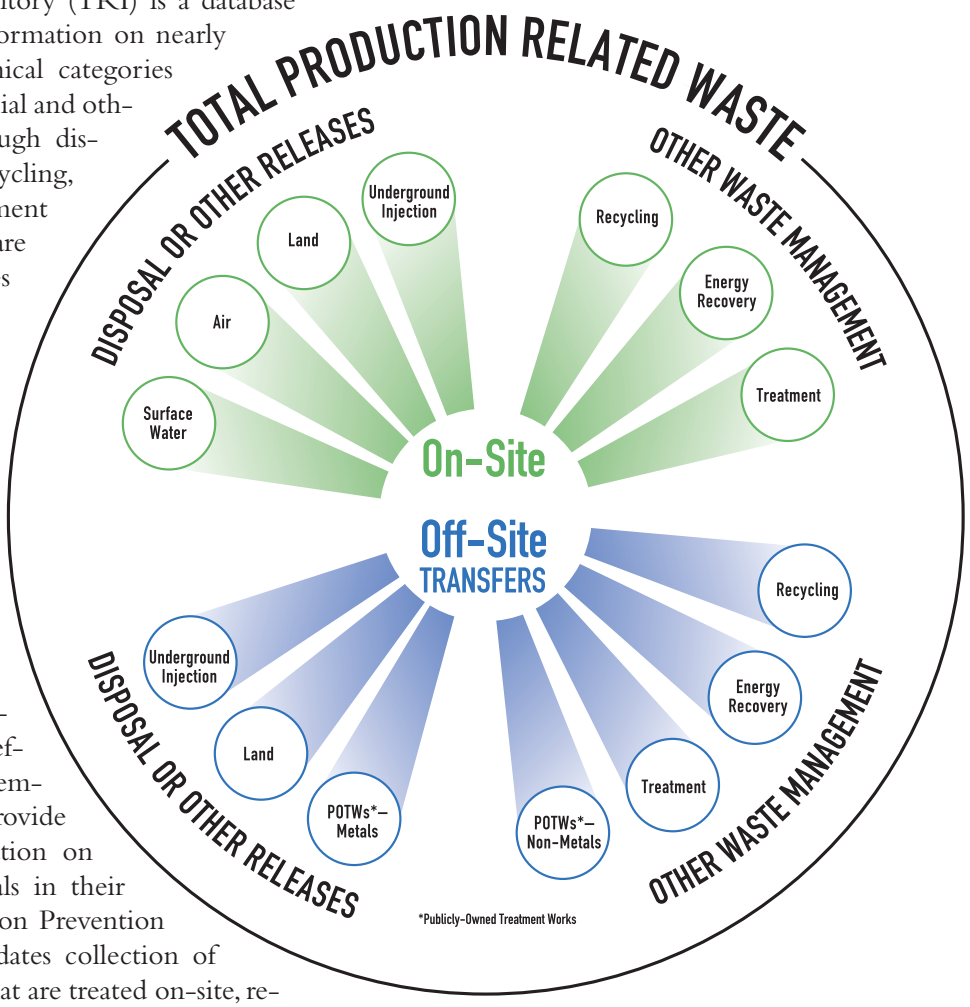
2005
Toxics Release Inventory (TRI) Public Data Release Report

EPA 260-R-07-001
March 2007

What is the Toxics Release Inventory?

Figure 1: Information Collected Under TRI



The Toxics Release Inventory (TRI) is a database that contains detailed information on nearly 650 chemicals and chemical categories that almost 23,500 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.

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. EPA also uses TRI data 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 search for 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 of chemicals, not whether (or to what degree) the public has been exposed to them. 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 more serious 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**.

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:

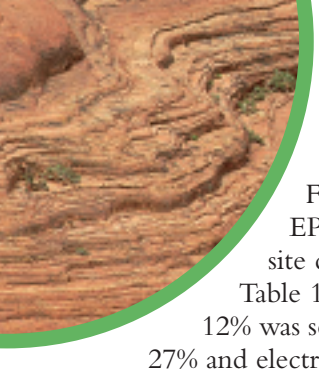
- Disposal of harmful materials to Class I Underground Injection wells located in isolated formations beneath the lowermost underground source of drinking water, which limits potential for contamination; and
- Disposal to landfills that are designed with liners, covers, leak-detection systems, and groundwater 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**) for more information on the differences of these data elements.

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

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. 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.

For more detailed 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) 2005?

For RY 2005, 23,461 facilities, including federal facilities, reported to EPA's TRI Program. They reported 4.34 billion pounds of on-site and off-site disposal or other releases of the almost 650 toxic chemicals, as shown in Table 1. Almost 88% of the total was disposed of or otherwise released on-site; 12% was sent off-site for disposal or other releases. Metal mining facilities reported 27% and electric utilities reported 25% of the total in 2005, as shown in Figure 2.

Persistent bioaccumulative toxic (PBT) chemicals accounted for 477.4 million pounds or 11% of reported on- and off-site disposal or other releases in 2005. Of that total, lead and lead compounds accounted for 98% or 469.3 million pounds. Total disposal or other releases for mercury and mercury compounds were 4.4 million pounds and, for dioxin and dioxin-like compounds, they were 85,501 grams (189 pounds).

There were 179 known or suspected carcinogens on the TRI list for 2005. They accounted for 923.1 million pounds or 21% of reported on- and off-site disposal or other releases in 2005. Of that total, lead and lead compounds accounted for 51% and arsenic and arsenic compounds for 20%. Almost three-quarters (680.3 million pounds or 74%) were disposed of or otherwise released to some form of on-site land disposal. Styrene air emissions were 45% of the total 112.7 million pounds of air emissions of carcinogens.

All federal facilities, whether operated by federal agencies or contractors, are required to report to EPA's TRI Program. For RY 2005, a total of 304 federal facilities submitted 1,025 forms and reported 97.6 million pounds of total on- and off-site disposal or other releases and 230.7 million pounds of production-related waste managed.

How did the TRI data change over time?

From 2004 to 2005, total disposal or other releases on- and off-site increased by 116.9 million pounds or 3%. On-site disposal or other releases increased by 2%, while off-site disposal or other releases increased by 5%.

Total production-related waste managed, which focuses on waste management practices rather than ultimate disposition of a chemical, decreased by 3% over that same time period. Recycling and energy recovery as well as on-site treatment decreased, while off-site treatment and the quantity disposed of or otherwise released increased from 2004 to 2005.

Disposal or other releases of PBT chemicals increased by 5% in from 2004 to 2005, due to an increase of 6% in disposal or other releases for lead and lead compounds. Without metal mining, disposal or other releases of lead and lead compounds increased by 2%. Total disposal or other releases of mercury and mercury compounds decreased by 9% from 2004 to 2005; air emissions of mercury and its compounds decreased by 1%. Total disposal or other releases of dioxin and dioxin-like compounds decreased by 23%.

Disposal or other releases of carcinogens increased by 9% or 72.4 million pounds from 2004 to 2005, including an increase of 54% or 65.4 million pounds in arsenic and arsenic compounds and a 6% or 26.3 million pounds in lead and lead compounds. On-site land disposal increased by 13% (80.7 million pounds) while air emissions of carcinogens decreased by 7% (7.9 million pounds).

Federal facilities showed an overall increase in disposal or other releases of 9.2 million pounds or 10% from 2004 to 2005. Total production-related waste managed at federal facilities increased by 11.5 million pounds or 5%.

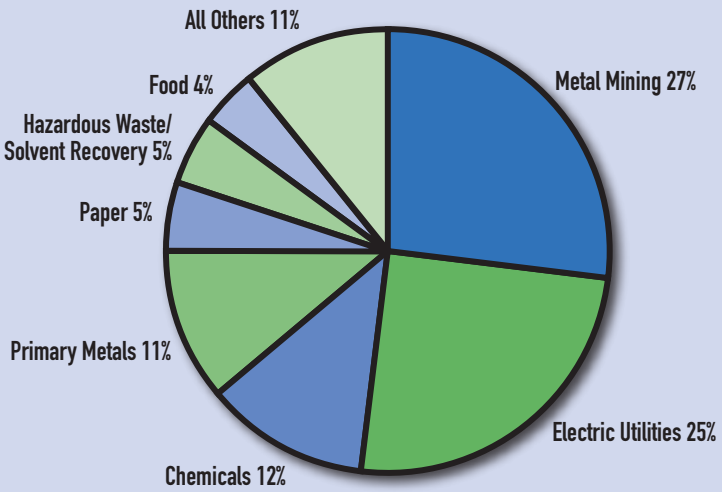
From 2001 to 2005, total production-related waste managed has decreased by 8%, as shown in Figure 3.

Manufacturing facilities have been required to report to EPA's TRI Program since 1987. From 1988 to 2005, manufacturing facilities decreased their on- and off-site disposal or other releases by 58% based on chemicals that have been consistently reported since 1988.

Toxics Release Inventory, 2005

23,461 TRI facilities reported 4.34 billion pounds of on- and off-site disposal or other releases for RY 2005

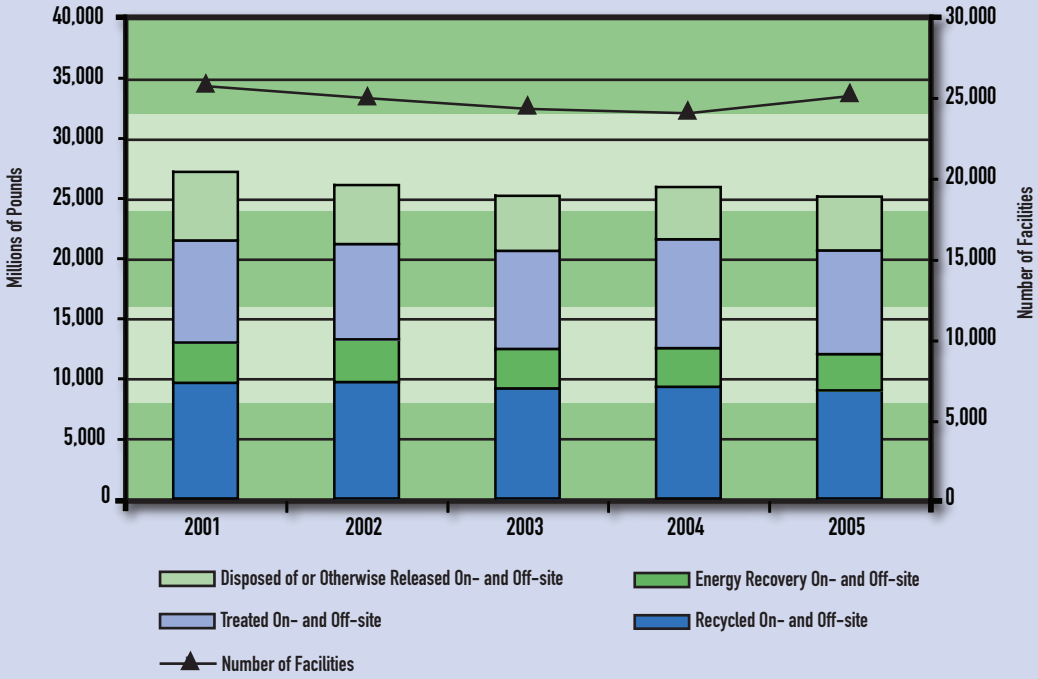
Figure 2: 2005 TRI Total Disposal or Other Releases
4.34 billion pounds



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 March 2007.

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

Figure 3: Total Production-related Waste Managed, 2001-2005



Note: Data are from TRI Form, Section 8, for year indicated. Data as of March 2007. This figure covers those years for which comparable data on all currently listed TRI chemicals, including PBTs, are available. Tables encompassing a wider range of years include only those chemicals for which data are comparable (i.e., the chemical must have been consistently reported for the entire time covered) and can be generated using TRI Explorer.

From 2001-2005, total production-related waste managed decreased by 8% and number of facilities reporting decreased by 9%.

TABLE 1: TRI ON-SITE AND OFF-SITE DISPOSAL OR OTHER RELEASES, 2005

ON-SITE DISPOSAL OR OTHER RELEASES	POUNDS	PERCENT
Air	1,511,690,431	34.8
Water	240,246,101	5.5
Underground Injection	230,659,487	5.3
Land	1,823,908,662	42.0
TOTAL ON-SITE DISPOSAL OR OTHER RELEASES	3,816,291,200	87.9
OFF-SITE DISPOSAL OR OTHER RELEASES		
Underground Injection	13,160,198	0.3
Land	489,649,640	11.3
POTWs and Wastewater Treatment	8,052,273	0.2
Other	22,096,959	0.5
TOTAL OFF-SITE DISPOSAL OR OTHER RELEASES	532,959,071	12.3
TOTAL ON- AND OFF-SITE DISPOSAL OR OTHER RELEASES	4,339,463,751	100.0

Note: 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 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 March 2007.

These 23,461 facilities reported 25.1 billion pounds of TRI chemicals in total production-related waste managed during 2005. Almost 36% was recycled, 34% was treated, 18% was disposed of or otherwise released on- and off-site, and 12% was used for energy recovery, as shown in Table 2.

TABLE 2: PRODUCTION-RELATED WASTE MANAGED BY WASTE MANAGEMENT ACTIVITY, 2005

WASTE MANAGEMENT ACTIVITY	POUNDS	PERCENT
Quantity Recycled On- and Off-site	8,972,973,497	35.8
Quantity Treated On- and Off-site	8,637,333,393	34.4
Quantity Disposed of or Otherwise Released On- and Off-site	4,462,029,095	17.8
Quantity Used for Energy Recovery On- and Off-site	3,018,834,164	12.0
TOTAL PRODUCTION-RELATED WASTE MANAGED	25,091,170,149	100.0
Non-production-related Waste Managed	23,731,682	

Note: Data are from TRI Form R, Section 8, as of March 2007. Quantity disposed of or otherwise released on- and off-site is different from total on- and off-site disposal or other releases because the amounts in Table 1 do not include amounts sent off-site to other TRI facilities that report that amount disposed of or otherwise released on-site. Also, the amounts in Table 1 may include amounts reported as non-production-related waste managed in this table. The numbers may also be different due to the differences in reporting requirements for Section 5 and 6 and Section 8.

What other information is available on the Public Data Release?

EPA has also developed an electronic report (eReport) for the 2005 Public Data Release. This report offers detailed information on the 2005 Public Data release and is available on the TRI Web site. The eReport includes:

- a summary of key findings which provides a detailed look at the 2005 data; and
- additional tables and charts which provide a look at the top chemicals, industries, and facilities for 2005.

To access this report and other information on the TRI the TRI Program, please visit our Web site at: **www.epa.gov/tri**.

How can I access TRI data?

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. It also provides further details and breakdown on the type of disposal or other releases reported. Find out what chemicals are released to the air by facilities in your state in 2005, 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 preferences. 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 2005 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,

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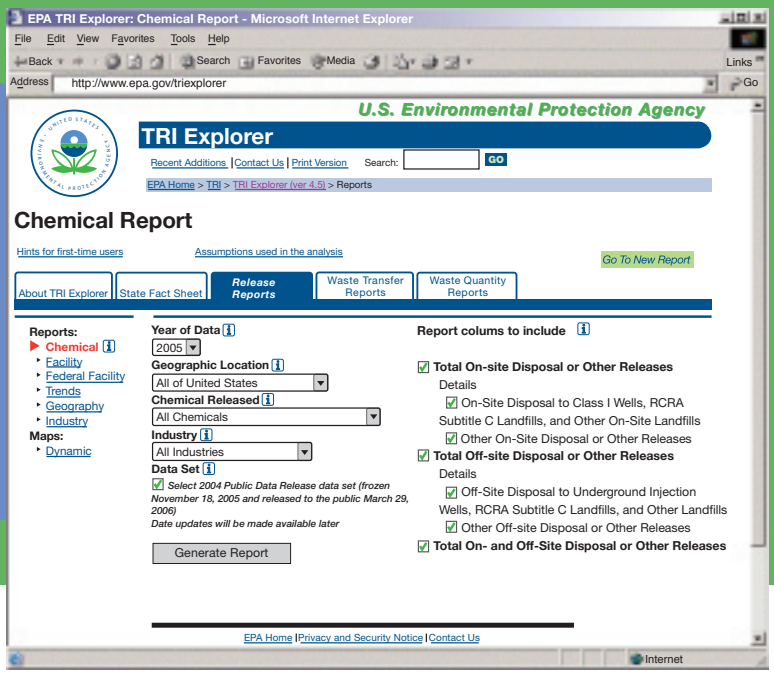

Where can I find contact information?

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**.

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