

State of Utah  
Department of Environmental Quality

Utah Toxic Release Inventory  
Reporting Year 2017  
Data Summary Report



December 2018

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## **EXECUTIVE SUMMARY**

### **Introduction**

Under Section 313 of the federal Emergency Planning and Community Right-to-Know Act (EPCRA) the Toxic Release Inventory (TRI) is a compilation of data submitted by certain chemical facilities subject to the reporting requirements of EPCRA. TRI data provides select information for 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 (EPA) 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) in its role as a member of the SERC for Reporting Year (RY) 2017. 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.

This report presents data submitted from facilities that are subject to the TRI reporting criteria for releases that occurred for the reporting year of January 1 to December 31, 2017. The deadline for reporting this data was July 1, 2017.

### **Disclaimer**

This report reflects all submissions received by the EPA as of August 1, 2018. Any submissions reported to the EPA after August 1, 2018 are not included in this summary report.

### **Excluded Data**

Several logistical issues exist that prevent the Utah database system from matching the EPA data set exactly. At the present time there are several facility data files that cannot be loaded into the Utah system. These facilities exist as pairs where each facility of the pair is related. Each facility of the pair submits TRI separately; however, each paired facility submits under the same TRI Facility Identification number. The Utah system does not currently accommodate this circumstance and as a result of this conflict, the data submitted by these facilities cannot be loaded into the DEQ data management system.

The EPA publishes TRI data available on the internet for all past reporting years. The EPA data can be viewed here: <http://www.epa.gov/toxics-release-inventory-tri-program>. These datasets serve as an independent source to cross-check past years. This is useful because facilities may submit data revisions at any time for past years which may affect the statistics. The latest reporting year data is made available after release of the TRI National Analysis report by the EPA.

## **Variations in Data Values in this Report**

Calculations for state-wide releases were made using significant figures provided in the data received from the state data exchange (SDX). However, some of the state-wide release amounts and corresponding percentages in this data summary report have been rounded off for the sake of simplicity. As a result, slight discrepancies in some values and percentages presented in this report should be expected.

## **ABOUT THE TRI PROGRAM**

### **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 EPCRA Section 313 chemicals. Nationally, a facility subject to EPCRA reports TRI information annually to the EPA and to the state in which it is located. The Utah Hazardous Chemical Emergency Response Commission, more commonly known as the SERC, was established by the Utah legislature as Utah Code §53-2a-701. The Utah Department of Environmental Quality 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 DEQ via the EPA for EPCRA Reporting Year RY 2017.

### **Who Must Report to TRI?**

A facility must report TRI information to the EPA and SERC if it:

- Conducts operations within specified Standard Industrial Classification (SIC) Codes or North American Industrial Classification System (NAICS) 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 Types of Chemicals are Subject to Reporting?**

There are over 600 chemicals and chemical categories subject to reporting under TRI based on acute or chronic human health or environmental effects. 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/toxics-release-inventory-tri-program/tri-listed-chemicals>. Changes promulgated by the 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 as needed in the Code of Federal Regulations.

## **What Are the Limitations of the TRI 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 are 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 are 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 amount.

*Year to Year Comparison of Statewide TRI Totals.* The TRI list of chemicals requiring reporting, and the methods used for estimating emissions have changed significantly throughout the history of the TRI reporting program. Furthermore, a facility may satisfy the program reporting threshold requirement for some years and not others. A facility may also submit revisions at any time for prior years. These activities will alter the totals for the impacted reporting category and report year. Release totals will change perhaps across multiple report years as a result of the revisions and make the interpretation and comparison of release numbers seem less consistent to the general public.

## **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 effects.

*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. Conversely, a small release in volume may have a relatively high concentration and be more toxic than a larger release.

*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.

## **RELEASE DETAILS**

### **Total Releases**

Total on-site and off-site release amounts reported by all facilities reporting TRI in Utah for the current reporting year increased by 12.1% from 270.2 million pounds in RY 2016 to 302.9 million pounds for RY 2017 showing a net increase of about 32.7 million pounds.

### **Releases to Air (on-site)**

Total TRI releases to air reported by Utah facilities for RY 2017 increased by 79.1% from 6.7 million pounds to 12 million pounds showing an increase of about 5.3 million pounds. Chemicals reported in the largest quantities were Chlorine, reported at 7.9 million pounds, and hydrochloric acid (aerosol forms only), reported at 2.3 million pounds.

### **Releases to Land (on-site)**

For the current report year, total chemical releases to land increased by 11.3%. Total releases to land increased from 259.2 million pounds to 288.4 million pounds resulting in a net increase of about 29.2 million pounds. The largest quantities reported were for metal compounds of lead, copper, zinc, Chromium, and nickel.

Releases to land reported by the Kennecott Mine Concentrator & Power Plant facility increased from 201.2 million pounds in RY 2016 to 234.4 million pounds in RY 2017, an increase of approximately 16.5%. Kennecott's Smelter and Refinery facility reported a decrease of approximately 30.2% from 47.6 million pounds in RY 2016 to 33.2 million pounds in RY 2017. Kennecott facilities comprise the largest single-source quantity reported for releases to land. The combined releases reported by Kennecott facilities for releases to land show an increase of 7.6%, from 248.8 million pounds in RY 2016 to 267.6 million pounds in RY 2017. More details about the Kennecott facilities are presented below

The Energy Solutions LLC facility releases to land increased from 2.8 million pounds in RY 2016 to 12.6 million pounds in RY 2017. This increase of approximately 9.8 million pounds was primarily due to building debris from the demolition of two nuclear power plants out of state. The building debris included large quantities of copper piping, chromium, nickel, manganese, and friable asbestos. These metal compounds were properly disposed of at the facility according to license and applicable permit requirements.

### **Releases to Surface Water (on-site)**

Total releases to surface water increased by 6.5%, from approximately 116,000 pounds to about 123,500 pounds. Chevron Products Company is the largest contributor to this category of reporting. Chevron reported a total release of 112,300 pounds, which is approximately 90% of the total for all releases to surface waters for this reporting year. Nitrate compounds comprised the single largest fraction of chemicals released. At 111,710 pounds, nitrate compounds generated by Chevron comprised approximately 90.4% of the total amount by weight of chemicals released to surface waters.

The total release to surface water reported by two Kennecott facilities (Mine Concentrator and Power Plant, and the Smelter & Refinery) was approximately 10,000 pounds for a variety of TRI chemicals representing about 8.4% of the total statewide release to surface water. The majority of the chemicals reported in releases to surface water by Kennecott facilities are metals compounds. The aggregate amounts reported from Chevron and the two Kennecott facilities comprise about 99% of the total quantities released to surface waters statewide.

### **Total Off-site Transfers**

Transfers of TRI chemicals to “other off-site” locations are transfers to facilities other than Publicly Owned Treatment Works (POTWs). Often these facilities include chemical recyclers and waste disposal sites. The amount of chemicals reported transferred off-site decreased by 7.4% from 21 million pounds to 19.5 million pounds. Metal compounds (zinc), copper, and nitrate compounds topped the list of chemicals transferred off-site.

### **Kennecott Facilities**

Kennecott Utah Copper operates through two facilities:

- Mine, Concentrators & Power Plant (MCP); and,
- Smelter & Refinery (S&R).

Primary operations for mining facilities include gold ore, copper ore and nickel ore mining, 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.

The MCP reported an increase of approximately 16.5% in releases to land for RY 2016 compared to RY 2017. The Smelter and Refinery facility reported a decrease of approximately 30.25%.

It is important to note that Kennecott is reporting under the guidance provided by the EPA, which defines a “release” to land as including the placement of mining residuals that contain trace amounts of TRI constituents into a secure and permitted tailings impoundment. These properly managed tailings are required to be reported as “releases”, even though the tailings impoundment is specifically sited, engineered, constructed, and permitted to prevent an actual release to the environment.

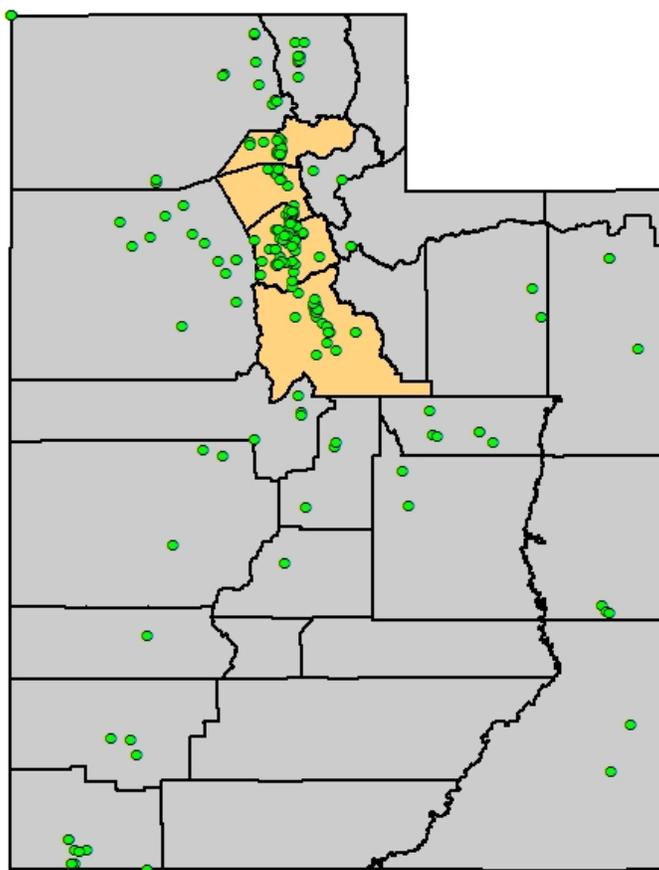
## RELEASE DETAILS: FIGURES AND TABLES ILLUSTRATING RY 2017 TRI DATA

The following pages contain the relevant figures and tables that summarize the TRI data for RY 2017. These figures and tables are compilations made from the data submitted by various facilities in Utah.

### Facility Locations

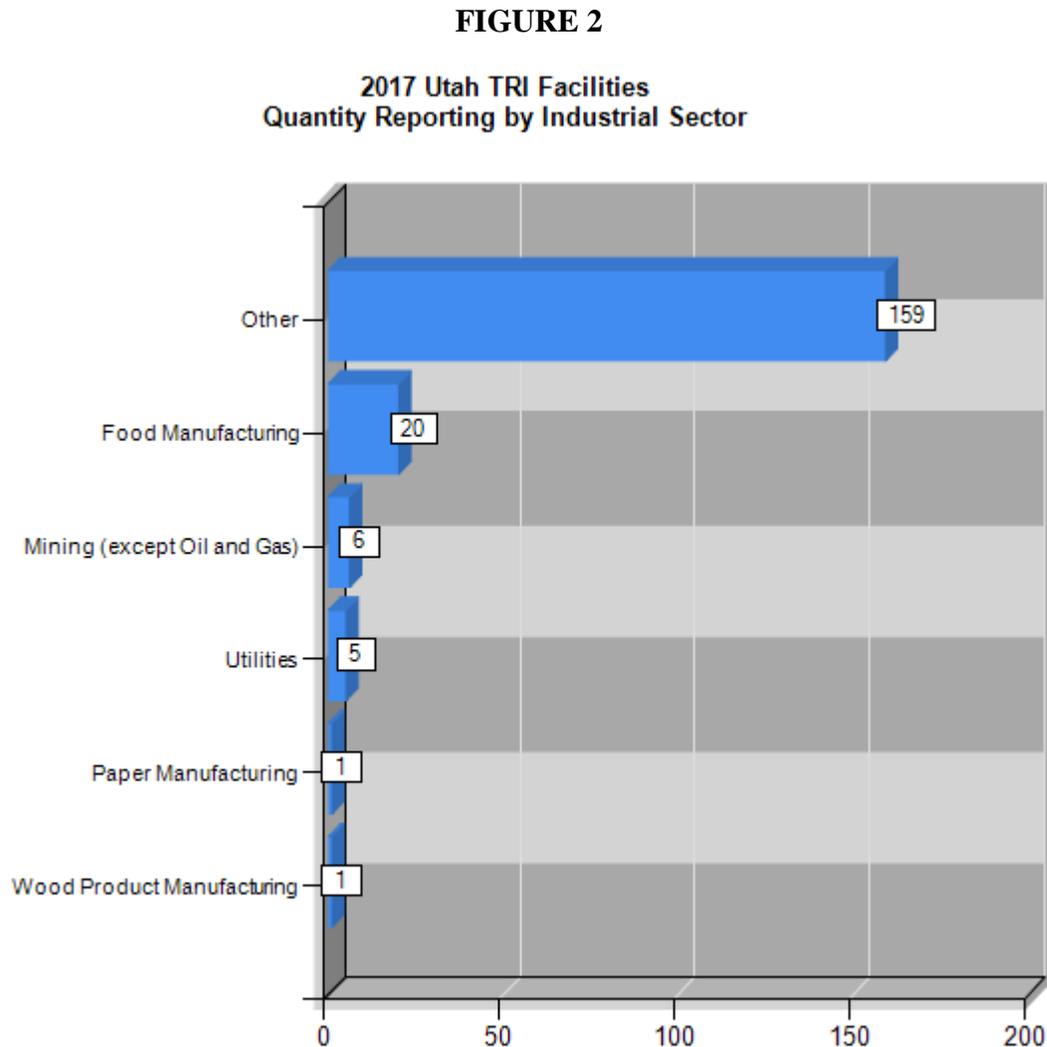
Each facility reports the coordinate data in latitude and longitude as part of the TRI submission. Figure 1 shows the geographic distribution of TRI reporting facilities across Utah. For purposes of reporting, the Wasatch Front is comprised of Davis, Salt Lake, Utah and Weber Counties. For RY 2017, facilities along the Wasatch Front comprised 68% of all facilities reporting in Utah.

**FIGURE 1**  
**Utah 2017 TRI Facility Locations & Wasatch Front**



## Industrial Sectors

Figure 2 shows a breakdown of industrial sectors reporting TRI data.

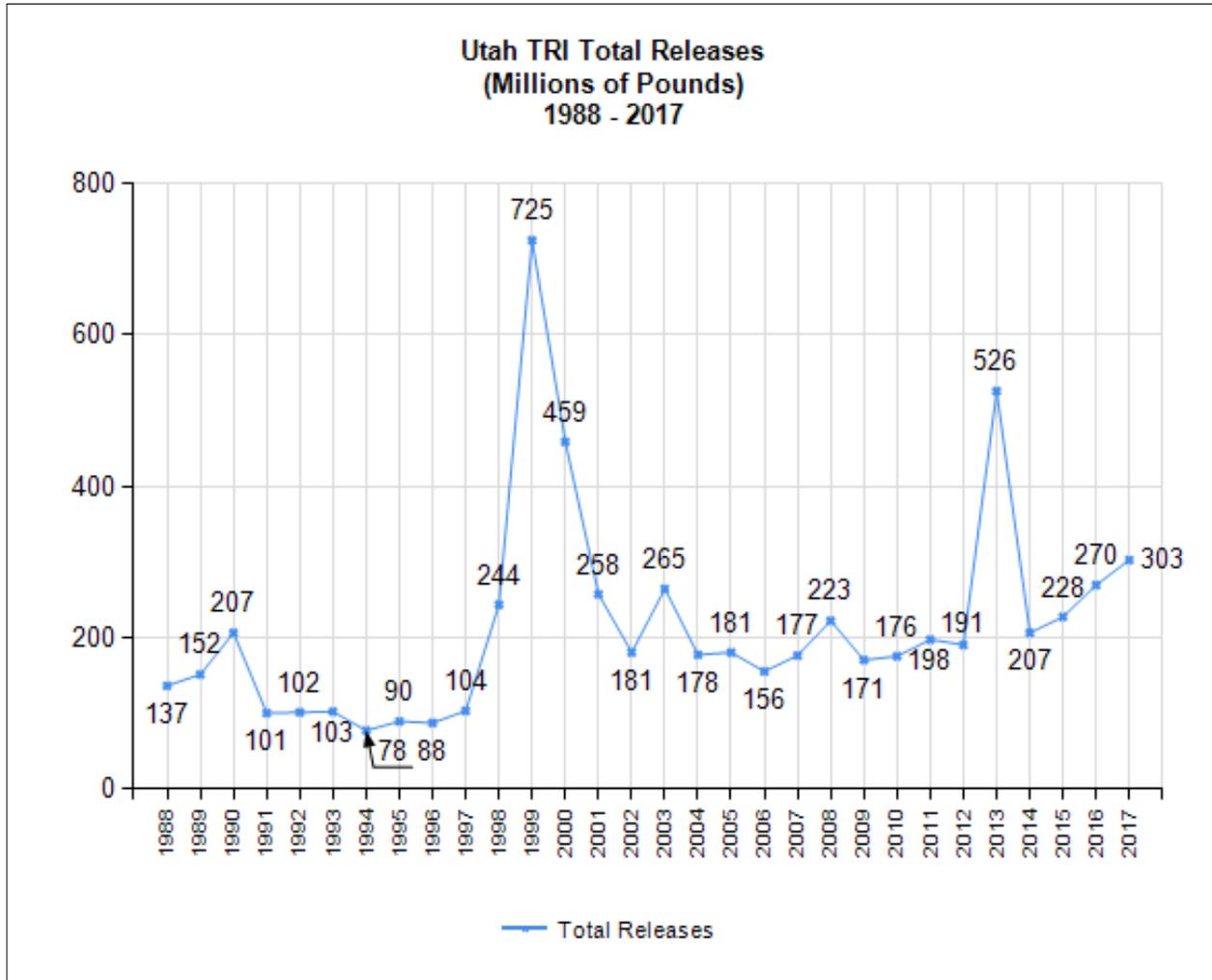


Additional industrial sectors (but not all) that comprise the “Other” category include: Petroleum and coal products manufacturing; chemical manufacturing; plastics and rubber products manufacturing; nonmetallic mineral product manufacturing; primary metal manufacturing; fabricated metal product manufacturing; machinery manufacturing; computer and electronic product manufacturing; electrical equipment; appliance and component manufacturing; transportation equipment manufacturing; miscellaneous manufacturing; merchant wholesalers; durable goods; non-durable goods; administrative support services; waste management and remediation services; national security; and international affairs.

## TOTAL RELEASES

Figure 3 and Tables 1 and 2 relate to total TRI releases in Utah.

**FIGURE 3**



**TABLE 1**

**TOP 10 FACILITIES**  
**Total On-site and Off-site Releases**

Facility Name	Pounds/Year
1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	234,373,091
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	33,310,528
3 ENERGY SOLUTIONS LLC	12,620,312
4 US MAGNESIUM, LLC	10,063,063
5 CLEAN HARBORS GRASSY MOUNTAIN LLC	2,217,824
6 CLEAN HARBORS ARAGONITE, LLC.	1,400,621
7 PACIFICORP HUNTER PLANT	1,148,640
8 BRUSH RESOURCES INC, MILL	1,137,102
9 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION	1,034,629
10 INTERMOUNTAIN POWER GENERATING STATION	999,956

**TABLE 2**

**Top 10 Chemicals - Total On-site and Off-site Chemical Releases**  
**(Reported in an amount equal to or greater than 1 million pounds)**

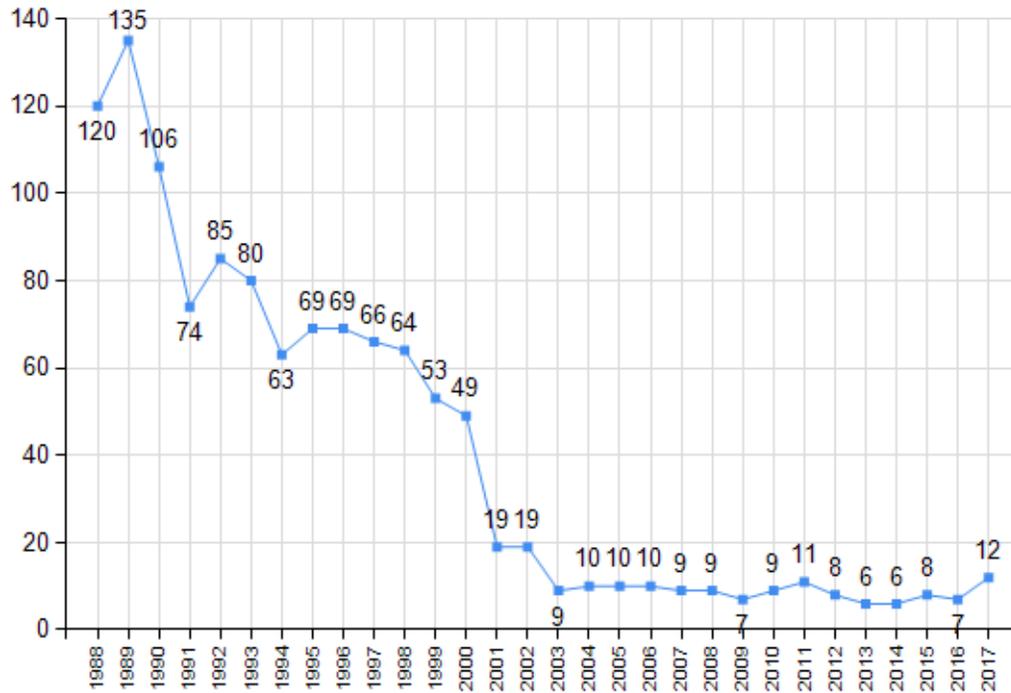
Chemical Name	Pounds/Year
1 Lead Compounds	183,937,802
2 Copper Compounds	77,492,820
3 Zinc Compounds	8,406,573
4 Chlorine	7,940,911
5 Chromium Compounds	6,226,908
6 Nickel Compounds	3,116,248
7 Arsenic Compounds	2,490,631
8 Hydrochloric acid	2,277,351
9 Ammonia	1,681,228
10 Barium Compounds	1,670,153

## RELEASES TO AIR

Figure 4 and Tables 3 and 4 relate to total releases to air.

**FIGURE 4**

**Utah TRI Total Releases to Air  
(Millions of Pounds)  
1988 - 2017**



**TABLE 3**

**Top 10 Facilities - Total Releases to Air**

<u>Facility Name</u>	<u>Pounds/Year</u>
1 US MAGNESIUM, LLC	10,057,799
2 HEXCEL CORPORATION	361,914
3 HOLLY REFINING & MARKETING COMPANY-WOODS CROSS	233,704
4 BRUSH RESOURCES INC, MILL	182,369
5 TESORO REFINING AND MARKETING COMPANY	153,501
6 CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY	132,843
7 ASH GROVE CEMENT COMPANY	114,802
8 BIG WEST OIL LLC	97,130
9 KENNECOTT UTAH COPPER SMELTER & REFINERY	87,426
10 LISBON VALLEY MINING CO LLC	63,948

**TABLE 4**

## Top 10 Chemicals - Total Releases to Air

	<u>Chemical Name</u>	<u>Pounds/Year</u>
1	Chlorine	7,940,911
2	Hydrochloric acid	2,277,348
3	Ammonia	600,175
4	Hydrogen cyanide	314,482
5	Sulfuric acid	151,978
6	Hexane	91,411
7	Toluene	89,570
8	Propylene	85,100
9	Hydrofluoric acid	79,127
10	Xylene (mixed)	56,005

## RELEASES TO LAND

Tables 5 and 6 relate to releases to land.

**TABLE 5**

Top 10 Facilities - Total Releases to Land

<u>Facility Name</u>	<u>Pounds/Year</u>
1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	234,360,294
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	33,210,411
3 ENERGY SOLUTIONS LLC	12,620,312
4 CLEAN HARBORS GRASSY MOUNTAIN LLC	2,216,890
5 PACIFICORP HUNTER PLANT	1,100,492
6 BRUSH RESOURCES INC, MILL	954,725
7 INTERMOUNTAIN POWER GENERATING STATION	948,992
8 PACIFICORP - HUNTINGTON PLANT	717,948
9 WESTERN ZIRCONIUM	704,467
10 CLEAN HARBORS ARAGONITE, LLC.	644,833

**TABLE 6**

Top 10 Chemicals - Total Releases to Land

<u>Chemical Name</u>	<u>Pounds/Year</u>
1 Lead Compounds	183,630,371
2 Copper Compounds	77,445,992
3 Zinc Compounds	7,250,583
4 Chromium Compounds	6,043,988
5 Nickel Compounds	3,111,411
6 Arsenic Compounds	2,486,554
7 Barium Compounds	1,601,515
8 Ammonia	1,054,618
9 Asbestos	1,026,933
10 Manganese Compounds	881,511

## RELEASES TO SURFACE WATER

Tables 7 and 8 relate to releases to surface water.

**TABLE 7**

### Top 10 Facility Releases to Surface Water

Facility Name	Pounds/Year
1 CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY	112,295
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	6,274
3 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	4,027
4 HEXCEL CORPORATION	482
5 VALMONT COATINGS - INTERMOUNTAIN GALVANIZING	190
6 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION	163
7 RUBBER ENGINEERING	17
8 UNIVERSAL INDUSTRIAL SALES INC	16
9 ENVIROTECH PUMPSYSTEMS	10
10 TELEFLEX DEFENSE SYSTEMS	10

**TABLE 8**

### Top 10 Chemical Releases to Surface Water

Chemical Name	Pounds/Year
1 Nitrate compounds	111,710
2 Ammonia	1,709
3 Copper Compounds	1,132
4 Zinc Compounds	1,078
5 Chromium Compounds	1,024
6 Manganese Compounds	1,005
7 Antimony Compounds	1,000
8 Silver Compounds	1,000
9 Nickel Compounds	969
10 Selenium Compounds	525

## TOTAL OFF-SITE TRANSFERS

Tables 9 and 10 relate to total transfers off-site.

**TABLE 9**

### Top 10 Facilities Transferring Chemicals Off-site

<u>Facility Name</u>	<u>Pounds/Year</u>
1 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION	9,204,347
2 CERROWIRE & CABLE CO.	2,015,938
3 CLEAN HARBORS ARAGONITE, LLC.	1,725,911
4 UTILITY TRAILER MFG. - CLEARFIELD 2	930,043
5 PACIFIC STATES CAST IRON PIPE COMPANY	639,605
6 DANNON COMPANY, THE	520,005
7 HEXCEL CORPORATION	441,698
8 TYCO PRINTED CIRCUIT GROUP, LP ., LOGAN DIVISION	421,679
9 SHAW NAPTECH, INC. - CLEARFIELD 2	305,092
10 JOHNSON MATTHEY	263,923

**TABLE 10**

### Top 10 Chemicals Transferred to Off-site Facilities

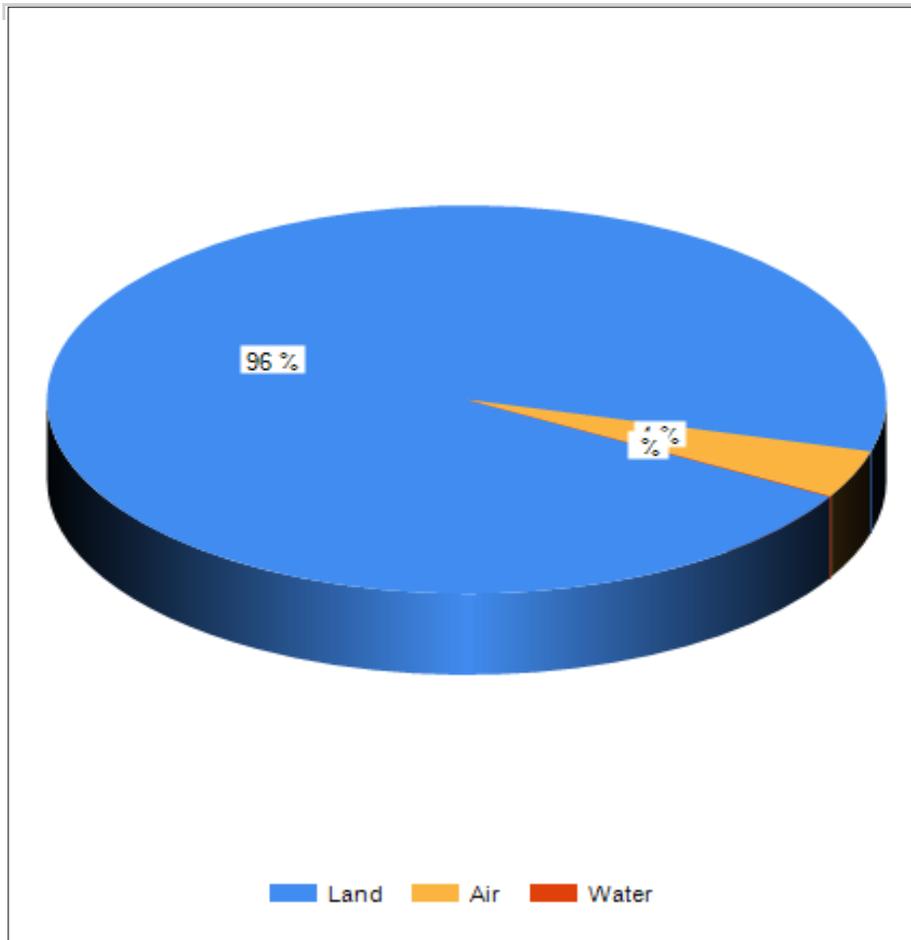
<u>Chemical Name</u>	<u>Pounds/Year</u>
1 Zinc Compounds	8,723,328
2 Copper	2,203,303
3 Nitrate compounds	1,554,378
4 Chromium	1,097,681
5 Manganese Compounds	928,494
6 Lead Compounds	626,356
7 Nickel	525,340
8 Copper Compounds	497,689
9 Manganese	378,102
10 Chromium Compounds	291,428

## TOTAL ON-SITE RELEASES BY MEDIA

Figure 5 relate to total on-site releases by media

**Figure 5**

Utah 2017 TRI Total On-site Releases By Media



Media	
Land	96 %
Air	4 %
Water	1 %

## SUMMARY

Total state-wide release amounts and corresponding percentages presented within this TRI annual report have been rounded for simplicity. As a result of either basing calculations on raw data (which is not provided in this report), or of rounding to whole numbers, various total and percentage values presented may not correspond exactly to each other, or to the tables or figures within this report. In addition, the number of significant figures was increased when it was considered beneficial to show a difference between reporting year data values.

Trends recognized in the Toxic Release Inventory data for RY 2017 may be summarized as follows:

- *Total On-site and Off-site Releases* increased by 18.7%, from 270.2 million pounds to 302.8 million pounds, an increase of about 32.6 million pounds
- *Total Releases to Air* increased by 79.1% from 6.7 million pounds to 12 million pounds showing an increase of about 5.3 million pounds. Chemicals ranked first and second for quantities released to air were chlorine and hydrochloric acid (aerosol forms only) respectively.
- *Total Releases to Land* statewide increased by 11.3% from 259.2 million pounds to 288.4 million pounds for a total increase of 29.2 million pounds. The Kennecott Mine Concentrators and Power Plant facility reported a 16.5% increase from last year, while the Kennecott Smelter and Refinery facility reported a decrease of about 30.25%. Kennecott releases represent about 92.2% of the total releases to land reported state-wide.
- *Total Releases to Surfaces Water* increased by 6.47% from approximately 116,000 pounds in RY 2016 to about 123,500 pounds in the current reporting year. Nitrate compounds comprise about 89.44% of total releases to surface waters.
- *Transfers Off-site* to treatment, storage & disposal facilities decreased by 7.14% from 21 million pounds to 19.5 million pounds. These facilities typically include chemical recyclers and waste disposal facilities.