



# Toxic Release Inventory

2008  
Annual Report  
Ohio Environmental Protection Agency  
Division of Air Pollution Control  
April 2010

## Executive Summary

Since 1988, the Ohio Environmental Protection Agency (Ohio EPA) Toxics Release Inventory (TRI) Program collects information on annual releases, disposal or other waste management activities for over 650 reportable chemicals from industrial sources within Ohio. For reporting year 2008, statewide totals account for 223 million pounds of TRI regulated chemicals or compounds released, disposed, and waste managed in Ohio. Reports were made from 1,458 facilities statewide which submitted 5,208 chemical forms.

For reporting year 2008, there were two changes in reporting requirements that impacted Ohio TRI reporting facilities. Facilities that file reports for dioxin and dioxin-like compounds may need to file a Schedule 1 report, in addition to a standard Form R. The form is a four-page document which includes chemical-specific information for each type of disposal or other release, as well as, the waste managed data found in Sections 5, 6, and 8 of the Form R (current year only). Schedule 1 requires the reporting of the individual grams data for each dioxin and dioxin-like compound and is submitted as an adjunct to the Form R. Using the reported grams data, Toxic Equivalency Quantity (TEQ) values can be calculated for each of the reported media. TEQ total values are calculated by multiplying grams data for each reported media type by its Toxic Equivalency Factor (TEF) and summing the results.

The second change occurred when the 2009 Omnibus Appropriations Act returned TRI reporting requirements back to rules in effect prior to December 22, 2006. Changes require that all reports on persistent bioaccumulative and toxic (PBT) chemicals be submitted on the Form R. For all other TRI regulated chemicals, Form A may be used if the "annual reporting amount" is 500 pounds or less and the chemical was manufactured, processed or otherwise used in an amount not exceeding 1 million pounds during the reporting year.

For reporting year 2008, Ohio EPA received 5,208 TRI Form R reports from 1,458 facilities. While one-third of these facilities reported a single chemical, the average number of chemicals reported was four. Table 1 compares reporting years 2007 and 2008 TRI data for all reporting facilities.

Total releases and transfers decreased by 18 percent between 2007 and 2008, with the number of reporting facilities decreasing by nearly 4.3 percent. Facility increases and decreases are attributable to many factors including changes in production, types of measurement used, and pollution prevention efforts to minimize releases and develop uses or find markets for what might otherwise have been a waste. For many Resource Conservation and Recovery Act (RCRA) facilities, which were subject to TRI reporting in 1998, minor waste stream and market changes greatly affected TRI reporting. There can be subtle differences in what makes a material a "waste" and whether it is treated, recycled or used for energy recovery.

This report is a summary of the information collected under Ohio's TRI program. New and revised reports are routinely processed by Ohio EPA as facilities perform "self-audits" or otherwise discover errors. Ideally, state and federal TRI data should be the same, as facilities are required to submit TRI reports to both Ohio EPA and U.S. EPA. However, since the state and federal databases are maintained and updated separately, changes are not always made at the same time and some variation is possible.

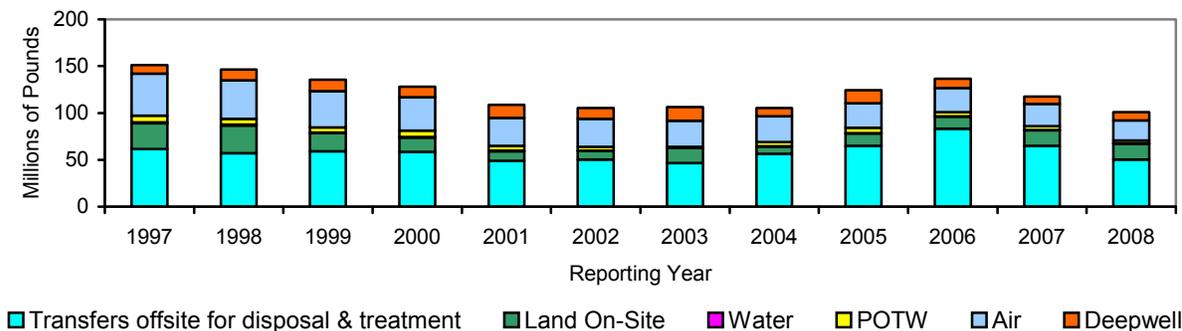
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**Table 1: Comparison of 2007 and 2008 TRI Data**

Comparison	2007 Amount	2008 Amount	Change
Releases to Air	114,885,509	90,268,057	-21.4%
Releases to Water	9,302,392	8,489,758	-8.74%
Deepwell Injection	22,254,022	22,940,948	3.09%
Releases to Land On-Site	74,158,761	59,099,048	-20.3%
Discharges to POTW	17,719,088	17,337,285	-2.15%
Off-Site Disposal / Treatment	80,101,083	62,986,209	-21.4%
<b>Total Releases and Transfers*</b>	<b>270,862,917</b>	<b>222,773,683</b>	<b>-18.0%</b>
Energy Recovery On-Site	73,855,323	69,388,508	-6.05%
Energy Recovery Off-Site	31,723,367	31,282,664	-1.39%
Recycling On-Site	108,883,051	84,930,868	-22.0%
Recycling Off-Site	164,082,223	156,388,099	-4.69%
Treatment On-Site	381,498,054	367,223,924	-3.74%
Number of Chemicals Reported	313	310	0.01%
Number of Reporting Facilities	1,523	1,458	-4.26%
Number of Form Rs	5,166	5,208	-0.08%
Number of Form As	769	618	-19.6%

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

**Figure 1: 10-Year TRI Trends  
(Original Industries and Chemicals Only)**



Ohio EPA contacted facilities reporting a significant increase or decrease in waste management or releases between 2007 and 2008 to determine the reason for the difference. The following information was developed through summary data and facility responses.

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### Air Releases

Air releases were down 21.4% for 2008 to slightly under 90.27 million pounds. As in previous years, power generating facilities in Ohio reported the largest TRI air releases, occupying eight of the top ten spots of the top-ten air releases. Power generating facility releases primarily contain hydrochloric and sulfuric acid aerosols that result from coal combustion. These two chemicals make up 60 percent of all reported air releases. Trace amounts of various metals within coal, including barium and chromium, are also released as combustion compounds.

Global Metallurgical Inc. (Washington County) reported an increase of more than 640,000 pounds of air releases. The facility recently discovered additional emissions from stack test data from a sister company located in West Virginia. After a process and engineering review, it was determined that the data should be applied to their Ohio facility. Reports based on this new information, the reporting increase in emissions was reported for 2008.

RRI Energy Inc. (Lorain County) reported a 540,000 pound increase in air releases due to a difference in emission factors affecting their hydrogen chloride and hydrogen fluoride emissions.

AEP Cardinal Power Plant (Jefferson County) reported a decrease of 6.9 million pounds. AEP notes the decrease is due to installing Flue Gas Desulfurization (FGD) equipment in January 2008 on 2 units at that location.

Dayton Power and Light Company (Adams County) reduced its air releases by more than 6.3 million pounds by installing four scrubbers during the first half of 2008. In addition to being able to reducing sulfur dioxide emissions by more than 95%, these scrubbers also reduce other acid gases and mercury emissions.

Duke Energy's Beckjord Generating Station (Clermont County) reported a reduction in air releases at this location by more than 2.3 million pounds as a result of several major plant outages that occurred in 2008.

Johns Manville Corporation Plant 8 (Defiance County) reported a reduction of more than 1.3 million pounds of air releases due to an improved accounting and estimation method for 2008. Production and machine operating times were reduced in 2008 at the facility.

### Water Releases

Water releases in Ohio decreased by 8.74 percent from 2007. AK Steel (Coshocton County) led the state in TRI water releases with more than 3.8 million pounds of TRI reported discharges. AK Steel releases remain primarily nitrate and did demonstrate a 400,000 pounds decrease attributed to a reduction in nitrate concentration. AK Steel (Muskingum County) reported 330,000 pound reduction in water releases due to reduced operation on their pickling line that generates nitrate wastes. Nitrates were more than 40% less in 2008 compared to 2007 for this location.

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Nitrate releases accounted for more than 90% of all reported releases to Ohio waterways in 2008. Nitrate compounds are manufactured by way of the treatment of nitric acid and are routinely permitted and monitored under the terms of NPDES (National Pollution Discharge Elimination System permits).

### Deepwell Injection

In Ohio, only two facilities reported TRI deepwell injection for 2008, showing an increase of 3.09 percent when compared to 2007 data. INEOS USA, LLC in Lima (Allen County) reported 10.6 million pounds, a 1.6 million pound increase from 9 million pounds reported in 2007. INEOS USA, LLC notes the increase is due to increased production levels at their plant.

Vickery Environmental Services (Sandusky County), a RCRA regulated disposal facility in Vickery, reported a decrease of 950,000 pounds. The decrease is related to less waste receipts received by and waste minimization efforts at the facility.

### Land Releases On-Site

Land releases on-site were down in 2008, decreasing by 20.3 percent to slightly over 59 million pounds. Envirosafe Services of Ohio (Lucas County) reported the largest decrease showing 15.1 million pounds less than reported in 2007. Envirosafe Services reported 84 percent of waste received was electric arc furnace material. In addition, most of the mix waste material accepted during 2008 contained a lower concentration of contaminants than during the 2007 reporting year.

Arcelomittal Cleveland (Cuyahoga County) reported increased on-site releases by 640,000 pounds. The company previously shipped waste offsite in 2007, but in 2008, started to landfill waste on-site.

Overall, bag house dust and steel mill waste constituted the majority of TRI reported releases to land on-site. Reprocessed galvanized steel produces zinc waste, which constitutes a major portion of bag house dust. The on-site land disposal of zinc and zinc compounds decreased by 10.9 million pounds from 2007. In addition, power plants in Ohio contribute to land on-site releases through type and quantities of coal burned and include barium, manganese, vanadium and other metals.

### POTW Releases

Publicly Owned Treatment Works (POTW's) in Ohio reported TRI total releases were down statewide by 2.15 percent for 2008, from 17.7 million in 2007 to slightly over 17.3 million pounds for the 2008 reporting. Nitrate compounds represent the largest POTW releases, accounting for 79 percent of total statewide releases.

Shepherd Chemical Company (Hamilton County) reported an increase of more than 800,000 pounds mostly due to a significant increase in the production of company products that result in the generation of nitrates as a by-product waste.

Emery Oleochemicals (Hamilton County) reduced their discharges by

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470,000 pounds. Methanol accounts for 85 percent of the total site discharges by the POTW. They reduced methanol discharges through process optimization and by setting up a leak detection and repair program required by U.S. EPA.

### **Off-Site Disposal and Treatment**

Statewide transfers off-site for disposal and treatment were down by over 17.1 million pounds, which is a statewide decrease of 21.4 percent from 2007.

Off-site disposal and treatment mainly affects the disposal of zinc and zinc compounds. The Timken Company (Stark County) reported the largest decrease (8.76 million) of off-site disposal and treatment in 2008. The decrease is due to sending electric arc furnace dust (EAF) from stabilization/landfill (off-site treatment) to zinc recovery (recycled off-site) in 2008, reported to the Ohio EPA's Tox-Minus program.

### **Total Releases and Transfers**

Total releases and transfers decreased by almost 57 million pounds from 2007 or 18 percent to 261 million pounds in 2008. EnviroSAFE Services of Ohio (Lucas County) reported a decrease of secured land disposal by more than 15 million pounds. In 2008, 84 percent of the total waste EnviroSAFE received was electric arc furnace dust. EnviroSAFE's customer base and waste composition changes throughout the year. According to the company, waste materials accepted during 2008 contained lower concentrations of contaminants when compared to 2007.

Timken Company (Stark County) reported a decrease of more than 8.7 million pounds. The decrease is attributed to sending electric arc furnace dust from stabilization/landfill treatment off-site to zinc recovery off-site in 2008, while participating in Ohio EPA's Tox-Minus program.

American Electric Power (Jefferson County) reported a decrease of close to 7 million pounds. AEP notes the decrease is due to the operation of newly installed Flue Gas Desulfurization (FGD) equipment on 2 units. The FGD's were placed in service January 2008.

J.M. Stuart Station (Adams County) reported a decrease of 6.5 million pounds. The facility installed four Flue Gas Desulfurization (FGD) scrubbers during the first half of 2008. In addition to being capable of reducing sulfur dioxide emissions by more than 95 percent, these scrubbers also reduce other acid gases and mercury emissions. Parent company Dayton Power and Light has joined with Ohio EPA's Tox-Minus efforts.

Ohio electric generating facilities continue to be a significant segment of Ohio's TRI reporting universe in this area totaling almost 35 million pounds in total releases and transfers for treatment and disposal.

INOES USA, LLC reported an increase of 1.6 million pounds of total releases and transfers, due to increased production.

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**Treatment On-Site** Treatment on-site data decreased 3.74 percent by 14.3 million pounds in Ohio and remains the primary waste management activity reported by state facilities. Traditional manufacturing, power generation, and RCRA Treatment, Storage, and Disposal (TSD) facilities all report on-site waste treatment in some manner.

AEP's Gavin Plant (Gallia County) and Millennium Inorganic, Plant 1 (Ashtabula County) each reported over 60 million pounds (73 million and 60.6 million respectively) for on-site treatment.

AEP's Gavin Plant reported a 10 million pound increase in on-site treatment. This can be attributed to an 11% increase in production and adding Flue Gas Desulfurization (FGD) equipment in January 2008.

Millennium Inorganic Plant 1 reported a 7.8 million pound increase in on-site treatment attributed to an increase in the amount of waste generated due to process changes and process variability.

Bailey-PVS Oxides (Fulton County) treated 15 million pounds less in 2008 due to production level decreases at the plant.

**Energy Recovery On-Site** Energy recovery on-site showed a 6 percent decrease of over 4.5 million pounds lowering levels to 69.4 million pounds in 2008 from 2007. LaFarge North America (Paulding County) led the state, reporting 46 million pounds, an increase of more than 4.8 million pounds over 2007. LaFarge North America is a RCRA TSD facility that supplies fuel quality waste to an adjacent cement plant. The facility indicated they had an increase in fuel quality waste volumes the facility received.

Sunoco Chemicals, Inc Haverhill (Scioto County) reported a decrease of more than 6.2 million pounds. The decrease is attributed to reduced generation and use of waste fuels to operate facility boilers.

Kraton Polymers U.S. LLC (Washington County) reported a decrease of slightly more than 1.1 million pounds as a result of installing new condensers and upgrading existing condensers on vents to recover additional process solvents for reuse. The ability to reuse solvents reduced the fuel stream by approximately 1.1 million pounds.

**Energy Recovery Off-Site** Statewide, energy recovery off-site decreased by 1.39 percent (440,703 pounds) for 2008. Most energy recovery activity was reported by chemical manufacturing and RCRA regulated TSD facilities. VEOLIA ES Technical Solutions (Montgomery County) increased off-site energy recovery by 1.5 million pounds as a result of an increase in the amount of material they received.

Chemtron Corporation (Lorain County) increased off-site energy recovery by more than 1.49 million pounds from 2007. They are a permitted TSD facility and accept a multitude of waste streams from various clients. Reported quantities reflect an increase in waste receipts that contained TRI regulated chemicals.

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Clean Harbors, formerly Safety Clean, (Licking County) increased off-site energy recovery by 1.46 million pounds. Clean Harbors' corporate business model resulted in more volume and different mix of material being managed at the facility.

Hukill Chemical (Cuyahoga County) reduced their off-site energy recovery by slightly over 1.14 million pounds for 2008. The decrease can be explained due to the dynamic character of the waste handling, reclamation and blending services. Hukill Chemical Corporation accepts hazardous waste, non-hazardous waste and non-waste materials for processing. Processing can consist of reclaiming these materials and/or fuel blending of materials. The chemical amounts reported on the Toxic Release Inventory vary because processing is dependent on the type of material generators and customers bring to the facility. Factors such as changes in amounts of material used, amounts of material favored for reclamation and makeup of materials (reportable chemical percentages found in materials).

Research Organics (Cuyahoga County) reduced off-site energy recovery by more than 1 million pounds. They used less alcohol in the chemical process reducing the amount of material generated after reaction. In addition, the facility improved efficiency by processing material as a recoverable alcohol.

### **Recycling On-Site and Off-site**

On-site recycling decreased by almost 22 million pounds to 84.9 million pounds statewide in 2008. Hukill Chemical Corporation (Cuyahoga County) reported a decrease of more than 9 million pounds recycled on-site. Their decreased numbers are due to the dynamic character of the waste handling, reclamation and blending services.

Thomas Steel Strip (Trumbull County) reported a decrease of 4.46 million pounds primarily of hydrochloric acid aerosols which were recycled on-site. The decrease was caused by reduction in operating hours of an acid recovery system and reducing recovered acid concentrations from 30 percent to 15 percent.

Luvata Ohio Incorporated (Delaware County) reported a decrease of more than 3.8 million pounds of on-site recycling primarily due to the shutdown of one of two copper producing units due to poor economic conditions.

Sherwin Williams Company (Franklin County) reported an increase of 2.12 million pounds of on-site recycling due to the installation of an on-site distillation unit used to recycle cleaning solvent that was previously sent off-site for recycling.

Off-site recycling was down 4.69 percent from 164 million pounds in 2007 to 156.4 million pounds in 2008.

Johnson Controls Battery (Lucas County) decreased off-site recycling by more than 5 million pounds. The decrease in off-site recycling was due to

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an approximate 1 million unit reduction in production in 2008. Also, scrap reduction initiatives in 2008 reduced scrap sent to a smelter.

Timken Company (Stark County) reported an increase of more than 8.2 million pounds. The increase can be attributed to sending Electric Arc Furnace dust from a program of stabilization and landfill treatment off-site to a zinc recovery program that is recycled off-site. The company participates in Ohio EPA's Tox-Minus program.

### PBT Chemicals

The overall releases and transfers for persistent bioaccumulative toxic (PBT) chemicals decreased 32% for reporting year 2008. Ohio had a 12,017 pound (17.8 percent) increase in air releases from PBT chemicals.

In 2008, 886 Form Rs were submitted for PBT chemicals.

The PBT chemical list consists of 16 individual chemicals and 4 chemical categories. The chemical categories are dioxin and dioxin-like compounds, lead compounds, mercury compounds and polycyclic aromatic compounds (PACs). The four PBTs with the largest volume of reported releases, transfers and treatment in Ohio for 2008 were: lead and lead compounds, PACs, mercury and mercury compounds, and pendimethalin.

Mercury and mercury compounds were reported by 109 facilities in 2008, compared to 105 in 2007. Reporting facilities include power plants, paper mills, steel works, refuse systems, glass manufacturing, and electric light manufacturers.

Fewer reports (552) were submitted for lead and lead compounds in 2008, compared to 561 reports for 2007. Lead and lead compounds were reported from nearly every major NAICS code classification required to report to TRI. EnviroSAFE Services (Lucas County) reported over 1.36 million pounds of lead and lead compounds released or disposed on or off-site.

Most PACs including individually listed benzo(g,h,i)perylene, are constituents of fossil fuels. Other industrial processes are also sources of PACs. Types of facilities include hot mix asphalt plants, asphalt roofing manufacturers, iron foundries, primary aluminum producers, coke ovens, pulp mills, Portland cement kilns and carbon black manufacturers. A total of 154 Ohio facilities reported PACs and/or benzo(g,h,i)perylene in 2008.

Dioxin and dioxin-like compounds were reported by 48 facilities. That is one facility less than in 2007. Those industries reporting dioxin and dioxin-like compounds include fossil fuel power plants, paper mills, foundries and petroleum refiners. Small quantities of dioxins are formed as a result of combustion processes, chlorine bleaching pulp and paper, certain types of chemical manufacturing and processing and other industrial processes.

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Pendimethalin is a selective herbicide used to control most annual grasses and certain broadleaf weeds in field corn, potatoes, rice, cotton, soybeans, tobacco, peanuts and sunflowers. It is also used on crops, residential lawns and ornamental shrubs and trees. The chemical was reported by three companies in Ohio: Turf Care Supply (Belmont County), Anderson Lawn Products (Lucas County), and The Scotts Company (Union County).

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## What's New This Year

### Ohio EPA Accepts TRI Reports through the Central Data Exchange

Facilities located in Ohio can submit their TRI information to both U.S. EPA and the Ohio EPA/Toxic Release Inventory Program simultaneously through the Federal Central Data Exchange (CDX) using the TRI-ME software. CDX will automatically forward the data to the Ohio TRI program at Ohio EPA. This method eliminates the need to generate a diskette or CD to mail separately to Ohio EPA. This option will no longer be available in 2010 to submit 2009 TRI reports.

U.S. EPA considers TRI-MEweb to be the TRI reporting software of the future. Currently, U.S. EPA plans to offer TRI-MEdesktop software through the 2008 reporting period and then discontinue the application.

TRI-Made Easy Web (TRI-MEweb) is a Web-based application that you can access anywhere you have a connection to the internet. Unlike the desktop version of the TRI-ME software, TRI-MEweb requires no downloads or software installs. The preferred method to report to U.S. EPA is by the use of the TRI-Made Easy Web (TRI-MEweb) application. TRI-MEweb allows facilities to file a paperless report, significantly reduce data errors, and receive instant receipt confirmation of their submissions. TRI-MEweb is similar to its predecessor TRI-MEdesktop in that it assists you in preparing your forms, but TRI-MEweb offers so much more, such as:

- Enhanced Data Quality and Validation assistance
- Facility and Chemical Quick Lists
- Enhanced Section 8 Calculator
- Prior Year revision capability
- Trend Analysis Reports
- Electronic withdrawal

### Form R Changes

**The following information updated the *Reporting Forms and Instructions for Reporting Year 2008* as well as highlights new resources developed by EPA.**

- On May 10, 2007, OAC Rule 3745-100-07 was amended to expand reporting requirements for the dioxin and dioxin-like compounds category. There are seventeen distinct members of this chemical category listed under TRI. The amended rule requires that, in addition to the total grams released for the entire category, facilities must report the quantity for each individual member on a new Form R Schedule 1. EPA will then use the individual mass quantity data to calculate toxic equivalents (TEQs) values that will be made available to the public along with the mass data. The amended rule also removes the requirement to report the single distribution of compounds in the category.
- Minor changes were made to the TRI reporting forms as part of the TRI Reporting Forms Modification Rule (39931 Federal Register / Vol. 70, No. 132, Tuesday, July 12, 2006):

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- Beginning with Reporting Year 2005, the *de minimis* level for naphthalene has been changed from 1.0% to 0.1% since naphthalene is now classified as an OSHA carcinogen.
- Beginning with Reporting Year 2005, methyl ethyl ketone (CAS number 78-93-3) has been removed from the EPCRA section 313 list of reportable toxic chemicals.
- Beginning in the 2006 Reporting Year, there are two *de minimis* levels for cobalt compounds, inorganic cobalt compounds have a 0.1% *de minimis* level and organic cobalt compounds have a 1.0% *de minimis* level.
- TRI Burden Reduction Rule. The TRI Burden Reduction final rule is effective for Reporting Year 2006. The rule expands eligibility for the Form A Certification Statement for PBT and Non-PBT chemicals. The new eligibility criteria are listed below.
  - PBT Chemicals - The rule allows the use of Form A for facilities with zero releases (both on-site and off-site) and 500 pounds or less of treatment, recycling, and/or energy recovery of PBT chemicals. The rule applies to all PBT chemicals except dioxin and dioxin-like compounds.
  - Non-PBT Chemicals -The rule allows the use of Form A for a non-PBT chemical with 5000 pounds or less of releases (both on-site and off-site), treatment, recycling, and/or energy recovery, and the contribution of on-site and off-site releases is limited to 2000 pounds or less.

### **Omnibus Appropriations Act of 2009 Changes Toxics Release Inventory (TRI) Reporting Requirements**

Toxics Release Inventory (TRI) reporting requirements changed on March 11, 2009, as a result of a change in federal law. The 2009 Omnibus Appropriations Act, returned TRI reporting requirements back to the rules in effect prior to December 22, 2006, and affectively, overturned the Burden Reduction Rule of 2006. These changes affect TRI reports due July 1, 2009.

The change requires that all reports on persistent, bioaccumulative, and toxic (PBT) chemicals be submitted on "Form R," the more detailed form. For all other chemicals the shorter form, "Form A" may be used only if the "annual reporting amount" is 500 pounds or less and that the chemical was manufactured, processed or otherwise used in an amount not exceeding 1 million pounds during the reporting year.

EPA will issue a rule revising the regulatory text in the Code of Federal Regulations to reflect these changes. TRI-ME software and other reporting assistance materials are being revised and will also be available soon.

### **North American Industry Classification System (NAICS) Codes in TRI Reporting**

The list of TRI-covered NAICS codes was developed using 2002 NAICS codes. The list of industries subject to reporting under the TRI program is commonly divided into two groups called "Original" and "New". Original industries are those covered under the original legislation. New industries are those which were added in 1998. For more information on NAICS and complete SIC to NAICS crosswalk tables, please go to the Census Bureau NAICS website.

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The NAICS is reviewed every five years for potential revisions so that the classification system can keep pace with the changing economy. The codes were last updated on March 16, 2006, when OMB published a final notice of the NAICS revision for 2007 (71 FR 28532) that states that "data published for reference years beginning on or after January 1, 2007, should be published using the 2007 NAICS United States Codes."

EPA has published a final rule to incorporate 2007 Office of Management and Budget (OMB) revisions and other corrections to the NAICS codes used for TRI Reporting. [Federal Register (FR) notice [73 Federal Register 32466](#) (June 9, 2008)] With this rule, facilities are required to use 2007 NAICS codes on TRI reporting forms that are due on July 1, 2009, covering releases and other waste management quantities at the facility for 2008. TRI facilities should continue to use [TRI NAICS codes](#) identified in EPA's 2006 rule on their TRI reporting forms due July 1, 2008.

The full list of NAICS codes for facilities that must report to TRI (including exceptions and/or limitations) if all other threshold determinations are met can be found at: [www.epa.gov/tri/tridata/naics/ncodes.htm](http://www.epa.gov/tri/tridata/naics/ncodes.htm). The facility should determine its own NAICS code(s), based on its activities on-site, using the NAICS Manual and by referring to the extensive OMB crosswalk tables found on the Census Bureau website: [www.census.gov](http://www.census.gov).

### **Reporting Latitude/Longitude, and Program ID numbers in RY 2007.**

As part of the TRI Forms Modification Rule, latitude and longitude data (Part I, Section 4.6 of Forms R and A) and Program identification (ID) numbers including RCRA, NPDES and UIC ID numbers (Part 1, Section 4.8, 4.9, and 4.10 of Forms R and A) will no longer be collected by the TRI program. However these data elements will still be part of the TRI data disseminations. TRI data users will obtain these data elements from the Facility Registry System (FRS), EPA's centralized database system for facility information. That system will gather these data elements from existing data, other EPA programs, state and local governments and commercial sources.

If they choose, TRI facilities will still have the ability to review, update and insert latitude and longitude values and Program ID numbers that are being used to represent them. Facilities that use TRI-ME and file their reports over the Internet will be able to do this by signing into the Central Data Exchange (CDX). Links to CDX and this process will also be available to facilities through the electronic Facility Data Profile, the electronic Facility Data Release and on the TRI-ME web page. Facilities may also review and update their latitude and longitude values on the Internet via the Envirofacts FRS Query at:

[http://www.epa.gov/enviro/html/fii/fii\\_query\\_java.html](http://www.epa.gov/enviro/html/fii/fii_query_java.html)

Facilities that do not have Internet access will be able to update their latitude and longitude coordinates and Program ID values by contacting the EPA Facility Error Notification/Correction Center at 703-243-8307, or by mail at:

Lockheed Martin B NEISEC  
Error Notification/Correction Center  
1010 North Glebe Road  
Arlington, VA 22201

## Understanding and Using TRI Information

### SARA Overview

The Superfund Amendments and Reauthorization Act, SARA, was passed in 1986. SARA is also known as the Emergency Planning & Community Right to Know Act, or "EPCRA." It was passed in part due to concerns following an incident, which occurred in Bhopal, India. In December, 1984 a methyl isocyanate (MIC) gas leak from a plant operated by Union Carbide India Limited injured or killed thousands of people. SARA required that a chemical emergency response network be expanded to ensure national coverage. State Emergency Response Commissions (SERCs) coordinating with Local Emergency Planning Committees (LEPCs) and local fire departments are responsible for this network. SARA also created or updated four reporting requirements to ensure that chemical storage, use, and release information was available to the potential emergency responders and the community. These reporting programs overlap depending upon whether the materials are "oils," "hazardous chemicals," "hazardous substances," "extremely hazardous substances" (EHSs) or toxic chemicals. Brief explanations of each requirement, including the SARA and enabling Ohio Revised Code (ORC) citations, are listed below.

EHS Notification (SARA 301-303, ORC 3750.02.07). This notification provision is triggered by storage of one or more EHSs. There are 360 listed EHS chemicals, which are considered immediately dangerous to life or health. Chlorine gas is an example. A specific "threshold planning quantity" (TPQ) is specified for each chemical. TPQs vary, and, while 500 pounds is an approximate average, the TPQ may be as low as one pound. When a facility meets or exceeds the TPQ for a chemical, it must notify the response community (SERC, LEPC and local fire department) and designate contacts and coordinators to pre-plan emergency response activities and serve as emergency contacts. Contact the "Right-To-Know"/SERC Unit in the Division of Air Pollution Control (DAPC), for assistance or for a referral to the appropriate LEPC (614-644-2260).

Emergency Release Notification (SARA 306, ORC 3750.07). Release or spill reporting may be required when there is an offsite release of oil, a hazardous substance, or an extremely hazardous substance. The reporting triggers, known as the "Reportable Quantity" (RQ) vary, ranging from one to 5,000 pounds. The definition of "facility" includes trucks and tankers. Gasoline is included under the definition of "oil" and oil is reportable at 25 gallons or at any quantity entering the waters of the State. Spills or releases should be reported upon discovery to the Ohio EPA/SERC at 1-800-282-9378 or 1-614-224-0946. Hazardous substance spills may require National Response Center reporting. The Ohio EPA Spill Unit of the Division of Emergency and Remedial Response (DERR) can provide additional information (614-644-2080).

Chemical Inventory Reporting (SARA 311-312, ORC 3750.07.08). The location, quantity, storage conditions and properties of EHSs or "hazardous chemicals" (hazardous due to OSHA hazard communication attributes) must be reported. Such reporting for EHSs is triggered when stored at quantities greater than 500 pounds or the chemical-specific TPQ (whichever is lower). Reporting for hazardous chemicals, a large universe determined by the attributes noted on the Material Safety Data Sheet (MSDS), is triggered by the storage of 10,000 pounds. Like EHS notifications, reports must be submitted to the SERC, LEPC and local fire department.

Ohio SERC forms, Tier II forms, or electronic "Tier2Submit" reporting are used for "inventory reporting" and are due March 1<sup>st</sup> for the prior calendar year. Contact the

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“Right-To-Know”/SERC Unit in DAPC (614-644-2260), or the appropriate LEPC for assistance.

Toxic Release Inventory Reporting (SARA 313, ORC 3751) Facilities within SIC codes 20-39 and seven other selected non-manufacturing SIC codes with 10 or more employees or equivalent are required to annually report “Form R” or “Form A” information if they manufacture, process or otherwise use any listed chemicals in amounts exceeding the reporting threshold. TRI “toxic” chemicals include 581 individually listed chemicals and 30 chemical categories, including 3 delimited categories containing 58 chemicals, for a total of 666 separate chemicals. Reported TRI information includes chemical use, release, recycling, energy recovery and treatment information, as well as pollution prevention activities at the facility. TRI reporting is on a calendar year basis with reports due July 1<sup>st</sup> for the prior calendar year. Reported information is readily available from Ohio EPA or U.S. EPA TRI Web sites (see page 28 for Web site information). The Ohio EPA TRI Unit can be contacted at 614-644-2270.

### 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 inspects potential non-reporting facilities each year. Approximately 5% of the inspections result in enforcement actions against facilities, which did not properly file TRI reports.

### Who Must Report

Facilities are required to report if they meet all three of the following requirements:

1. Have 10 or more full-time employees (or the equivalent of 20,000 hours worked per year).
2. The facility is in a SIC (as in effect on January 1, 1987) major group or industry code listed in paragraph (A) of rule 3745-100-17 of the Administrative Code (for which the corresponding NAICS (as in effect on January 1, 2002) subsector and industry codes are listed in paragraphs (B) and (C) of rule 3745-100-17 of the Administrative Code) by virtue of the fact that it meets one of the following criteria:
  - (a) The facility is an establishment; with a primary SIC major group or industry code listed in paragraph (A) of rule 3745-100-17 of the Administrative Code, or a primary NAICS subsector or industry code listed in paragraph (B) or (C) of rule 3745-100-17 of the Administrative Code.
  - (b) The facility is a multi-establishment complex where all establishments have primary SIC major group or industry codes listed in paragraph (A) of rule 3745-100-17 of the Administrative Code, or primary NAICS subsector

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or industry codes listed in paragraph (B) or (C) of rule 3745-100-17 of the Administrative Code.

- (c) The facility is a multi-establishment complex in which one of the following is true:
  - (i) The sum of the value of services provided and/or products shipped and/or produced from those establishments that have primary SIC major group or industry codes listed in paragraph (A) of rule 3745-100-17 of the Administrative Code, or primary NAICS subsector or industry codes listed in paragraph (B) or (C) of rule 3745-100-17 of the Administrative Code is greater than fifty per cent of the total value of all services provided and/or products shipped from and/or produced by all establishments at the facility.
  - (ii) One establishment having a primary SIC major group or industry code listed in paragraph (A) of rule 3745-100-17 of the Administrative Code, or a primary NAICS subsector or industry code listed in paragraph (B) or (C) of rule 3745-100-17 of the Administrative Code contributes more in terms of value of services provided and/or products shipped from and/or produced at the facility than any other establishment within the facility.
  - (iii) The facility manufactured (including imported), processed or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical as set forth in rule 3745-100-07, 3745-100-14, or 3745-100-16 of the Administrative Code.

3. Manufactured, imported, processed or otherwise used a reportable toxic chemical in quantities exceeding the applicable threshold established by U.S. EPA for that year, chemical and usage. For most reportable chemicals, the thresholds for manufacturing, importing or processing are 25,000 pounds and “otherwise use” is 10,000 pounds. PBT chemicals have notably lower reporting thresholds of 100 pounds or less.

Facilities, which are defined as “all buildings, equipment, structures, and stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person,” must submit a Form R for each listed chemical used in amounts that exceed the reporting threshold, even if the chemical is not released to the environment.

Facilities using less than one million pounds of a listed toxic chemical in a calendar year and having less than 500 pounds of that toxic chemical as a reportable amount (released to the environment, treated, recycled or used for energy recovery) can file a certification statement (Form A) instead of the more detailed Form R. Form A cannot be used for reporting PBT chemicals.

### Reportable Chemicals

The list of reportable toxic chemicals has evolved since the enactment of Section 313. Over 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.

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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 evaluates chemicals that 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, U.S. EPA, or on the Internet at <http://www.epa.gov/tri/trichemicals/index.htm>.

### Chemical Qualifiers

Some TRI reportable chemicals have qualifiers associated with them. Most TRI chemicals are not listed with a qualifier, and are subject to reporting in all forms that they may be manufactured, processed, or otherwise used. TRI reportable chemicals with qualifiers are discussed below:

<b>Chemical</b>	<b>Qualifier</b>
Aluminum	Only fume or dust is reportable.
Aluminum oxide	Only fibrous forms are reportable.
Ammonia (aqueous)	10% of total aqueous ammonia from water dissociable salts and other sources is reportable (100% of anhydrous ammonia is reportable).
Asbestos	Friable forms (can be crumbled or reduced to powder with hand pressure) only.
Chromium compounds	Reportable only if not chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR).
Dioxin and dioxin-like compounds	PBT chemicals reportable if manufactured at the facility or processed or otherwise used when present as contaminants in a chemical but only if they were created during the manufacture of that chemical. Reported in grams instead of pounds (454 grams = 1 pound).
<b>Chemical</b>	<b>Qualifier</b>
Hydrochloric acid	Acid aerosols only.
Isopropyl alcohol	Reportable only if manufactured by the strong acid process.
Lead and lead compounds	Reportable as a PBT (100 pound threshold) unless contained in a stainless steel, bronze or brass alloy (in which case it is reportable at a 25,000 pound processing threshold).
Nitrate Compounds	Water dissociable; reportable only when in aqueous solution.
Phosphorus	Only the yellow and white forms are reportable.
Saccharin	Only manufacturers must report.
Sulfuric acid	Acid aerosols only.
Vanadium	Only reportable if not an alloy constituent.
Zinc	Only fume or dust is reportable.

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### TRI Data Uses and Limitations

Users 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 and seven non-manufacturing industries. Many other industries release toxic chemicals into the environment.
- For reporting year 2008, TRI covers over 600 toxic chemicals and chemical categories. The TRI data does not represent all chemicals used by all 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 chemicals released.
- The majority of releases are based on estimates. Facilities are required to base releases on monitoring data if it is available. When monitoring data is not available, 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, 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 below 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.

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### TRI Rule Changes

The following list summarizes significant changes that U.S. EPA has finalized in the past several years.

Federal Register/Date	Title	Summary
59 FR 61432 / November 30, 1994	Addition of Certain Chemicals	Added 286 chemicals and chemical categories, including 39 chemicals as part of two delineated categories, to the list of reportable toxic chemicals. Addition of these chemicals and chemical categories was based on their acute human health effects, carcinogenicity or other chronic human health effects, and/or their adverse effects on the environment. Reporting for these chemicals and chemical categories was required beginning with the 1995 calendar year.
59 FR 61488 / November 30, 1994	Alternate Threshold for Facilities With Low Annual Reportable Amounts	Allows reporting TRI chemicals on a simplified certification form (Form A) if the amount of the chemical manufactured, processed or otherwise used is not greater than a million pounds and the reportable amount is less than 500 pounds in that year.
62 FR 23834 / May 1, 1997	Addition of Facilities in Certain Industry Sectors; Revised Interpretation of Otherwise Use	Added seven industry groups to the list of facilities subject to TRI reporting requirements. These industry groups are metal mining, coal mining, electric utilities, commercial hazardous waste treatment, chemicals and allied products-wholesale, petroleum bulk terminals and plants-wholesale and solvent recovery services. Revised the interpretation of the threshold activity, "otherwise use" to include treatment for destruction, disposal, and waste stabilization.
63 FR 19838 / April 22, 1998	Deletion of Certain Chemicals	Deleted several chemicals and chemical categories from the list of chemicals subject to reporting. Section 372.65 was amended by deleting the entries for 2-bromo-2- nitropropane-1,3-diol, dimethyldichlorosilane, 2,6-dimethylphenol, methyltrichlorosilane, and trimethylchlorosilane under paragraph (a), and deleting the entire CAS No. entries for 52-51-7, 75-77-4, 75-78-5, 75-79-6, and 576-26-1 under paragraph (b).
64 FR 58666 / October 29, 1999	Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals	Lowered the reporting thresholds for certain persistent bioaccumulative toxic (PBT) chemicals subject to TRI reporting. Added a category of dioxin and dioxin-like compounds to the TRI list of toxic chemicals and established a 0.1 gram reporting threshold for the category. Added certain other PBT chemicals to the TRI list of toxic chemicals and established lower reporting thresholds for these chemicals. Removed the fume or dust qualifier from vanadium and added all forms of vanadium with the exception of vanadium when contained in alloys. Also added vanadium compounds to the TRI list of toxic chemicals. However, EPA did not lower the reporting thresholds for either vanadium or vanadium compounds.

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65 FR 39552 / June 26, 2000	Phosphoric Acid	Deleted phosphoric acid from the list of chemicals subject to reporting requirements under TRI.
66 FR 4500 / January 17, 2001	Lead and Lead Compounds; Lowering of Reporting Thresholds	Lowered reporting thresholds to 100 pounds for lead and all lead compounds except for lead contained in stainless steel, brass, and bronze alloys.
66 FR 10685 / February 16, 2001	Lead and Lead Compounds; Lowering of Reporting Thresholds; Delay of Effective Date	Delayed (by 60 days) the effective date of this rule in accordance with the memorandum of January 20, 2001, from the Assistant to the President and Chief of Staff, entitled "Regulatory Review Plan."
70 FR 39931 / July 12, 2005	Toxic Release Inventory Reporting Forms Modification Rule	<p>EPA will no longer require TRI facilities to report location information (latitude and longitude data) and several facility identifiers (regulatory assigned identification codes for each facility). Instead, the data will be obtained from existing EPA databases and made available to TRI data users. The proposal also:</p> <ul style="list-style-type: none"> <li>• Includes several minor reporting changes related to waste management activities,</li> <li>• Simplifies the reporting of pollution prevention activities, and</li> <li>• Improves public access to information about source reduction and pollution control activities undertaken by some facilities.</li> </ul>
71 FR 32464 / June 6, 2006	Community Right-to-Know; Toxic Chemical Release Reporting Using North American Industry Classification System (NAICS)	Requires facilities reporting to TRI to use North American Industry Classification System (NAICS) codes in place of the Standard Industrial Classification (SIC) codes previously used on TRI reporting forms. Facilities that report to TRI are required to use 2002 NAICS codes on reporting Form R and the Form A Certification Statement.
71 FR 76932 / December 22, 2006	Toxic Release Inventory Burden Reduction Final Rule	The final TRI Rule announced December 18, 2006 expands eligibility for use of the Form A Certification Statement (Form A) in lieu of the more detailed Form R by TRI facilities submitting required annual reports on releases and other waste management. This rule provides incentives for facilities to improve environmental performance by eliminating or reducing releases and managing remaining wastes using preferred methods such as recycling and treatment.
72 FR 26544 / May 10, 2007	Dioxin and Dioxin-like Compounds; Toxic Equivalency Information; Community Right-To- Know Toxic Chemical Release Reporting	The final rule requires that, in addition to reporting total gram quantities for the category, facilities are required to report the mass quantity of each individual member of the category. The mass quantity data for the individual members of the category will be used by EPA to perform toxic equivalency (TEQ) computations which will be made available to the public. TEQs are a weighted quantity measure based on the toxicity of each member of the dioxin and dioxin-like compounds category relative to the most toxic members of the category, i.e., 2,3,7,8-tetrachlorodibenzo-p-dioxin

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		and 1,2,3,7,8-pentachlorodibenzo-p-dioxin. The final rule also eliminates the reporting of the single generic distribution for the members of the dioxin and dioxin-like compounds category.
71 FR 32464 / June 6, 2007	Community Right-to-Know; Toxic Chemical Release Reporting Using North American Industry Classification System (NAICS)	Requires facilities reporting to TRI to use North American Industry Classification System (NAICS) codes in place of the Standard Industrial Classification (SIC) codes previously used on TRI reporting forms. Facilities that report to TRI are required to use 2002 NAICS codes on reporting Form R and the Form A Certification Statement.
70 FR 39931 / July 12, 2007	Toxic Release Inventory Reporting Forms Modification Rule	EPA will no longer require TRI facilities to report locational information (latitude and longitude data) and several facility identifiers (regulatory assigned identification codes for each facility). Instead, the data will be obtained from existing EPA databases and made available to TRI data users. The proposal also: <ul style="list-style-type: none"> <li>• Includes several minor reporting changes related to waste management activities,</li> <li>• Simplifies the reporting of pollution prevention activities, and</li> </ul> Improves public access to information about source reduction and pollution control activities undertaken by some facilities.
71 FR 76932 / December 22, 2007	Toxic Release Inventory Burden Reduction Final Rule	The final TRI Rule announced December 18, 2007 expands eligibility for use of the Form A Certification Statement (Form A) in lieu of the more detailed Form R by TRI facilities submitting required annual reports on releases and other waste management. This rule provides incentives for facilities to improve environmental performance by eliminating or reducing releases and managing remaining wastes using preferred methods such as recycling and treatment.
73 FR 32466 / June 9, 2008	Corrections and 2007 Updates to the Toxics Release Inventory (TRI) North American Industry Classification System (NAICS) Reporting Codes	EPA amended the regulations to make certain updates and corrections to the list of North American Industry Classification System (NAICS) codes subject to reporting under the Toxics Release Inventory (TRI) to reflect the Office of Management and Budget (OMB) 2007 NAICS revision. EPA made corrections to the list of NAICS codes subject to reporting under TRI that was published on June 6, 2006, in the final rule adopting NAICS for TRI reporting and corrected a longstanding typographical error in the regulatory text.
74 FR 19001 / April 27, 2009	Toxics Release Inventory Form A Eligibility Revisions Implementing the 2009 Omnibus Appropriations Act	EPA amended its regulations on the eligibility criteria for submitting a Form A Certification Statement in lieu of the more detailed Form R submitted by facilities subject to TRI reporting under section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and section 6607 of the Pollution Prevention Act of 1990 (PPA). This action was taken to comply with the "Omnibus Appropriations Act of 2009" enacted on March 11,

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2009. As this action was taken to conform the regulations to a Congressional legislative mandate, and this rule was effective immediately. Upon publication to the Federal Register, the provisions of the Toxics Release Inventory Burden Reduction Final Rule were removed and the regulations in place prior to its implementation were restored.

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### 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. TRI 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: Ohio EPA's Office of Compliance Assistance and Pollution Prevention (OCAPP) 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. OCAPP provides several services to industrial facilities. OCAPP 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 or electronically through the Internet at <http://www.epa.ohio.gov/Default.aspx?alias=www.epa.ohio.gov/ocapp>.

OCAPP provides free assistance with completing pollution prevention plans and 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.

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. Non-complying facilities face enforcement action by either the community or Ohio EPA.

DSW regulates direct surface water point 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 RCRA. Facilities using a surface impoundment to dispose of TRI chemicals may also fall under the regulations of the

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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 that 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 these 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. Ohio EPA has been delegated authority to administer this program in Ohio.

Section 112(r) of the Clean Air Act Amendments of 1990 created a risk management planning (RMP) 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. Approximately 500 facilities in Ohio have filed risk management plans since 1999. These plans are updated every five years or as-needed when changes occur at the facility.

### TRI Terminology

Chemical Abstracts Service Registry Number (CAS No.) - A numerical identification given to each unique chemical which aids in the identification of a chemical with multiple synonyms (e.g., phenol, CAS No. 108-95-2, is also known as benzenol, carboic acid, hydroxybenzene, izal, monohydroxybenzene, monophenol etc. TRI chemical categories (e.g., zinc compounds) do not have a CAS No. and are assigned category codes by U.S. EPA (e.g., N982 for zinc compounds).

Discharge to Publicly Owned Treatment Works (POTWs) - A POTW is a wastewater treatment facility owned by a public authority such as a municipality or county. Some TRI facilities generate wastewater and discharge it through pipes or sewers to a POTW. At the POTW further treatment of the chemical occurs through biodegradation by microorganisms or removal from the wastewater occurs if the chemical enters the sludge generated during the biodegradation process. Next, the treated wastewater is released to waters of the state. The sludge generated from the process may be incinerated, land-applied, or landfilled. Generally, chemicals that are

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easily utilized as nutrients by microorganisms, have a low solubility in water, or are volatile are treatable by the POTW. Not all TRI chemicals can be treated or removed by a POTW. So POTWs limit the industrial contribution of those pollutants.

Environmental Fate: The disposition, over time, of a chemical in the environment. The bioaccumulation of a chemical in fish or the decomposition of a chemical when exposed to sunlight, are examples of environmental fate.

Manufacture: The production, preparation, compounding or importing of a TRI chemical, including the coincidental production of the chemical as an intermediate, by-product or impurity.

NAICS: North American Industrial Classification System (NAICS). The North American Industry Classification System (NAICS) is a system used by the Federal Government for collecting and organizing industry-related statistics. The NAICS codes are updated every five years to stay current with industry developments.

The list is available at: <http://www.census.gov/eos/www/naics/>

Otherwise Use: Any activity involving a TRI chemical that does not fall under the definition of manufacture or process. A chemical that is not intentionally incorporated into a product, like solvents that are used for parts cleaning, falls under the otherwise use category.

PACs: Polycyclic aromatic compounds. There are 21 chemicals that comprise the PAC category. Benzo(g,h,i)perylene, another PAC, is individually listed in the EPCRA list of chemicals. The PAC category is designated as "N590" in the chemical list. Most PACs are constituents of fossil fuels (coal and oil), but also come from other sources such as hot mix asphalt plants and asphalt roofing, iron foundries, coke ovens, primary aluminum producers, pulp mills, cement kilns and carbon black manufacturing. If a facility burns approximately 5000 gallons of No. 6 fuel oil in a year, it would meet the reporting threshold for PACs for that year.

PBTs: In October, 1999, U.S. EPA promulgated the final rule on persistent bioaccumulative toxic chemicals, or PBTs. The PBT chemicals contain several insecticide/pesticides along with the PACs discussed above, lead and mercury and their compounds and dioxin and dioxin-like compounds. For chemicals designated as PBTs, the reporting threshold has been significantly reduced (e.g., from 25,000 pounds to 100 pounds). Other requirements on PBT chemicals help assure accurate reporting of these chemicals (i.e., the de minimis exemption was eliminated, Form R, rather than the simplified Form A must be used, range reporting was eliminated and data can be entered in fractions of a pound).

Process: Preparation of a TRI chemical, after its manufacture, for distribution in commerce. Processing includes intentionally incorporating a chemical into a product or the reaction of a chemical to form another chemical or product.

Quantity Recycled Off-Site: 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: The quantity of toxic chemical recovered at the facility that generated it and made available for further uses.

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

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Quantity Used for Energy Recovery: This is the quantity of toxic chemical that was combusted (on-site or off-site) 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.

Recycle: The process of capturing a useful product from a waste stream. Solvent recovery, metals recovery and acid regeneration are examples of recycling.

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

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.

Standard Industrial Classification (SIC) Code: A four-digit code established by the Federal Office of Management and Budget used to describe the type of activities at a facility. The first two digits indicate the major industrial grouping; the last two digits describe a facility activity within in the industrial grouping. For example, a facility with SIC 2813 is grouped within “chemicals and allied products” (28) producing industrial gases. Facilities that engage in a variety of activities may possess multiple SIC codes.

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 wastewater beneath the lowermost underground source of drinking water.

## Summary of Data

In 2008, approximately 261 million pounds of toxic chemicals were reported as having been released to the environment or transferred off-site for treatment or disposal. The data presented for 2008, including the listings of top companies, chemicals and counties, reflects the TRI data reporting due July 1, 2008. The TRI Unit continually reviews this data and works with reporting facilities to assure data quality. Additional and revised data provided subsequent to July 1<sup>st</sup> has been incorporated into this report to the extent possible considering publication deadlines. 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 manner:

- 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.

## Summary of Data

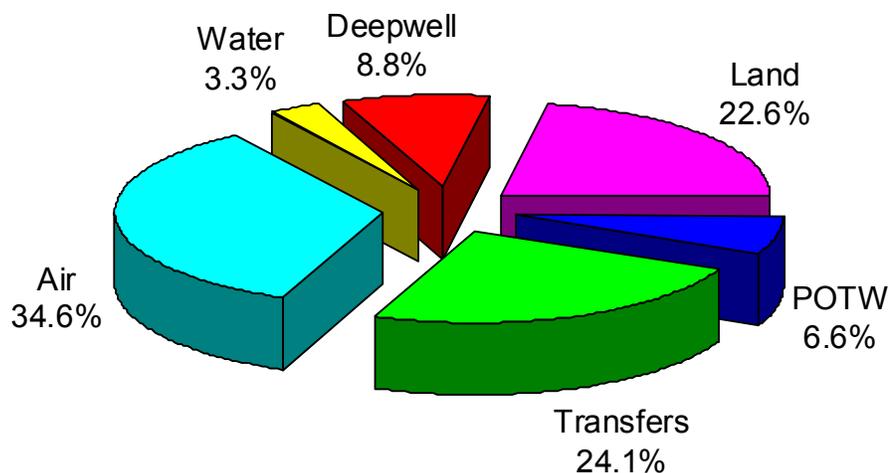
Statewide totals of on-site releases, off-site transfers, and on-site waste management for reporting years 1999 to 2008 are provided in Table 2A and 2B. Table 2A represents all data including the data for delisted, added, and modified chemicals and the expansion industrial sectors. Table 2B does not include data for: (1) chemicals that have been delisted, added or modified; and (2) new industrial sectors which were added to TRI in order to allow for historical trend analysis.

**Table 2A: 10-Year-Trend: All Facilities and Chemicals (millions of pounds)**

Comparison	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Releases to Air	151.0	145.5	122.1	134.1	132.2	128.2	126.3	120.3	114.9	90.3
Releases to Water	10.3	11.4	10.0	8.9	8.0	8.0	6.9	8.3	9.3	8.5
Deepwell Injection	27.7	30.3	32.0	29.6	29.3	22.6	24.5	22.5	22.3	22.9
Releases to Land On-Site	70.5	76.8	65.6	67.7	67.6	49.7	62.5	79.5	74.2	59.1
Discharges to POTW	19.8	23.1	18.8	17.4	17.3	18.6	19.8	16.6	17.7	17.4
Off-Site Disposal / Treatment	77.3	77.2	83.9	68.5	65.6	71.3	82.5	97.4	80.1	63.0
<b>Total Releases &amp; Transfers*</b>	<b>326.7</b>	<b>334.0</b>	<b>305.9</b>	<b>299.2</b>	<b>298.6</b>	<b>276.5</b>	<b>292.6</b>	<b>312.9</b>	<b>270.9</b>	<b>222.8</b>
Off-Site Energy Recovery	60.0	46.3	40.1	53.8	42.8	37.6	36.0	35.0	31.7	31.3
On-Site Energy Recovery	124.6	94.7	81.0	104.6	81.2	84.3	82.1	97.5	73.9	69.4
Off-Site Recycling	186.9	175.1	172.7	169.0	150.9	148.4	160.2	161.5	164.1	156.4
On-Site Recycling	233.8	223.1	205.6	167.1	171.7	157.8	132.4	98.1	108.9	84.9
On-Site Treatment	262.4	222.2	255.1	271.4	427.3	385.4	338.7	351.3	381.5	367.2
Reporting Facilities	1,735	1,749	1,798	1,737	1,693	1,647	1,636	1,593	1,523	1,458

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

**Figure 2A: 2008 Toxic Releases and Transfers**

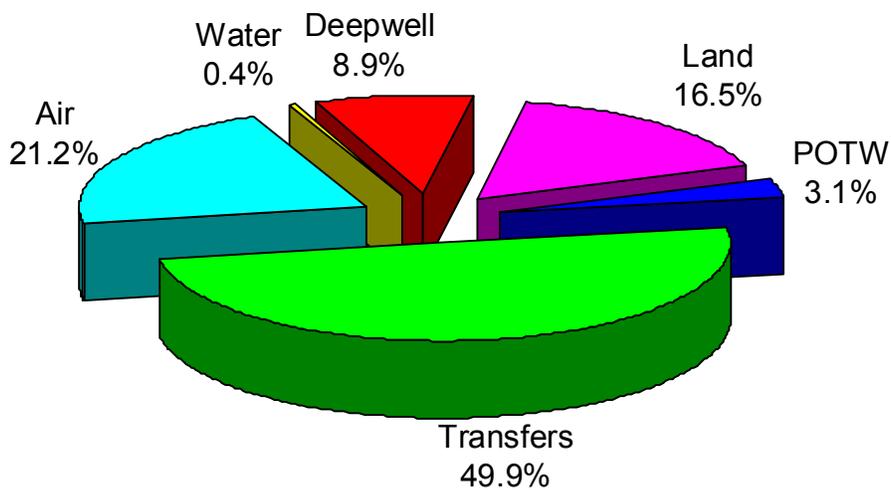


## Summary of Data

**Table 2B: 10 Year-Trend: Original Facilities and Chemicals (millions of pounds)**

Comparison	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Releases to Air	38.4	35.6	30.0	29.6	30.0	27.5	26.2	25.7	23.9	21.4
Releases to Water	0.5	0.46	0.4	0.3	0.6	0.3	0.3	0.4	0.3	0.4
Deepwell Injection	12.3	11.2	13.8	11.6	14.6	8.6	14.2	10.0	7.6	9.0
Releases to Land On-Site	19.3	15.3	10.2	9.0	16.3	7.6	13.1	12.7	16.4	16.7
Discharges to POTW	5.7	6.9	5.1	4.3	4.4	4.7	5.6	4.6	4.2	3.1
Off-Site Disposal / Treatment	59.2	58.3	49.0	50.3	46.6	56.5	64.9	83.4	65.2	50.4
<b>Total Releases &amp; Transfers</b>	<b>135.4</b>	<b>127.7</b>	<b>108.4</b>	<b>105.1</b>	<b>110.3</b>	<b>105.1</b>	<b>124.3</b>	<b>136.7</b>	<b>117.5</b>	<b>101.0</b>
Off-Site Energy Recovery	27.2	24.5	22.2	43.3	20.3	21.9	20.0	26.4	19.2	17.4
On-Site Energy Recovery	100.3	77.0	65.1	84.4	71.9	81.6	79.1	93.8	70.7	67.3
Off-Site Recycling	176.4	167.9	165.7	161.7	143.4	142.2	142.3	137.8	129.5	126.0
On-Site Recycling	181.7	165.2	152.3	129.0	113.3	78.2	63.8	64.0	59.8	54.7
On-Site Treatment	117.8	110.8	100.0	117.1	148.0	149.7	110.9	106.8	108.0	109.6
Reporting Facilities	1,486	1,509	1,570	1,510	1,473	1,423	1,419	1,399	1,334	1,269

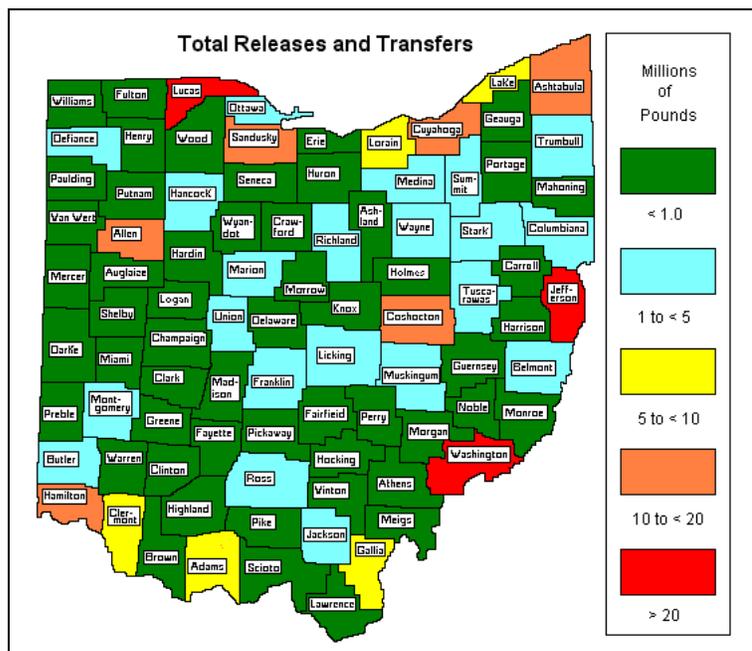
**Figure 2B: 2008 Toxic Releases and Transfers**



## Summary of Data

### Total Releases and Transfers for 2008\*

Top 10 Counties		
County	Pounds	
1. Lucas	32,508,411	
2. Jefferson	28,517,970	
3. Washington	21,749,250	
4. Hamilton	14,944,149	
5. Allen	14,568,920	
6. Ashtabula	13,965,606	
7. Sandusky	12,983,802	
8. Cuyahoga	12,362,146	
9. Coshocton	11,665,792	
10. Adams	8,452,243	



Top 10 Chemicals		
Chemical	Pounds	
1. Zinc and zinc compounds	53,472,129	
2. Hydrochloric acid (aerosols)	42,692,814	
3. Manganese and manganese compounds	24,514,403	
4. Nitrate compounds	21,791,257	
5. Sulfuric acid (aerosols)	12,717,511	
6. Barium and barium compounds	10,551,676	
7. Hydrogen fluoride	9,671,851	
8. Ammonia	9,579,106	
9. Nitric Acid	8,913,060	
10. Carbonyl sulfide	8,166,301	

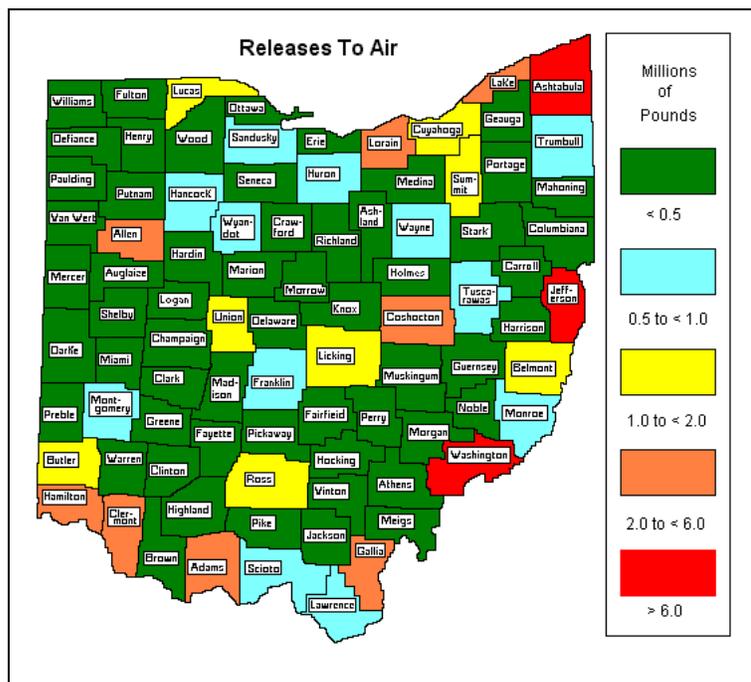
Top 10 Facilities		
Facility / County	Pounds	
1. EnviroSAFE Services of Ohio Inc. / Lucas	28,566,140	
2. Vickery Environmental Inc. / Sandusky	12,350,250	
3. Severstal Wheeling, Inc. / Jefferson	11,941,502	
4. W. H. Sammis Plant / Jefferson	10,813,331	
5. INEOS USA LLC / Allen	10,791,266	
6. AEP, Muskingum River Plant / Washington	10,205,275	
7. Millennium Inorganic Chemicals / Ashtabula	8,324,045	
8. DP&L J.M. Stuart Station / Adams	7,378,725	
9. Shepherd Chemical Co.	6,992,700	
10. AEP, Conesville Plant / Coshocton	6,714,683	

\* All data included.

## Summary of Data

### Releases to Air for 2008\*

Top 10 Counties		
County	Pounds	
1. Washington	12,641,100	
2. Jefferson	11,657,034	
3. Ashtabula	8,468,026	
4. Coshocton	5,668,806	
5. Adams	5,249,390	
6. Clermont	4,900,192	
7. Hamilton	4,470,267	
8. Lake	3,841,114	
9. Gallia	3,542,799	
10. Allen	3,001,725	



### Top 10 Chemicals

Chemical	Pounds
1. Hydrochloric acid (aerosols)	41,905,506
2. Sulfuric acid (aerosols)	12,717,511
3. Carbonyl sulfide	8,166,301
4. Ammonia	7,206,748
5. Hydrogen fluoride	4,055,476
6. Certain glycol ethers	2,043,461
7. Methanol	1,778,705
8. 1-chloro-1,1-difluoroethane	1,763,521
9. N-Hexane	1,225,797
10. N-Butyl alcohol	1,178,536

### Top 10 Facilities

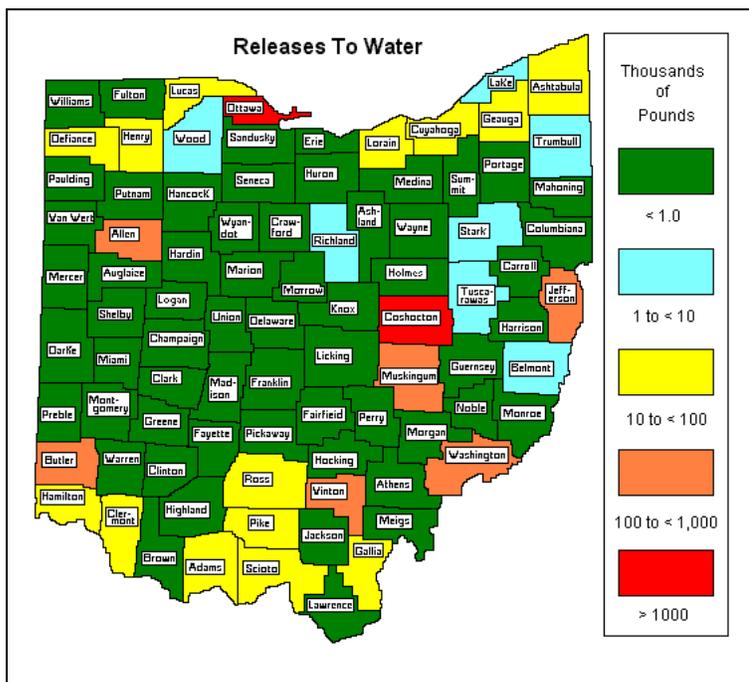
Facility / County	Pounds
1. American Electric Power Muskingum River Plant / Washington	8,844,238
2. FirstEnergy W.H. Sammis Plant / Jefferson	8,217,348
3. Millennium Inorganic Chemicals Plant 2 / Ashtabula	5,568,983
4. American Electric Power Conesville Plant / Coshocton	5,381,077
5. DP&L J.M. Stuart Station / Adams	4,830,569
6. American Electric Power Cardinal Plant / Jefferson	3,349,691
7. Duke Energy, Miami Fort Generating Station / Hamilton	3,240,542
8. FirstEnergy Eastlake Plant / Lake	2,880,385
9. Duke Energy, Beckjord Generating Station / Clermont	2,820,733
10. PCS Nitrogen of Ohio L.P. / Allen	2,605,932

\* All data included.

## Summary of Data

### Releases to Water for 2008\*

Top 10 Counties	
County	Pounds
1. Coshocton	3,836,562
2. Ottawa	1,739,635
3. Washington	978,546
4. Muskingum	440,507
5. Allen	308,293
6. Butler	253,761
7. Jefferson	199,640
8. Vinton	175,883
9. Ashtabula	81,024
10. Lucas	69,289



### Top 10 Chemicals

Chemical	Pounds
1. Nitrate compounds	7,607,237
2. Manganese and manganese compounds	326,516
3. Ammonia	319,650
4. Barium and barium compounds	53,542
5. Zinc and zinc compounds	43,137
6. Methanol	31,381
7. Copper and copper compounds	27,509
8. Chromium and chromium compounds	17,215
9. Ethylene glycol	13,509
10. Nickel and nickel compounds	9,362

### Top 10 Facilities

Facility / County	Pounds
1. AK Steel Corp. Coshocton Works / Coshocton	3,801,250
2. Brush Wellman Inc. / Ottawa	1,739,625
3. Kraton Polymers US LLC / Washington	731,862
4. AK Steel Corp. Zanesville Works / Muskingum	440,506
5. Eramet Marietta Inc. / Washington	235,194
6. PCS Nitrogen of Ohio LP / Allen	222,922
7. Titanium Metals Corp. / Jefferson	178,826
8. Sands Hill Mining LLC / Vinton	171,960
9. AK Steel Corp. / Butler	127,896
10. Miller Breweries East Inc. / Butler	122,340

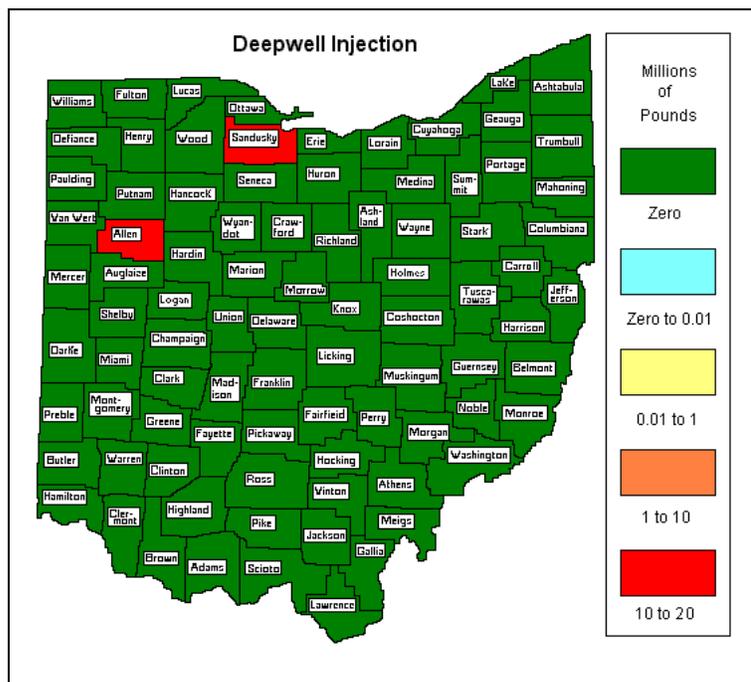
\* All data included.

## Summary of Data

### Deepwell Injection for 2008\*

Top 10 Counties	
County	Pounds
1. Sandusky	12,311,678
2. Allen	10,629,270

Note: Only 2 facilities reported on-site deepwell injection.



Top 10 Chemicals	
Chemical	Pounds
1. Nitric acid	5,648,060
2. Hydrogen fluoride	5,028,860
3. Acetonitrile	4,000,000
4. Methanol	1,612,646
5. Ammonia	1,438,845
6. Acrylamide	1,200,000
7. Acrylonitrile	930,000
8. Chromium and chromium compounds	490,000
9. Zinc and zinc compounds	339,273
10. Hydroquinone	320,000

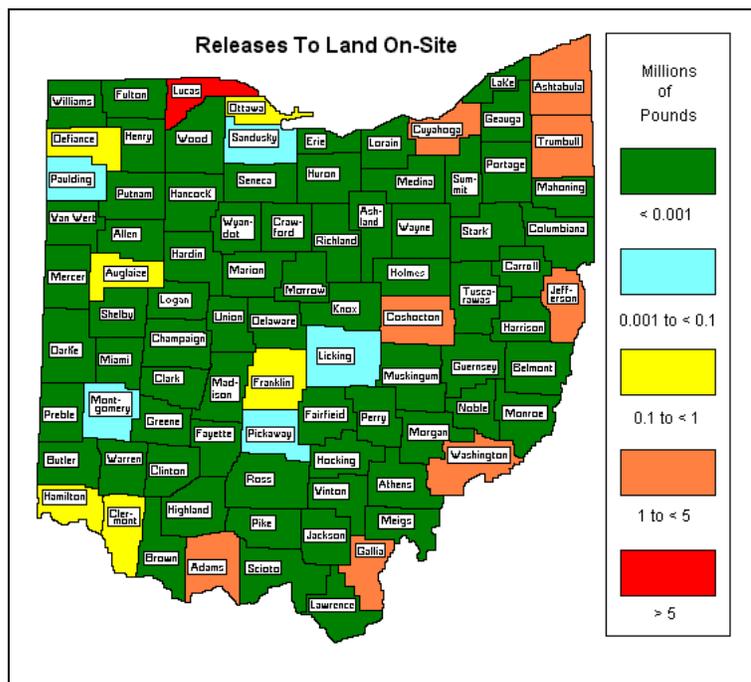
Top 10 Facilities	
Facility / County	Pounds
1. Vickery Environmental Inc. / Sandusky	12,311,678
2. INEOS USA LLC / Allen	10,629,270

\* All data included.

## Summary of Data

### Releases to Land On-Site for 2008\*

Top 10 Counties		
County	Pounds	
1. Lucas	29,211,632	
2. Washington	5,333,505	
3. Ashtabula	4,700,515	
4. Gallia	4,474,523	
5. Cuyahoga	3,896,487	
6. Adams	3,182,446	
7. Trumbull	2,602,981	
8. Jefferson	1,785,702	
9. Coshocton	1,315,680	
10. Defiance	910,845	



### Top 10 Chemicals

Chemical	Pounds
1. Zinc and zinc compounds	28,506,163
2. Manganese and manganese compounds	14,766,114
3. Barium and barium compounds	5,571,892
4. Chromium and chromium compounds	2,924,516
5. Lead and lead compounds	2,082,963
6. Vanadium and vanadium compounds	1,685,109
7. Copper and copper compounds	1,289,473
8. Nickel and nickel compounds	818,022
9. Arsenic and arsenic compounds	495,370
10. Cobalt and cobalt compounds	324,244

### Top 10 Facilities

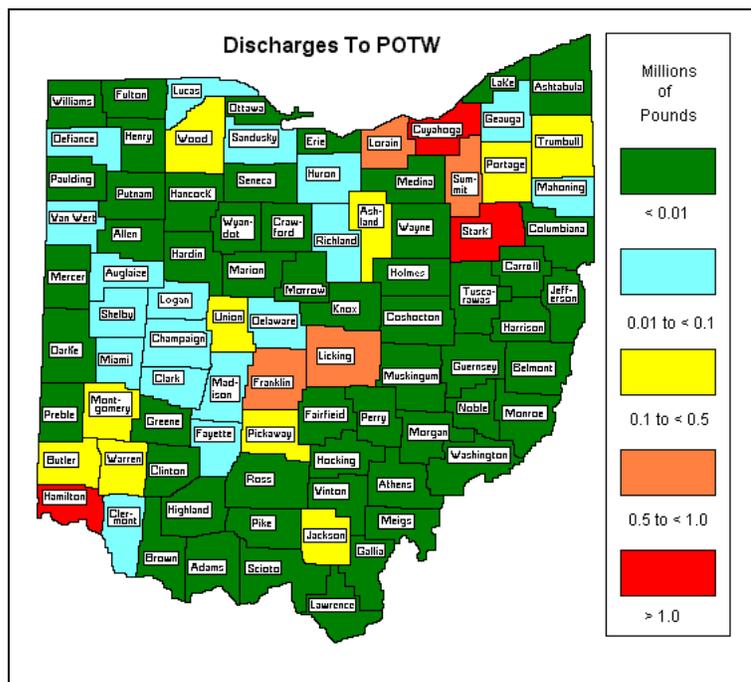
Facility / County	Pounds
1. EnviroSAFE Services of Ohio Inc. / Lucas	28,565,210
2. Eramet Marietta Inc. / Washington	3,983,497
3. Arcelormittal Cleveland Inc. / Cuyahoga	3,896,138
4. American Electric Power Gavin Plant / Gallia	3,145,442
5. Millennium Inorganic Chemicals #2/ Ashtabula	2,700,062
6. Severstal Warren Inc. / Trumbull	2,602,501
7. Dayton Power & Light Co. J.M Stuart Station / Adams	2,529,594
8. Millennium Inorganic Chemicals #1 / Ashtabula	2,000,193
9. American Electric Power Cardinal Plant / Jefferson	1,785,702
10. American Electric Power Muskingum Plant / Washington	1,347,308

\* All data included.

## Summary of Data

### Discharges to POTW for 2008\*

Top 10 Counties		
	County	Pounds
1.	Hamilton	9,106,680
2.	Stark	1,055,230
3.	Cuyahoga	1,001,635
4.	Franklin	716,336
5.	Summit	589,294
6.	Licking	550,123
7.	Lorain	514,961
8.	Trumbull	446,250
9.	Montgomery	401,533
10.	Butler	399,889



### Top 10 Chemicals

Chemical	Pounds
1. Nitrate compounds	13,633,368
2. Methanol	1,131,128
3. Certain glycol ethers	660,754
4. Ethylene glycol	341,965
5. Ammonia	323,369
6. Sodium nitrite	246,701
7. Allyl alcohol	198,943
8. Zinc and zinc compounds	150,822
9. Formaldehyde	93,461
10. Aniline	75,632

### Top 10 Facilities

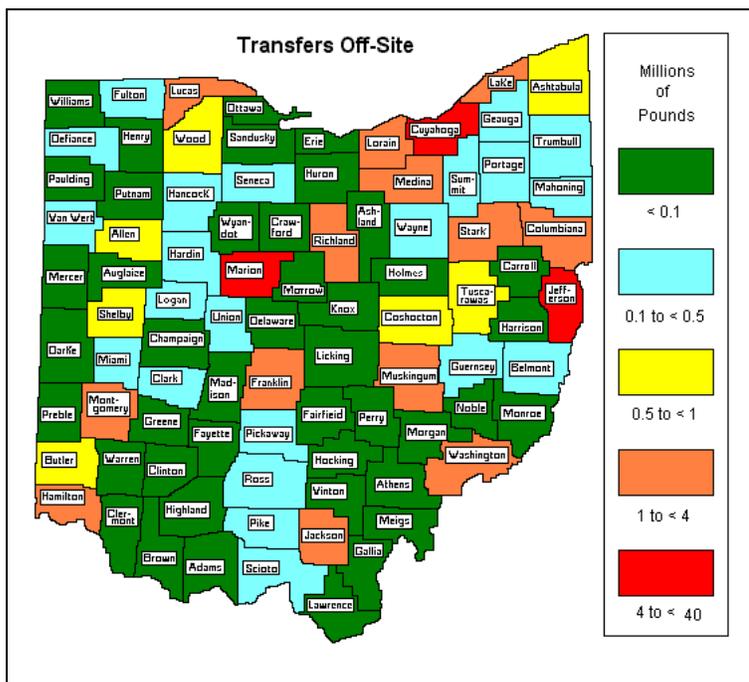
Facility / County	Pounds
1. Shepherd Chemical Co. / Hamilton	6,981,651
2. Jewel Acquisition LLC – Louisville / Stark	661,990
3. Emery Oleochemicals LLC Cincinnati / Hamilton	623,759
4. Rhodia Inc. / Hamilton	552,708
5. Anomatic Corp. / Licking	455,030
6. Diamond innovations Inc. / Franklin	738,433
7. PPG Industries Inc. Barberton / Summit	405,749
8. GM Lordstown Complex / Trumbull	355,620
9. BASF Catalysts LLC / Lorain	652,966
10. Ohio Precious Metals LLC / Jackson	344,818

\* All data included.

## Summary of Data

### Transfers Off-Site To Disposal or Treatment for 2008\*

Top 10 Counties		
County	Pounds	
1. Jefferson	14,875,593	
2. Cuyahoga	6,417,455	
3. Marion	4,161,663	
4. Lorain	3,726,542	
5. Stark	2,969,637	
6. Washington	2,796,086	
7. Lake	2,780,109	
8. Montgomery	2,364,179	
9. Richland	2,334,005	
10. Muskingum	1,896,083	



### Top 10 Chemicals

Chemical	Pounds
1. Zinc and zinc compounds	24,135,554
2. Manganese and manganese compounds	8,955,903
3. Barium and barium compounds	4,809,175
4. Nitric Acid	3,037,755
5. Methanol	2,842,099
6. Chromium and chromium compounds	2,352,774
7. Lead and lead compounds	2,158,654
8. Copper and copper compounds	1,722,440
9. Nickel and nickel compounds	1,259,606
10. Toluene	1,000,877

### Top 10 Facilities

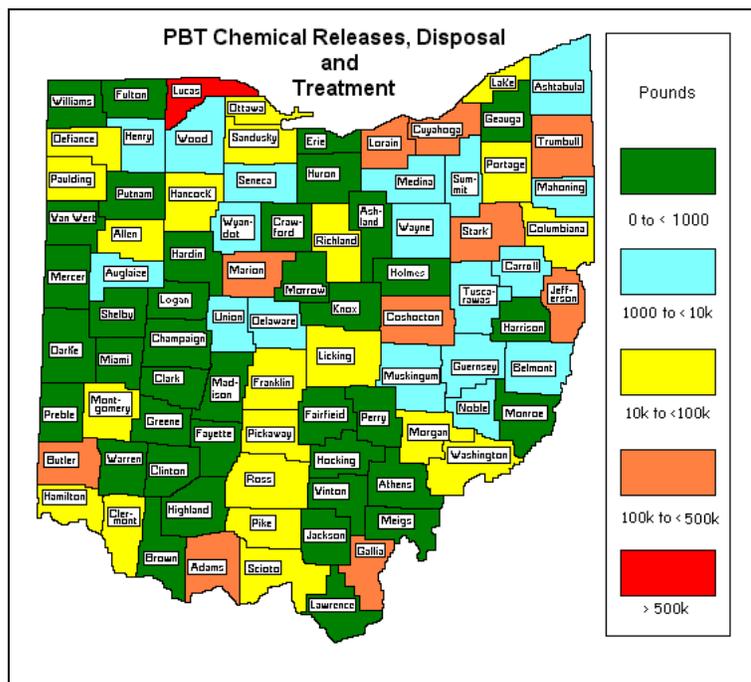
Facility / County	Pounds
1. Severstal Wheeling Inc. / Jefferson	11,914,208
2. NUCOR Steel Marion Inc. / Marion	3,122,498
3. FirstEnergy W.H. Sammis Plant / Jefferson	2,585,897
4. AK Steel Corp. – Mansfield Works / Richland	2,249,345
5. Energizer Battery Mfg. Inc. / Washington	2,173,273
6. DuPont Electronic polymers / Montgomery	2,039,726
7. AK Steel Corp. – Zanesville Works / Muskingum	1,888,539
8. FirstEnergy Eastlake Plant / Lake	1,834,481
9. Envirote of Ohio Inc. / Stark	1,729,152
10. Charter steel Cleveland / Cuyahoga	1,648,603

\* All data included.

## Summary of Data

### PBT Chemical Releases, Disposal and Treatment for 2008\*

Top 10 Counties		
County	Pounds	
1. Lucas	1,377,194	
2. Cuyahoga	341,877	
3. Jefferson	316,809	
4. Lorain	295,644	
5. Marion	253,934	
6. Stark	238,860	
7. Coshocton	169,720	
8. Trumbull	155,554	
9. Gallia	140,465	
10. Adams	117,537	



### PBT Chemical Release, Disposal and Treatment Summary†

PBT Chemical	Air	Water	Deepwell Injection	Land	POTW	Off-Site Disposal / Treatment
Aldrin	0	0	0	0	0	0
Benzo(G,H,I)perylene	933.98	52.7	0	0.62	5.0	2,578.36
Chlordane	3.82	0	0	0	0	2,236.32
Dioxin & compounds	33.44 gr	0.26 gr	0	259.56 gr	0	138.37 gr
Heptachlor	1.64	0	0	0	0	712.16
Hexachlorobenzene	0.03	0	0	0	8.0	2,329.61
Isodrin	0	0	0	0	0	0
Lead & compounds	79,176.73	4,633.09	10,567.00	2,082,963.6	2,978.08	2,158,654.07
Mercury & compounds	7,389.46	76.2	16	4,403.55	3.43	3,390.21
Methoxychlor	0.21	0	0	0	0	1,701.29
Pendimethalin	3,073.97	0.01	0	0	0.0	7,945.53
Pentachlorobenzene	150.53	0	0	0	0	490.51
PCBs	0	0	0	0	0	175.34
PACs	6,752.54	92.06	264	45.8	5.10	57,056.10
Tetrabromobisphenol A	0	0	0	0	0	0
Toxaphene	0.37	0	0	0	0	1,235.26
Trifluralin	96	0.4	0	0	0.0	8.80

† Quantities rounded to whole numbers, units are pounds unless specified otherwise.

\* All data included.

## Summary of Data

### Releases by Industry

Beginning with the 2006 data, facilities were required to submit appropriate 2007 North American Industry Classification System (NAICS) designations for their facility rather than the 1987 Standard Industrial Classification (SIC) codes previously used (71 Federal Register 32464 June 6, 2007, see [www.epa.gov/tri/lawsandregs/naic/](http://www.epa.gov/tri/lawsandregs/naic/) ).

Only manufacturing facilities in SIC codes 20 through 39 were initially required to report under TRI. Seven industrial groups within major SIC codes 10, 12, 49, 51 and 73 began reporting in 1998. These are metal mining (10), coal mining (12), coal and oil-fired electricity generating facilities (4911 and 4931), RCRA Subtitle C refuse system facilities (4953), chemicals and allied products (wholesale, 5169), petroleum bulk stations (wholesale, 5171), and solvent recovery services (7389). In addition, federal facilities are required to report to TRI under a presidential executive order. Federal facilities may fall in a variety of NAICS codes, both within and outside of the TRI reportable NAICS codes. Federal facilities which fall outside of the TRI NAICS codes are grouped within "other" in Table 3.

Table 3 presents the TRI releases and transfers by industrial group or North American Industrial Classification (NAICS) codes. 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 2008 were those reporting facilities in NAICS code 2211 (Electric Utilities), NAICS code 331 (Primary Metal Industries), and NAICS code 325 (Chemicals and Allied Products). The following table represents the industrial categories and their reported releases and transfers under TRI.

The industrial sectors most recently added accounted for almost 37% of the releases and transfers for treatment and disposal reported. The electric generating facilities accounted for releases and transfers for treatment and disposal of over 73 million pounds, and the RCRA Subtitle C refuse system facilities accounted for over 46 million pounds of releases and transfers for treatment and disposal.

## Summary of Data

**Table 3: Releases and Transfers by NAICS Code**

\* This table was updated on September 3, 2010 to correct an error on On-Site Releases values

NAICS Code	Industry Group	Number of Reporting Facilities	Number of Reports	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
2121	Coal Mining	2	22	171,980	0	0	0
2211	Electric Utilities	26	348	66,373,829	6,951,049	803,051	147,816,975
311	Food/Beverage/Tobacco	46	94	1,912,235	359,033	64,528	1,489,657
313	Textiles	6	23	66,886	71,611	5,731	14,446
315	Apparel	1	2	0	3,465	0	0
321	Wood Products	8	15	74,809	10,247	27,295	124,351
322	Paper & Allied Products	28	97	2,321,056	468,040	676,084	23,810,980
323	Printing & Publishing	13	27	120,504	35,380	114,068	452,221
324	Petroleum	24	215	1,533,415	797,977	1,120,787	14,540,868
325	Chemicals	259	1,272	31,961,004	20,208,094	20,314,691	179,597,487
326	Plastics and Rubber	145	294	3,378,779	1,426,362	1,615,587	1,972,427
327	Stone, Clay, and Glass	60	145	1,666,994	1,087,009	1,740,450	1,631,397
3273	Cement	7	27	96,355	4,972	404,388	46,058,540
331	Primary Metals	162	597	21,939,728	32,014,527	37,173,202	32,641,593
332	Fabricated Metals	258	749	3,844,065	4,610,047	46,208,054	17,198,140
333	Machinery	75	216	121,236	1,036,948	8,429,305	669,743
334	Computers/Electronic Products	38	63	8,096	1,596,244	868,367	981,500
335	Electrical Equipment	40	87	377,517	667,711	6,877,591	963,531
336	Transportation Equipment	133	592	1,689,865	2,473,515	17,366,136	2,701,186
337	Furniture	10	37	124,965	388,449	638,382	2,113,459
339	Miscellaneous Manufacturing	21	40	63,068	601,265	330,658	1,270,661
4246	Chemical Wholesalers	23	181	58,190	243,790	455,754	2,878,271
4247	Petroleum Bulk Terminals	18	168	57,077	3,519	31,638	218,218
562	Hazardous Waste/ Solvent Recovery	25	444	40,945,037	5,224,889	42,237,829	42,089,550
Other		29	71	1,891,116	39,343	167,179	308,094
		1,457	5,826	180,797,811	80,323,494	187,670,762	521,543,299

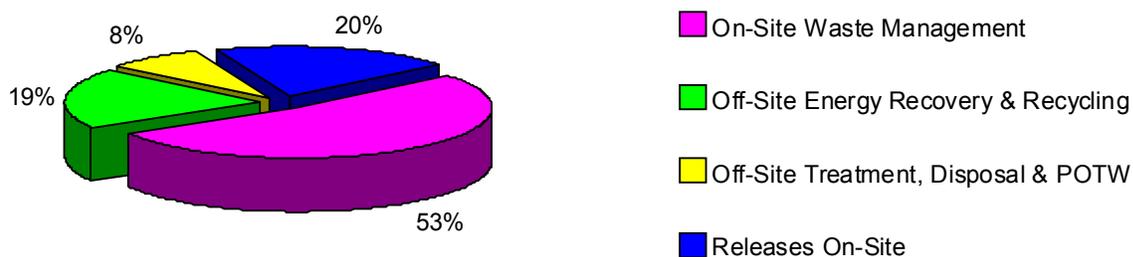
## Summary of Data

### Management of TRI Chemicals in Waste

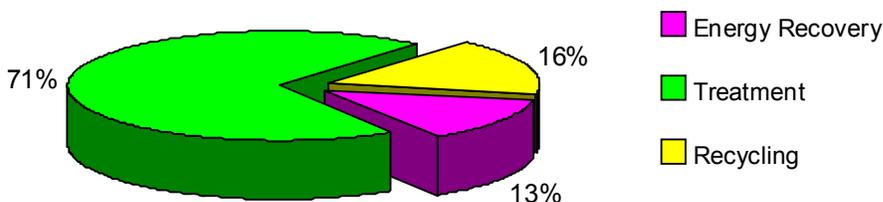
The Pollution Prevention Act (PPA) of 1990 required facilities to report information about the quantities of TRI chemicals in waste managed both on-site and off-site. The PPA established a hierarchy of waste management options in which source reduction is the preferred approach to managing waste. Source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

**Figure 3: Management Of Total Waste**  
(All industries and chemicals)



**Figure 4: On-Site Waste Management**  
(All industries and chemicals)



## Summary of Data

Nearly 131 facilities implemented source reduction activities at their facility during 2008 for over 407 chemicals. 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 (to the prior year) use of a particular toxic chemical. The production 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 chemical. In 2008, nearly 60% of the TRI reports indicated a decrease in production when compared to the data for 2007. Table 4 indicates the changes in production reported by facilities covered by TRI.

**Table 4: Changes in Production from 2007 to 2008**

Change in Production (Production Ratio)	Number of Form Rs	Percent Reporting
Increase by $\geq$ 30%	476	9.1%
Increase by $\geq$ 20%, less than 30%	163	3.1%
Increase by $\geq$ 10%, less than 20%	457	8.8%
Less than 10% increase	569	10.9%
No Change	405	7.8%
Less than 10% decrease	1140	21.9%
Decrease by $\geq$ 10%, less than 20%	724	13.9%
Decrease by $\geq$ 20%, less than 30%	415	8.0%
Decrease by $\geq$ 30%	859	16.5%

## 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 shows Ohio's national ranking for each type of release. The following tables are based on U.S. EPA's national TRI report and data from the September 17, 2009 national data release.

**Table 5: Ohio's National Rank**

National Rank In:	2006	2007	2008
Air Releases	1	1	1
Water Releases	13	7	13
Land On-Site Releases	6	5	5
Deepwell Injection	4	4	3
Reporting Facilities	1,552	1,472	1,445

**Table 6: Number of Reporting Facilities**

Number of Reporting Facilities – RY 2008		
Rank	State	Number of Facilities
1	Texas	1,510
<b>2</b>	<b>Ohio</b>	<b>1,458*</b>
3	California	1,336
4	Pennsylvania	1,199
5	Illinois	1,065

\* According to Ohio EPA's data the number of reporting facilities is 1,445.

**Table 7: Top States for Releases**

Medium	Rank	State	Release (pounds)
<b>Air</b>	1	<b>Ohio</b>	<b>90,134,152</b>
	2	Georgia	84,392,249
	3	Pennsylvania	73,734,473
	4	Texas	69,098,771
	5	North Carolina	56,812,908
<b>Water</b>	1	Indiana	20,610,716
	2	Virginia	20,428,208
	3	Nebraska	16,978,971
	4	Texas	15,129,805
	5	Louisiana	14,839,081
	<b>13</b>	<b>Ohio</b>	<b>8,504,345</b>
<b>Land On-Site</b>	1	Alaska	548,951,557
	2	Nevada	199,173,413
	3	Utah	214,545,832
	4	Arizona	89,990,044
	<b>5</b>	<b>Ohio</b>	<b>58,024,469</b>
<b>Deepwell Injection</b>	1	Texas	61,507,267
	2	Louisiana	41,791,960
	<b>3</b>	<b>Ohio</b>	<b>22,940,948</b>
	4	Florida	18,561,372
	5	Alaska	21,278,305

## 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.

<b>Ohio TRI Report Access</b>	The reports submitted by facilities are available for review at Ohio EPA's office located at 50 West Town Street in Columbus from 8:00 a.m. to 5:00 p.m. Photocopies are also available.	
<b>Information Requests</b>	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 electronically. Data searches and summaries can also be performed. Call the TRI staff at (614) 644-2270 during business hours.	
<b>U.S. EPA Electronic Facility Data Release (e-FDR) and Public Data Release (PDR)</b>	<p>The purpose of the Toxics Release Inventory (TRI) Facility Locator Tool is to provide early sharing of the Reporting Year (RY) 2008 data with stake holders. With the release of the RY 2008 TRI National Analysis (formerly known as the TRI Public Data Release or PDR) on December 9, 2009, the Facility Locator Tool will no longer be available for use. Instead, users can access the RY 2008 TRI data through <a href="#">TRI Explorer</a>, <a href="#">TRI Section of Envirofacts</a> and via the <a href="#">2008 download files</a> on the TRI website. For more information see the <a href="#">TRI Home Page</a> and the RY 2008 <a href="#">TRI National Analysis site</a>.</p> <p>The Facility Locator Tool query tool will be back on-line in the summer of 2010, when the reporting year 2009 data is made available.</p>	
<b>Web Resources</b>	Ohio EPA TRI	<a href="http://www.epa.ohio.gov/dapc/tri/tri.aspx">www.epa.ohio.gov/dapc/tri/tri.aspx</a>
	U.S. EPA TRI	<a href="http://www.epa.gov/tri/">www.epa.gov/tri/</a>
	U.S. EPA TRI Explorer	<a href="http://www.epa.gov/triexplorer/">www.epa.gov/triexplorer/</a>
	Toxnet	<a href="http://www.toxnet.nlm.nih.gov/">www.toxnet.nlm.nih.gov/</a>
	Envirofacts	<a href="http://www.epa.gov/enviro/">www.epa.gov/enviro/</a>
	RTK Network	<a href="http://www.rtknet.org/">www.rtknet.org/</a>
	Ohio County Profiles	<a href="http://development.ohio.gov/research/RegionalProfiles.htm">http://development.ohio.gov/research/RegionalProfiles.htm</a>
<b>Ohio TRI Program Contacts</b>	Cindy Dewulf	<a href="mailto:cindy.dewulf@epa.state.oh.us">cindy.dewulf@epa.state.oh.us</a>
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	Muhammad Elsalahat	<a href="mailto:muhammad.elsalahat@epa.state.oh.us">muhammad.elsalahat@epa.state.oh.us</a>

## TRI Related Acronyms

<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>BACT</b>	Best Available Control Technology
<b>BIF</b>	Boiler and Industrial Furnace
<b>CAA</b>	Clean Air Act
<b>CEM</b>	Continuous Emissions Monitoring
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CWA</b>	Clean Water Act
<b>EHS</b>	Extremely Hazardous Substance
<b>EIS</b>	Environmental Impact Statement
<b>EIS</b>	Emissions Inventory System
<b>EPA</b>	Environmental Protection Agency
<b>EPCRA</b>	Emergency Planning & Community Right-to-Know Act
<b>ERNS</b>	Emergency Response Notification System
<b>ESA</b>	Environmental Site Assessment
<b>FIFRA</b>	Federal Insecticide, Fungicide & Rodenticide Act
<b>FINDS</b>	Facility Index System
<b>FOIA</b>	Freedom of Information Act
<b>FR</b>	Federal Register
<b>HAP</b>	Hazardous Air Pollutant
<b>HCFC</b>	Hydrochlorofluorocarbon
<b>HMR</b>	Hazardous Materials Regulations
<b>HON</b>	Hazardous Organic NESHAP
<b>HSWA</b>	Hazardous & Solid Waste Amendments - 1984 Amendments to RCRA
<b>LEPC</b>	Local Emergency Planning Committee
<b>MACT</b>	Maximum Achievable Control Technology
<b>MSDS</b>	Material Safety Data Sheet
<b>NAAQS</b>	National Ambient Air Quality Standard
<b>NACEPT</b>	National Advisory Committee on Environmental Policy and Technology
<b>NESHAP</b>	National Emission Standard for Hazardous Air Pollutant
<b>NOx</b>	Abbreviation for oxides of nitrogen
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>PACs</b>	Polycyclic Aromatic Compounds
<b>PAH</b>	Polynuclear Aromatic Hydrocarbon

## TRI Related Acronyms

<b>PBT</b>	Persistent Bioaccumulative Toxic chemicals
<b>PCB</b>	Polychlorinated Biphenyls
<b>PEL</b>	Permissible Exposure Limit
<b>PIC</b>	Product of Incomplete Combustion
<b>PM</b>	Particulate Matter
<b>POTW</b>	Publicly Owned Treatment Works
<b>PPA</b>	Pollution Prevention Act of 1990
<b>ppb</b>	Parts per billion
<b>ppm</b>	Parts per million
<b>RCRA</b>	Resource Conservation & Recovery Act
<b>RQ</b>	Reportable Quantity
<b>SARA</b>	Superfund Amendments & Reauthorization Act
<b>SDWA</b>	Safe Drinking Water Act
<b>SERC</b>	State Emergency Response Commission
<b>SIC</b>	Standard Industrial Classification
<b>SIP</b>	State Implementation Plan
<b>SOx</b>	Sulfur Oxides
<b>TAP</b>	Toxic Air Pollutant
<b>THC</b>	Total Hydrocarbons
<b>TITLE III</b>	(SARA) Emergency Planning and Community Right-to-Know Act
<b>TLV</b>	Threshold Limit Value
<b>TPH</b>	Total Petroleum Hydrocarbons
<b>TPQ</b>	Threshold Planning Quantity
<b>TRI</b>	Toxic Release Inventory
<b>TSCA</b>	Toxic Substance Control Act
<b>TSDF</b>	Treatment, Storage and Disposal Facility
<b>TSP</b>	Total Suspended Particulates
<b>TWA</b>	Time Weighted Average
<b>UIC</b>	Underground Injection Control
<b>USC</b>	United States Code
<b>UST</b>	Underground Storage Tank
<b>VOC</b>	Volatile Organic Compounds
<b>VOL</b>	Volatile Organic Liquid
<b>WQM</b>	Water Quality Management