Ohio EPA

1998
Toxic Release Inventory
Annual Report

Ohio Environmental Protection Agency
Division of Air Pollution Control

March 2000

Executive Summary

Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) provides for the collection and public release of annual Toxic Release Inventory (TRI) reports regarding the release of toxic chemicals into the community. Since the first TRI reports were made available to the public more than ten years ago, TRI has expanded to include information on waste generation, additional reportable chemicals, and seven new industrial sectors.

Facilities continue to make impressive strides toward reducing toxic chemicals usage, waste and releases. As of January 21, 2000, Ohio EPA received TRI reports from 1,676 facilities. Table 1 illustrates the comparison of the 1997 and 1998 TRI data. For the purpose of comparison with 1997 data, the 1998 data is presented without the releases and transfers reported by the new industrial sectors.

The seven new industrial sectors include: metal mining, coal mining, coal and oil-fired electric generating facilities, commercial hazardous waste treatment facilities, chemical and allied products (wholesale), petroleum bulk stations (wholesale), and solvent recovery services. Reports for these facilities were filed for the first time in 1999, covering calendar year 1998. The new industrial sectors reported total releases and transfers of approximately 197 million pounds, with 114 million pounds of releases and transferred reported by electric generating utilities, and 79.3 million pounds of releases and transfers reported by commercial hazardous waste treatment facilities.

TRI is only a tool; the TRI data can be used in many ways, as long as the limitations of the data are understood. TRI provides the public with the ability to track toxic chemicals in their community, city, or county. The success of TRI relies on the public using the available information. Ohio EPA invites you to use the TRI data to become more informed about the releases within your community.

Table 1: Comparison of 1997 and 1998 TRI Data

Environmental Medium	Amount Released in 1997 in lbs/yr	Amount Released in 1998 in lbs/yr (not including new facilities)	Percent Change	Amount Released in 1998 including new facilities
Releases to Air	67,193,765	63,254,305	-5.86%	159,028,928
Releases to Water	5,984,312	5,694,458	-4.84%	6,070,982
Deepwell Injection	11,584,640	13,329,469	15.06%	31,170,469
Releases to Land On-site	26,311,121	25,453,744	-3.26%	89,993,514
Discharges to POTW	17,220,919	16,694,932	-3.05%	16,823,475
Transfers Off-site for Disposal and Treatment	60,177,695	57,442,606	-4.55%	75,740,612
Total Releases and Transfers	188,441,162	181,869,514	-3.49%	365,666,271*
Energy Recovery On-site	107,657,744	116,972,582	8.65%	116,972,582
Energy Recovery Off-site	33,005,709	35,500,662	7.56%	101,344,151
Recycling On-site	221,418,453	263,985,451	19.22%	289,586,633
Recycling Off-site	188,731,168	185,446,125	-1.74%	187,359,943
Treatment On-site	142,231,963	141,361,864	-0.61%	221,754,308
Number of Reporting Facilities	1,623	1,576	-2.90%	1,676

*Does not include releases which were transferred off-site to facilities which reported the same chemical under TRI.

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WHAT IS THE TOXIC RELEASE INVENTORY?

The Toxic Release Inventory, or TRI, is a publicly available database that contains specific toxic chemical release and transfer information from manufacturing facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), which Congress passed to provide information to the public about the presence and release of toxic and hazardous chemicals in communities. The first TRI reports were filed July 1, 1988, covering releases in calendar year 1987. The Pollution Prevention Act of 1990 expanded TRI to include mandatory reporting of additional waste management and pollution prevention activities. Each year, manufacturing facilities meeting chemical use thresholds must report estimated releases and transfers of toxic chemicals to U.S. EPA and to the state where the facility is located. Seven non-manufacturing industrial sectors are required to report under TRI beginning with reporting year 1998. The TRI chemical list includes more than 600 chemicals and chemical categories.

OHIO'S TRI PROGRAM

In 1988, the Ohio General Assembly passed the Ohio Right-to-Know Act, Substitute Senate Bill 367. This law provided for state implementation of EPCRA. Under this law, Ohio EPA is charged with the administration of Section 313 (Ohio Administrative Code 3745-100). The law gave Ohio EPA authority to enforce Section 313 and established filing fees for covered facilities to support the TRI Program. Ohio EPA's Division of Air Pollution Control coordinates the TRI Program.

Ohio EPA annually inspects approximately 100 facilities. In calendar year 1999, Ohio EPA resolved seven enforcement actions against facilities which had not filed TRI reports.

WHO MUST REPORT

A facility is required to report if it meets each of the following requirements:

1. It has 10 or more full-time employees;

2. It is included in the manufacturing facilities in Standard Industrial Classification codes 20 through 39. Seven non-manufacturing industrial sectors were added on May 1, 1997: metal mining, coal mining, coal and oil-fired electricity generating facilities, commercial hazardous waste treatment facilities, chemicals and allied products (wholesale), petroleum bulk stations (wholesale),

and solvent recovery services. Reports for these non-manufacturing industrial sectors will be filed July 1, 1999, covering calendar year 1998.

3. It manufactured or processed a reportable toxic chemical in quantities exceeding the thresholds established by U.S. EPA for that year, or it otherwise used 10,000 pounds or more of a reportable toxic chemical for that calendar year. The threshold amounts for manufacturing and processing a toxic chemical are 75,000 pounds for calendar year 1987, 50,000 pounds for calendar year 1988, and 25,000 pounds for calendar year 1989 and subsequent years.

Facilities must submit a Form R for any listed chemical used in amounts that exceed the reporting threshold, even if the chemical is not released to the environment. Facilities which generate less than five hundred pounds of a listed chemical which is released to the environment, treated, recycled, or used for energy recovery, and use less than one million pounds of the toxic chemical in a calendar year can file a certification statement or Form A instead of a full Form R.

CHEMICALS

The list of reportable toxic chemicals has evolved since the enactment of Section 313. More than 600 toxic chemicals and chemical categories are currently subject to reporting under Section 313. These chemicals vary widely in form (solid, liquid and gas) and in toxicity.

The Administrator of U.S. EPA has the authority to modify the list of chemicals that must be reported. Petitions to add and delete chemicals have been submitted by industry, environmental groups, and the state governors. U.S. EPA is currently evaluating chemicals which may be added or deleted from the list of reportable chemicals. Chemicals are removed from the list because they have not been shown to cause significant adverse human health or environmental effects. The list of reportable chemicals can be obtained from Ohio EPA or U.S. EPA, and is available on the Internet at www.epa.gov/opptintr/tri.

FEDERAL FACILITIES

President Clinton issued an executive order under which federal facilities must comply with the planning and reporting provisions of EPCRA and the Pollution Prevention Act (PPA) of 1990. Executive Order #12856 requires all federal facilities that manufacture, process or otherwise use any listed chemical above the reporting threshold to submit a toxic chemical release inventory Form R. The first reports for federal facilities were submitted July 1, 1995 for calendar year 1994.

LIMITATIONS OF THE DATA

The user of the TRI data should be aware of the limitations of the data in order to accurately interpret its significance. The TRI data has some significant limitations:

- TRI covers only certain manufacturing industries. Many non-manufacturing industries release toxic chemicals into the environment. U.S. EPA added seven additional non-manufacturing industrial sectors, which reported July 1, 1999.

- For reporting year 1998, TRI covers approximately 600 toxic chemicals and chemical categories. The TRI data does not represent all chemicals used by all manufacturing industry.

- Releases are reported as total annual releases without reference to frequency or duration. The annual release totals alone are not sufficient to assess the health or environmental impact of the toxic chemical released.

- The majority of releases are based on estimates. Facilities are required to base releases on monitoring data when available; otherwise, estimates are used. Estimates result in significant variability among reporting facilities.

- High volume releases of relatively non-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. TRI data summaries must be interpreted with care.

- The TRI report contains information regarding the release of chemicals, not the public's exposure to the chemicals. Some chemicals break down when exposed to the environment. Some chemicals disperse rapidly when released into the environment, eliminating their threat to public health and to the environment. Other highly toxic chemicals may not disperse when released. Disposal of toxic chemicals in underground injection wells does not expose the public since the material is injected thousands of feet into the ground. Also, off-site transfers may not expose the community to chemicals. Screening risk assessments must be completed before health and environmental assessments can be made.

- The addition of non-manufacturing industrial sectors can lead to double counting of toxic releases. To calculate total releases and transfers, Ohio EPA identified transfers off-site to a facility which reported TRI releases of the same chemical, and subtracted the transfer off-site from the total releases. If the off-site location name or permit number did not match a reporting facility, the transfer off-site was included in the total releases and transfers. Inconsistent reporting of facility names can lead to double counting.

- Ohio EPA conducts extensive data quality efforts to make every attempt to ensure that the data compiled in this report accurately reflects the data reported by the facilities; however, we acknowledge the possibility of errors due to data entry or problems with the reporting software. Because the TRI data is based on estimates, facilities are encouraged to revise their reports when the estimates are improved. Revisions and corrections of these errors are entered into the Ohio TRI database on an ongoing basis.

TRI REGULATORY CHANGES

The TRI Program continued to grow and change during the past year and it appears that the expansion of the program will continue into coming years. The following list identifies the significant changes which U.S. EPA has finalized, or has formally proposed.

Chemical List Expansion: On November 28, 1994, U.S. EPA published the final rule which added 282 toxic chemicals and chemical categories to the list of reportable chemicals. Approximately 170 of these chemicals are active ingredients in pesticides. These chemicals were reportable beginning with calendar year 1995, with the first reports filed July 1, 1996.

Persistent and Bioaccumulative Toxic Chemicals
On October 29, 1999, U.S. EPA published a final rule which lowered the TRI reporting threshold for persistent bioaccumulative toxic (PBT) chemicals and added PBT chemicals and PBT chemical compound categories to TRI. The following chemicals were added with a lower threshold:

benzo(g,h,i)perylene	10 pound threshold
benzo(j,k)fluorene (fluoranthene)	100 pound threshold
3-methylcholanthrene	100 pound threshold
pentachlorobenzene	10 pound threshold
tetrabromobisphenol A (TBBPA)	100 pound threshold
dioxin and dioxin-like compounds	0.1 gram threshold

U.S. EPA lowered the reporting threshold for the following TRI chemicals:

10 pound threshold - chlordane, heptachlor, hexachlorobenzene, isodrin, polychlorinated biphenyls, toxaphene, mercury and mercury compounds

100 pound threshold - aldrin, methoxychlor, pendimethalin, polycyclic aromatic compounds, trifluralin,

Materials Accounting: U.S. EPA is examining additional data elements including throughput information to measure waste management. U.S. EPA published an advanced notice of proposed rule making (ANPR) on October 1, 1996 to seek comment on the addition of this information which includes the quantity of chemical used, the quantity remaining in the final product, and quantity remaining in the waste stream. This expansion may occur after the Facility Expansion.

Small Source Exemption: On November 28, 1994, U.S. EPA finalized an exemption for facilities which generate a small quantity of waste. This exemption is the result of a petition submitted by the national Small Business Administration to exempt low level releases. The exemption applies to facilities which generate less than five hundred pounds of a listed chemical which is released to the environment, treated, recycled, or used for energy recovery, and use less than one million pounds of the toxic chemical in a calendar year. The facility would be permitted to file a certification statement instead of a full Form R. This exemption is also referred to as the alternative threshold. The first certification statements were accepted July 1, 1996. This alternate threshold reporting form is referred to as Form A.

Facility Expansion: On May 1, 1997, U.S. EPA finalized the addition of non-manufacturing industrial sectors. Seven industrial groups were added: metal mining, coal mining, coal and oil-fired electricity generating facilities, commercial hazardous waste treatment facilities, chemicals and allied products (wholesale), petroleum bulk stations (wholesale), and solvent recovery services. Reports for these facilities were filed July 1, 1999, covering calendar year 1998.

OHIO EPA PROGRAMS RELATED TO TRI CHEMICALS

The availability of TRI data has increased awareness of toxic chemicals within Ohio, and has focused attention on the reduction and management of these chemicals. EPCRA does not mandate the control of toxic releases or require reduction of the releases of toxic chemical or chemical usage. There are numerous other programs within Ohio EPA that directly impact the management of TRI chemicals through the issuance of permits or through other regulatory or non-regulatory activities. Most releases reported under TRI are regulated through air, water, and/or land disposal permits. The following descriptions provide an understanding of how some of these programs contribute toward reducing TRI releases, waste generation, and the risks associated with toxic chemicals.

Pollution Prevention: The Office of Pollution Prevention (OPP) was established on July 1, 1993 as part of the state budget bill. OPP works with companies on a voluntary, non-regulatory basis to help them modify their operating processes to generate less pollution in a cost-effective and technically feasible manner. OPP provides several services to industrial facilities. OPP provides free on-site and other types of technical assistance for pollution prevention activities. Copies of hundreds of pollution prevention documents are available upon request and electronically through the World Wide Web at http://www.epa.state.oh.us/opp. OPP provides free assistance with completing pollution prevention plans; provides assistance in identifying and implementing pollution prevention credit projects to mitigate portions of environmental enforcement penalties in conjunction with other Ohio EPA Divisions and the Ohio Attorney General's Office. OPP provides low-interest loans (2/3rds of prime) from $25,000 to $150,000 to businesses and facilities with less than 500 employees on-site in conjunction with the Ohio Department of Development. OPP also provides recognition for pollution prevention efforts through the "Ohio Prevention First" voluntary pollution prevention planning program and the annual Governor's Awards program.

Division of Surface Water: Ohio EPA's Division of Surface Water (DSW) regulates industries which discharge toxic chemicals to Publicly Owned Treatment Works or POTWs through its pretreatment program. These industries are regulated by the community if the community has a state-approved pretreatment program, otherwise, Ohio EPA directly regulates these industries. In either case, significant industrial facilities are issued permits which contain discharge limitations as well as requirements for monitoring the waste streams. Noncomplying facilities face enforcement action by either the community or Ohio EPA.

DSW regulates surface water discharges in Ohio primarily through the issuance of National Pollutant Discharge Elimination System (NPDES) permits. Of the approximately 400 pollutants regulated by NPDES permits, 126 have been designated as priority pollutants under the Clean Water Act. Approximately 80 of these are TRI chemicals.

Division of Drinking and Ground Water: Ohio EPA's Division of Drinking and Ground Water (DDAGW) regulates facilities which use underground injection in Ohio. All deep injection wells are permitted and routinely monitored by Ohio EPA. These permits include stringent requirements for monitoring pressures, volumes injected, and mechanical integrity of the wells.

Division of Hazardous Waste Management: Ohio EPA's Division of Hazardous Waste Management (DHWM) regulates generators of hazardous waste and facilities which treat, store, or dispose of such waste. Ohio EPA assigns an identification number to hazardous waste handlers regulated under the Resource Conservation and Recovery Act (RCRA). Facilities using a surface impoundment to dispose of TRI chemicals may also fall under the regulations of the Clean Water Act and be regulated by the Division of Surface Water. Not all TRI chemicals are considered hazardous under RCRA. Some discharges to land may be considered solid waste, which is not regulated as hazardous. Large quantity generators and facilities that have a permit to treat, store, or dispose of RCRA-regulated waste must submit an Annual Hazardous Waste Report to DHWM.

Division of Air Pollution Control: Ohio EPA's Division of Air Pollution Control (DAPC) regulates new sources of toxic air emissions through the air permitting program. Each potential new source of air toxics undergoes a technical evaluation through which each toxic chemical's potential threat to human health and the environment is reviewed.

Six TRI chemicals are currently regulated under U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP). They are benzene, asbestos, inorganic arsenic, vinyl chloride, beryllium and mercury. U.S. EPA creates NESHAP emission standards for air pollutants which may pose a serious health hazard on a national level, but are not covered by the National Ambient Air Quality Standards. The National Ambient Air Standards are levels of air quality established by U.S. EPA to protect the public and the environment. These levels have been adopted for ozone, lead, nitrogen dioxide, sulfur dioxide, particulate matter, and carbon monoxide.

The Clean Air Act Amendments of 1990 requires U.S. EPA to regulate 189 additional air toxic chemicals, 173 of which are on the TRI list. U.S. EPA regulates sources of air toxics by issuing maximum achievable control technology (MACT) standards for source categories of air toxics. U.S. EPA was mandated to issue MACT standards for 40 source categories by November 1992, with all categories covered in 10 years.

Section 112(r) of the Clean Air Act Amendments of 1990 created a risk management planning program. The purpose of these regulations is to prevent accidental releases of regulated substances and to reduce the severity of those releases that do occur. A facility is subject to the regulation if they have any listed regulated substance above a given threshold in a single on-site process. U.S. EPA estimates that the program affects approximately 1,700 facilities in Ohio. We anticipate that many of the facilities reporting under TRI will also report under 112(r). The risk management plans were submitted to U.S. EPA in June 1999. In 1998, legislation was passed through which Ohio EPA was granted authority to administer and enforce the program. Ohio EPA received delegated authority from U.S. EPA to oversee the program in January 2000.

EXPLANATION OF TERMS

Discharge to Publicly Owned Treatment Works (POTWs) - A POTW is a wastewater treatment facility owned by a municipality or other unit of local government. Some TRI facilities generate wastewater which is transferred through pipes or sewers to a POTW. Treatment or removal of a chemical from the wastewater depends upon the nature of the chemical, as well as the treatment methods present at the POTW. Chemicals that are easily utilized as nutrients by microorganisms, or have a low solubility in water, are likely to be removed to some extent. Chemicals that are volatile and have a low solubility in water may evaporate into the atmosphere. Not all TRI chemicals can be treated or removed by a POTW. Some chemicals, such as metals, may be removed but are not destroyed, and may be disposed of in landfills or discharged into receiving waters.

Quantity Recycled Off-Site - This is the quantity of toxic chemical that was shipped for recycling, not the amount of chemical recovered at the off-site location.

Quantity Recycled On-Site - This is the quantity of toxic chemical recovered at the facility that generated it and made available for further uses.

Quantity Treated On-Site - This is the quantity of toxic chemical destroyed or converted to a chemical that is not reportable under TRI in on-site waste treatment operations.

Quantity Used for Energy Recovery - This is the quantity of toxic chemical that was combusted in some form of energy recovery device, such as a furnace or a boiler. The toxic chemical should have a heating value high enough to sustain combustion. The use of a chemical as a fuel constitutes energy recovery.

Releases to Air - Releases to air are reported as stack or fugitive emissions. Stack emissions are releases to air that occur through stacks, vents or other confined air streams. Fugitive emissions are releases that are not through a confined air stream. Fugitive emissions include evaporative losses from surface impoundments, spills, and releases from building ventilation systems.

Releases to Water - Releases to water include discharges to streams, rivers, lakes, and other bodies of water. Releases due to stormwater runoff are also reportable under TRI.

Releases to Land - Releases to land occur within the boundaries of the reporting facility. Releases to land included disposal of toxic chemicals in landfills, land treatment/application farming (in which a waste containing a listed chemical is applied to or incorporated into soil), surface impoundments (which are uncovered holding areas used to evaporate and/or settle waste materials), and other land disposal methods (such as leaks, spills, or waste piles)

Transfers Off-site for Treatment and Disposal - Waste transferred off-site for disposal is generally either released to land at an off-site facility or injected underground. Toxic chemicals transferred off-site for treatment may be treated through a variety of methods including neutralization, incineration, and physical separation. These methods result in varying degrees of destruction of the chemical.

Underground or Deepwell Injection - Underground injection is the contained release of a fluid into a subsurface well for the purpose of waste disposal. Class I wells are used to inject liquid hazardous wastes or dispose of industrial and municipal waste waters beneath the lowermost underground source of drinking water.

SUMMARY OF DATA

In 1998, 378.8 million pounds of toxic chemicals were reported as having been released to the environment and transferred off-site for treatment or disposal. The data presented for 1998, including the listings of top companies, chemicals and counties, reflects the TRI data as reported July 1, 1999. Changes to the list of reportable chemicals create difficulties in presenting historical TRI data in an accurate and understandable form. This report presents the data in the following matter:

- Releases for chemicals which were "redefined" were modified in this report to reflect the change if it did not require a case by case evaluation. Non-aerosol forms of hydrochloric acid are no longer reportable. Therefore, only air releases of hydrochloric acid were included in the TRI data presented in this report. Ammonia was "redefined" for calendar year 1994; only 10% of aqueous ammonia is now reportable. Because this change requires a case by case evaluation, past years' data was not modified. Ammonium nitrate was delisted for calendar year 1995. However, the ammonia portion is still reportable and the nitrate portion is reportable as nitrate compounds. Due to the change in the reporting requirement for ammonia in 1994, only ten percent of the ammonia portion of ammonium nitrate was reportable for calendar year 1995. Only ten percent of the ammonia portion of ammonium nitrate was included in the data presented in this report.

- To accurately represent trends in the toxic releases, the chemicals which were added, "redefined" or delisted, and the expansion industries were not included in the calculation of trends for the executive summary and the figures representing trends within this report. Table 2A represents the TRI data as it was reported each year. Table 2B represents the TRI data used to calculate trends. All Phase 1 expansion chemicals, delisted chemicals or "redefined" chemicals, and the expansion industries were excluded from the data in Table 2B, so that the historical trends analysis would reflect true changes in the reported releases and not reflect changes in the reporting requirements.

- Throughout this report, TRI data are referred to as "total releases and transfers." Total releases and transfers refer to on-site releases to air, water, land; deepwell injection; discharges to POTWs; and off-site transfers for treatment and disposal only. The Pollution Prevention Act of 1990 added the reporting of transfers off-site for recycling and energy recovery. For the purpose of this report, transfers for recycling and energy recovery are grouped separately from transfers for treatment and disposal.

- The addition of hazardous waste treatment facilities, and other non-manufacturing industrial sectors has resulted in the potential to double count releases. Manufacturing facilities report transfers off-site to these non-manufacturing facilities, and, in turn, the non-manufacturing facilities report their releases to the air, water, land and transfers off-site. To calculate total releases and transfers within the state, transfers off-site by manufacturing facilities to facilities which reported the same chemical were not included in the data presented as transfers off-site or total releases and transfers. To calculate county totals, transfers off-site by manufacturing facilities to facilities located in the same county which reported the same chemical were not included in the data presented as transfers off-site or total releases and transfers.

Statewide totals of on-site releases, off-site transfers, and on-site waste management for reporting years 1987 to 1998 are provided in Table A and 2B. Table 2A represents the TRI data as reported by facilities, including the data for delisted, added, and modified chemicals and the expansion industrial sectors . Table 2B does not include data for chemicals that have been delisted, added or modified, and for new industrial sectors which were added to TRI in order to allow for historical trend analysis.

Table 2A: Summary of TRI Data in Millions of Pounds Per Year - All Data As Reported (Including All Chemicals and Facilities)

Environmental Medium	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Air	136.82	140.37	132.76	115.09	104.66	91.96	83.65	79.88	75.38	71.06	67.19	159.03
Water	7.77	4.68	5.95	5.87	5.98	4.76	4.76	1.20	5.82	6.11	5.98	6.07
Deepwell Injection	22.30	17.08	16.31	24.80	28.38	24.03	25.19	14.49	14.47	13.68	11.58	31.17
Land On-site	53.62	74.18	33.81	25.01	23.07	22.18	19.51	21.75	30.26	28.35	26.31	89.99
POTW	20.99	22.39	18.07	24.71	22.40	21.55	16.81	8.89	16.58	16.85	17.22	16.82
Transfers Off-site for Treatment & Disposal	211.46	210.92	104.35	81.81	53.15	58.63	60.57	47.38	46.18	48.35	60.18	75.74
Total Releases & Transfers	452.96	469.62	311.25	277.29	237.64	223.12	210.48	173.58	188.69	184.40	188.48	378.83
Transfers Off-Site to Facilities Report Under TRI												13.16
Adjusted Total Releases and Transfers (Does not include transfers off-site to facilities which report under TRI)												365.67
Off-Site Energy Recovery	NA	NA	NA	NA	36.15	34.38	28.25	37.21	38.10	40.75	33.01	101.34
On-Site Energy Recovery	NA	NA	NA	NA	103.43	106.84	104.33	95.23	90.44	96.34	107.66	116.97
Off-Site Recycling	NA	NA	NA	NA	153.65	189.95	205.46	229.64	222.05	194.45	188.73	187.36
On-Site Recycling	NA	NA	NA	NA	547.45	679.20	581.66	263.94	348.99	327.83	221.42	289.59
On-Site Treatment	NA	NA	NA	NA	448.98	487.77	383.26	266.88	162.31	153.31	142.23	221.75
Number of Reporting Facilities	1,398	1,611	1,774	1,795	1,760	1,768	1,776	1,752	1,697	1,643	1,623	1,676
Number of Form R's	5,525	6,343	6,514	6,555	6,340	6,227	6,161	5,757	5,092	4,864	4,594	5,294
Number of Form A's	NA	NA	NA	NA	NA	NA	NA	NA	489	554	754	1,065
No. of Chemicals Reported	171	177	181	182	182	185	191	184	235	224	213	306

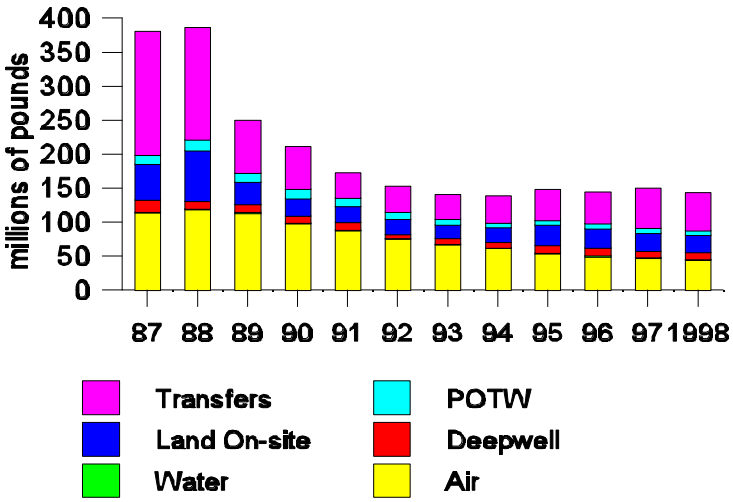
Table 2B: Summary of TRI Data in Millions of Pounds Per Year
Excluding Chemicals Which Were Not Reportable in All Reporting Years

Environmental Medium	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Air	114.41	118.64	113.76	98.79	87.64	75.60	67.74	62.12	53.86	49.72	47.54	44.10
Water	1.42	1.35	1.46	0.57	1.46	0.79	0.55	0.63	1.16	1.49	1.04	0.97
Deepwell Injection	16.87	11.51	10.96	10.54	11.70	5.99	8.64	8.21	11.78	11.57	9.42	11.40
Land On-site	53.30	74.13	33.76	24.96	23.01	22.11	19.38	21.63	30.10	28.25	26.19	25.34
POTW	12.97	15.51	12.81	13.86	11.82	10.55	8.82	6.69	6.37	7.50	7.67	6.14
Transfers Off-site for Treatment & Disposal	182.31	164.78	77.16	62.89	37.47	37.58	35.39	39.37	44.28	46.24	58.36	55.49
Total Releases & Transfers	381.27	385.91	249.91	211.60	173.10	152.62	140.54	138.65	147.56	144.76	150.21	143.44
Off-Site Energy Recovery	NA	NA	NA	NA	36.14	34.38	28.25	37.21	37.51	40.25	32.35	33.42
On-Site Energy Recovery	NA	NA	NA	NA	103.42	106.66	104.15	95.05	82.73	87.53	98.05	107.53
Off-Site Recycling	NA	NA	NA	NA	138.68	173.78	187.18	214.33	220.31	192.98	187.05	183.00
On-Site Recycling	NA	NA	NA	NA	168.38	294.01	240.46	209.55	332.98	302.82	200.92	245.54
On-Site Treatment	NA	NA	NA	NA	155.26	186.66	173.66	124.87	132.20	135.87	125.91	125.69

TRI TRENDS

From 1988 to 1995, Ohio facilities steadily decreased releases. In 1996 and 1997, total releases and transfers increased slightly. In 1998, total releases and transfers have decreased slightly. There are several noteworthy differences between 1997 and 1998, as shown in Table 2B and Figure 2. Increases and decreases in releases can be attributed to many factors, including changes in production, a change in the product produced, and pollution prevention efforts made by facilities to decrease releases.

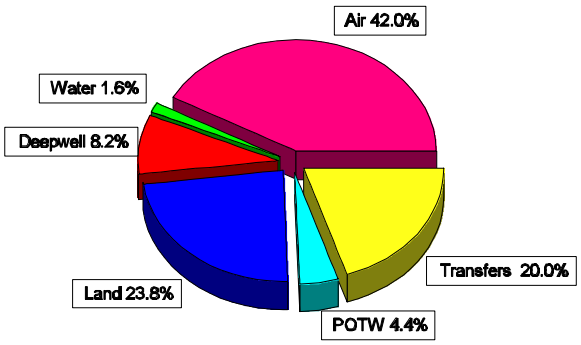
Figure 2: 1987 - 1997 TRI Trends



Air emissions decreased by 5.86% between 1997 and 1998. Nine facilities decreased emissions more than 300,000 pounds, with the largest reduction due to Ford Motor Company, located in Lorain County. These decreases were attributable to changes in processes or solvents used, the installation of additional control equipment, and the shut down of a process.

Water releases decreased by 4.84%. This decrease was primarily due to Lukens Steel, located in Stark County, which decreased production in 1998.

Figure 1: 1998 Toxic Releases and Transfers
as reported for calendar year 1998



Releases to land on-site decreased by 3.26%. The facility contributing the largest reduction was GM Powertrain Defiance, located in Defiance County, reporting a decrease of more than 6 million pounds.

Deepwell Injection decreased 15.3% between 1996 and 1997, and increased 15% between 1997 and 1998. BP Chemical, located in Allen County, reduced its production in 1997, which resulted in a decrease of nearly 1.3 million pounds, and increased production in 1998, resulting in an increase in deepwell injection of 1.7 million pounds.

Transfers Off-site for treatment and disposal decreased 4.55% between 1997 and 1998. Several facilities contributed to this decrease, with three facilities reporting decreases of more than one million pounds. Two Millennium Inorganic facilities, located in Ashtabula County, decreased transfers off-site by 2.85 and 2.2 million pounds respectively. This decrease corresponded with a reported increase in land on-site releases by Millennium Inorganic as material was disposed of in an on-site

landfill instead of being transferred off-site.

Energy recovery on-site increased by 8.65%. This was primarily due to a production increase by Lafarge Corporation, located in Paulding County, which reported an increase of more than 12 million pounds. Off-site energy recovery increased by 7.56% with three facilities reporting an increase of one million pounds each. These changes were primarily due in part to an increase in production.

On-site recycling increased by 19.22%. The largest increase was reported by American Steel Foundries located in Stark County, which reported an increase of 53.8 million pounds. Off-site recycling decreased 1.74% from 1997 to 1998. Ten facilities decreased off-site recycling by more than one million pounds, with Moen, Inc., located in Lorain County, reporting the largest decrease of 6.65 million pounds. These changes were due a change in the interpretation of what is reportable as a waste. Offsetting these large reported decreases, three facilities reported increases in recycling of more than one million pounds each.

Approximately 182 facilities implemented source reduction activities during calendar year 1998. Source reduction means any activity which: (1) reduces the amount of any chemical entering any waste stream or released into the environment prior to recycling, treatment, or disposal; and (2) reduces the hazard to public health and the environment associated with the release(s) of such substances. Source reduction includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. This continued level of source reduction by the reporting facilities demonstrates their commitment to continue to reduce toxic releases beyond environmental regulations.

Facilities also report their production ratios or an activity index for the current reporting year as compared to the prior reporting year. This ratio is to demonstrate the relative use of a particular toxic chemical. This ratio or index must be based on some variable of production or activity which reflects the toxic chemical usage. A ratio of 1.1 would indicate a 10% increase in production related to the reported chemicals. In 1998, 47.3% of the TRI facilities reported an increase in production. Table 3 represents the changes in production reported by facilities covered by TRI.

Table 3: Changes in Production from 1997 to 1998

Changes in Production (production ratio)	% of Reporting Industry
Production increased more than 30%	11.0
Production increased between 20% - 30%	5.1
Production increased between 10% - 20%	13.9
Production increased less than 10%	17.3
No change in production	8.3
Production decreased less than 10%	15.0
Production decreased between 10% - 20%	11.7
Production decreased between 20% - 30%	3.7
Production decreased more than 30%	4.0
Not reported	10.0

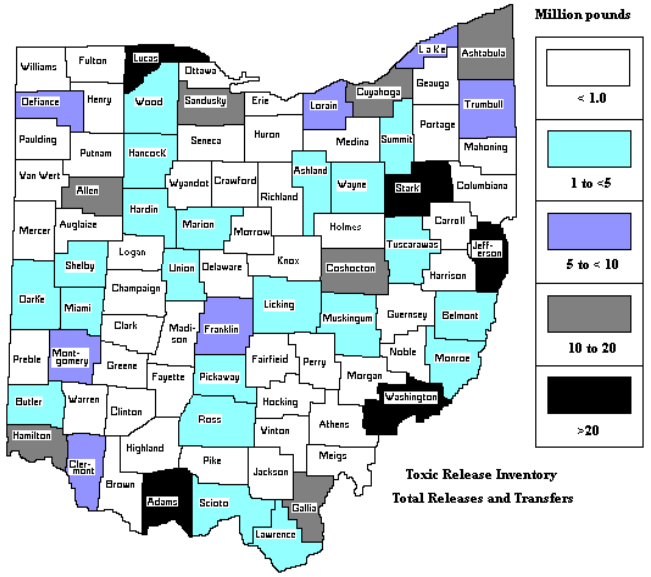
TOTAL RELEASES AND TRANSFERS FOR 1998*

10 Top Counties

	Counties	Pounds
1.	Lucas	55,420,918
2.	Jefferson	32,283,119
3.	Washington	31,886,033
4.	Stark	24,843,796
5.	Adams	21,583,296
6.	Allen	19,515,790
7.	Sandusky	19,046,110
8.	Hamilton	17,049,176
9.	Gallia	14,241,695
10.	Ashtabula	13,172,710

10 Top Chemicals

Chemical	Pounds
1. Hydrochloric Acid	71,012,577
2. Zinc & Compounds	67,106,168
3. Manganese & Compounds	33,055,970
4. Sulfuric Acid	21,833,516
5. Nitrate Compounds	19,141,210
6. Chromium & Compounds	14,063,240
7. Ammonia	13,908,264
8. Barium & Compounds	9,430,518
9. Hydrogen Fluoride	9,301,526
10. Nitric Acid	6,884,153



10 Top Facilities

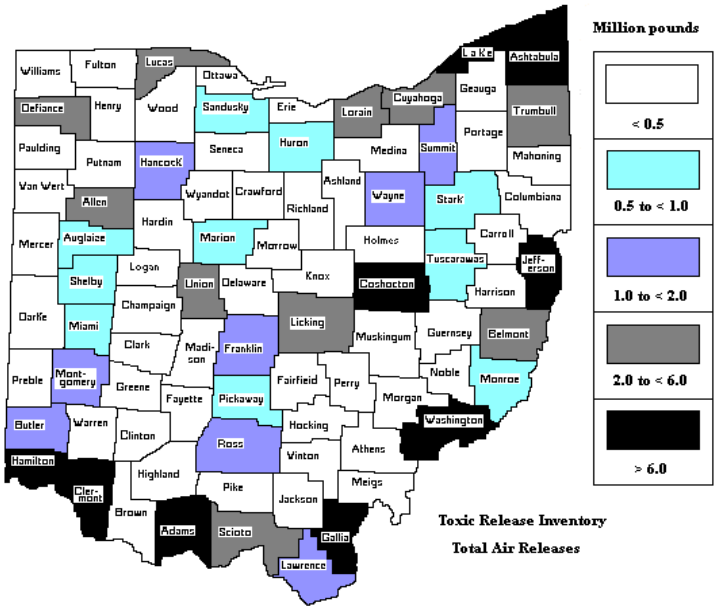
	Facility - County	Pounds
1.	Envirosafe Services of Ohio Inc. - Lucas	50,604,038
2.	Waste Management of Ohio Inc. - Sandusky	17,913,118
3.	Dayton Power & Light J.M. Stuart Station - Adams	16,091,282
4.	Elkem Metals Co. - Washington	14,667,177
5.	First Energy - W.H. Sammis Plant- Jefferson	14,263,327
6.	BP Chemicals Inc. - Allen	13,908,264
7.	Cardinal Plant - Jefferson	13,182,840
8.	AEP Muskingum River Plant - Washington	8,909,331
9.	Ohio Valley Electric - Kyger Creek Station - Gallia	8,731,086
10.	Envirite of Ohio - Stark	8,231,920

* Does not include transfers off-site to facilities reporting the same chemical.

AIR RELEASES FOR 1998*

10 Top Counties

	Counties	Pounds
1.	Jefferson	23,811,556
2.	Adams	17,270,474
3.	Washington	13,927,844
4.	Gallia	10,426,324
5.	Coshocton	7,669,151
6.	Lake	7,667,675
7.	Clermont	7,135,647
8.	Hamilton	6,699,902
9.	Ashtabula	6,378,434
10.	Allen	5,523,306



10 Top Chemicals

	Chemical	Pounds
1.	Hydrochloric Acid	70,941,193
2.	Sulfuric Acid	21,833,262
3.	Ammonia	10,859,659
4.	Hydrogen Fluoride	6,147,180
5.	Carbonyl Sulfide	4,809,127
6.	Methanol	4,319,091
7.	Xylene - mixed isomers	4,249,457
8.	Certain Glycol Ethers	3,978,708
9.	Toluene	3,571,499
10.	Methyl Ethyl Ketone	3,322,963

10 Top Facilities

	Facility - County	Pounds
1.	Dayton Power & Light J.M. Stuart Station - Adams	12,808,504
2.	First Energy - W.H. Sammis Plant- Jefferson	12,115,408
3.	Cardinal Plant - Jefferson	11,323,277
4.	AEP Muskingum River Plant - Washington	7,930,873
5.	Ohio Valley Electric - Kyger Creek Station - Gallia	7,707,645
6.	First Energy - East Lake Plant - Lake	6,346,570
7.	AEP Conesville Plant - Coshocton	6,132,623
8.	CG&E Beckjord Station - Clermont	5,416,190
9.	CG&E Miami Fort Station - Hamilton	5,252,883
10.	Dayton Power & Light - Killen Station - Adams	4,461,970

* All data included

RELEASES TO WATER FOR 1998*

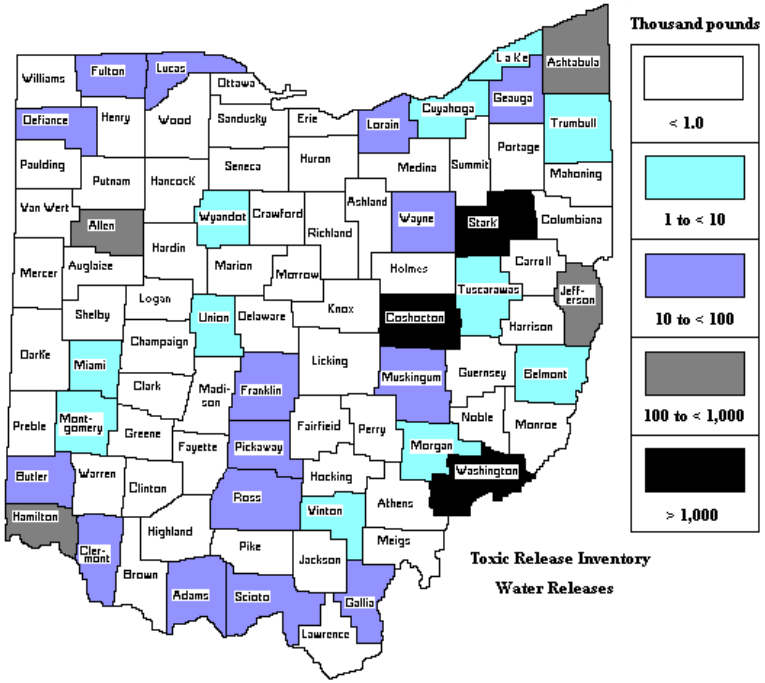
10 Top Counties

	Counties	Pounds
1.	Coshocton	2,004,214
2.	Stark	1,431,410
3.	Washington	1,297,918
4.	Ashtabula	323,674
5.	Hamilton	190,477
6.	Jefferson	189,505
7.	Allen	144,925
8.	Muskingum	53,560
9.	Clermont	52,226
10.	Scioto	50,631

10 Top Chemicals

	Chemical	Pounds
1.	Nitrate Compounds	4,320,341
2.	Manganese & Compounds	869,436
3.	Ammonia	388,685
4.	Zinc & Compounds	106,397
5.	Barium & Compounds	95,423
6.	Methanol	55,205
7.	Copper & Compounds	35,714
8.	Nickel & Compounds	32,715
9.	Formaldehyde	22,110
10.	Chromium & Compounds	21,119

*All data included



10 Top Facilities

	Facility - County	Pounds
1.	Armco Inc. Coshocton Stainless - Coshocton	2,001,550
2.	J&L Specialty Steel Inc. - Stark	1,100,143
3.	Elkem Metals Co. - Washington	773,000
4.	Shell Chemical Co. - Washington	470,925
5.	Lukens Steel Corp. Massilon Plant - Stark	214,085
6.	Millennium Inorganic Chemicals Plant 1 - Ashtabula	180,000
7.	Cardinal Plant	155,696
8.	Millennium Inorganic Chemicals Plant 2 - Ashtabula	140,000
9.	Alliance Midwest Tubular - Stark	104,071
10.	Clark Refining & Marketing Inc. - Allen	92,500

DEEPWELL INJECTION FOR 1998*

Counties

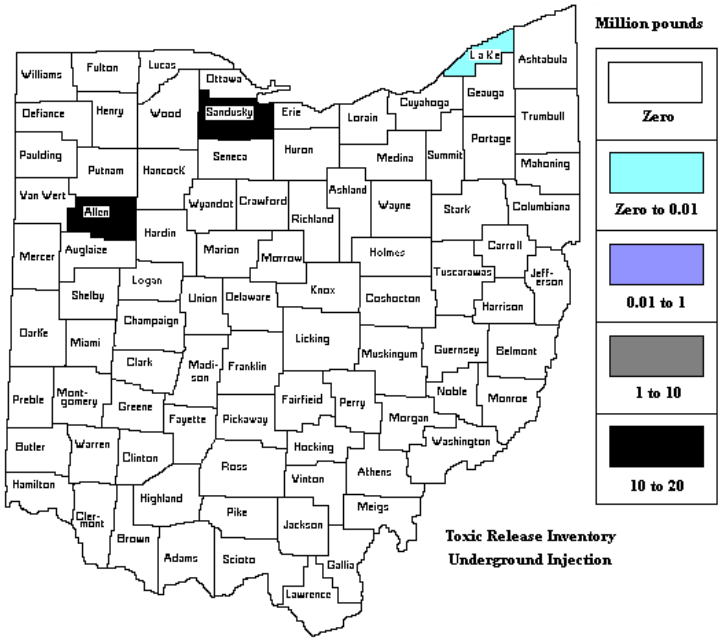
	Counties	Pounds
1.	Sandusky	17,841,000
2.	Allen	13,323,037
3.	Lake	6,432

Note - Only three facilities currently report on-site deepwell injection.

10 Top Chemicals

	Chemical	Pounds
1.	Acetonitrile	6,850,000
2.	Nitric Acid	5,300,000
3.	Nitrate Compounds	5,044,000
4.	Hydrogen Fluoride	2,900,000
5.	Phosphoric Acid	2,400,000
6.	Ammonia	1,723,400
7.	Acrylamide	1,400,000
8.	Cyanides	1,032,000
9.	Acetamide	900,035
10.	Chromium & Compounds	660,255

***** All data included



Facilities

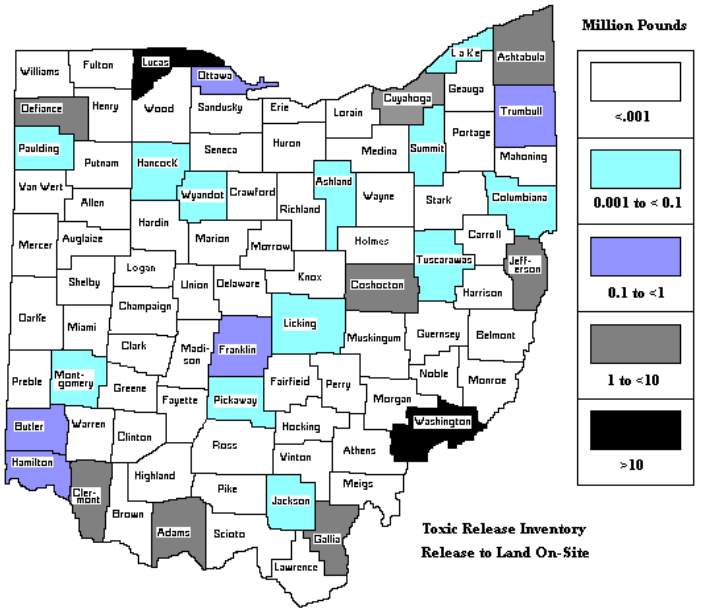
	Facility - County	Pounds
1.	Waste Management of Ohio - Sandusky	17,841,000
2.	BP Chemicals - Allen	13,323,037
3.	Tomen Agro Perry - Lake	6,432

Note - Only three facilities currently report on-site deepwell injection.

RELEASES TO LAND ON-SITE FOR 1998*

10 Top Counties

	Counties	Pounds
1.	Lucas	50,599,933
2.	Washington	10,815,020
3.	Defiance	6,338,140
4.	Ashtabula	5,300,020
5.	Adams	4,300,000
6.	Gallia	3,777,740
7.	Clermont	1,734,085
8.	Jefferson	1,698,426
9.	Cuyahoga	1,365,140
10.	Coshocton	1,075,618



10 Top Chemicals

	Chemical	Pounds
1.	Zinc & Compounds	48,298,950
2.	Manganese& Compounds	22,310,751
3.	Barium & Compounds	5,930,058
4.	Lead & Compounds	4,567,890
5.	Chromium & Compounds	3,031,092
6.	Copper & Compounds	1,971,470
7.	Nickel & Compounds	1,175,700
8.	Arsenic & Compounds	762,759
9.	Aluminum (fume & dust)	700,000
10.	Cobalt & Compounds	332,864

10 Top Facilities

	Facility - County	Pounds
1.	Envirosafe Services of Ohio, Inc. - Lucas	50,522,000
2.	Elkem Metals - Washington	9,864,000
3.	GM Powertrain Defiance - Defiance	6,274,074
4.	Millennium Inorganic Chemicals Plant 2 - Ashtabula	3,300,000
5.	Dayton Power & Light - J.M. Stuart Station - Adams	3,270,000
6.	AEP Gavin Plant - Gallia	2,769,640
7.	Millennium Inorganic Chemicals Plant 1 - Ashtabula	2,000,000
8.	Cardinal Plant - Jefferson	1,696,280
9.	LTV Steel Co. Cleveland Works - Cuyahoga	1,358,140
10.	CG&E W.H. Zimmer Generating Station - Clermont	1,335,040

* All data included

DISCHARGES TO POTW FOR 1998*

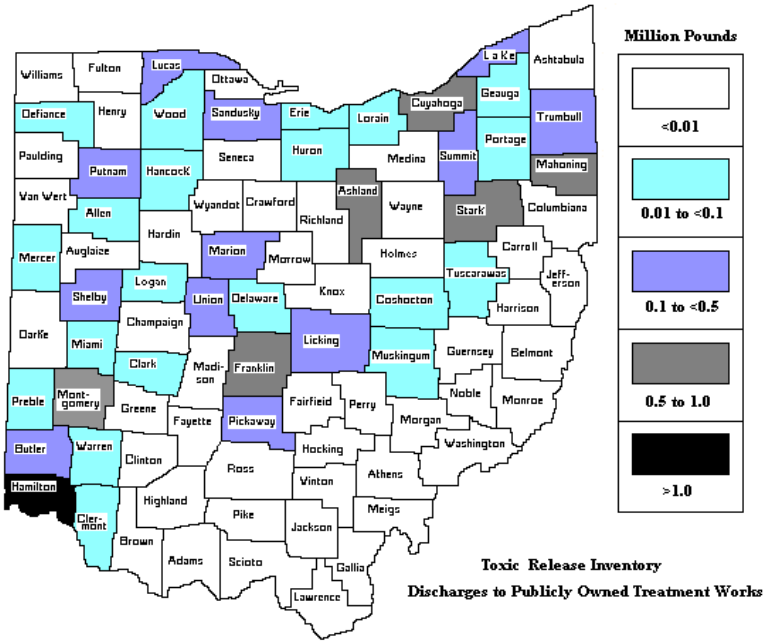
10 Top Counties

	Counties	Pounds
1.	Hamilton	9,142,825
2.	Franklin	970,908
3.	Montgomery	956,521
4.	Ashland	868,350
5.	Cuyahoga	684,108
6.	Stark	604,672
7.	Mahoning	500,836
8.	Shelby	428,801
9.	Summit	271,568
10.	Pickaway	220,076

10 Top Chemicals

	Chemical	Pounds
1.	Nitrate Compounds	9,335,730
2.	Methanol	3,547,245
3.	Certain Glycol Ethers	873,051
4.	Ammonia	649,896
5.	Sodium Nitrite	560,416
6.	Ethylene Glycol	227,672
7.	Phosphoric Acid	208,753
8.	Formaldehyde	177,244
9.	Nitric Acid	165,840
10.	Potassium	119,718

* All data included



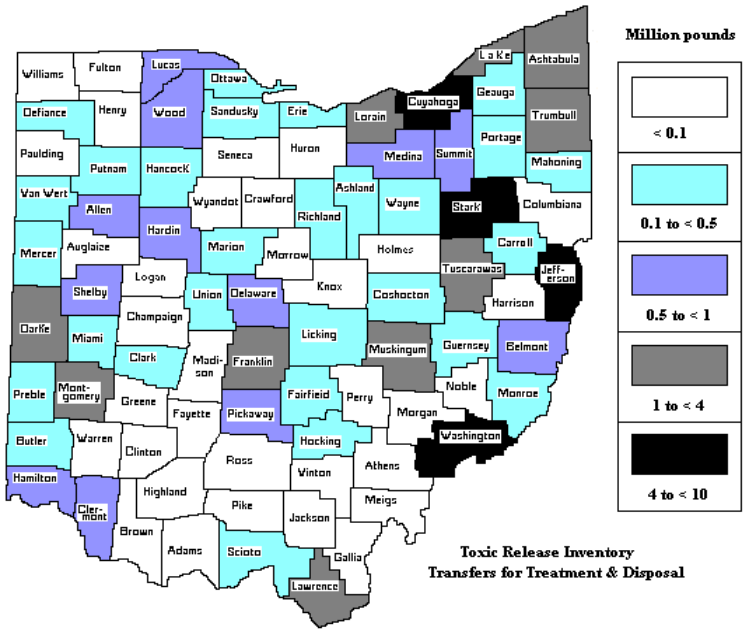
10 Top Facilities

	Facility - County	Pounds
1.	Shepherd Chemical Co. - Hamilton	4,052,741
2.	Cincinnati Specialties - Hamilton	1,376,792
3.	Henkel Corp. Chemical Group - Hamilton	1,217,146
4.	Tremco Inc. - Ashland	840,000
5.	BF Goodrich Hilton Davis - Hamilton	738,710
6.	GE Superabrasives - Franklin	505,905
7.	GE Austintown Products - Mahoning	500,000
8.	GMTG Moraine Assembly - Montgomery	408,550
9.	GE Ivanhoe Road Plant - Cuyahoga	389,000
10.	Stolle Products - Shelby	359,185

TRANSFERS OFF-SITE FOR 1998*

10 Top Counties

	Counties	Pounds
1.	Stark	22,142,752
2.	Cuyahoga	7,200,863
3.	Jefferson	6,583,632
4.	Washington	5,845,251
5.	Muskingum	3,171,559
6.	Lorain	3,141,761
7.	Montgomery	2,512,689
8.	Franklin	1,931,703
9.	Trumbull	1,832,273
10.	Tuscarawas	1,272,381



10 Top Chemicals

	Chemical	Pounds
1.	Zinc & Compounds	18,108,323
2.	Chromium & Compounds	10,309,029
3.	Manganese & Compounds	9,194,501
4.	Nitric Acid	4,513,898
5.	Nickel & Compounds	4,289,326
6.	Barium & Compounds	3,236,135
7.	Lead & Compounds	2,814,633
8.	Cyclohexane	1,730,633
9.	Xylene (mixed isomers)	1,670,364
10.	Copper & Compounds	1,523,765

10 Top Facilities

	Facility - County	Pounds
1.	Envirite of Ohio Inc. - Stark	8,129,110
2.	American Steel Foundries - Stark	5,880,580
3.	Wheeling Pittsburgh Steel Mingo - Jefferson	4,181,900
4.	Timken Co. Faircrest Steel - Stark	4,112,000
5.	Eveready Battery Co. - Washington	3,139,650
6.	Armco Inc. - Muskingum	2,784,150
7.	Timken Co. Harrison Steel - Stark	2,482,630
8.	First Energy W.H. Sammis Plant - Jefferson	2,134,500
9.	Shell Chemical Co. - Washington	1,834,324
10.	Chemtron Corp. - Lorain	1,507,758

* All data included

RELEASES BY INDUSTRY

Figure 3: Releases and Transfers by Industrial Sector

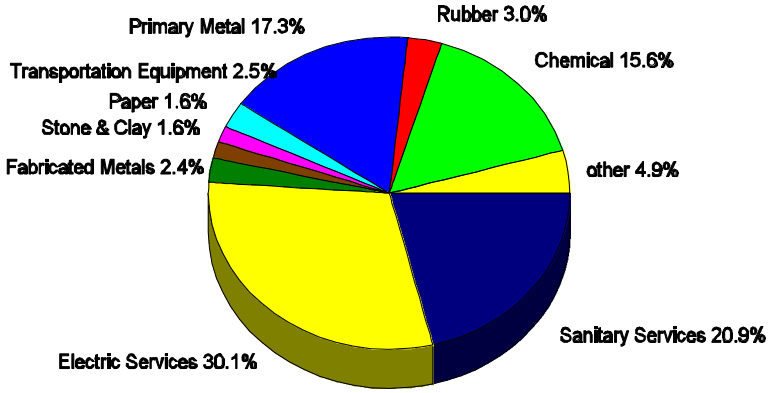


Table 4 presents the TRI releases and transfers by industrial group or Standard Industrial Classification (SIC) codes. Facilities report their SIC codes on the Form R. Manufacturing facilities in SIC codes 20 through 39 were required to report under TRI through 1998. U.S. EPA recently added seven additional SIC codes, which reported for reporting year 1998. In addition, federal facilities are required to report to TRI under a presidential executive order. Federal facilities may fall in a variety of SIC codes, both within and outside of the manufacturing SIC code range. Federal facilities which fall outside of SIC codes 20 through 30 are grouped as "other" in Table 4.

In analyzing releases by manufacturing industry, trends remain fairly constant. The industry groups with the largest quantities of TRI releases and transfers for treatment and disposal in 1997 were SIC code 33 - primary metals (65.5 million pounds) and SIC code 28 - chemicals (58.99 million pounds). The following table represents the industrial categories and their reported releases and transfers under TRI.

The new industrial sectors accounted for more than 50 percent of the releases and transfers reported. SIC code 49 includes both electric services (coal and oil fired electric generating facilities) and sanitary services (hazardous waste treatment facilities subject to RCRA Subtitle C). The electric generating facilities accounted for releases and transfers of 114 million pounds, and the hazardous waste treatment facilities accounted for 79.3 million pounds of releases and transfers.

Table 4: Releases and Transfers by SIC Code

SIC Code	Industry Group	No. of Reporting Facilities	No. of Form Rs and Form As	On-Site Releases (Air, Water, Land On-site, and Deepwell Injection)	Discharges to POTW & Transfers Off-site for Treatment & Disposal	Transfers Off-site for Energy Recovery & Recycling	On-Site Recycling, Treatment, and Energy Recovery
12	Coal Mining	4	41	3,642	0	0	6,404
20	Food & Kindred Products	69	127	2,231,226	448,278	481,111	1,924,641
22	Textile Mill Products	13	44	1,304,193	422,350	1,360,696	5,195,143
23	Apparel	3	9	154,723	10,490	4,180	1,090,880
24	Lumber & Wood Products	24	72	425,964	132,143	1,133,003	2,152,958
25	Furniture & Fixtures	7	18	230,622	223,804	0	800
26	Paper & Allied Products	33	121	5,790,942	435,097	1,471,215	26,606,284
27	Printing & Publishing	19	24	362,906	14,472	129,503	414,979
28	Chemicals & Allied Products	280	1,464	36,489,523	22,503,085	44,695,759	156,015,880
29	Petroleum Refining	22	121	628,093	360,336	1,078,815	23,794,760
30	Rubber & Miscellaneous Plastics	202	480	7,615,324	3,886,274	3,292,488	4,438,924
32	Stone, Clay, Glass & Concrete	80	200	4,248,104	1,961,852	3,006,329	142,388,256
33	Primary Metal Industries	226	787	34,318,836	31,213,989	91,098,405	109,953,580
34	Fabricated Metal Products	276	724	5,532,284	3,440,177	21,528,989	23,327,469
35	Industrial Machinery	101	277	1,083,549	1,301,214	6,402,827	1,927,708
36	Electronic Equipment	66	176	1,104,854	2,853,878	22,352,394	10,663,497
37	Transportation Equipment	122	521	5,752,348	3,857,092	21,529,963	11,943,891
38	Instruments and Medical Goods	14	25	67,318	231,440	1,329,860	89,722
39	Miscellaneous Manufacturing	17	58	390,503	844,654	51,250	330,000
49	Electric, Gas & Sanitary Services	37	554	178,042,370	15,197,344	45,468,519	81,921,610
51	Wholesale Trade - Chemical and Petroleum Products	51	458	233,857	1,411,022	19,505,503	20,646,153
73	Business Services	8	54	251,954	1,815,096	2,783,285	3,419,459
other	Other	2	4	758	0	0	30,525

MANAGEMENT OF TRI CHEMICALS IN WASTE

The Pollution Prevention Act (PPA) of 1990 required facilities to report information about the quantities of TRI chemicals managed in waste, both on-site and off-site. The PPA established a hierarchy of waste management options in which source reduction is the preferred approach to managing waste. Source reduction is defined as a means of preventing waste from being generated. In situations where source reduction cannot be implemented, the preferred pollution prevention techniques in order of preference are recycling, energy recovery, and treatment.

The TRI data can be used to analyze trends in total quantities of TRI chemicals in waste to determine if facilities are reducing the amount of waste generated. As reported under TRI, waste falls under one of four categories based upon its final disposition. The first category is releases on-site, which includes releases to air, water, deepwell injection, and land on-site. The second category is discharges to POTWs and transfers off-site for treatment and disposal. The third category of transfers off-site for recycling and energy recovery, which includes waste recycled or used as fuel. The fourth category is waste management on-site, which includes on-site treatment, recycling, and energy recovery. The following figures provide the relative percentages of the total amount of waste generated in these four categories. As illustrated by the pie chart, the majority of waste generated never leaves the facility, but is managed on-site through treatment, recycling, or energy recovery. The on-site waste management data, when combined with the amounts released on-site and transferred off-site, is important in understanding the overall annual amount of waste which is generated at a facility.

Figure 4: Management of Total Waste

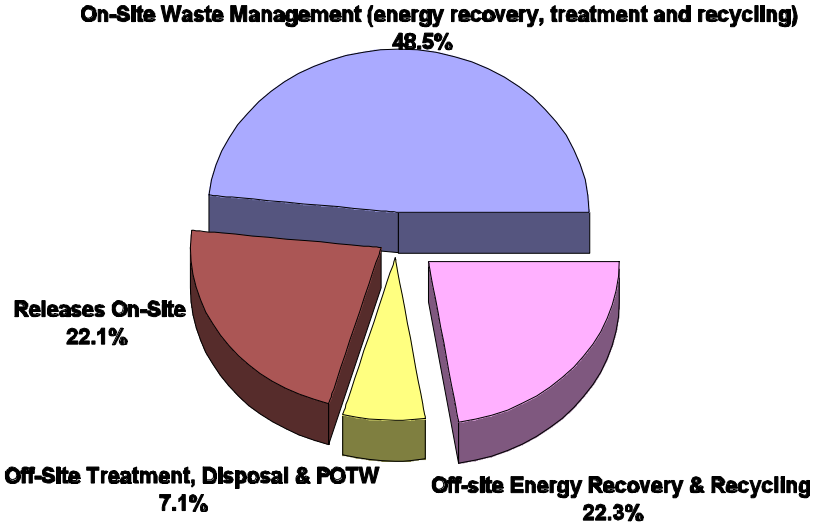
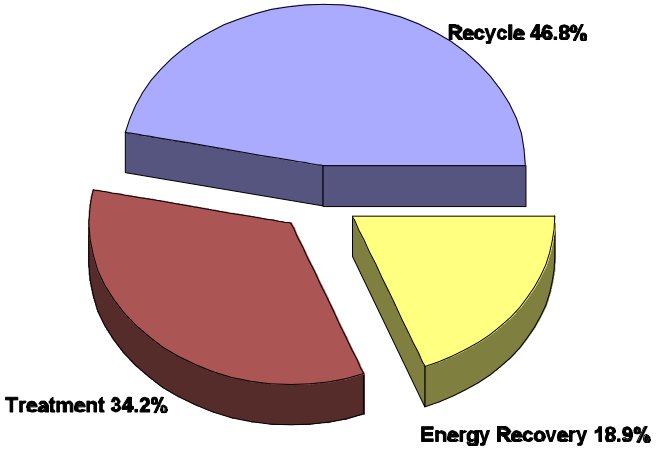


Figure 5: On-Site Waste Management



THE NATIONAL PERSPECTIVE

Ohio, a leader in technology and industry, continues to represent a significant portion of the national TRI reporting industries and releases. Table 5 represents Ohio's national ranking for each type of release. Because the complete 1998 national data was not available prior to the drafting of this report, the national ranking for 1998 was not yet available. Tables 6 and 7 identify the top ranked states for 1997 TRI data based on US EPA's national TRI report.

Table 5: Ohio's National Rank

Environmental Medium	1995	1996	1997
Air	5	5	4
Water	10	7	9
Land On-Site	4	4	3
Deepwell Injection	4	4	4
Number of Reporting Facilities	1	1	1

Table 6: Top States for Number of Reporting Facilities

Number of Reporting Facilities in 1997		
Rank	State	Number of Facilities
1.	Ohio	1,589
2.	California	1,378
3.	Illinois	1,289
4.	Pennsylvania	1,222
5.	Texas	1,217

Table 7: Top States for Releases

Releases to Air in 1997			Releases to Water in 1997			Releases to Land On-Site in 1997			Deepwell Injection in 1997		
Rank	State	Emissions in pounds	Rank	State	Releases in pounds	Rank	State	Releases in pounds	Rank	State	Injection in pounds
1.	Texas	108,366,675	1.	Louisiana	46,909,318	1.	Montana	37,719,409	1.	Texas	89,929,406
2.	Tennessee	81,947,095	2.	Pennsylvania	38,517,920	2.	New Mexico	31,624,037	2.	Louisiana	54,243,582
3.	Louisiana	74,838,852	3.	Texas	20,788,710	**3.**	**Ohio**	**28,674,261**	3.	Florida	27,506,942
4.	**Ohio**	**66,806,601**	4.	Mississippi	11,945,812	4.	Utah	27,134,462	**4.**	**Ohio**	**11,584,640**
5.	Utah	65,561,602	5.	Florida	8,636,614	5.	Illinois	24,613,731	5.	Tennessee	9,273,267
			9.	**Ohio**	**6,061,775**						

ADDITIONAL INFORMATION

Ohio EPA's Division of Air Pollution Control (DAPC) has the primary responsibility in Ohio for collecting, processing, and distributing information submitted under TRI. Additional information not contained in this report is available to the public through the TRI Program located in DAPC.

- Access to hard copy reports - The reports submitted by facilities are available for review at Ohio EPA's office located at 122 South Front Street in Columbus from 8:00 a.m. to 5:00 p.m. Photocopies are also available.

- Information requests by telephone - TRI staff can take requests by phone to provide information on individual facilities. TRI information can be supplied by fax or by mail as either a hard copy or on a computer disk. Data searches and summaries can also be performed on the data. Call the TRI staff at (614) 644-2270 during business hours.

- Information through the Internet - The TRI staff maintains a TRI web site on Ohio EPA's web page. The complete Ohio database and an electronic version of this report can be accessed through the web page. The TRI data can be found at the following Internet address: www.epa.state.oh.us/dapc/tri/tri.html

- 1998 Toxic Release Inventory Public Data Release - U.S. EPA's most recent annual TRI report is available. It covers information nationwide and provides a good perspective on how Ohio compares to other states. This report may be obtained by contacting U.S. EPA's hotline at 1-800-535-0202.

Questions or comments regarding TRI are welcome. Please direct questions, comments, or requests to:

TRI Program
Ohio EPA/DAPC
P.O. Box 1049
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