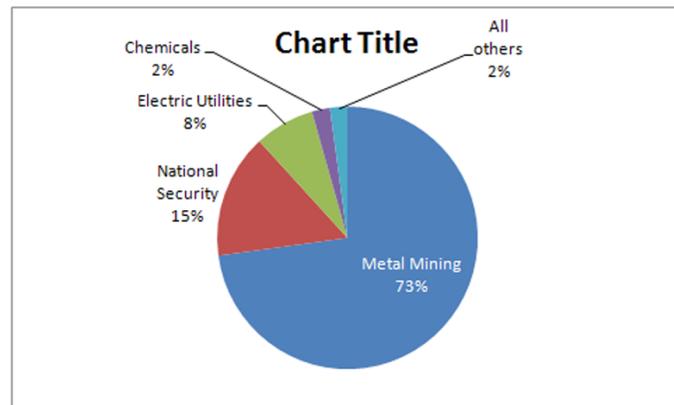
## Top 10 Released Chemicals

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

	Chemical	Total Releases (in pounds)	Percentage of Total Releases
1	LEAD AND LEAD COMPOUNDS	2,824,619	47%
2	COPPER AND COPPER COMPOUNDS	894,901	15%
3	CHROMIUM AND CHROMIUM COMPOUNDS (EXCEPT CHROMITE ORE MINED IN THE TRANSVAAL REGION)	658,440	11%
4	MANGANESE AND MANGANESE COMPOUNDS	582,311	10%
5	NICKEL	280,818	5%
6	BARIUM AND BARIUM COMPOUNDS	199,751	3%
7	NITRATE COMPOUNDS	113,605	2%
8	HYDROCHLORIC ACID (1995 AND AFTER ACID AEROSOLS ONLY)	95,855	2%
9	HYDROGEN FLUORIDE	85,225	1%
10	NAPHTHALENE	58,837	1%

## Industry Breakdown

Metal mining accounts for 73% of total releases in 2011. All metal mines who reported are copper ore or nickel ore mining facilities. 80% of metal mine releases (3.5 million pounds) were in surface impoundments, which are natural topographic depressions, man-made excavations and diked areas that primarily are made of earthen materials and which hold liquid wastes.



## 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 the Arizona-Mexico Border area, 3.5 million pounds of total (on-site and off-site) releases of PBT chemicals were reported in 2011. This is a decrease of 680 thousand pounds or 19% 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 Releases (in pounds)		Percent Change
	2010	2011	
LEAD AND LEAD COMPOUNDS	3,502,450	2,824,619	-19%
MERCURY AND MERCURY COMPOUNDS	3,789	1,802	-52%
POLYCYCLIC AROMATIC COMPOUNDS	0.6	0.3	-46%
DIOXIN AND DIOXIN-LIKE COMPOUNDS	0.00188	0.00195	4%
BENZO(G,H,I)PERYLENE	0.004	0	-100%

Note: Releases of PBT chemicals are shown in pounds. Dioxin and dioxin-like compounds data are reported in grams but converted to pounds in the above table for consistency.

## Facilities with Largest PBT Releases

The top ten facilities in the Arizona-Mexico Border area for total on-site and off-site releases of PBT chemicals are the following:

	Facility Name	City	Total Releases (in pounds)	% of Total
1	FREEPORT-MCMORAN SIERRITA INC.	Green Valley	1,541,670	55%
2	ASARCO LLC MISSION COMPLEX	Sahuarita	1,239,654	44%
3	US MARINE CORPS BARRY M GOLDWATER RANGE (PART)	Yuma	18,353	1%
4	US DOD USAF DAVIS-MONTHAN AFB	Tucson	8,700	0%
5	USDOD FORT HUACHUCA - RANGES	Fort Huachuca	6,672	0%
6	ARIZONA ELECTRIC POWER COOPERATIVE INC.	Cochise	3,843	0%
7	US ARMY GARRISON YUMA PROVING GROUND MAIN FACILITY	Yuma	3,658	0%
8	IRVINGTON GENERATING STATION	Tucson	3,031	0%
9	TRIANGLE INDUSTRIAL CORP.	Tucson	804	0%
10	SILVER BELL MINING LLC	Marana	25	0%

Note: 0% means that the amount is less than 0.5% and has been rounded off for consistency of formatting

## On-line Access

For more information, see:

[www.epa.gov/tri](http://www.epa.gov/tri)

(For national TRI information)

[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.*