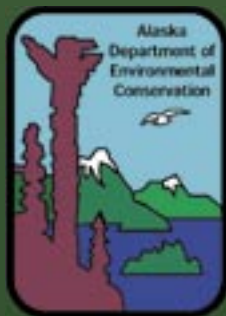




State of Alaska

Department of  
Environmental  
Conservation



A guide to the  
RY 2002

# Toxics Release Inventory for Alaska



**TRI requires certain industries to report releases and waste management activities for more than 650 chemicals.**

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## Introduction

Under Section 313 of the Emergency Planning and Community Right-to-Know Act, certain businesses are required to submit reports each year on the amounts of more than 650 chemicals their facilities released into the environment (either routinely or as a result of accidents), or otherwise managed as waste. The purpose of this reporting requirement is to inform the public about the releases and other waste management of EPCRA section 313 chemicals in their communities and to provide the government with information for research and the development of appropriate regulations.

Section 313 requires facilities to report for each listed chemical the amount released to air, water, land, underground injection and transferred off-site to disposal. Facilities also must report the amounts of those EPCRA section 313 chemicals otherwise managed as waste, including on-site treatment, combustion for energy recovery, recycling and transfers offsite for treatment, combustion for energy recovery and recycling.

The information reported under Section 313 is compiled by EPA into the Toxics Release Inventory (TRI) which is available to the public on the web. This report is intended to serve as a guide to TRI for Alaska. It provides an overview of the TRI program and describes the limitations of the data and factors to consider when using information submitted by Alaska facilities.

## Overview of TRI Reporting Requirements

Facilities in specified industries are required to report to the U. S. Environmental Protection Agency if they have ten or more employees and exceed thresholds for use of certain chemicals on the TRI list. For most TRI chemicals, more than 25,000 pounds of a TRI chemical must be manufactured or processed, or more than 10,000 pounds otherwise used to trigger reporting for that chemical. EPA has set a much lower threshold for Persistent, Bioaccumulative and Toxic (PBT) chemicals: 100 pounds for persistent and bioaccumulative chemicals; 10 pounds for highly persistent and highly bioaccumulative chemicals; and, 0.1 grams for dioxin and dioxin-like compounds.

The term “release” in the TRI program is very broad and includes permitted emissions and discharges, management of wastes in regulated disposal units as well as accidental spills and releases. Facilities are also required to report other waste management activities which occur on-site or which involve transfers of waste off-site.

“On-site releases” are TRI chemicals that are either emitted to the air, disposed of on-land, or are discharged to surface waters or underground injection wells. “Off-site releases” are reported when wastes are shipped off-site for management in land disposal units.

Reported releases of TRI chemicals in Alaska since 1997 have averaged more

**The term “release” in the TRI program is very broad and includes permitted emissions and discharges, management of wastes in regulated disposal units as well as accidental spills and releases.**

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than 400 million pounds per year. The majority of Alaska's reported releases are chemicals that are present as naturally occurring minerals contained in waste rock excavated from mine sites and are not the result of changes in environmental management or operating practices at mine facilities.

## Uses of TRI Information

Under Section 313(h) of EPCRA, Congress clearly provided for the wide distribution of TRI data to government agencies and the public:

*“The release form shall inform persons about releases of toxic chemicals to the environment; to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of appropriate regulations, guidelines, and standards; and for other similar purposes.”*

## Limitations of TRI Information

The chemicals included on the TRI list have been designated based upon potential human health or environmental impacts if exposed to the chemicals. However, the TRI data alone do not reflect exposure to these chemicals or potential risk. Actual exposure or risk would depend upon actual chemical concentrations and potential routes of exposure.

TRI does not require monitoring or measurements by facilities to calculate the actual release amounts. If measured data are not available, facilities may calculate release amounts using a variety of methods. Actual releases may vary considerably from the estimates derived by these computational methods. In addition, TRI data do not represent the concentration of a chemical release nor information about the mobility of the chemical in the environment.

**TRI data alone do not reflect exposure to these chemicals or potential risk.**

## Mining Operations

Metal Mining as an industry encompasses 99% of Alaska's TRI data. Five mines fall within the TRI reporting requirements. Most of Alaska's mines process gold, silver, lead and zinc. Typically a pit or underground mineshaft is excavated to access and remove ore. This requires drilling holes and blasting the rock, then crushing and processing the ore to extract the minerals. Mineral processing can involve additional chemicals to concentrate valuable ore.

## Reported Land Releases

The federal and state governments review and approve all discharges to the environment to ensure they comply with air, land and water quality standards. Residual materials from processing, milling and leaching of ores are managed in a tailings storage facility at the mine site. Storage facilities can be for tailings under water or engineered on land.



The Red Dog Mine mill where ore is processed into zinc and lead concentrate.

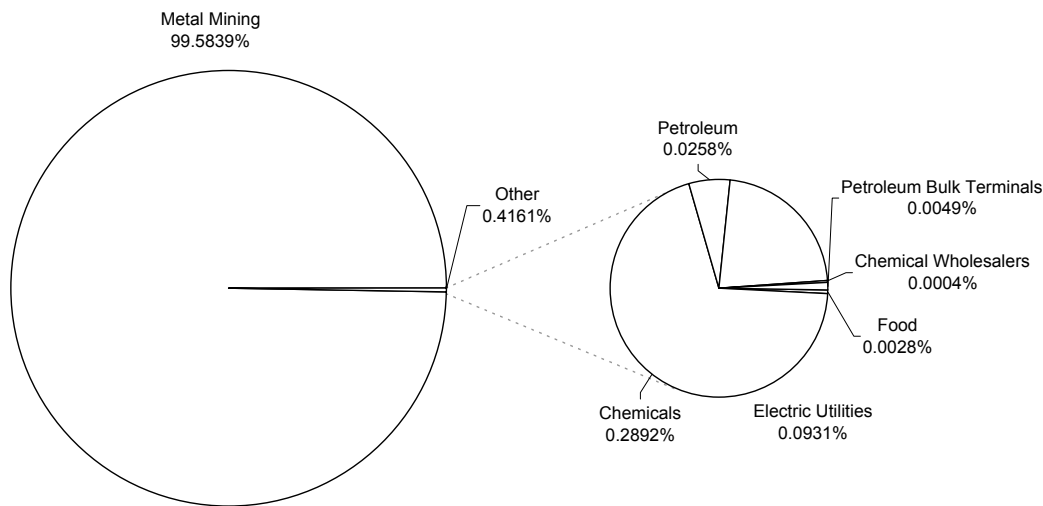
Metals contained in unprocessed mined materials such as “waste rock” and processed materials such as “tailings,” that are placed on the land at the mine are currently included in the TRI report as a “release to land,” even though those materials are placed in engineered containment structures. Waste rock is naturally occurring rock which has been mined but is not of sufficient ore grade to warrant further processing. This rock is usually separated from the ore body and set aside in another part of the facility.

### **Waste Rock**

The non-ore bearing rock or “waste rock” is managed on site in piles. Trace concentrations of naturally occurring TRI chemicals may be present in the waste rock. Alaska Water Pollution discharge regulations apply to waste rock piles, along with other mine site components, to ensure runoff over or through the waste rock complies with State water quality standards. In addition, mine reclamation regulations administered by the Department of Natural Resources as the lead agency of the Large Mine Project Teams, require that waste rock piles be reclaimed and revegetated to provide a productive post-mining land use.

### **Surface Water Releases**

Mineshafts and pit excavations may come into contact with groundwater,



**For 2001, mines in Alaska reported 498 million pounds in TRI releases to land, representing about 99 percent of all Alaska TRI releases from all industries.**

requiring dewatering to enable further mining. Most of the TRI releases reported to water, such as nitrate and metal compounds, represent naturally occurring substances found in the groundwater that is discharged during dewatering. Water effluents include process water and wastewater related to specific mining operations or storm water runoff, which may come in contact with a facility's operations. All water discharges are regulated by State and Federal agencies to ensure they comply with water quality standards.

Processed water, where chemicals have been used is the largest part of surface water releases. Mine dewatering accounts for 20.5 million pounds of reported TRI releases to water or about 0.04 percent of total reported mine releases. State or federal pollution discharge permits to prevent degradation of waters of the state, govern discharges from mine dewatering.

### Heap Leach Pads

A few smaller mines in Alaska have operated as heap leach facilities where diluted cyanide is used to concentrate valuable metals, usually gold. When a mine site closes or a heap leach pad is decommissioned the cyanide solution in the heap is neutralized or treated to safe levels. The heap is required to be reclaimed and revegetated for return to future productive use. When a heap leach pad is decommissioned the trace metals remaining in the leached ore on the pad are reported to TRI as "other" land releases as is waste rock.



The open pit at Red Dog Mine.

### Reported Air Releases

**Alaska Water Pollution discharge regulations apply to waste rock piles, along with other mine site components, to ensure waters of the state are not degraded.**

Mines operate under the Air Quality Control Permit conditions issued by the State, according to the provisions of the Federal Clean Air Act Amendments of 1990. Air emissions are categorized as either Stack Air Emissions that are associated with a point source such as a baghouse, or Fugitive Air Emissions that are diffuse such as smoke, particulate matter (dust) generated by activities such as construction, operation of large mining equipment, and wind blown dust from exposed areas. Most releases of fine ore concentrates are unintentional and have to follow the state's spill response requirements for cleanup.

### **Non-point Source Emissions**

Some metal compounds are contained in the dust (or particulate matter) that is wind blown off of heap leach pads, waste rock or ore stockpiles. The metal compounds in this dust are reported as non-point source air releases. Air pollution control permits require management practices to minimize these emissions.

Methanol, propylene, and ethylene glycol are all used for antifreeze protection in either water sprays for dust control or for drilling fluids. Some of these chemicals may be reported as non-point source releases to the air.

### **Stack or Point Source Emissions**

Air releases that come from discrete points at the mine or from stacks or pipes are reported as stack or point source emissions. Metal compounds in the dust from crushers, and conveyor drop points are reported as point source emissions.



Road sampling to monitor fugitive dust emissions from trucks.

## Summary of TRI Releases by Industry

Industry	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	SURFACE WATER DISCHARGE	UNDERGROUND INJECTION	SURFACE IMPOUNDMENTS	OTHER LANDFILLS - RELEASES	OTHER DISPOSAL	Total
Chemicals	140,505	1,570,266	62,450	11	0		250	1,773,482
Chemical wholesalers	202	1,656	0	0	0		0	1,858
Electric Utilities	0	1,739	0	0	0		0	1,739
Federal Facility	123	195,588	6	0	0	303	253,813	449,833
Food	51,827	2,000	1,000	0	0		0	54,827
Metal Mining	254,337	27,599	1,250	17,763,351	252,386,532	23,170,099	251,940,232	545,543,399
Oil Refineries	89,692	41,105	1,785	0	755		2,892	136,228
Petroleum bulk terminals	4,677	21,380	93	0	0		13	26,163
<b>Total</b>	<b>541,363</b>	<b>1,861,332</b>	<b>66,584</b>	<b>17,763,362</b>	<b>252,387,287</b>	<b>23,170,402</b>	<b>252,197,200</b>	<b>547,987,529</b>

## List of Alaska Facilities Reporting TRI Releases

Industry	Primary SIC Code	Facility Name
Chemical Wholesalers	5169	Quadra Chemicals Western Inc. - Fairbanks
	5169	Univar USA Inc. (Formerly Vopak USA Inc.)
Chemicals	2873	Agrium Kenai Nitrogen Ops.
Electric Utilities	4911	Aurora Energy L.L.C.
	4911	Golden Valley Electric Assoc. Inc. Healy Power Plant
Federal Facility	3731	U.S. Coast Guard ISC Ketchikan
	9621	U.S. Coast Guard Integrated Support Command Kodiak
	9711	U.S. Air Force Clear Air Force Station
	9711	U.S. Air Force Eielson AFB AK
	9711	U.S. Air Force King Salmon Alaska
	9711	U.S. Army Delta Training Area
	9711	U.S. Army Fort Richardson Training Ranges
	9711	U.S. Army Fort Wainwright
	9711	U.S. Army Fort Wainwright Training Ranges
9711	U.S. DOD USAF Elmendorf AFB	
Food	2026	Creamery Corp. (DBA Matanuska Maid Dairy)
	2091	Trident Seafoods Corp. Star Of Kodiak
	2092	Trident Seafoods Corp.
	2092	Unisea Inc.
Metal Mining	1031	Delong Mountain Transportation Facility Port Site
	1031	Kennecott Greens Creek Mining Co.
	1031	Red Dog Ops.
	1041	Fort Knox Mine
	1041	Illinois Creek Mine
	1041	True North Mine
Oil Refineries	2911	Petro Star Inc.
	2911	Petro Star Valdez Refinery
	2911	Tesoro Alaska Kenai Refinery
	2911	Williams Alaska Petroleum Inc.
Petroleum Bulk Terminals	5171	Chevron Prods. Co. Anchorage Terminal
	5171	Kenai Pipeline Co. - KPL Facility
	5171	Tesoro Alaska Co. Anchorage Terminal
	5171	Williams Alaska Petroleum Inc. Anchorage Terminal
	5171	Williams Alaska Petroleum Inc. Fairbanks Terminal



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## MORE INFORMATION ON TRI RELEASES

### Public Data Release Reports and State Fact Sheets

Public Data Release Reports, which are published annually by the US EPA to coincide with the release of TRI data to the public, provide summaries, analyses and comparison of TRI data by year. The annual report contains detailed analyses and supporting tables for releases and other waste management of TRI chemicals; geographic distribution of TRI releases; industrial patterns of releases and other waste management; the interstate and intrastate transport of TRI chemicals; chemicals with the largest releases and other waste management; and other topics. Reports for reporting year 1996 and later can be viewed on the web at <http://www.epa.gov/tri/tridata/index.htm>, printed, or downloaded (in PDF format) by section or by entire report.

The four-page State Fact Sheets are also published annually. They contain key TRI report data, including information about the reporting facilities; chemicals for which the most releases were reported; the number of state facilities reporting and the total reports received; total state releases and waste management reported by medium. The report also lists the names and telephone numbers of state and regional TRI coordinators. Copies of this report for 1996 and later are available on the web at [www.epa.gov/tri/tridata/index.htm](http://www.epa.gov/tri/tridata/index.htm).

Starting with the reporting year 2002 data release, the Public Data Release will consist of a short summary document, state fact sheet, and instructions for acquiring data using the TRI Explorer web site.

### Additional Contacts

For general TRI Program information in US EPA Region 10, which includes Alaska, Washington, Oregon and Idaho, contact the the TRI Program Manager:

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The TRI Contact for Alaska is:

Camille Stephens  
Department of Environmental Conservation  
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Juneau, AK 99801-1795  
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email: [Camille.Stephens@dec.state.ak.us](mailto:Camille.Stephens@dec.state.ak.us)

## **On-line Access**

*TRI Explorer* is a searchable online database which lets users quickly and easily find TRI data for reporting facilities throughout the nation. The URL for TRI Explorer is: <http://www.epa.gov/triexplorer/>

*Envirofacts* provides integrated data extracted from five major EPA programs, including TRI. The database allows users to search for information about specific facilities or geographic location. The Envirofacts site is located at <http://www.epa.gov/enviro/>

*RTKNet* contains information from multiple environmental databases, including TRI, that can be searched by facility, location, chemical and other variables such as Standard Industrial Classification (SIC) code. The RTK Net site is located at <http://www.rtknet.org>

## **CD-ROM Access**

The entire Toxics Release Inventory database is published by EPA [and](#) is available on the web at <http://www.epa.gov/tri/tridata/index.htm>. Raw data is also available on the EPA's website or on CD-ROM, available from EPA by request.

For information concerning environmental regulatory programs administered by the Alaska Department of Environmental Conservation, access the website at <http://www.state.ak.us/dec>.





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