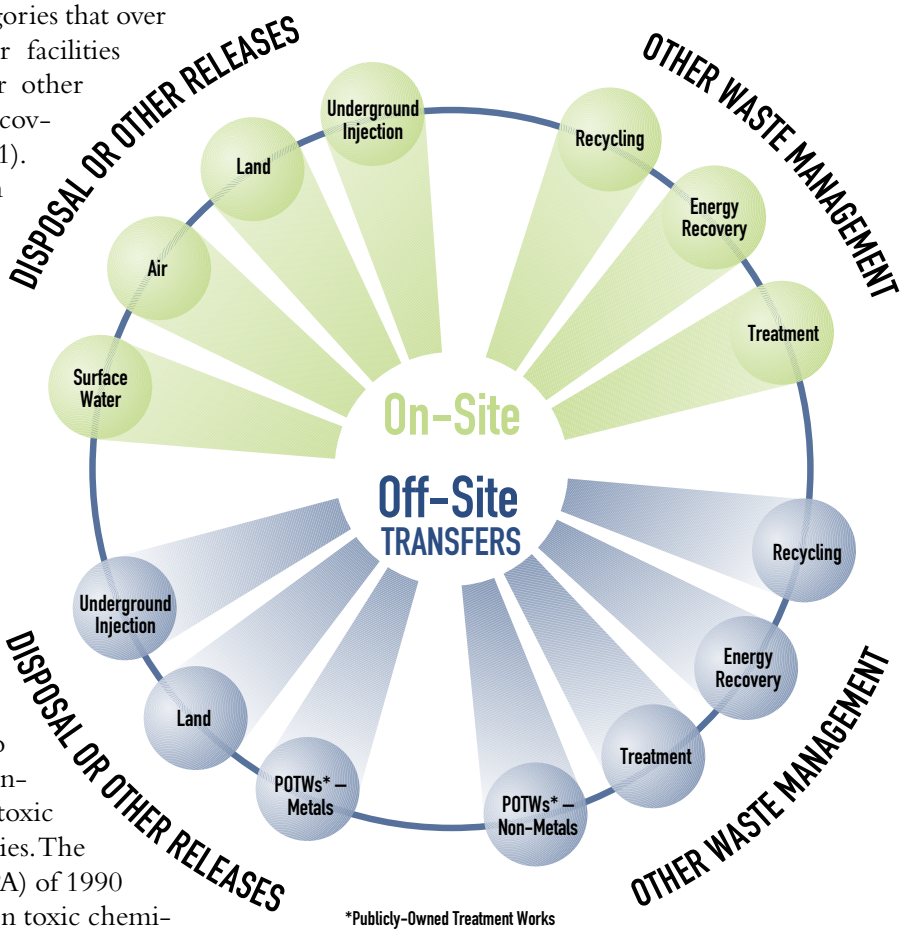
2002
Toxics Release Inventory (TRI) Public Data Release Report

EPA 260-R-04-003
June 2004

What is the Toxics Release Inventory?

The Toxics Release Inventory (TRI) is a database that contains detailed information on nearly 650 chemicals and chemical categories that over 20,000 industrial and other facilities manage through disposal or other releases, recycling, energy recovery or treatment (see Figure 1). The data are collected from industries including manufacturing, metal and coal mining, electric utilities, commercial hazardous waste treatment, and other industrial sectors.

Figure 1: Information Collected Under TRI



Section 313 of the Emergency Planning and Community Right to Know Act (EPCRA) of 1986 was enacted to facilitate emergency planning, to minimize the effects of potential toxic chemical accidents, and to provide the public with information on releases of toxic chemicals in their communities. The Pollution Prevention Act (PPA) of 1990 mandates collection of data on toxic chemicals that are treated on-site, recycled, and combusted for energy recovery. Together, these laws require facilities in certain industries, which manufacture, process, or use toxic chemicals above specified amounts, to report annually on disposal or other releases and other waste management activities related to these chemicals.

The U.S. Environmental Protection Agency (EPA) maintains this information in a national database called the Toxics Release Inventory, which is available to the public via the Internet **www.epa.gov/tri.**

What are the benefits of TRI data?

The TRI provides the public with unprecedented access to information about toxic chemical releases and other waste management activities on a local, state, regional and national level.

TRI data help the public, government officials and industry:

- identify potential concerns and gain a better understanding of potential risks;
- identify priorities and opportunities to work with industry and government to reduce toxic chemical disposal or other releases and potential risks associated with them; and
- establish reduction targets and measure progress toward reduction goals.

TRI data are widely used across EPA programs. For example, the National Partnership for Environmental Priorities, an element of the Resource Conservation Challenge (RCC), uses TRI data to identify facilities that may present pollution prevention opportunities. TRI data are also used by EPA in the Risk Screening Environmental Indicator (RSEI) tool, which provides users with additional understanding of chronic human health and potential exposures associated with TRI chemicals. You can learn about other EPA programs and tools that utilize TRI data by visiting EPA's Web Site at **www.epa.gov** or from EPA's publication *How are the Toxics Release Inventory Data Used?* at **www.epa.gov/tri/guide_docs/2003_datausepaper.pdf.**

What are the limitations of the TRI data?

Users of TRI data should be aware that TRI data reflect disposal or other releases and other waste management activities of chemicals, not whether (or to what degree) the public has been exposed to those chemicals. Both the toxicity of a chemical and exposure considerations should be taken into account when using the data.

- TRI chemicals vary widely in **toxicity,** or their potential to produce toxic effects. Some high-volume releases of less toxic chemicals may appear to be a more serious problem than lower-volume releases of highly toxic chemicals, when just the opposite may be true.
- The potential for **exposure** may be greater the longer the chemical remains unchanged in the environment. Sunlight, heat, or microorganisms may or may not decompose the chemical. Smaller releases of a persistent, highly toxic chemical may create a more serious problem than larger releases of a chemical that is rapidly converted to a less toxic form.

For more detailed information on this subject refer to *The Toxics Release Inventory (TRI) and Factors to Consider When Using TRI Data* document at **www.epa.gov/tri/tridata/index.htm.**

What should I know about the different types of disposal or other releases?

The TRI Program collects data on a number of different types of disposal or other releases, as well as on certain waste management and recycling practices. Disposal or other releases of chemicals into the environment occur through a range of practices that may ultimately affect the potential for human exposure to the toxic chemicals. Facility releases may include discharges to air, water, and land. Facilities limit contamination and human exposure by disposing of or otherwise releasing waste in certain ways. For example:

- Disposal of harmful materials to Class I Underground Injection wells located in isolated formations beneath the lowermost underground source of drinking water, which limits potential for contamination; and
- Disposal to landfills that are designed with liners, covers, leak detection systems, and groundwater monitoring systems also limit the potential for human exposure to the contents of the landfill.

Most disposal or other release practices are subject to a variety of regulatory requirements designed to limit environmental harm. Please refer to the *Toxics Release Inventory (TRI) and Factors to Consider When Using TRI Data* (**www.epa.gov/tri/tridata/index.htm**) for more information on the differences of these data elements.

What should I know about persistent bioaccumulative toxic (PBT) chemicals?

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

For more information about the Agency's multimedia strategy for priority PBT chemicals, visit EPA's Office of Prevention, Pesticides, and Toxic Substances web site at **www.epa.gov/opptintr/pbt/pbtstrat.htm.**

What do TRI data show for reporting year (RY) 2002?

For RY 2002, a total of 24,379 facilities, including federal facilities, reported to EPA's TRI Program. They reported 4.79 billion pounds of on-site and off-site disposal or other releases of the almost 650 toxic chemicals, as shown in Table 1. Over 89 percent of the total was disposed of or otherwise released on-site, with almost 11 percent sent in waste off-site for disposal or other releases, as shown in Figure 2.

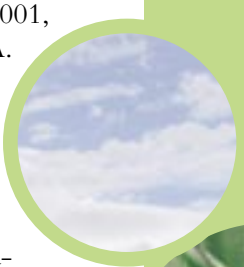
PBT chemicals accounted for 451.9 million pounds of reported on- and off-site disposal or other releases in 2002. Of that total, lead and lead compounds accounted for 98 percent or 441.8 million pounds. Total disposal or other releases for mercury and mercury compounds were 5.3 million pounds and, for dioxin and dioxin-like compounds, they were 452,209 grams. One facility, however, reported 311,022 grams of total disposal or other releases of dioxin and dioxin-like compounds in error for RY 2002. Without the report by this one facility, total disposal or other releases of dioxin and dioxin-like compounds were 141,187 grams.

All federal facilities, whether operated by federal agencies or contractors (e.g. military bases), are required to report to EPA's TRI Program. For RY 2002, a total of 315 federal facilities submitted 1,002 forms and reported 85.2 million pounds of total on- and off-site disposal or other releases.

How did the TRI data change over time?

While the database shows a 15% decrease (819.4 million pounds) in total disposal or other releases nationwide from 2001 to 2002, the decrease is largely attributable to a court decision affecting the metal mining sector. Without metal mining, there was a 5% increase from 2001 to 2002, largely due to increases reported by one facility. Production-related waste decreased by 4% from 2001 to 2002 or by 0.3% without metal mining. After correcting for certain facility reporting errors, PBT chemicals show a 3% increase in disposal or other releases for lead and lead compounds and a 5% decrease in dioxin and dioxin-like compounds. Mercury and mercury compounds increased by 10%, however, air emissions of mercury and its compounds decreased by 4%.

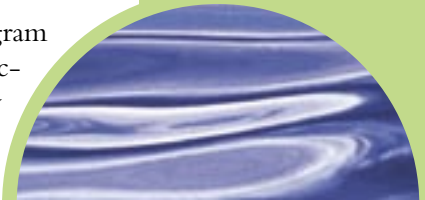
Metal mining accounted for 26% of the total disposal or other releases on- and off-site in 2002. This sector reported an overall decrease of 43% from 2001, largely related to the court's decision in Barrick Goldstrike Mines v. EPA. The electric utilities sector accounted for 23% of total disposal or other releases in 2002 compared to 19% in 2001, making it the second largest industry segment behind metal mining.



Federal facilities showed an overall increase in disposal or other releases of 6.8 million pounds or 9 percent. Total production-related waste managed at federal facilities decreased by 13.2 million pounds or 6 percent from 2001 to 2002.

Starting in 1998, additional industries were required to report, including electric utilities, metal and coal mines, commercial hazardous waste treatment facilities and solvent recovery facilities, chemical wholesale distributors and petroleum terminals and bulk stations. From 1998 to 2002, all TRI facilities, including those from the sectors added in 1998, have reported a reduction of 37 percent, as shown in Figure 3.

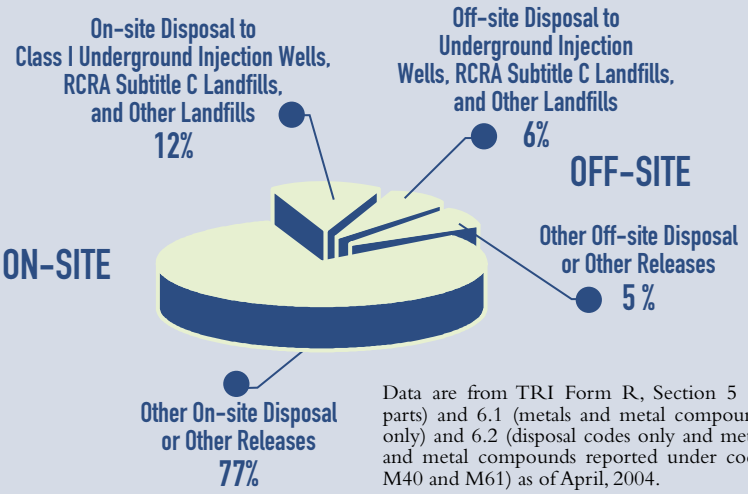
Manufacturing facilities have been required to report to EPA's TRI Program since the beginning of the Program in 1987. From 1988 to 2002, manufacturing facilities decreased their on- and off-site disposal or other releases by 49 percent, as shown in Figure 4.



Toxics Release Inventory, 2002

24,379 TRI facilities reported 4.79 billion pounds of on- and off-site disposal or other releases for RY 2002

Figure 2: Distribution of TRI Disposal or Other Releases, 2002

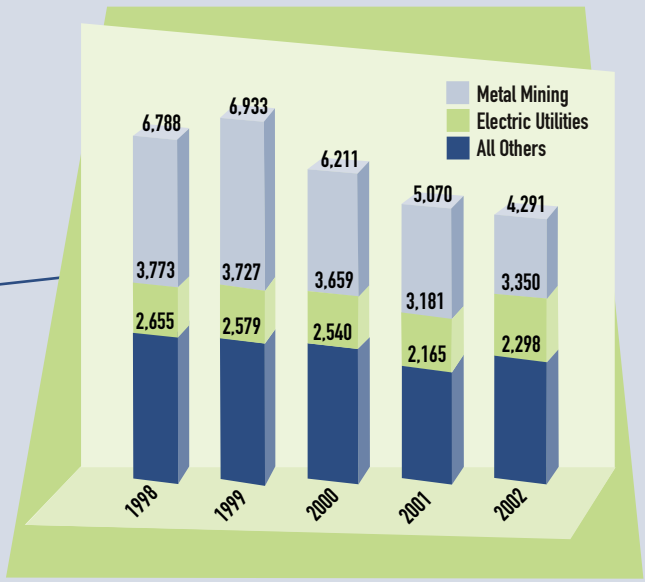


Data are from TRI Form R, Section 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (disposal codes only and metals and metal compounds reported under codes M40 and M61) as of April, 2004.

What do TRI data show over a longer period of time?

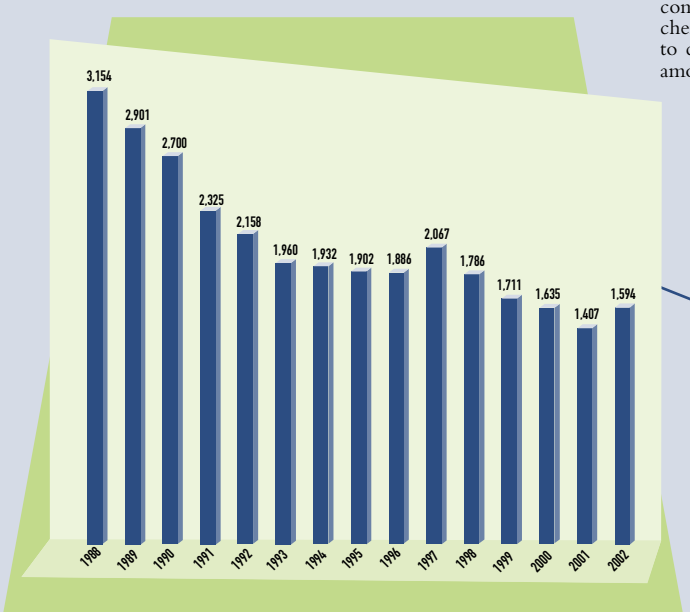
Total on- and off-site disposal or other releases from all facilities decreased by 37% from 1998-2002.

Figure 3: Total On- and Off-site Disposal or Other Releases, 1998-2002



Data are from TRI Form R, Sections 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (Disposal codes only and metals and metal compounds reported under codes M40 and M61). Does not include PBT chemicals, vanadium and vandium compounds. Does not include transfers to disposal or other releases sent to other TRI facilities that reported the amounts as on-site disposal or other releases. Data as of April 2004.

Figure 4: Total On- and Off-site Disposal or Other Releases, 1988-2002



Total on-and off-site disposal or other releases of the original chemicals from the original types of manufacturing facilities decreased by 49% from 1988-2002.

Data are from TRI Form, Sections 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (Disposal codes only and metals and metal compounds reported under codes M40 and M61). Does not include delisted chemicals, chemicals added in 1990, 1994 and 1995, aluminum oxide, ammonia, hydrochloric acid, PBT chemicals, sulfuric acid, vanadium and vanadium compounds. For the years 1998 and after, does not include industries, other than manufacturing industries, that are required to report for 1998 and later years only. Data as of April 2004.

TABLE 1: TRI ON-SITE AND OFF-SITE DISPOSAL OR OTHER RELEASES, 2002

	POUNDS
ON-SITE DISPOSAL TO CLASS I UNDERGROUND INJECTION WELLS, RCRA SUBTITLE C LANDFILLS, AND OTHER LANDFILLS	597,147,619
Class I Wells	201,816,839
RCRA Subtitle C Landfills	123,161,569
Other On-site Landfills	272,169,211
OTHER ON-SITE DISPOSAL OR OTHER RELEASES	3,681,638,975
Fugitive Air Emissions	209,779,007
Point Source Air Emissions	1,422,167,217
Surface Water Discharges	229,976,391
Class II-V Wells	20,520,746
Land Treatment	21,861,484
Surface Impoundment	795,053,151
Other Land Disposal	982,280,979
TOTAL ON-SITE DISPOSAL OR OTHER RELEASES	4,278,786,594
OFF-SITE DISPOSAL TO UNDERGROUND INJECTION WELLS, RCRA SUBTITLE C LANDFILLS, AND OTHER LANDFILLS	272,583,110
Underground Injection	9,483,341
RCRA Subtitle C Landfills	37,192,833
Other Landfills	225,906,936
OTHER OFF-SITE DISPOSAL OR OTHER RELEASES	241,140,625
Storage Only	9,126,232
Solidification/Stabilization (Metals and Metal Category Compounds Only)	126,677,019
Wastewater Treatment (Excluding POTWs) (Metals and Metal Category Compounds Only)	3,566,759
Transfers to POTWs (Metals and Metal Category Compounds Only)	1,969,565
Surface Impoundments	16,754,521
Land Treatment	9,712,740
Other Land Disposal	39,724,984
Other Off-site Management	15,179,036
Transfers to Waste Broker for Disposal	12,917,807
Unknown	5,511,962
TOTAL OFF-SITE DISPOSAL OR OTHER RELEASES	513,723,735
TOTAL ON-SITE AND OFF-SITE DISPOSAL OR OTHER RELEASES	4,792,510,329

Note: Data are from TRI Form R, Section 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (disposal codes only and metals and metal compounds reported under codes M40 and M61) as of April 2004. Off-site Disposal or Other Releases transferred to other TRI facilities reporting such transfers as on-site disposal or other releases are not included.

These 24,379 facilities reported almost 26.2 billion pounds of TRI chemicals in waste managed during 2002. Almost 30 percent was recycled on-site, 28 percent was treated on-site and 19 percent was disposed of or otherwise released on- and off-site, as shown in Table 2.

TABLE 2: QUANTITIES OF TRI CHEMICALS IN WASTE BY WASTE MANAGEMENT ACTIVITY, 2002

WASTE MANAGEMENT ACTIVITY	POUNDS	PERCENT
Quantity Recycled On-site	7,732,267,995	29.5
Quantity Recycled Off-site	1,983,001,794	7.6
Quantity Used for Energy Recovery On-site	2,879,971,103	11.0
Quantity Used for Energy Recovery Off-site	804,043,747	3.1
Quantity Treated On-site	7,256,791,037	27.7
Quantity Treated Off-site	608,002,430	2.3
Quantity Disposed of or Otherwise Released On- and Off-site	4,904,042,338	18.7
TOTAL PRODUCTION-RELATED WASTE MANAGED	26,168,120,444	100.0
Non-production-related Waste Managed	25,065,757	

Note: Data are from TRI Form R, Section 8, as of April 2004.

What can I expect in the future?

EPA plans to modernize its TRI Program as an ongoing effort to provide the highest quality data to U.S. communities. The TRI Program will:

- Continue enhancements to TRI Explorer that allow users to sort TRI data based on user preferred methods;
- Provide RY2003 TRI data to the public earlier by releasing facility specific, form-by-form data through an electronic facility data release (eFDR) in November, 2004; and
- Pilot web-based TRI-ME reporting software that may provide pre-populated reporting forms with prior year's data, electronic signature, and instant error notification and data quality alerts.

EPA has also updated its reporting form to provide more contextual information for TRI data and resulting reports. The TRI program strives to continue to provide the public with important information about toxic chemical releases and other waste management activities in our communities.

Where can I find more information?

TRI Explorer: It's On-line! It's Easy! It's Your Right to Know!

TRI Explorer provides fast and easy access to the TRI data and can answer your questions about a chemical, facility, geographic area, or industry sector. Find out what chemicals are released to the air by facilities in your state in 2002, what facilities reported in your zip code or what progress has been made in reducing TRI chemicals since 1988. TRI Explorer provides customized reports on these and many other topics from the TRI data. Users of TRI data can also customize maps of states or counties within a state to their preference. Each report can be quickly and easily sorted by total disposal or other releases, by fugitive air emissions, by surface water discharges, by disposal to RCRA Subtitle C landfills, etc. Electronic state fact sheets with 2002 data are also available for each state. Visit the TRI Explorer home page to begin creating your own report on TRI data at **www.epa.gov/triexplorer.**

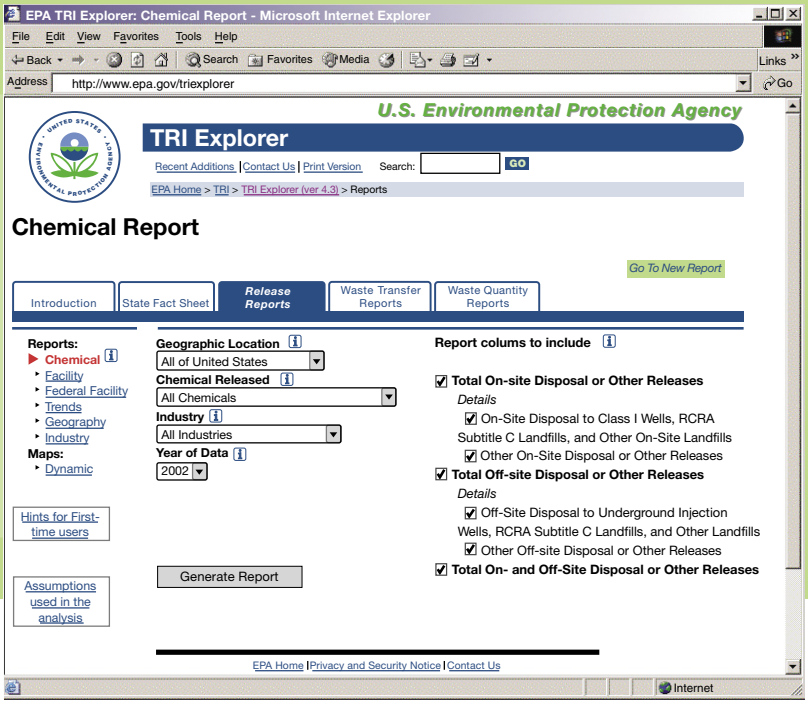
Customize reports,

research data

quickly and easily

from your own computer:

www.epa.gov/triexplorer



Where can I find contact information?

There are three other options for finding more detailed information:

- You can find out more information about the TRI program by contacting the toll-free Emergency Planning and Community Right-to-Know (EPCRA) Call Center at 1-800-424-9346, or
- You can seek assistance in accessing and using TRI data by contacting the TRI User Support Service 202-566-0250 or e-mailing your questions to **tri.us@epa.gov**, or
- You can find your state or regional TRI coordinator by visiting EPA's TRI web site at **www.epa.gov/tri.**

United States
Environmental Protection Agency
1200 Pennsylvania Avenue NW
(2844T)
Washington DC 20460

Official Business
Penalty for Private Use $300

First Class Mail
Postage and Fees Paid
EPA
Permit No. G-35