



State of Utah
Department of Environmental Quality

Utah Toxic Release Inventory
Reporting Year 2009
Data Summary Report

Division of Environmental Response and Remediation
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EXECUTIVE SUMMARY

Introduction

Under Section 313 of the federal Emergency Planning and Community Right-to-Know Act (ECPRA) the Toxic Release Inventory (TRI) is a compilation of data submitted by certain facilities subject to the reporting requirements of EPCRA. TRI data provides select information of a finite list of chemicals defined by the statute concerning releases and transfers into the environment and the transfers of chemicals to other off-site facilities for final disposition. Section 313 requires a facility to submit TRI data to the U.S. Environmental Protection Agency and the State Hazardous Chemical Emergency Response Commission (SERC). This report is a summary of the data submitted to the Utah Department of Environmental Quality (DEQ) for calendar year 2009. TRI information includes only selected industrial sectors using larger volumes of certain listed chemicals. Therefore, TRI data may only include a relatively small portion of all chemical releases of environmental significance. TRI data can be used to provide basic information on the types and volumes of waste and emissions at a facility, but the data must be used with other concentration, migration, environmental target, and exposure information to assess the relative level of human health or environmental risk.

Beginning in 2002, EPA made preliminary TRI data available via the internet. Persons interested may query data using a variety of query tools to retrieve multiple facility data across multiple years of reporting. In 2002 EPA began publishing state fact sheets which provide a summary of TRI data for each state.

Beginning with Reporting Year 2006, Utah started participating in the State Data Exchange Network-National Environment Information Exchange Network (SDX). This partnership provides DEQ the mechanism to receive TRI data directly from EPA, and beginning with RY2006 data it is now the exclusive source of TRI data to the State of Utah where it is retained in the Utah Data Management System (Utah DMS).

It is traditionally the practice of EPA to “freeze”¹ TRI data several months after the data are received on or before the annual July 1 submission deadline. TRI data including revision data may be submitted by a facility at any time during the calendar year. These data are processed dynamically at the EPA Data Processing Center which is transmitted virtually in real-time to the Utah data-server. Utah does not freeze the Utah data set. Information offered in this report reflects the presentation of all data and the statistical analyses reflects a compilation of all data within the Utah DMS received at the time the statistical tables and charts are produced.

Beginning with the RY2009 report, the EPA Public Data Release (PDR) will be released under a new title of “TRI National Analysis.”

¹ Freeze – TRI data submissions or revisions submitted after the date on which EPA sets a freeze on the dataset are not used in the final statistical calculations published in the annual EPA TRI report.

Duplicate Amounts Reduction Calculation

EPA incorporates a correction calculation for data that has been “double-counted.” Double counting is the term applied by EPA to amounts of waste that have effectively been reported two times.² The Utah system does not currently perform a similar correction calculation and for this reason totals related to select categories (e.g. total offsite transfers) have higher values in the Utah data in comparison to the EPA data.

Historically the multi-year data trend presented in past Utah TRI reports have shown amounts up to 14% higher than EPA totals for the chosen year of comparison. UDEQ anticipates that the Utah 2009 reporting year data will be similar with this variation in certain categorical totals reported.

EPA makes TRI data available on the internet for past report years with the exception of the current dataset reported. These datasets serve as an independent source to cross-check past years. The current report year data set is made available to the public after it is announced by EPA via the TRI National Analysis.

2009 TRI Summary

For reporting year 2009, 167 facilities filed a total of 798 chemical forms under the federal TRI program. A total of 142 unique chemicals or chemical categories were also reported.

Total Releases

Total onsite and offsite release amounts reported by all facilities reporting TRI in Utah for reporting year 2009 decreased 33.4%. The amount of total releases reported in RY2008 was 224 million pounds. Total releases reported in RY2009 were 149 million pounds showing a net decrease of 75 million pounds.

Releases to Air (onsite)

The total TRI release to air reported by Utah facilities in 2009 decreased by 25.4%. The total release to air amount reported in 2008 was 9.1 million pounds. Total amount released to air reported in 2009 is 6.8 million pounds showing a reduction of approximately 2.3 million pounds.

Releases to Land (onsite)

In RY2009 total chemical releases to land decreased by 32.0%. Total releases to land in RY2008 were 202.9 million pounds. Releases for report year 2009 totaled 137.8 million pounds resulting in a net decrease of 65.0 million pounds.

Kennecott facilities in Utah comprise the largest single-source quantity of amount reported for releases to land. Combined releases reported by Kennecott facilities for releases to land in 2008 totaled 187.4 million pounds. The combined releases reported by Kennecott facilities for

² 2006 State Fact Sheet (see end notes).

releases to land in 2009 totaled 124.5 million pounds showing an overall decrease of 62.9 million pounds representing a 33.6% decrease.

Releases to Surface Water (onsite)

Total releases to surface water in 2008 were reported at 92,184 pounds. In RY2009 releases to surface water were reported at 100,856 pounds showing an increase by 9.4%.

For reporting year 2009 Chevron Products Company reported a release of approximately 87,100 pounds contributing 86.4% of the total. Almost 98 percent of the total poundage released to surface water by Chevron is comprised of nitrate compounds. Kennecott facilities reported 12,528 pounds for various TRI chemicals. The combined amounts reported from these two facilities comprise 98.9% of the total quantities released to surface waters statewide.

Transfers to POTWs

Publicly Owned Treatment Works (POTWs) are wastewater treatment plants. Transfers reported to POTWs in RY2009 increased by 15.4%. Transfers to POTWs reported in 2008 totaled 1.3 million pounds. Transfers reported in 2009 were 1.5 million pounds showing an increase of about 200,000 pounds. Nitrates constitute about 75.8% of the total chemicals transferred to POTWs. The remaining percentage consists of ammonia and nitric acid and smaller amounts of volatile organic chemicals and a variety of other chemicals in small percentages.

TRI-reported releases to POTWs do not include information concerning the rate of release or concentrations of chemicals in the release. However, state and federal law requires industrial facilities with wastewater flows exceeding federally established chemical concentrations to operate industrial pretreatment equipment to reduce such concentrations below harmful levels before discharging to the POTWs.

Total Offsite Transfers

Transfers of TRI chemicals to “other offsite” locations are transfers to facilities other than POTWs. Often these facilities include chemical recyclers and waste disposal sites. The amount of chemicals reported transferred offsite in 2009 decreased by 22.1%. The amount of other offsite transfers reported in 2008 was 22.2 million pounds. Total offsite transfers reported in 2009 were 17.3 million pounds.

Persistent Bioaccumulative Toxic (PBT) Chemicals – Dioxin & Dioxin-Like Compounds

For 2009, the amount of PBT Dioxin & dioxin-like compounds released decreased slightly by less than 1%. Dioxin and dioxin-like compounds were reported at 4,405 grams in 2008, and 4,401 grams in 2009. The total release amount reported to land comprises greater than 99% of the total release amount. Total releases to both air and land remained near constant.

In 2009 U.S. Magnesium reported approximately 4,333 grams of dioxin and dioxin-like chemicals. This amount constitutes greater than 99% of the total quantity reported.

INTRODUCTION

What is the Toxic Release Inventory?

The Toxic Release Inventory (TRI) is a database providing information about releases of certain TRI program specific chemicals and chemical categories into the environment, and transfers to off-site facilities by facilities that manufacture, process, or otherwise use Section 313 chemicals. Nationally, a facility subject to the Emergency Planning and Community Right to Know Act (EPCRA) reports TRI information annually to the U.S. Environmental Protection Agency (EPA) and to the state in which it is located. The Utah Hazardous Chemical Emergency Response Commission (more commonly known as the State Emergency Response Commission - SERC) was established under Utah Code Ann: §63-5-5. The Utah Department of Environmental Quality (UDEQ) acts on behalf of the SERC to administer the EPCRA program in Utah and manage all associated data submitted by facilities subject to the reporting requirements of EPCRA. TRI data must be submitted annually by July 1 for the previous calendar year. This report is a summary of data submitted to the UDEQ for EPCRA reporting year 2009.

Who Must Report to TRI?

A facility must report to TRI if it:

- Conducts operations within specified Standard Industrial Classification (SIC) Codes;
- Has 10 or more full-time employees (or equivalent); and,
- Manufactures or processes more than 25,000 pounds or uses more than 10,000 pounds of any TRI listed chemical during the calendar year.

TRI data only includes reports from manufacturing facilities, federally owned facilities, coal mining, metal mining, electrical generation facilities combusting coal or oil, hazardous waste disposal, wholesale bulk petroleum distribution, chemical wholesale distribution, and solvent recycling.

What Type of Information Must Be Reported?

A facility must report the:

- Amount of each listed chemical released to the air, water, or soil;
- Amount of each listed chemical transferred off-site or sent to a wastewater treatment plant;
- Amount of each listed chemical recycled, treated, or disposed; and,
- Facility's pollution reduction activities.

What Types of Chemicals are Subject to Reporting?

Over 600 chemicals and chemical categories were included in the reporting list for 2009, based on acute or chronic human health or environmental effects. Pursuant to the federal EPA TRI program, no new chemicals were added to the list for reporting year 2009. TRI program specific chemicals are listed under Title 40 of the Code of Federal Regulations Part 372. For additional information on chemicals subject to reporting under TRI, visit EPA's website at

<http://www.epa.gov/tri/trichemicals/index.htm>. Changes promulgated by EPA to the TRI program, (i.e., additions or deletions of TRI program chemicals or chemical categories) are published in the Federal Register and updated annually in the Code of Federal Regulations.

What Are the Benefits and Uses of TRI Data?

TRI data can be used in a variety of ways:

- The public can use TRI data to identify potential concerns.
- Government can use TRI data to evaluate environmental programs and establish regulatory priorities.
- The data can be used to provide basic information on the types and volumes of waste being generated or managed at a facility and, in conjunction with other data, can be utilized to study and identify potential hazards to public health or the environment.
- Industry can use TRI data to establish release reduction targets and document release reduction progress.

What Are the Limitations of the Data?

- *Not All Toxic Releases/Transfers Are Reported.* Only a few sectors of industry are currently required to submit TRI reports. Thus, only a portion of all chemical releases or transfers is included in the inventory. Additionally, the list of chemicals for which reporting is required is not inclusive of all chemicals known to have significant public health or environmental impact.
- *Reported Release/Transfer Totals Usually Are Based on Estimations Only.* No special monitoring is required to calculate emission or transfer totals. Reported data is often based on estimations.
- *Smaller Release Totals Are Reported as Ranges, Not Exact Numbers.* If a chemical release or transfer estimate was below 1,000 pounds, companies were allowed to report ranges of 1-10, 11-499, and 500-999 pounds. In such cases, the mid-point of the range was entered into Utah's database. These estimations may, therefore, be above or below the actual figure.
- *TRI Statewide Totals Cannot Be Compared Easily From Year to Year.* The TRI list of chemicals requiring reporting and methods requiring the estimating of emissions have changed significantly through the history of the TRI reporting program. Facilities may meet the TRI reporting requirements and submit TRI reports for some years and not others. These changes make accurate multi-year comparisons of statewide release or transfer totals very difficult.

What Cautions Should Be Used in Interpreting TRI Data?

- *TRI Reports Releases, Not Exposures.* Release estimates alone are not sufficient to determine exposure, risk of exposure, or calculate potential adverse human health or environmental affects.

- *TRI Does Not Report Concentrations.* TRI emission totals do not include information on the concentration of chemicals in air, water, or wastes placed on land. A large release may be a large volume at low concentration.
- *TRI Releases Are Often Permitted by State or Federal Law.* TRI releases are often permitted by state or federal environmental agencies after an evaluation has concluded the release will not adversely affect human health or the environment.

Changes to the Regulations

- There were no significant changes in the TRI reporting rules for RY2009. Changes to the TRI regulations can be reviewed on-line at <http://www.epa.gov/fedrgstr/>.

How Can the Public Obtain TRI Information?

Extracts of TRI information can be obtained from several sources:

- Computer summaries of Utah TRI information or copies of original TRI submissions can be obtained by submitting a written request to:

Utah Division of Environmental Response and Remediation
195 North 1950 West, 1st Floor
P.O. Box 144840
Salt Lake City, Utah 84114-4840
Or email the request to eqderrtier2@utah.gov

A customer may choose to have pages copied by a DERR employee at a cost of \$0.25 per single-sided page. Pages copied by the customer are \$0.05 per single-sided page with the first 10 pages free. Specialized computer summaries are available for a fee charged at an hourly rate. Most specialized reports require less than one hour's time to create. Please call UDEQ (801-536-4100) for current hourly rates.

The EPA offers access to TRI data on the Internet through the following websites:

- www.epa.gov/tri
- <http://www.epa.gov/tri/tridata/>

DATA MANAGEMENT

Significant changes have been implemented to the methods and techniques used in the Utah Data Management System (Utah DMS) to receive, manage and deliver TRI data. Beginning with RY2006, Utah initiated participation in the National Environment Information Exchange Network - State Data Exchange (SDX) Network. Utah's participation in the SDX was executed through a Memorandum of Agreement (MOA) between EPA and DEQ. The MOU provided some of the technical and administrative mechanisms through which EPA transmits TRI data electronically to Utah. Data submitted from facilities to EPA through the State Data Exchange are delivered directly from EPA to a Utah data server referenced in this document as the "Node." Beginning in RY2006, TRI data are now received exclusively by Utah through the State Data Exchange system.

Since the SDX is now the exclusive source of TRI data to Utah it was practical to make internal comparisons to an independent EPA dataset for the reporting year to confirm Utah DMS performance, and to ensure that the data managed and delivered remains accurate within the limitations of current available resources.

Several differences between the EPA system and the Utah DMS were identified. EPA technology serves several data concepts not currently supported by the Utah DMS: (a) Duplicate submission of the same chemical or chemical compound under a given TRI Facility ID (TRIFID); (b) Multiple NAICS³ codes under a single TRIFID; and (c) duplicate reporting of chemicals and chemical compounds otherwise termed by EPA as double-counting. (The term *double counting* is applied to release or transfer amounts of waste reported two times.⁴) EPA can account for double-counting in published data.

The combination of these items enables EPA to adjust certain data totals to account for duplicate-reporting or double-counting (see EPA TRI 2006 State Fact Sheet Utah paragraph 2 of the *Notes*, (<http://www.epa.gov/triexplorer/> see tab State Fact Sheet).

Pursuant to the TRI program each facility is required to report. By the act of reporting a transfer offsite, the same amount of waste by weight may have been reported to Utah two times if the facility is transferring those wastes to a Treatment Storage and Disposal (TSD) facility also located in Utah. The secondary reporting occurs when the TSD facility then reports the waste via TRI as a release. The Utah DMS does not currently adjust for this instance of double counting. Summary statistics compiled by the Utah DMS tend to be slightly higher than EPA statistical summaries. With recent revisions made to the Utah DMS the differences have been minimized. In past years our analyses of the reporting amounts have shown that the Utah values tended to be about 14% higher than those reported by EPA. With the most recent revisions to the Utah DMS, our preliminary analysis of the data shows that the disparity between the current and prior reporting years has been significantly reduced to about 3 percent.

³ North American Industrial Classification System

⁴ A complete explanation of the term *double counting* may be found in the endnotes of EPA TRI State Fact Sheets.

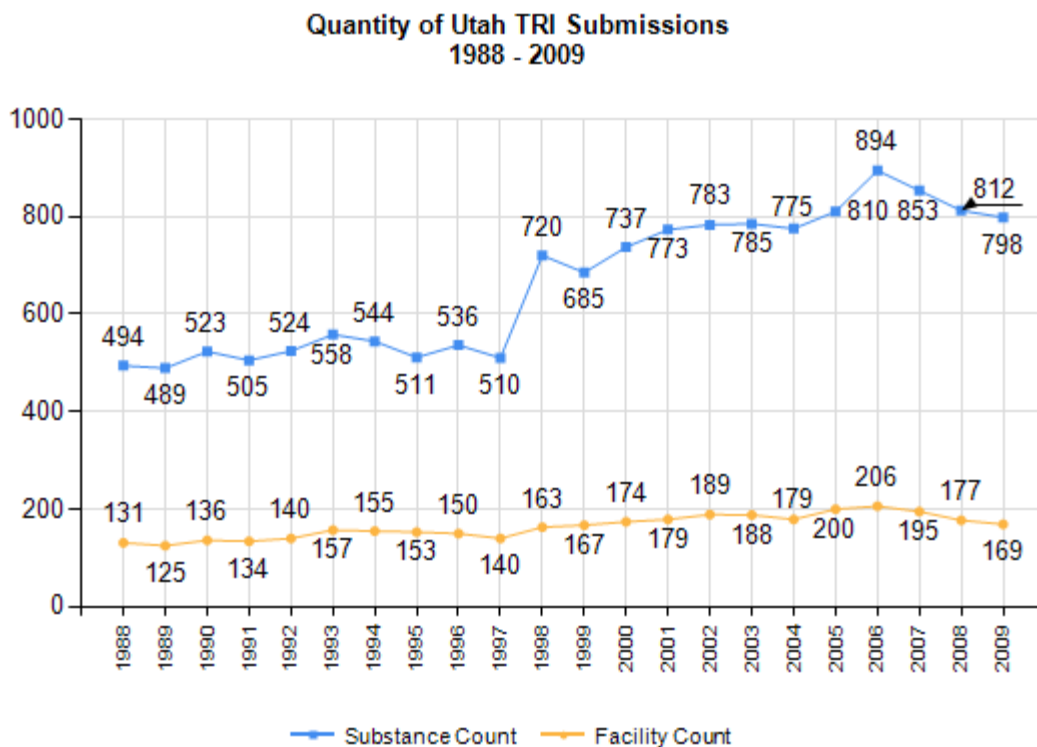
Facility Overview

NUMBER OF REPORTING FACILITIES

For calendar year 2009, 169 Utah facilities filed a total of 798 TRI form submissions. A total of 142 unique TRI-listed chemicals (or compounds) were reported which is a decrease from 137 unique chemicals (or compounds) reported in 2008. In comparison to last year the number of facilities that submitted under TRI decreased by 8 and the total number of program forms (Form R and Form A) reports decreased by 14.

Figure 1 shows the annual trend in the number of facilities and number of chemical reports. One-hundred thirty-four facilities, or 65% of all facilities that reported in Utah, are located along the Wasatch Front.⁵

FIGURE 1



⁵ Wasatch Front is defined to include the Counties of Weber, Davis, Salt Lake and Utah.

FACILITY LOCATION

Each facility reports its latitude and longitude as part of the TRI submission. Figure 2 shows the geographic distribution of TRI sites across Utah. For purposes of reporting, the Wasatch Front is comprised of Weber, Davis, Salt Lake and Utah Counties. Facilities along the Wasatch Front comprise 62 % of all facilities (104 of 169) reporting in Utah in reporting year 2009 while the Wasatch Front contributes 51% of all chemical forms (406 of 798) submitted.

FIGURE 2

Utah 2009 TRI Facility Locations & Wasatch Front

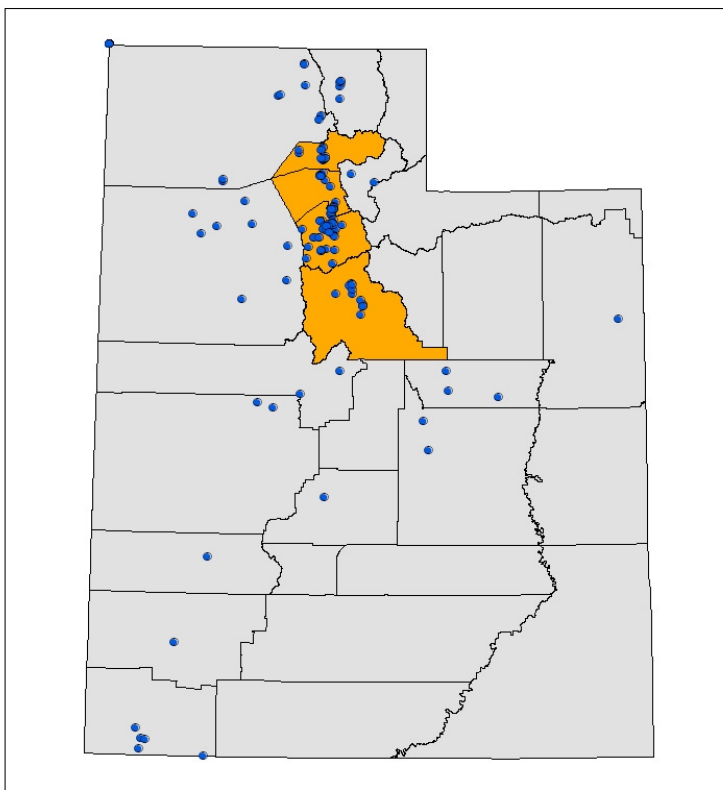
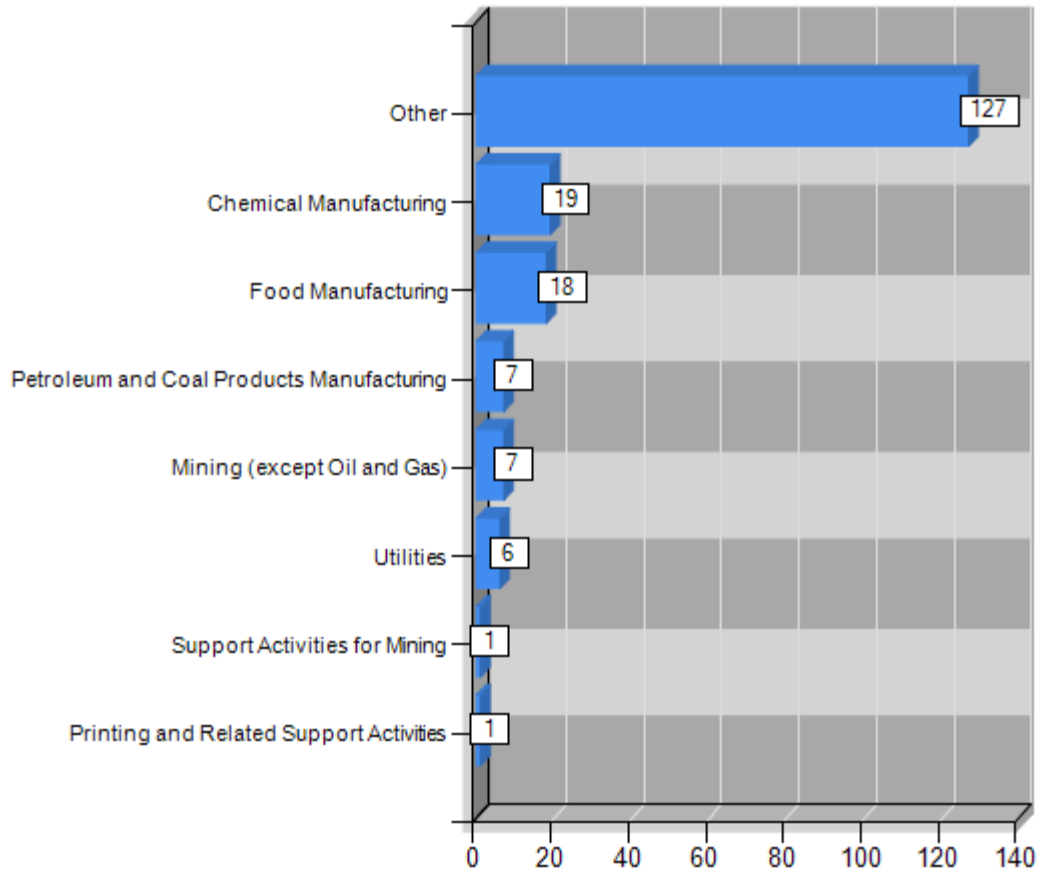


Figure 3 below shows the 2009 TRI reporting by industry sector category. The facilities reporting were categorized into 8 industrial sectors based on facility NAICS (North American Industrial Classification System) code. Industrial sectors are identified in Figure 3. For 2009, with the exception of the category of *Other* which captures the majority of commercial/industrial sectors not otherwise grouped, facilities reporting from the Chemical Manufacturing and Food Manufacturing sectors represent the largest category with 19 facilities.

FIGURE 3

**2009 Utah TRI Facilities
Quantity Reporting by Industrial Sector**

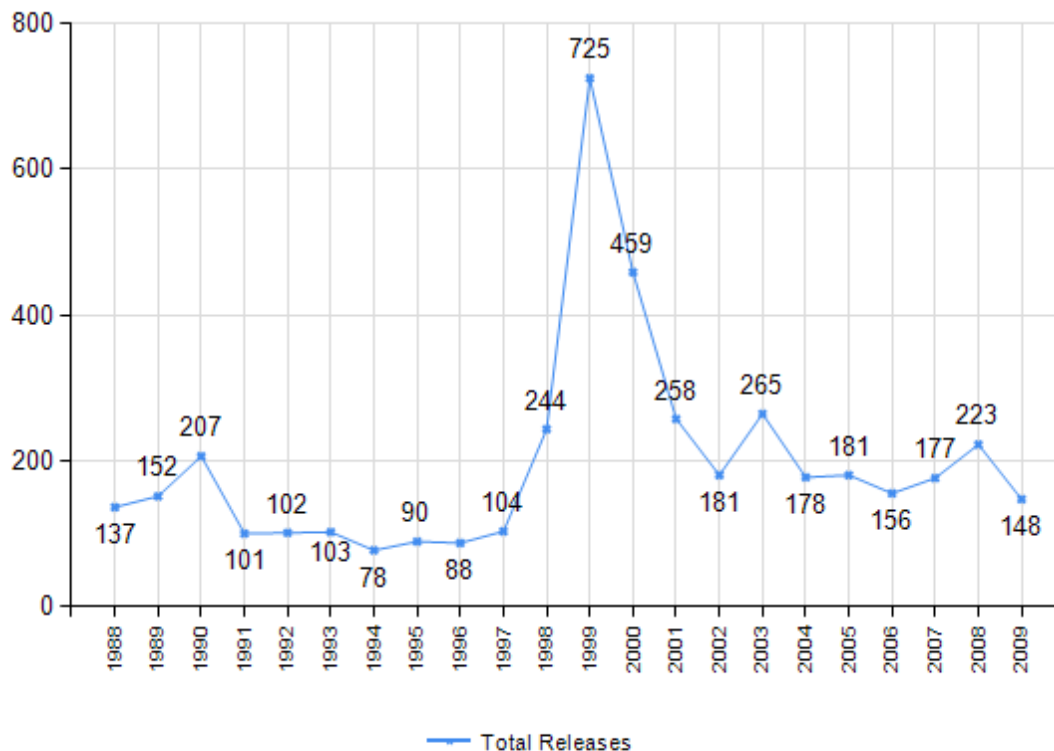


TOTAL RELEASES

Figure 4 shows the trend for total releases in Utah from 1988 through 2009.

FIGURE 4

Utah TRI Total Releases
(Millions of Pounds)
1988 - 2009



Release totals are typically described under two primary categories: (1) *Total On-Site Disposal or Other Releases*, and (2) *Total Off-Site Disposal or Other Releases*. These categories are further sub-divided as outlined below.

1. Total On-Site Disposal (or Other Releases) are sub-categorized as:
 - a. Total releases to air;
 - b. Total releases to land;
 - c. Total releases for TSD (treatment, storage, and disposal) facilities (as described by RCRA⁶);
 - d. Total releases for fossil fuel electric generation utilities;
 - e. Total releases to surface waters; and,
 - f. Group sub-total.

2. Total Off-Site Disposal (or Other Releases including transfers to off-site facilities) are sub-categorized as:
 - a. Transfers to POTWs;
 - b. Other transfers off-site; and,

⁶ Resource Conservation and Recovery Act (1976).

c. Group sub-total.

These sub-categories are more informative with additional descriptive context: (1) for transfers of TRI-listed metals to municipal wastewater treatment plants (POTW), generally, metals pass untreated through conventional treatment plants and are discharged in the plant effluent; and (2) TRI chemicals transferred to off-site facilities and disposed at off-site facilities are regarded as being released to the environment. POTW Metals and metals compounds are added to Off-site release totals. POTW Non-metals wastes are not added toward the Off-site release total. These quantities are reported both as a transfer and then as an on-site disposal. Data released under the federal Public Data Release describes and accounts for the duplication inherent to the latter point.

Total On- and Off-site Releases – Total releases reported by Utah facilities in report year 2009 were 148 million pounds (see Figure 4). Total releases reported in report year 2008 were 223 million pounds. Total Releases reported under TRI decreased by 74.9 million pounds from 2008 to 2009 which is a net decrease of 33.4%.

Distribution of total amounts reported relative to the primary categories *Total On-Site Disposal or Other Releases*, and *Total Off-Site Disposal or Other Releases* (includes transfers) is primarily reported in the on-site category. For the current reporting year *Total On-site* releases were reported in the amount of 146.2 million pounds while *Total Off-site Releases or Other disposals* were reported in the amount of 3.0 million pounds.

The most significant releases among *On-Site Disposal or Other Releases* are those reported as releases to land and air. Releases to land reported for 2009 totaled 137.8 million pounds comprising 85% of total releases in Utah. Total releases to air for the reporting year were 6.8 million pounds representative of about 4.2% of total releases.

Total Off-Site Transfers reported were 17.3 million pounds in RY2009, down from 22.2 million pounds reported in RY2008. *Total off-site releases* were reported at 3.0 million pounds, down from 10.8 million pounds reported in RY2008. Transfers to POTWs increased by slightly less than 200,000 pounds. The TRI program maintains and compiles two distinct off-site statistical amounts, one each for (1) *total off-site releases*, and (2) *total off-site transfers*. Total off-site releases decreased by 72.0% and total off-site transfers decreased by 22.4%.

Table 1 show a list of top facilities for on-site and off-site releases in 2009 and includes facilities reporting equal to or greater than 1 million pounds. Kennecott Mine, Concentrators & Power Plant, Kennecott Smelter & Refinery facilities, and Nucor Steel were the top three contributing facilities to total reported releases in Utah.

TABLE 1
TOP FACILITIES
Total On-site and Off-site Releases
(Reporting equal to or greater than 1 million pounds)

Facility Name	Pounds/Year
1 Kennecott Utah Copper Mine, Concentrators, & Power Plant	101,631,685
2 Kennecott Utah Copper Smelter & Refinery	23,041,976
3 Nucor Steel - A Division of Nucor Corporation	5,156,154
4 US Magnesium, LLC	3,595,698
5 Clean Harbors Aragonite, LLC.	3,410,119
6 Energy Solutions LLC	2,969,164
7 Intermountain Power Generating Station	2,200,860
8 Clean Harbors Grassy Mountain, LLC	2,077,065
9 Bonanza Power Plant	1,604,972
10 Pacificorp Hunter Plant	1,472,095
11 Amico Klemp	1,094,571
12 Pacificorp – Huntington Plant	1,090,036
13 ATK Thiokol, Promontory	1,085,926
14 Elkay West	1,084,203

Table 2 lists the top on-site and off-site chemical releases equal to or greater than one million pounds. Copper compounds, lead compounds, and zinc compounds constitute the chemicals released in greatest quantities in 2009.

TABLE 2
Top Chemicals - Total On-site and Off-site Chemical Releases
(Reported in an amount equal to or greater than 1 million pounds)

Chemical Name	Lbs/Year
1 Copper Compounds	88,977,081
2 Lead Compounds	28,111,317
3 Zinc Compounds	9,213,032
4 Arsenic Compounds	5,130,389
5 Barium Compounds	4,015,964
6 Hydrochloric acid	2,726,140
7 Chlorine	2,570,396
8 Nitrate compounds	2,263,393
9 Chromium Compounds	1,782,309
10 Copper	1,555,593
11 Chlorobenzene	1,414,343
12 Manganese Compounds	1,347,813
13 Ammonia	1,267,887
14 Chromium	1,012,468
15 Asbestos	1,005,226

Totals for on-site releases include releases to air, land, and water occurring on-site at the facility. Table 3 presents the top facilities reporting totals for on-site releases equal to or greater than one million pounds.

TABLE 3
Top Facilities - Total On-site Releases
(Equal to or greater than 1 million pounds)

Facility Name	Lbs/Year
1 Kennecott Utah Copper Mine, Concentrators, & Power Plant	101,613,047
2 Kennecott Utah Copper Smelter & Refinery	23,036,593
3 US Magnesium, LLC	3,595,629
4 Energy Solutions LLC	2,968,323
5 Intermountain Power Generating Station	2,200,860
6 Clean Harbors Grassy Mountain, LLC	2,072,663
7 Bonanza Power Plant	1,584,251
8 Pacificorp Hunter Plant	1,370,150
9 Pacificorp – Huntington Plant	1,038,414
10 ATK Thiokol, Promontory	1,029,112

The differences between totals presented in Table 1 (Total On-site and Off-site Releases) and Table 3 (Total On-site Releases) are not significant. The differences between these two tables are indicative of metals released from POTWs and TRI chemicals transferred off-site for disposal. The reader may infer that the combined volume of wastes transferred to POTWs plus wastes transferred off-site for disposal are relatively low in comparison to volumes that are released on-site.

Table 4 lists the top 10 chemicals for on-site releases.

TABLE 4
Top Chemicals - Total On-site Chemical Releases

Chemical Name	Lbs/Year
1 Copper Compounds	88,603,523
2 Lead Compounds	27,427,070
3 Arsenic Compounds	5,129,885
4 Zinc Compounds	4,374,371
5 Barium Compounds	3,954,996
6 Hydrochloric acid	2,724,548
7 Chlorine	2,570,396
8 Nitrate compounds	1,795,330
9 Chromium Compounds	1,538,178
10 Ammonia	1,246,759

RELEASES TO AIR

Figure 5 illustrates the trend of total releases to air for years 1988 to 2009. In 2009 releases to air were 6.8 million pounds. Total release to air decreased by 25.4% from 2008.

FIGURE 5

Utah TRI Total Releases to Air
(Millions of Pounds)
1988 - 2009

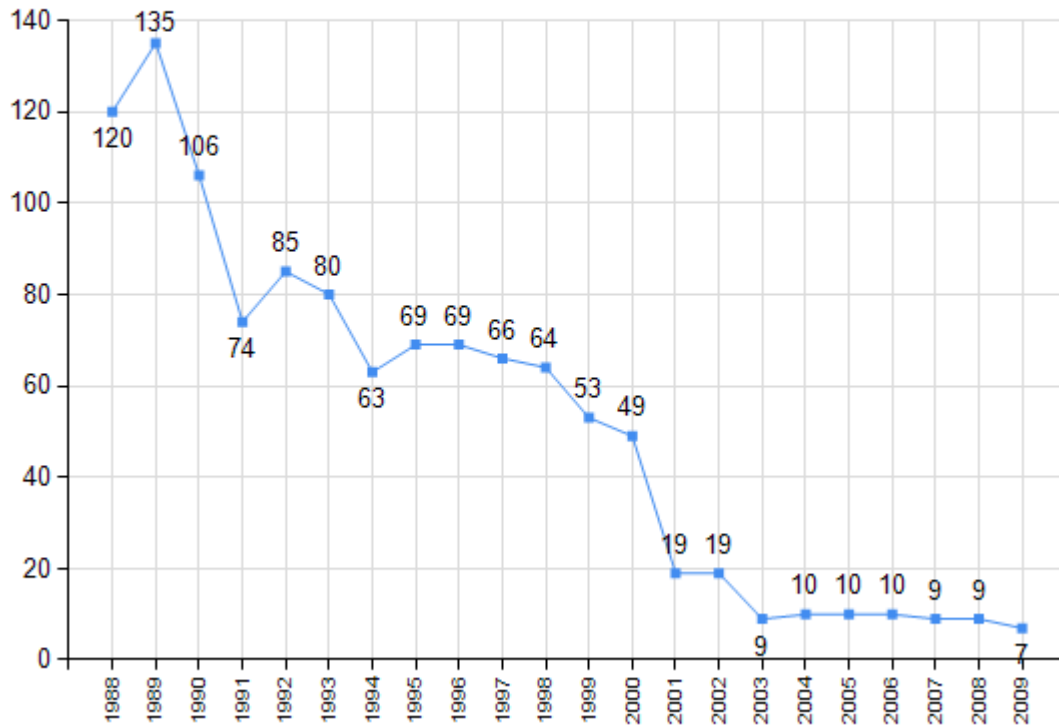


Table 5 provides the top 10 total releases to air by facility.

TABLE 5
Top 10 Facilities - Total Releases to Air

Facility Name	Lbs/Year
1 US Magnesium, LLC	3,593,889
2 ATK Thiokol, Promontory	876,410
3 Pacificorp – Carbon Plant	547,426
4 Pacificorp – Huntington Plant	200,311
5 Intermountain Power Generation Station	165,319
6 Brush Resources Inc, Mill	161,298
7 U.S. DOD USAF Ogden Air Logistics Center	140,296
8 Pacificorp Hunter Plant	139,759
9 Hexcel Corporation	127,897
10 Tesoro Refining and Marketing Company	126,500

U.S. Magnesium, ATK Launch Systems-Promontory, and the Pacificorp-Carbon Plant facilities were the primary contributors to total releases to air in 2009. These two facilities contribute 65.4 percent of the total releases to air.

Table 6 shows the top 10 releases by chemical amount to air.

TABLE 6
Top 10 Chemicals - Total Releases to Air

	Chemical Name	Lbs/Year
1	Hydrochloric acid	2,724,547
2	Chlorine	2,570,396
3	Ammonia	332,300
4	Hydrofluoric acid	299,662
5	Sulfuric acid	158,676
6	Methylene chloride	87,431
7	Hexane	84,713
8	Toluene	72,861
9	Hydrogen cyanide	66,696
10	1,1-Dichloro-1-fluoroethane	53,346

Hydrochloric acid (aerosols only) represents 39.9% of the total reported amount of all chemicals released to air and chlorine comprises 37.6% of the total reported of all chemicals released to air.

Facilities reported a total 2.7 million pounds of hydrochloric acid (aerosols only) released in RY2009. This represents a 28.1% reduction from the 3.8 million pounds reported in the prior year. The primary source of these releases originate in industry sectors: (a) Aerospace Product and Parts Manufacturing (877,000 pounds), (b) Nonferrous Metal (except Aluminum) Production and Processing (1.0 million pounds), and (c) Fossil Fuel Electric Power Generation (805,000 pounds). These three sectors comprise 99.5% of the total amount of hydrochloric acid release to air for 2009.

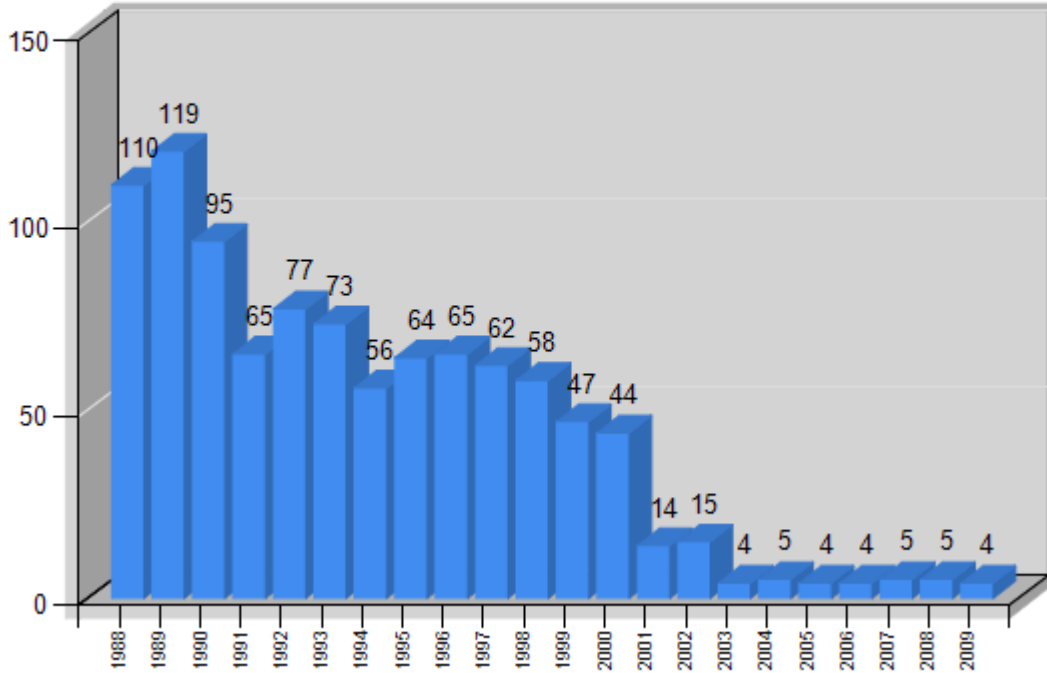
U.S. Magnesium

U.S. Magnesium (USM) is located along the southwest side of the Great Salt Lake in Tooele County. USM produces magnesium metal by extraction of magnesium chloride from brines drawn from the lake. Chlorine and hydrochloric acid are produced as by-products of the magnesium extraction process.

Figure 6 shows the annual trend for releases to air reported by USM.

FIGURE 6

**US MAGNESIUM, LLC
TRI Releases To Air
(Millions of Pounds)
1988 - 2009**



USM reported total releases to air of 3.6 million pounds in 2009 showing a 22% decrease from 4.6 million pounds reported in 2008. The bulk of releases to air by USM consist of chlorine and hydrochloric acid (aerosol forms only). The combined release total of chlorine and hydrochloric acid represents 52.6% of total releases to air.

In report year 2009 total chlorine released by the facility decreased by 29.2% from 2008. For hydrochloric acid (aerosol forms only), releases decreased by 28.1%. USM's national ranking among facility releases to air has dropped significantly in recent years. In RY 2000 USM was ranked #1 for total releases to air. In subsequent years, and as the result of capital improvements to recovery systems, USM has quickly decreased total emissions to air as seen in Figure 6. Based on release to air totals (fugitive plus point source emissions) USM ranked 34th in national ranking for RY2009.⁷

⁷ Query of EPA's web-based TRI program application TRI Explorer executed Oct 25, 2010. Query parameters chosen: Reports by Facility; Year of Data: "2009"; Geographic Location: "All of United States"; All Chemicals; Industry: "All Industries." Data were imported into MS Excel (v. 2003). One column titled *Total Air* was inserted and assigned a formula to sum the total release to air data fields *On-site Fugitive Air* and *On-site Point Source Air*. Facility records were then sorted in descending order on *Total Air* to determine the national rank.

ATK Launch Systems – Promontory

For 2009 ATK reported total releases to air in the amount of 876,410 pounds. Hydrochloric acid (aerosol forms only) accounts for 98.9% of the total amount released to air by ATK. The release of hydrochloric acid (aerosol forms only) is attributed to open burn/open detonation (OBOD) associated with static motor testing.

RELEASES TO LAND

Releases to land include: (1) landfills designed to receive solid waste; (2) surface impoundments for liquid waste; (3) land treatment, incorporating the waste into the soil; or (4) other disposal, such as placing materials containing TRI chemicals on land.

Table 7 shows the top 10 facility total releases to land.

TABLE 7
Top 10 Facilities - Total Releases to Land

Facility Name	Lbs/Year
1 Kennecott Utah Copper Mine Concentrators & Power Plant	101,594,360
2 Kennecott Utah Copper Smelter & Refinery	22,918,690
3 Energy Solutions LLC	2,968,323
4 Clean Harbors Grassy Mountain, LLC	2,072,624
5 Intermountain Power Generating Station	2,035,541
6 Bonanza Power Plant	1,525,014
7 Pacificorp Hunter Plant	1,230,390
8 Western Zirconium	846,589
9 Pacificorp – Huntington Plant	838,104
10 Brush Resources Inc, Mill	570,018

TRI chemical releases to land comprised 92.3% of total combined on-site and off-site releases reported in 2009. Releases to land decreased 32.0% from 202.9 million pounds in 2008 to 137.8 million pounds in 2009.

In RY2009 7 of 10 facilities (Table 7) each reported release to land amounts in excess of one million pounds. The aggregate sum for releases to land reported by these facilities represents 97.5% of the total releases to land, and 91.9% of total releases on-site.

Table 8 identifies the top 10 chemicals released to land in 2009.

TABLE 8
Top 10 Chemicals - Total Releases to Land

	Chemical Name	Lbs/Year
1	Copper Compounds	88,565,954
2	Lead Compounds	27,415,686
3	Arsenic Compounds	5,123,700
4	Zinc Compounds	4,362,670
5	Barium Compounds	3,951,500
6	Chromium Compounds	1,535,050
7	Asbestos	942,079
8	Manganese Compounds	914,727
9	Nickel Compounds	808,708
10	Ammonia	779,199

In reference to specific chemicals and/or chemical compounds reported released to land in 2009, copper compounds, lead compounds, arsenic compounds, zinc compounds barium compounds, and chromium compounds comprise the largest percentage of chemicals released to land in reporting year 2009. A comparison of the amounts reported 2008 versus 2009 shows:

- (1) Copper compounds decreased by 28.5% from 123.9 million pounds to 88.6 million pounds;
- (2) Lead compounds decreased by 50.4% from 55.3 million pounds to 27.4 million pounds;
- (3) Arsenic compounds increased by 39.5% from 3.7 million pounds to 5.1 million pounds;
- (4) Zinc compounds decreased 29.0% from 6.1 million pounds to 4.4 million pounds;
- (5) Barium compounds decreased by 3.7% from 4.1 million pounds to 4.0 million pounds;
- and
- (6) Chromium compounds increased by 11.1% from 1.4 million pounds to 1.5 million pounds.

Some additional detail regarding the decrease in the release of copper compounds and lead compounds was provided by Kennecott. Decreases in release amounts reported for these compounds are attributable to a decrease in the concentration of copper and lead in ore mined during the past calendar year; the concentration in ore processed decreased for copper and lead by approximately 59% and 55% respectively. Lastly, the percentage increases and decreases are directly attributable to the changes in concentration of mined material along with a total change in the volumetric amount of material mined.⁸

For releases to land by Kennecott Utah Copper Mine, Concentrators & Power Plant and Kennecott Utah Copper Smelter & Refinery, the reported amounts of arsenic compounds, copper compounds lead compounds and zinc compounds are greater than one million pounds. The Bonanza and Intermountain Power fossil fuel electric power generation plants are the only other

⁸ Electronic communication with KUC December 15, 2010.

facilities at which releases to land exceeded one million pounds. Both power plants reported the release of barium compounds.

Mining

Four mining facilities reported under the TRI program for reporting year 2009:

- Kennecott Utah Copper Mine, Concentrators & Power Plant
- Brush Resources, Inc., Mill
- Kennecott Barneys Canyon Mining Company
- Lisbon Valley Mining Company

Kennecott Facilities

Kennecott Utah Copper (KUC) operates through three facilities:

- (1) Barney's Canyon Mine (Barney's);
- (2) Mine, Concentrators & Power Plant (MCP); and
- (3) Smelter & Refinery (S&R).

Primary operations for each facility, respectively, are gold ore mining, copper ore and nickel ore mining, and smelting and refining. The MCP is one of the world's largest open pit mines. KUC conducts extensive mining, milling, smelting, and refining operations in western Salt Lake County. The MCP facility extracts millions of tons of overburden, waste rock, and ore during annual operations. Ore is concentrated and transported by pipeline to the smelter, which produces copper and gold. Sulfuric acid is also produced during the process.

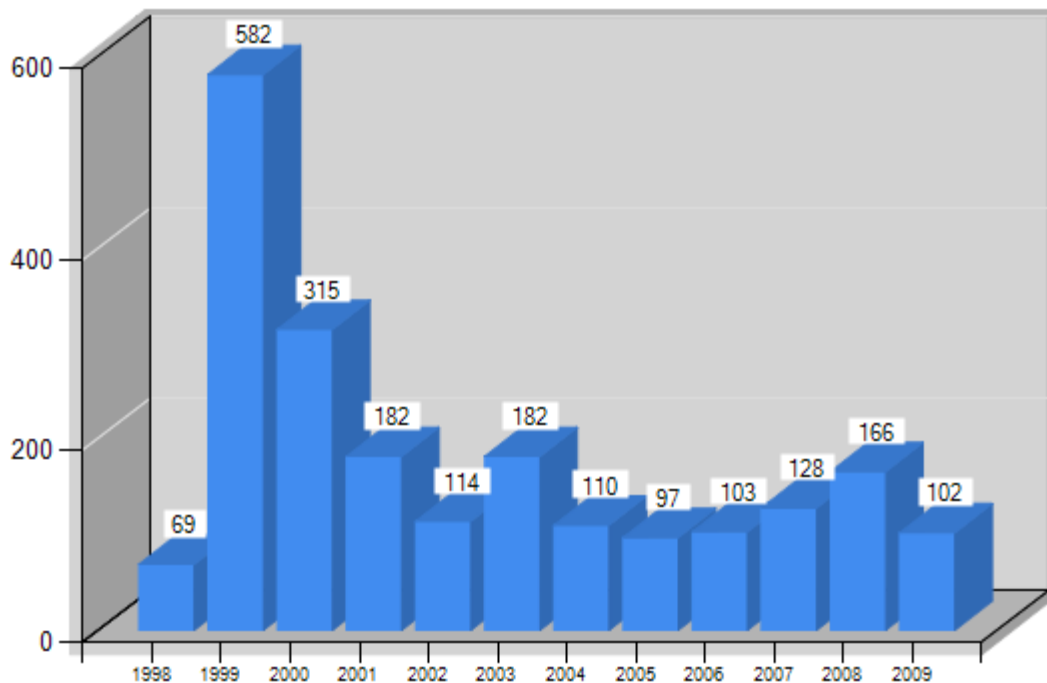
Releases to air represent the largest release by media category reported by the Barney's facility. However, releases to air contribute only a minor quantity relative to overall releases across all media (air, land, water) reported by KUC in its entirety. The MCP and S&R facilities contribute the bulk of releases to air and land, therefore, most discussion presented in this section represents data reported by these two facilities.

For RY2009 the MCP and S&R facilities reported total releases to land of 101.6 and 23.0 million pounds, respectively, for an aggregate sum of 124.6 million pounds. This amount accounts for 90.3% of total amount of releases reported to land in Utah. Releases were comprised primarily by compounds of arsenic, chromium, copper, lead, and zinc. The KUC facilities reported 187.4 million pounds of combined releases to land in 2008 showing a 33.6% decrease in releases to land in 2009.

Figure 7 shows the annual trend for releases to land from the KUC- Mine, Concentrator and Power Plant (MCP) facility.

FIGURE 7

**KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT
TRI Releases To Land
(Millions of Pounds)
1988 - 2009**

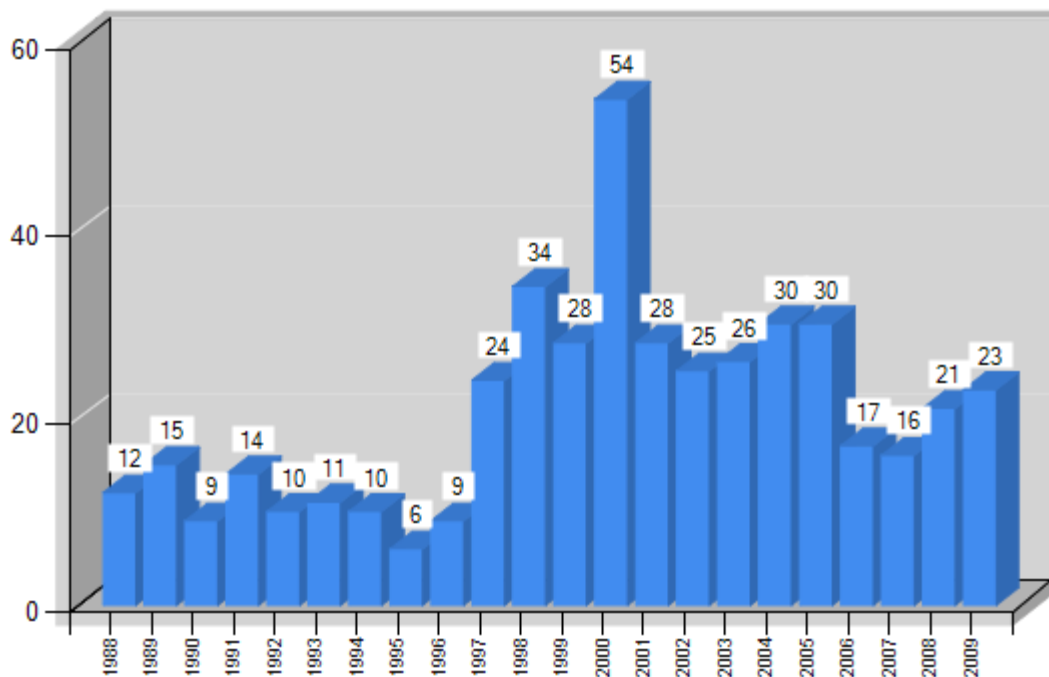


Chemical groups representing the highest total releases to land in 2009 from the KUC-MCNP include copper compounds (76.4 million pounds) and lead compounds (23.3 million pounds). The amount reported for these two chemical groups make up 98.1% of all releases to land by this facility.

The total releases to land reported by KUC-MCNP decreased by 39% dropping from 166 million pounds in 2008 to 102 million pounds in 2009. Naturally occurring fluctuations in the concentration of TRI constituents in the overburden removed and ore mined are also observed from year to year, which cause variations in the data.

Figure 8 shows the trend in releases to land originating from the KUC-Smelter and Refinery facility.

FIGURE 8
KENNECOTT UTAH COPPER SMELTER & REFINERY
TRI Releases To Land
(Millions of Pounds)
1988 - 2009



KUC-Smelter files a separate TRI report apart from the KUC-Mine Concentrators and Power Plant facility. The two facilities have been filing separately since 1987. Releases to land reported by the Smelter increased by 9.2% from 21 million pounds in 2008 to 23 million pounds reported in 2009. Fluctuations in the natural concentration of all mineral constituents are normal as operations migrate through the ore body being mined.

Chemical groups representing the highest total releases to land in 2009 from the Smelter & Refinery are copper compounds (11.6 million pounds), arsenic compounds (3.7 million pounds) zinc compounds (3.6 million pounds) and lead compounds (2.7 million pounds).

Waste Disposal Facilities

Facilities that treat, store, and/or dispose of hazardous waste are subject to EPCRA Section 313 reporting requirements. Subtitle C of the Resource Conservation and Recovery Act and the Utah Solid and Hazardous Waste Act provide regulations for these facilities. The EPA TRI definition of a *release* to land includes the placement of TRI chemicals into landfills, including landfills

specifically constructed under requirements of RCRA and Utah Law to contain the waste inside the landfill and prevent a release outside the landfill area.

Facilities reporting releases to land in this category for 2009 include:

- Clean Harbors Grassy Mountain, LLC
- Energy Solutions of Utah, LLC

Table 9 shows the amounts released to land for each facility respectively in 2009.

TABLE 9
Waste Disposal Facility Releases to Land

Facility Name	Lbs/Year
1 Energy Solutions LLC	2,968,323
2 Clean Harbors Grassy Mountain, LLC	2,072,624

Virtually 100% of the releases reported by these facilities were reported as releases to land.

Table 10 lists the top 10 TRI chemical totals released to land from waste disposal facilities. Releases to land in RY2009 were comprised primarily of metals compounds, asbestos and polychlorinated biphenyls.

TABLE 10
Top 10 Chemicals - Releases to Land
From Waste Disposal Facilities

Chemical Name	Lbs/Year
1 Lead Compounds	981,903
2 Asbestos	942,079
3 Chromium Compounds	650,620
4 Lead	571,436
5 Polychlorinated Biphenyls (PCBs)	487,810
6 Nickel Compounds	321,508
7 Copper Compounds	310,207
8 Copper	101,831
9 Aluminum oxide	94,026
10 Zinc Compounds	88,734

FIGURE 9

CLEAN HARBORS GRASSY MOUNTAIN, LLC
TRI Releases To Land
(Millions of Pounds)
1988 - 2009

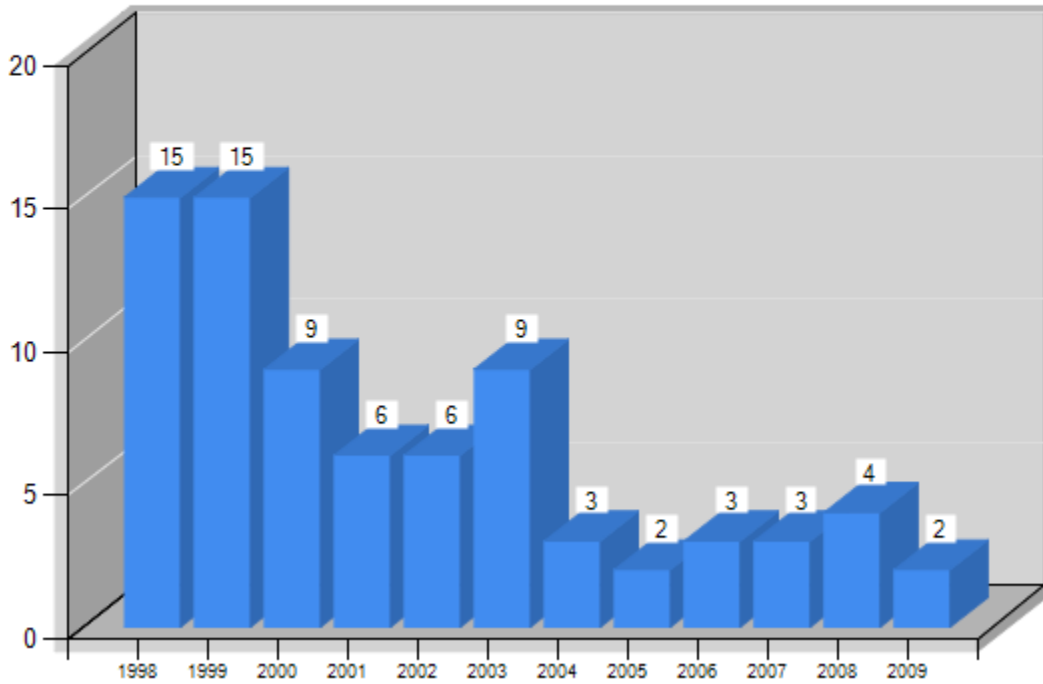


Figure 9 shows the trend of releases to land reported by the Clean Harbors Grassy Mountain facility. Releases to land reported by Grassy Mountain decreased by 44.0% from 3.7 million pounds reported in 2008 to 2.1 million pounds in 2009.

FIGURE 10

**ENERGY SOLUTIONS LLC
TRI Releases To Land
(Millions of Pounds)
1988 - 2009**

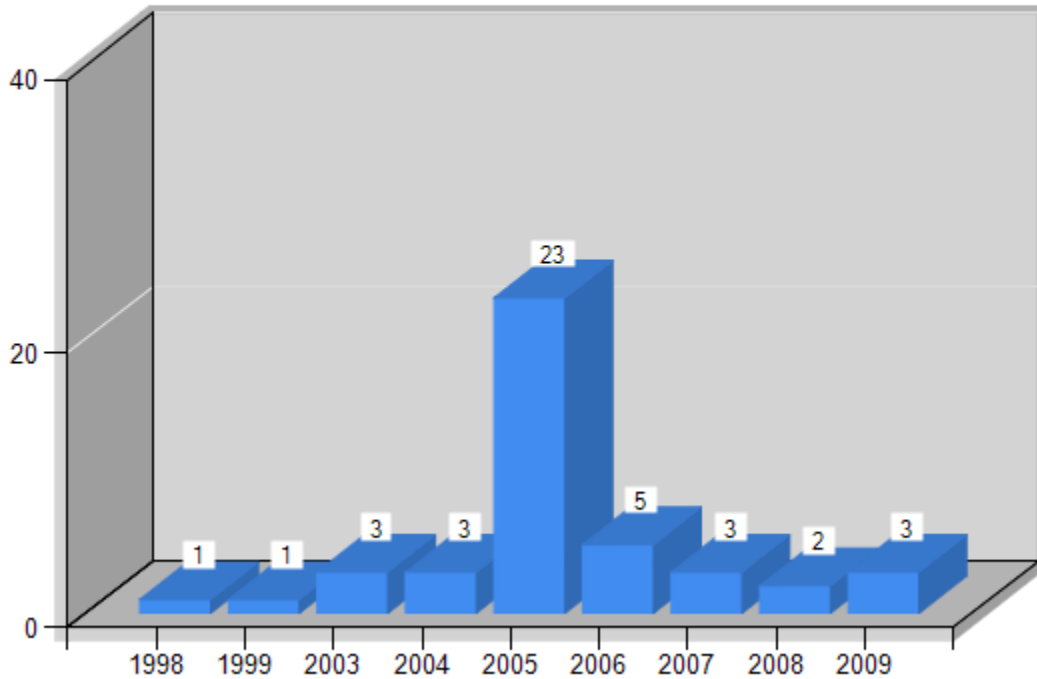


Figure 10 shows the trend for releases to land reported by Energy Solutions. This facility reported releases to land of 2.2 million pounds in 2008 and 3.0 million pounds in 2009. This is an increase of 34.8 % in total releases to land.

Releases to land by the facility included lead compounds (840,000 pounds), asbestos (825,000 pounds), chromium compounds (586,000 pounds), and copper and nickel compounds (310,000 and 300,000 pounds, respectively).

Electric Utilities

Electric utilities that burn coal have been required to submit TRI reports since 1998. Table 11 shows electric utility facilities reporting in 2009.

TABLE 11
Coal-Fired Electric Utility Releases to Land by Facility

Facility Name	Lbs/Year
1 Intermountain Power Generating Station	2,035,541
2 Bonaza Power Plant	1,525,014
3 Pacificorp Hunter Plant	1,230,390
4 Pacificorp – Huntington Plant	838,104
5 Pacificorp – Carbon Plant	112,116
6 Sunnyside Cogeneration Associates	15,207

Releases to land reported by coal-fired electric utilities totaled 5.9 million pounds in RY2008 and 5.8 million pounds in 2009, representing a 2% decrease.

Table 12 below provides the list of chemicals released to land by the coal-fired electric utility sector.

TABLE 12
Top Ten Chemical Releases to Land
From Coal-Fired Electric Utilities

Chemical Name	Lbs/Year
1 Lead Compounds	981,903
2 Asbestos	942,079
3 Chromium Compounds	650,620
4 Lead	571,436
5 Polychlorinated Biphenyls (PCBs)	487,810
6 Nickel Compounds	321,508
7 Copper Compounds	310,207
8 Copper	101,831
9 Aluminum oxide	94,026
10 Zinc Compounds	88,734

RELEASES TO SURFACE WATER

TRI-reported releases to surface water in Utah are a small percentage of total releases reported under TRI. Since only a small percentage of industries in Utah are required to submit TRI reports, this report identifies only a portion of the total chemical discharges to surface water bodies. However, in addition to TRI reports, many facilities are also required to submit discharge monitoring reports to the Utah Division of Water Quality which provide additional information on chemical concentrations and chemical amounts released to surface water.

In 2009, facilities reporting TRI chemical releases to surface waters reported a total of slightly less than 101,000 pounds. Releases increased by 9.4% from just greater than 92,000 pounds reported in 2008. Table 13 provides the list of the top 3 facilities that released TRI chemicals to surface waters for reporting year 2009. The amounts released by other facilities not shown in Table 13 are below 1,000 pounds per facility.

TABLE 13
Top 3 Facility Releases to Surface Water

Facility Name	Lbs/Year
1 Chevron Products Company – Salt Lake Refinery	87,094
2 Kennecott Utah Copper Smelter & Refinery	7,223
3 Kennecott Utah Copper Mine, Concentrators, & Power Plant	5,305

Table 14 provides the top 10 chemicals released to surface water in 2009.

TABLE 14
Top 10 - Chemical Releases to Surface Water

Chemical Name	Lbs/Year
1 Nitrate compounds	86,000
2 Ammonia	1,422
3 Nickel Compounds	1,343
4 Xylene (mixed)	1,300
5 Zinc Compounds	1,170
6 Selenium Compounds	1,026
7 Copper Compounds	1,010
8 Chromium Compounds	1,002
9 Antimony Compounds	1,000
10 Manganese Compounds	1,000

Releases to surface waters reported by Chevron Products Company comprise 86.4% of total releases to surface waters. Chevron reported 85,000 pounds of nitrate compounds or 98.8% of the total nitrate releases. KUC Mine, Concentrators and Power Plant, and KUC Smelter and Refinery reported 1,000 pounds of nitrate compounds and slightly over 7,200 pounds total pounds of chemicals released by the facility to surface waters. Nitrate compounds comprised 85.3% of the total releases to surface waters for this reporting year.

TRANSFERS TO PUBLICLY OWNED TREATMENT WORKS

POTWs are publicly owned wastewater treatment plants designed to treat sanitary sewage. They may also receive industrial wastewater. TRI “transfers to POTWs” identify the annual total amount of TRI chemicals discharged to POTW facilities.

Total releases to POTWs decreased by 15.4% from 1.3 million pounds in 2008 to 1.5 million pounds in 2009. Nitrate compounds and ammonia accounted for 75.8% and 9.0% of the total release quantities reported, respectively, to POTWs for 2009.

Table 15 identifies the top 10 facilities that released chemicals to POTWs in 2009.

TABLE 15
Top 10 - Facility Transfers to POTWs

Facility Name	Lbs/Year
1 Micron Technology, Inc. – Lehi Division	167,000
2 Schreiber Foods, Inc.	150,330
3 Johnson Matthey	143,879
4 Tyco Printed Circuit Group, LP ., Logan Division	139,224
5 Dannon Company, The	135,967
6 Easton Technical Products	124,835
7 Futura Industries	107,851
8 Nestle USA – Prepared Foods Division, Inc.	96,458
9 Smiths Food & Drug Dairy Division of Kroger Corporation	66,024
10 Holly Refining & Marketing Company –Woods Cross	62,195

Table 16 lists top chemical transfers to POTWs in 2009. Nitrate compounds account for 75.8% of all releases to POTWs while ammonia accounts for 9.0% of all releases to POTWs for the year.

TABLE 16
Top 10 - Chemicals Transferred to POTWs

Chemical Name	Lbs/Year
1 Nitrate compounds	1,125,451
2 Ammonia	133,838
3 Nitric acid	133,715
4 Glycol Ethers	52,583
5 Xylene (mixed)	11,041
6 Toluene	9,228
7 Methanol	6,178
8 Benzene	5,226
9 1,2,4-Trimethylbenzene	2,285
10 Hexane	1,000

TRI-reported releases to POTWs do not include information concerning the rate of release or concentration of chemicals in the release. However, state and federal law requires industrial facilities exceeding federally established chemical concentrations in wastewater to operate industrial pretreatment equipment to reduce such concentrations below harmful levels before discharging to the POTWs.

UTAH FACILITY TRANSFERS TO OTHER OFF-SITE LOCATIONS

Transfers to “other off-site” locations are transfers of TRI chemicals to facilities other than POTWs. Often these facilities include chemical recyclers and waste disposal sites. If the chemical is disposed of at these facilities, it is considered a release to the environment. The material transferred may or may not be classified a “hazardous waste”, but it contains a listed TRI chemical.

Table 17 lists the top 10 facilities that transferred chemicals to off-site locations in 2009. The total amount of TRI chemicals transferred off-site decreased by 22.1% from 22.2 million pounds in 2008 to 17.3 million pounds in 2009.

TABLE 17
Top 10 Facilities Transferring Chemicals Off-site

Facility Name	Lbs/Year
1 Nucor Steel - A Division of Nucor Corporation	4,740,583
2 Clean Harbors Aragonite, LLC.	3,408,878
3 Amico Klemp	1,093,532
4 Elkay West	1,084,203
5 Lifetime Products Inc.	811,526
6 Cerrowire & Cable Co.	736,224
7 Thatcher Company	377,582
8 Universal Industrial Sales Inc	349,013
9 Sterigenics EO, Inc	344,000
10 Hexcel Corporation	342,364

Transfers reported from the top three facilities listed in Table 17 comprise 77.0% of the entire amount of waste transferred in 2009.

Table 18 lists the top 10 chemicals transferred off-site.

TABLE 18
Top 10 Chemicals Transferred to Off-site Facilities

Chemical Name	Lbs/Year
1 Zinc Compounds	4,838,687
2 Nitrate compounds	1,593,514
3 Copper	1,439,107
4 Chlorobenzene	1,414,339
5 Chromium	993,327
6 Zinc	772,589
7 Nickel	754,328
8 Lead Compounds	684,401
9 Manganese Compounds	426,257
10 Ethylene glycol	376,158

Figure 11
Utah 2009 TRI Chemicals Transferred
Material Disposition by Disposition Type

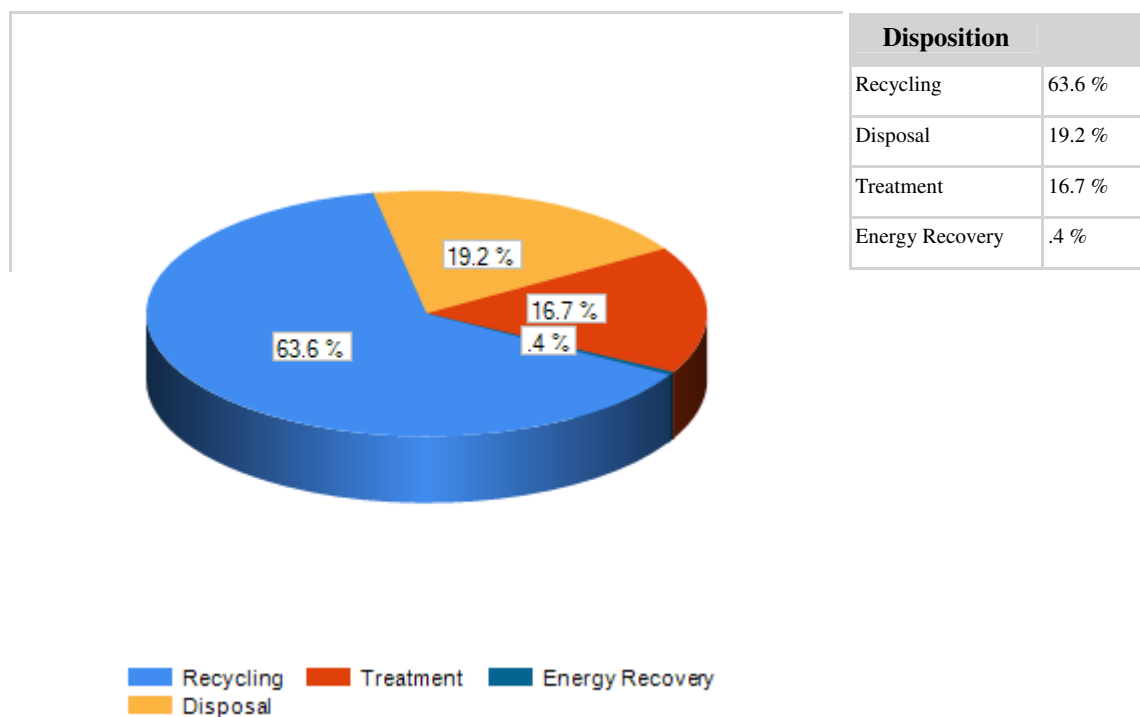


Figure 11 displays how chemicals were managed after being transferred from Utah facilities in 2009. The graphic shows that 64% of chemicals were transferred for recycling, 19% were transferred for disposal, 17% was transferred for treatment and the remaining percentage was transferred for energy recovery.

Figure 12
2009 Utah TRI Chemicals Transferred Within Utah and to Other States

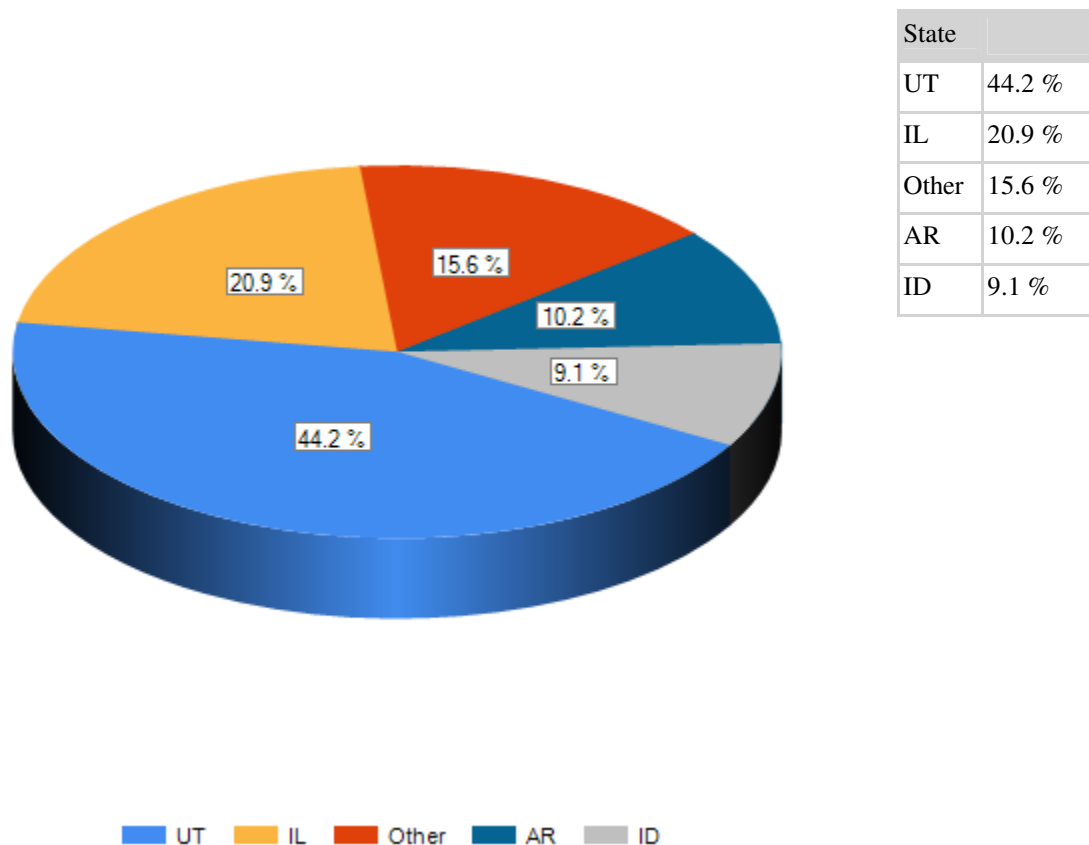


Figure 12 shows the percentages of chemicals transferred in 2009 to various states. Transfers off-site include transfers to facilities both inside and outside of Utah. Approximately 17.3 million pounds of wastes were transferred off-site in 2009. Utah received 44%, Illinois received 21%, Arkansas received 10% and Idaho received 9%, while the remaining 16% was transferred to other states.

Figure 13 shows the distribution of releases by media in millions of pounds. This graph shows proportions prior to data correction. The releases to land in 2009 account for the greatest portion of releases at 137.8 million pounds comprising 94.3% of all chemicals reported released. Releases to air and water made up the remaining 5% and 1%, respectively.

Figure 13
Utah 2009 TRI Total Releases By Media

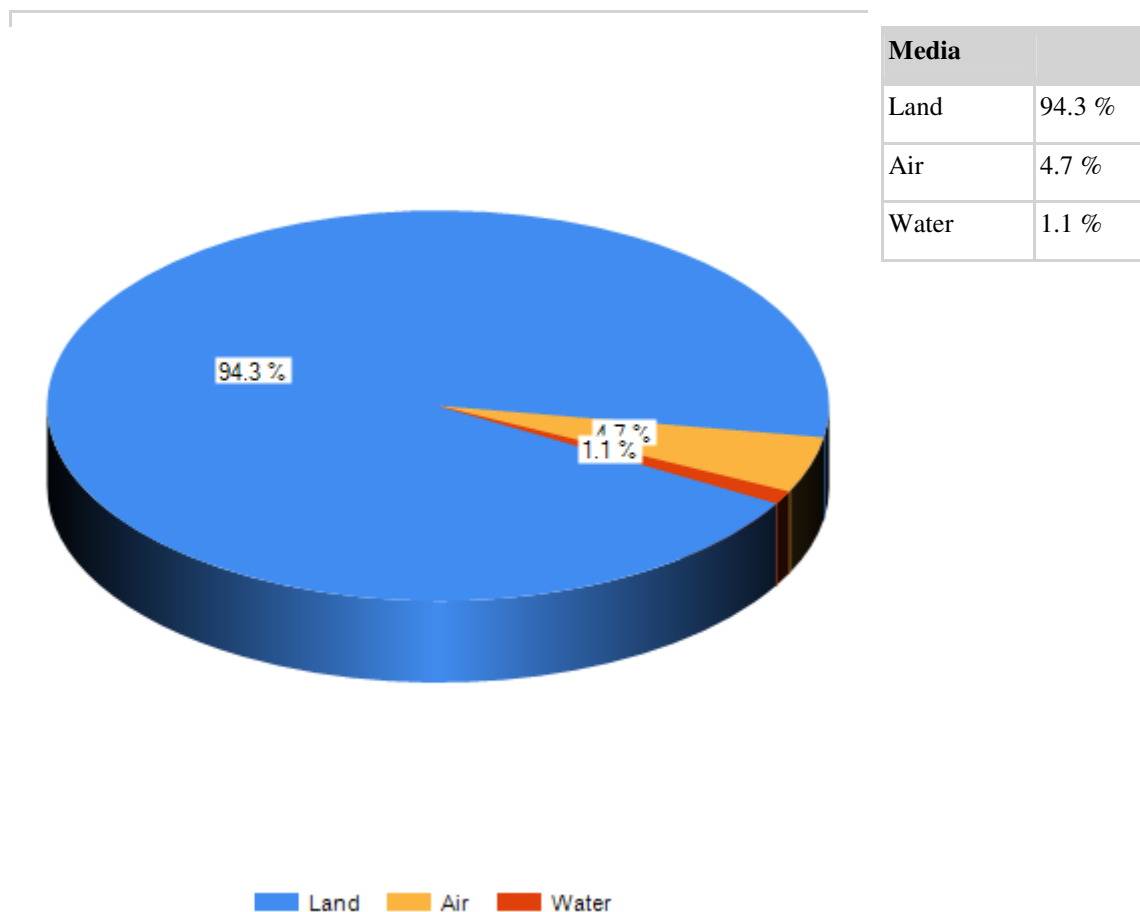


Figure 13

PERSISTENT BIOACCUMULATIVE TOXIC (PBT) CHEMICALS

In October 1999 EPA published a final rule (64 FR 58666) adding seven chemicals and two chemical compound categories to the list that meet the criteria of persistent and bioaccumulative toxic chemicals subject to reporting under EPCRA Section 313. Dioxin and dioxin-like compounds and polycyclic aromatic compounds (PACs) were the two chemical compound categories added. Under the 1999 rule, EPA also lowered the reporting thresholds for the dioxin and dioxin-like compounds chemical category to 0.1 gram.

Table 19 shows the 17 facilities in Utah reporting releases in 2009 of dioxin and dioxin-like compounds and the amount of these chemicals released by each facility.

TABLE 19
Facilities Reporting PBT
Dioxin and Dioxin-like Compound Releases
(Units in Grams)

Facility Name	To Air	To Land	Total Release
1 CLEAN HARBORS ARAGONITE, LLC.	20.45	0.00	20.45
2 US MAGNESIUM, LLC	3.00	4,332.76	4,335.75
3 BONANZA POWER PLANT	2.80	0.00	2.80
4 INTERMOUNTAIN POWER GENERATING STATION	2.07	7.15	9.22
5 PACIFICORP HUNTER PLANT	1.37	0.00	1.37
6 SUNNYSIDE COGENERATION ASSOCIATES	0.58	0.00	0.58
7 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	0.51	0.00	0.51
8 PACIFICORP - HUNTINGTON PLANT	0.46	0.00	0.46
9 ASH GROVE CEMENT COMPANY	0.16	0.00	0.16
10 PACIFICORP - CARBON PLANT	0.09	0.00	0.09
11 TESORO REFINING AND MARKETING COMPANY	0.03	0.00	0.03
12 WESTERN ZIRCONIUM	0.00	30.00	30.00
Totals	31.52	4,369.90	4,401.42

For reporting year 2009, 12 facilities in Utah reported a total release of 4,401.42 grams of dioxin and dioxin-like chemicals. This amount shows a 0.07% decrease from the amount 4,404.72 grams reported in RY2008. Of the total amount released, 99.3% was reported as releases to land with the remaining percentage reported as releases to air. The amount reported by US Magnesium comprises 98.5% of the total release amount for Utah. No dioxins were reported being released to surface water.

SUMMARY

Trends recognized in the Toxic Release Inventory data for reporting year 2009 may be summarized as follows:

- *Total On-site and Off-site Releases* decreased by 33.4%. Total releases reported for 2009 were 149.3 million pounds. Total releases reported for 2008 in Utah were 224.2 million pounds. The trend shows a reduction of approximately 75 million pounds.
- *Total Releases to Air* decreased by 25.4% in 2009. Total amount of releases to air reported was 6.8 million pounds. Chemicals ranked first and second for quantities released to air were hydrochloric acid (aerosol forms only) and chlorine, respectively.
- *Total Releases to Land* decreased by 32.0% from 202.9 million pounds in 2008 to 137.8 million pounds in 2009. Releases to land reported by Kennecott facilities represent 90.3% of all releases to land in report year 2009. Kennecott releases to land decreased by 63 million pounds in 2009 showing a 33.6% reduction in releases to land for all Kennecott facilities.
- *Total Releases to Surfaces Water* increased by 9.4% from 92,200 pounds in 2008 to 101,000 pounds in 2009. Nitrate compounds comprise 85.3% of the total release to surface waters statewide.
- *Total Transfers to Publicly Owned Treatment Works* increased by 15.4% from 1.3 million pounds in 2008 to 1.5 million pounds in 2009.
- *Transfers Offsite* to treatment, storage & disposal facilities, which typically include chemical recyclers and waste disposal facilities, decreased by 22.1% from 22.2 million pounds in 2008 to 17.3 million pounds in 2009.
- The most notable PBT chemical category is dioxin and dioxin-like compounds. Dioxin and dioxin-like compounds are unique in that they comprise the only chemical/chemical category throughout the TRI program in which the releases are reported in grams. Releases of PBT chemicals, dioxin and dioxin-like compounds, showed a decrease by 0.07% from 4,404.72 grams in 2008 to 4,401.42 grams in 2009. PBT releases to land constitute 99.3% of the total while releases to air make up the remaining 0.7% of all dioxin and dioxin-like chemicals released.