DELAWARE TOXICS RELEASE INVENTORY

DATA SUMMARY

2006

Prepared by the
Department of Natural Resources and Environmental Control

March 2008

2006 TRI DATA SUMMARY

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Front Cover: *The releases, transfers, and management of TRI chemicals, including those involved with this tank car of styrene at the Dow Reichhold facility north of Dover that spontaneously polymerized on August 25, 2006, are detailed in this report. The substance on the exterior of the tank car is solid polystyrene, despite its appearance as a liquid. As members of the State Emergency Response Team (SERT) which includes firefighters, police, and the Delaware Emergency Management Agency (DEMA), DNREC's Emergency Response team helps respond to such incidents. They assist the local responders in protecting citizens, property, and the environment from natural or man-made disasters.*

A MESSAGE FROM THE SECRETARY

The Department of Natural Resources and Environmental Control is pleased to present the Toxics Release Inventory (TRI) Report for the reporting year 2006. DNREC publishes this report to inform citizens about the environment in their communities. This is the 20th year of TRI data collection and I am particularly gratified at the effectiveness of the program, which is a non-regulatory way to reduce toxic chemical releases, largely through the visibility of TRI reporting. It is no surprise that properly motivated and left alone to innovate, Delaware companies have demonstrated continued ingenuity in becoming more efficient and significantly reduced their emissions.

This TRI report shows progress in two important areas: increased accuracy and decreased emissions across a broad front. Instead of relying on estimates, Delaware's TRI facilities increasingly use directly monitored data results. Last year, the use of such direct data revealed higher than estimated mercury releases from the Claymont Steel recycling plant. As a consequence, I issued an enforcement order requiring substantial reductions, and the company has made significant progress by cutting mercury emissions approximately in half. The 2006 TRI data reflect a more accurate method for reporting nitrate discharges into the Delaware River from the Delaware City refinery (Premcor/Valero) -- about ten times greater than its data in the 2005 TRI report. Our Water Resources Division is now working with the refinery to reissue the waste water discharge permit, and that permit will reduce these discharges.

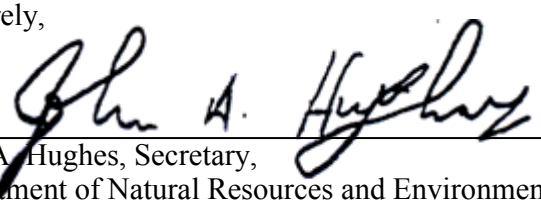
Excluding this correction to nitrate discharges into the Delaware River, the total TRI releases for Delaware increased about two percent over the 2005 reported releases. This increase is due largely to an increase reported by Perdue Georgetown for nitrate compounds released to water, and increased releases to air associated with the use of more coal at the Edgemoor Conectiv Power plant. Emissions from power plants will be significantly reduced when compliance with our multi-pollutant regulations is achieved The overall release TRI reported on-site release trend since 1998, however, is down by about 6 percent. Likewise, the trend for on-site releases of carcinogenic compounds continues downward with vinyl chloride falling by 33,000 pounds, 46 percent less than in 2005.

Despite concerns by states and others, the TRI program was modified by a Federal rule allowing more facilities to report on the TRI short Form A, beginning in the 2006 reporting year. This "short form" provides only general information and does not report any quantitative amounts. Nonetheless, through outreach efforts of DNREC's TRI program, Delaware companies generally did not shift to this "short form" and continued to provide more detailed TRI data.

We publish two TRI documents annually: This *Data Summary Report* and a longer, more detailed *TRI Data Detail Report*. These reports and reports for recent years are available at DNREC offices and also through the public information link at http://www.serc.delaware.gov/epcra.shtml. Specific facility data from 1995-2006 are also available at the above web site, and the ***Other Sources of Information*** section of this report provides details about the many other DNREC and EPA Internet sites devoted to community right-to-know.

I urge you to take advantage of the information in this report to learn about the management of chemicals in your community. I also encourage our industrial citizens to continue to reduce releases below today's levels and focus on providing a safer and more healthful environment for our future.

Sincerely,



John A. Hughes, Secretary,
Department of Natural Resources and Environmental Control

INTRODUCTION

This report reflects the third phase of environmental management since the industrial revolution began several decades ago.

First, chemicals became more diverse and widespread in our communities, especially during the last 60 years. Second, society and government responded to concerns with traditional regulations designed to control the potential harm to communities, human health, and the environment by chemicals. Third, in response to recognition by industries and communities that traditional regulation was not as effective as desired, a fundamental "Right to Know" has emerged in work places and in the broader community. Recognition of the value of information and the power that the public and employees can apply through the use of public and worker right to know has lead to a series of laws requiring simple reporting of the use and release of hazardous substances.

For example, Philadelphia enacted the nation's first "Right to Know" law in 1981. In 1986, Congress created the Toxics Release Inventory (TRI) as part of the Superfund Amendments and Reauthorization Act (SARA) to ensure that toxic chemicals are managed and used safely and responsibly by the manufacturing industries and other facilities. Delaware and DNREC support this program, and collect and distribute TRI data to the public each year. The fact that companies must report on the amount of toxic chemicals they release into the environment has, by itself, caused significant reductions in reported TRI environmental releases over the years.

One Delaware facility changed to a more accurate method of reporting and reported a large increase in its on-site release of nitrate compounds to water for 2006. Another facility also reported an increase in release of nitrate compounds to water. With the exception of these two increases, reports from other Delaware facilities resulted in an overall decrease in the total amount of state-wide on-site releases of 61,000 pounds for 2006. We hope that, with the help of industry and interested citizens, greater reductions in the amounts of on-site releases of TRI chemicals will resume next year.

This year's report focuses in part on the releases of the persistent, bioaccumulative and toxic chemicals known as PBT's, because this is only the seventh year that these chemicals have been reported at lower thresholds.

The Department of Natural Resources and Environmental Control (DNREC) hopes that the information presented in this report will benefit Delaware citizens by improving their awareness and promoting their involvement in environmental issues in their communities.

This report provides a summary of the toxic chemicals handled by Delaware facilities in 2006 and associated data reported to the TRI program. DNREC also publishes a second, more detailed TRI report that provides information about each TRI chemical reported by each facility.

WHAT IS THE TOXICS RELEASE INVENTORY?

The **Toxics Release Inventory**, or **TRI**, is a collection of data that contains information about toxic chemicals that are manufactured or used by some, but definitely not all, facilities in the United States. See page 4 for details on who must report to the TRI program. This information is reported each year by the facilities to the states where they are located, and to the U.S. Environmental Protection Agency (EPA). This information is available to the public through this report and a more technical report published by Delaware's Department of Natural Resources and Environmental Control (DNREC). In addition, the EPA publishes TRI reports, and the data is available through state and federal internet sites. The TRI program was established in 1986 to provide information to the public about the presence and release of toxic chemicals in their communities. It is part of the Emergency Planning and Community Right-to-Know Act (EPCRA).

The EPCRA Reporting Program maintains a database that is updated as new reports are received. The database currently contains twenty years of data. Most chemical releases reported under TRI are also regulated through Federal and/or State permits.

This report provides a summary of the 2006 TRI data and revisions received as of November 1, 2007 from Delaware facilities.

WHY IS THERE A NEED FOR THIS PROGRAM?

A dramatic and fatal accident involving the release of a large quantity of methyl isocyanate gas occurred in Bhopal, India on December 3, 1984. Because of this release and similar, less tragic, accidents that occurred in the United States, Congress enacted the Emergency Planning and Community Right to Know Act (EPCRA). The purpose of this Act is to give citizens information about the chemicals present in their communities, and improve the ability of facilities and local emergency agencies to plan for and respond to chemical emergencies. The Act established a number of reporting requirements for facilities and businesses, and reporting began in 1987. In 1991, Delaware established its own EPCRA legislation that enhanced the federal requirements.

WHAT IS A TOXIC CHEMICAL?

A toxic chemical is one that meets any one of several standards for serious or significant potential to harm human, fish, or animal life, or to be harmful to the environment. There are now 581 chemicals and an additional 30 chemical categories, such as mercury compounds, polycyclic aromatic compounds (PAC's), and Dioxin and Dioxin-like compounds, on the TRI chemical list. Of these chemicals and compounds, 100 were reported in Delaware for 2006.

WHO MUST REPORT TO THE TRI PROGRAM?

Not every facility in Delaware reports to the TRI program. There are three requirements a facility must meet before reporting is required.

1. Only facilities that have 10 or more full time employees are required to report.

2. A facility must be doing business as a manufacturer or processor, generate electric power, or distribute bulk petroleum products. All federal facilities are also required to report.

3. A facility must manufacture or process one of the chemicals on the TRI list in quantities greater than a minimum threshold value. This value is generally 25,000 pounds for Manufacturing and Processing, and 10,000 pounds for the Otherwise Use category. There are lower threshold values for chemicals known as Persistent, Bioaccumulative Toxins (PBT's). Some facilities are able to report some chemicals on a short form (Form A) if the reportable amount of that chemical meets certain criteria. No amounts are reported on Form A, but the facility indicates that it manufactured, processed, or otherwise used less than the threshold amount of the chemical during the year.

HOW DO WE GET THE DATA?

Each year by July 1, facilities report on each chemical that meets the reporting threshold. Each chemical report is usually on a 5-page form that details the type and amount of on-site release, off-site transfer, or on-site waste management activity the chemical has experienced during the prior calendar year. The facilities report this data to DNREC and to the EPA.

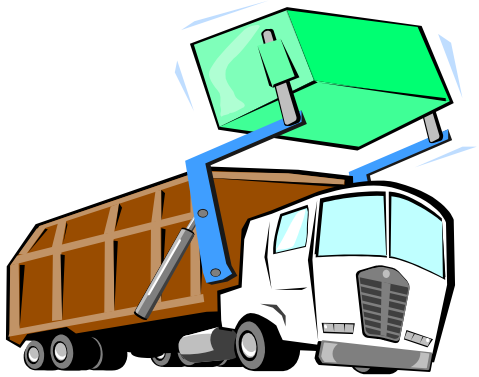
DNREC and EPA check the data for completeness and accuracy, including comparing it with data reported to other programs.

DNREC also visits some of the facilities to get a better understanding about the process at the facility and the reasons for specific chemical use. In addition, DNREC and EPA may audit a facility if they suspect that reporting was not accurate. Both DNREC and the EPA publish reports on the data. The reports, such as this one, are available to the public.

TYPES OF TRI DATA

TRI chemical data is reported in several categories. Table 1 on the next page lists all the categories and amounts reported in 2006 to Delaware and EPA under the TRI program.

On-Site Releases: On-site releases in Delaware are to **air, water,** or **land**. The **air** release category includes exhaust air collected by vents, ducts, or pipes, as well as air escaping into the general facility atmosphere. **Water** releases are to streams or water bodies, including rivers, lakes, oceans and bays at the facility site. This includes releases from sources such as industrial process outflow or open trenches and storm water runoff. **Land** releases go to landfills, hazardous waste landfills, surface impoundments (uncovered holding areas used to evaporate and/or settle waste materials), other land disposal such as waste piles or releases, and land application or treatment in which waste containing a TRI chemical is applied to or incorporated into soil or land at the facility.

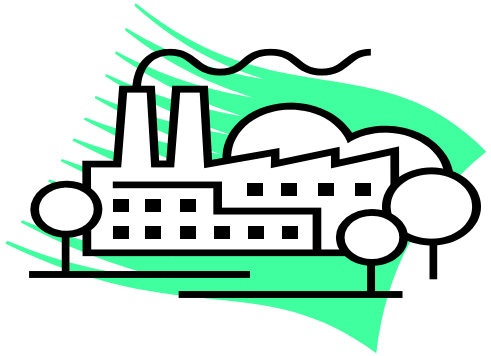


Off-Site Transfers: Off-site transfers include transfer of chemical waste to **POTW's** (Publicly Owned Wastewater Treatment Plants), to **recycle** operations, to **energy recovery** operations, to **treatment** operations, and to **disposal.** These transfers are to other facilities that are permitted to accept the waste from the facility that generates it.

On-site waste Management:
Waste management operations at the facility generating the waste include **recycling, energy recovery, and treatment.** These are the same as described above in Off-Site Transfers, but occur on-site.

2006 DATA SUMMARY

Table 1 shows statewide totals of 2006 TRI on-site releases, off-site transfers, and wastes managed on-site. These different categories are discussed in the previous section and below.



Seventy facilities submitted 331 reports on 100 different chemicals. As in past years, releases to air constitute the largest portion of the total on-site releases. One facility improved its method of reporting and reported a large increase in its on-site release of nitrate compounds to water for 2006. Another facility also reported an increase in release of nitrate compounds to water. With the exception of these two increases, reports from other Delaware facilities resulted in an overall decrease in the total amount of state-wide on-site releases of 61,000 pounds for 2006.

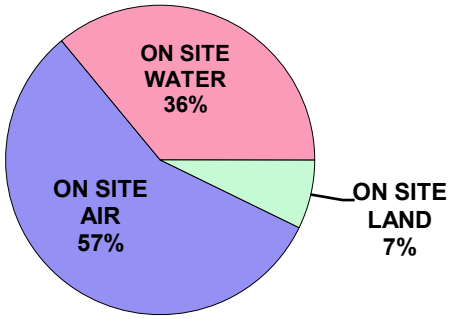
TABLE 1
2006 TRI DATA SUMMARY
(IN POUNDS)

	2006
No. of Facilities	70
No of Form A's	45
No of Form R's	286
No. of Chemicals	100
On-site Releases	
Air	6,343,159
Water	4,023,844
Land	804,512
Total Releases	11,171,515
Off-site Transfers	
POTW's	1,421,321
Recycle	8,425,272
Energy Recovery	4,200,803
Treatment	237,073
Disposal	4,739,121
Total Transfers	19,023,590
On-site Waste Mgmt.	
Recycle	10,594,593
Energy Recovery	17,937,031
Treatment	39,516,068
Total on-site Mgmt.	68,047,692
Total Waste	**98,242,798**

ON-SITE RELEASES

On-site releases are emissions to the air, water, or land environment at the facility site. Figure 1 shows the amounts of all TRI chemicals released on-site for all Delaware TRI facilities.

FIGURE 1
2006 ON SITE RELEASES



TOTAL REPORTED:
11,171,515 POUNDS

Of all the TRI chemicals released to air, hydrochloric acid and sulfuric acid make up about 76% of the total releases to air. These acid gasses are almost entirely generated by the power plants at Indian River, Edge Moor/Hay Road, INVISTA, and the

Premcor refinery. These same chemicals make up about 43% of the total on-site releases to air, water, and land combined.

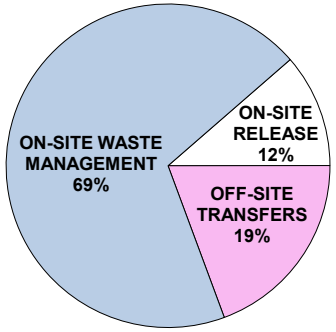
On-site releases to water consist mostly of nitrate compounds from the Premcor, Perdue Georgetown, and INVISTA Seaford facilities. Although these facilities are large producers of nitrate compounds, there are several other nitrate-producing facilities in Delaware that are not subject to the TRI program.

On-site releases to land are almost all metallic compounds such as barium, vanadium, lead, nickel, manganese, chromium, copper, and zinc compounds. The power plants at Indian River, INVISTA, and at the Motiva/ Premcor refinery generate most of these metallic compounds in ash from impurities in the fuels that they burn.

TOTAL WASTE

The relative amounts of all TRI chemical wastes from the three main categories in Table 1 are shown in Figure 2, where you can see the percentage contribution of the on-site releases, off-site transfers, and on-site waste management.

FIGURE 2
TOTAL TRI WASTE



TOTAL REPORTED:
98,242,798 POUNDS

Table 1 and Figure 2 show that on-site releases make up only about 12% of the total TRI waste. Other data, including transfers off-site and waste managed on-site are discussed in more detail in the *2006 TRI Data Detail Report* available from DNREC.

LIMITATIONS OF TRI DATA

In addition to the fact that not all facilities are required to report to the TRI program, there is an important thing to keep in mind:

THIS DATA DOES NOT INDICATE THE AMOUNT, IF ANY, OF HUMAN EXPOSURE OR HOW SEVERE IT MIGHT BE.

TRI data does not provide an indication of actual or potential exposure to the reported releases and cannot be used by itself to determine the impact on your health. Factors such as the chemical's release rate, the toxicity of the chemical, where the chemical enters the environment and its proximity to nearby communities must be fully considered when assessing exposure to the chemical. A small release to air of a highly toxic chemical near a large community may be a greater risk than a large release to land of a less toxic chemical in a remote area.

PERSISTENT, BIOACCUMULATIVE TOXIC CHEMICALS

Certain chemicals are more toxic to humans, animals, and the environment than others, and some remain in the environment much longer than others before they are destroyed by natural processes (if they are destroyed at all). In addition, some chemicals tend to accumulate in bodies of humans, fish, and animals rather than being destroyed or eliminated. These chemicals, if they meet certain standards, are classified as Persistent, Bioaccumulative Toxic (PBT) chemicals. Metals, as elements, are neither created nor destroyed. They can, however, change form in nature or industry as they combine with other elements to become chemicals or compounds that may be classified as PBT's.

If these PBT chemicals are manufactured, processed, or otherwise used above the reporting threshold amounts shown in Table 2, they are reportable to the TRI program. Because of the increased hazards associated with these substances, their thresholds for reporting to TRI are much lower than the basic thresholds applied to other, non-PBT substances. The total amounts released on-site for these PBT substances are shown in Table 3 on the next page.

TABLE 2
PBT CHEMICALS AND REPORTING THRESHOLDS
(pounds/year)

Chemical or Chemical Category	Threshold (Pounds)
Aldrin	100
Benzo[g,h,I]perylene	10
Chlorodane	10
Dioxin and dioxin-like compounds category	0.1 grams
Heptachlor	10
Hexachlorobenzene	10
Isodrin	10
Lead *	100
Lead and lead compounds *	100
Mercury	10
Mercury compounds	10
Methoxychlor	100
Octachlorostyrene	10
Pendimethalin	100
Pentachlorobenzene	10
Polychlorinated biphenyls (PCB's)	10
Polycyclic aromatic compounds category	100
Tetrabromobisphenol A	100
Toxaphene	10
Trifluralin	100

* Lower Threshold Starting With 2001 Reports

DATA FOR PERSISTENT BIOACCUMULATIVE TOXICS

In 2000, the EPA required reporting at much lower threshold levels on a class of chemicals known as persistent, bioaccumulative, toxics (PBT's).

Table 2 on page 8 shows the new thresholds. In 2001, lead and lead compounds, already on the TRI chemical list, were added to the PBT list, and their reporting thresholds were reduced. PBT's are receiving increased attention because we are learning that they remain in the environment for a long time and may not be readily destroyed by nature. PBT's may also move up the food chain without being destroyed and accumulate in body tissues.

Table 3 shows the reported on-site release amounts for PBT's for 2001-2006. The PBT chemicals made up a small part, about 0.32%, of the total on-site releases for 2006. Although PBT's were reportable in 2000, the addition of lead compounds and lead in 2001 greatly increased (by over 27,000 pounds) the total amount of PBT's that were reportable that year. The 2001-2006 data reported here includes lead compounds and lead reported on a consistent basis.

The 2006 reported on-site releases of PBT's are 10% higher compared to 2005 because INVISTA reported higher lead compounds released to land, and other facilities also reported higher lead compounds released on-site. The PBT's reported in 2006 are 15% more than the amounts reported in 2001.

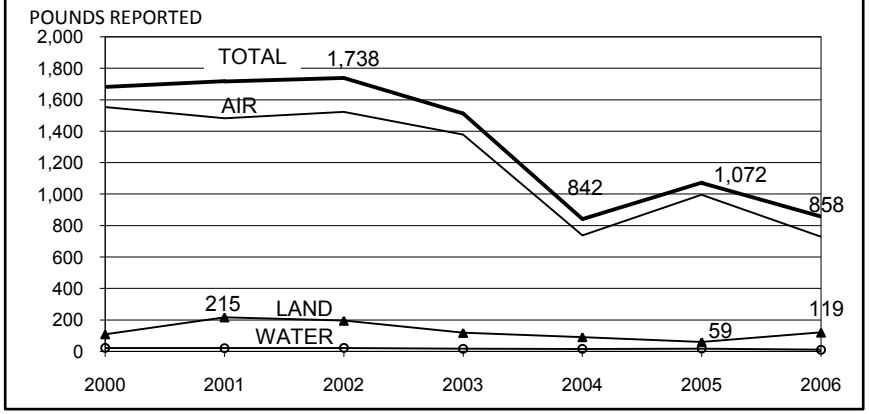
TABLE 3
2000-2006 TRI PBT DATA SUMMARY
(IN POUNDS)

	2001	2002	2003	2004	2005	2006
No. of facilities	23	32	28	26	28	26
No. of Form A's	NA	NA	NA	NA	NA	6
No. of Form R's	51	65	62	60	61	54
No. of Chemicals	12	11	11	11	11	11
On-site Releases				0	0	0
Air	5,681	5,282	5,230	3,797	4,095	4,076
Water	3,659	784	311	1,002	1,857	1,405
Land	21,852	17,166	21,826	27,356	26,559	30,270
Total On-Site Releases	31,192	23,232	27,367	32,154	32,510	35,750

Mercury and Mercury Compounds

Mercury (elemental mercury) and mercury compounds are an important part of the PBT category, and this section discusses some of the data in these reports. Reported elemental mercury on-site release amounts decreased as Occidental Chemical completes its chlor-alkali plant shutdown. Occidental Chemical sent about 157,000 pounds of mercury off-site for recycling in 2006 as part of this shutdown activity. Occidental contributed virtually all of the 51 pounds of elemental mercury released on-site, down from 278 pounds in 2005, and this amount will continue to decrease as the facility completes its shutdown. Figure 3 shows the combined trend for mercury and mercury compounds.

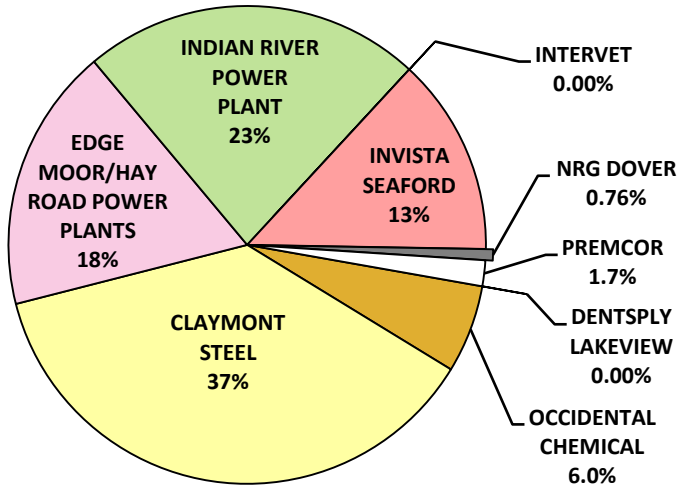
FIGURE 3
DELAWARE MERCURY TRENDS
ON-SITE RELEASE, ALL FACILITIES



Reported on-site releases of mercury compounds in Delaware increased 13 pounds (1.6%) due to a 59 pound increase in the report from the INVISTA facility, which offset decreased amounts from Claymont Steel, Indian River Power Plant, and Premcor. Overall total mercury on-site releases in Delaware have decreased by 51% since the peak of 1,738 pounds in 2002.

Figure 4 shows the percentage each of the facilities that reported a mercury or mercury compound contributed to the mercury on-site release total in 2006.

FIGURE 4
DELAWARE FACILITIES
2006 ON-SITE MERCURY RELEASES



858 TOTAL POUNDS REPORTED

CARCINOGENIC CHEMICALS

Some chemicals are known to or suspected to cause cancer in humans. These chemicals are called carcinogens. Table 4 shows the chemicals on the TRI list that are identified as carcinogens and were reported in Delaware for 2006. Table 4 also shows the number or reports that were received by the TRI program in Delaware for each of these chemicals.

DATA FOR CARCINOGENIC CHEMICALS

Table 5 shows data for carcinogens reported to TRI in Delaware since 2000. Additional detail on carcinogens can be found in the longer, more technical *2006 TRI Data Detail Report* available from DNREC. The amount of carcinogens released on-site in 2006 declined 4% compared to the amount released in 2005, and 41% since 2000.

TABLE 5

2000-2006 TRI CARCINOGENS

ON-SITE RELEASES IN POUNDS

	2000	2001	2002	2003	2004	2005	2006
AIR	401,192	345,472	402,350	245,676	221,262	224,135	187,836
WATER	4,666	13,987	11,791	10,773	12,129	8,062	6,770
LAND	258,048	190,804	187,549	334,290	222,680	178,694	199,866
TOTAL ON-SITE	663,906	550,263	601,690	590,739	456,071	410,890	394,472

TABLE 4

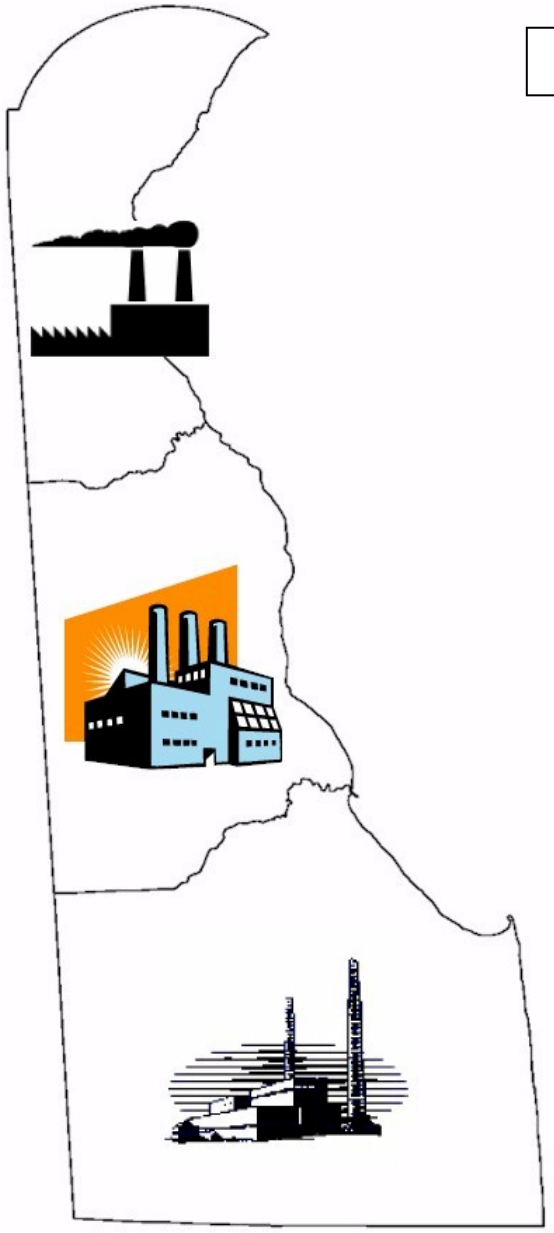
CARCINOGENS REPORTED BY DELAWARE FACILITIES FOR 2006

CHEMICAL NAME	NO. OF REPORTS
ACRYLAMIDE	1
ACRYLONITRILE	1
ARSENIC	1
ARSENIC COMPOUNDS	2
BENZENE	5
1,3-BUTADIENE	2
CHROMIUM COMPOUNDS	9
COBALT COMPOUNDS	3
DICHLOROMETHANE	1
DIETHYL SULFATE	1
ETHYL ACRYLATE	2
ETHYLBENZENE	3
ETHYLENE OXIDE	2
FORMALDEHYDE	1
HEXACHLOROBENZENE	1
LEAD	3
LEAD COMPOUNDS	14
4,4'-METHYLENEBIS(2-CHLOROANILINE)	2
NAPHTHALENE	7
NICKEL	3
NICKEL COMPOUNDS	6
NITROBENZENE	1
P-CHLOROANILINE	1
POLYCHLORINATED BIPHENYLS	1
POLYCYCLIC AROMATIC COMPOUNDS	12
PROPYLENE OXIDE	1
STYRENE	6
TETRACHLOROETHYLENE	1
TOLUENE DIISOCYANATE (MIXED	3
TRICHLOROETHYLENE	1
VINYL ACETATE	2
VINYL CHLORIDE	1
TOTAL =	100

Source: 2006 DNREC Database, November, 2007

FIGURE 5

ON-SITE RELEASES BY COUNTY



NEW CASTLE

Releases to Air = 2,891,978 Pounds
Releases to Water = 2,933,074 Pounds
Releases to Land = 899 Pounds
Total On-Site Releases = 5,825,951 Pounds
210 Reports, 35 Facilities
52.2% of Statewide Releases

KENT

Releases to Air = 182,649 Pounds
Releases to Water = 0 Pounds
Releases to Land = 0 Pounds
Total On-Site Releases = 182,649 Pounds
42 Reports, 15 Facilities
1.6% of Statewide Releases

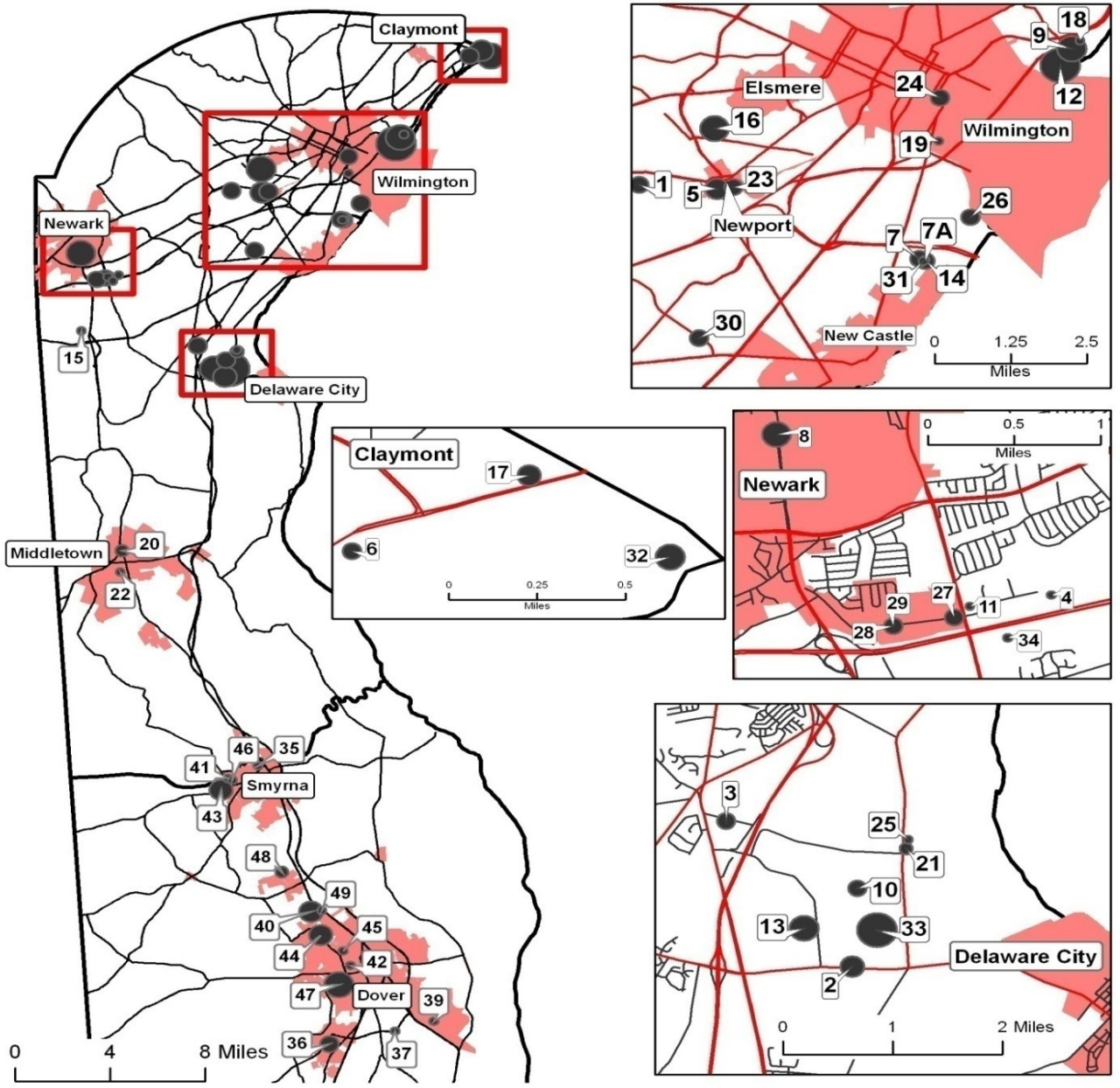
SUSSEX

Releases to Air = 3,268,532 Pounds
Releases to Water = 1,090,770 Pounds
Releases to Land = 803,613 Pounds
Total On-Site Releases = 5,162,915 Pounds
79 Reports, 20 Facilities
46.2% of Statewide Releases

Figure 5 on this page summarizes data about the TRI releases in 2006 for each county, and the maps and indexes on the next 2 pages show where TRI facilities are located.

Source: DNREC 2006 TRI Database, 11-1-07

FIGURE 6 - TRI FACILITY LOCATOR MAP 2006



MAP ID	FACILITY
1	AGILENT TECHNOLOGIES NEWPORT
2	AIR LIQUIDE
3	ARLON
4	CHROME DEPOSIT
5	CIBA SPECIALTY CHEMICALS
6	CLAYMONT STEEL
7	CRODA UNIQEMA
7A	CYTEC INDUSTRIES
8	DAIMLER CHRYSLER
9	DUPONT EDGE MOOR
10	DUPONT RED LION
11	E-A-R SPECIALTY COMPOSITES
12	EDGE MOOR/HAY ROAD POWER PLANTS
13	FORMOSA PLASTICS
14	FUJIFILM IMAGING
15	GE ENERGY USA
16	GENERAL MOTORS
17	HONEYWELL
18	IKO WILMINGTON
19	INSTEEL WIRE
20	JOHNSON CONTROLS
21	KUEHNE COMPANY
22	MACDERMID AUTOTYPE
23	MEDAL
24	NORAMCO
25	OCCIDENTAL CHEMICAL
26	PRINCE MINERALS
27	ROHM AND HAAS
28	ROHM AND HAAS BUILDING 7
29	ROHM AND HAAS TECH CENTER
30	SPATZ FIBERGLASS
31	SPI POLYOLS
32	SUNOCO MARCUS HOOK REFINERY
33	VALERO DELAWARE CITY REFINERY
34	VP RACING FUELS
35	BUCK ALGONQUIN
36	CAMDEL METALS
37	CARL KING
39	DOVER AIR FORCE BASE
40	DOW REICHHOLD
41	HALKO MFG.
42	HANESBRANDS
43	HANOVER FOODS
44	HIRSH INDUSTRIES
45	MCKEE RUN POWER PLANT
46	METAL MASTERS
47	NRG ENERGY DOVER
48	PPG DOVER
49	SERVICE ENERGY DOVER BULK PLANT

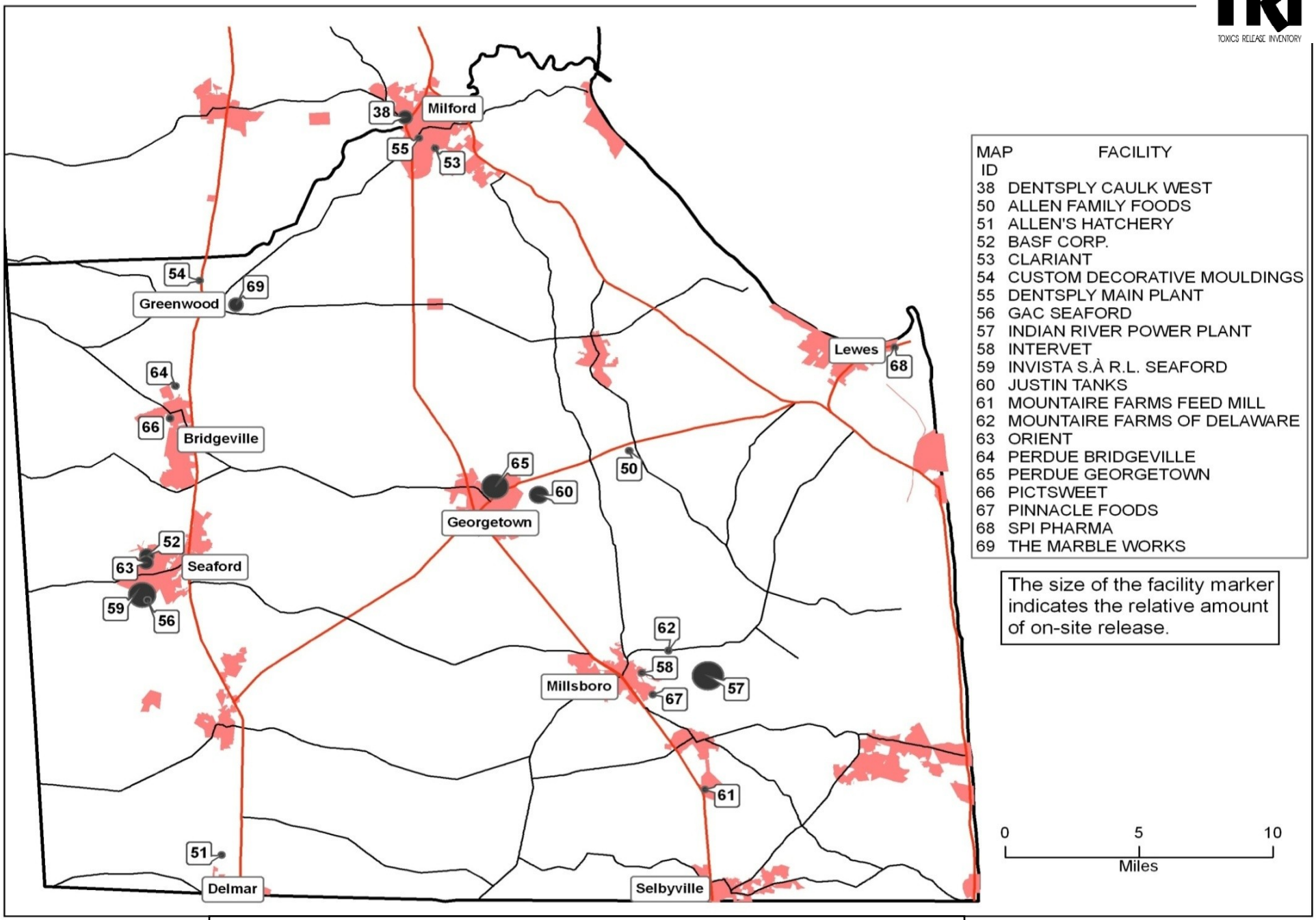
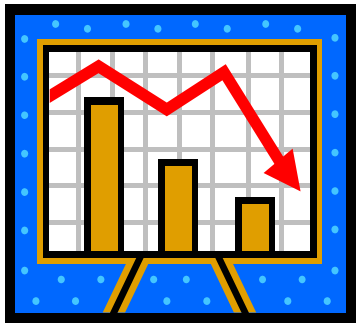


FIGURE 6 - TRI FACILITY LOCATOR MAP 2006

TRENDS OVER TIME



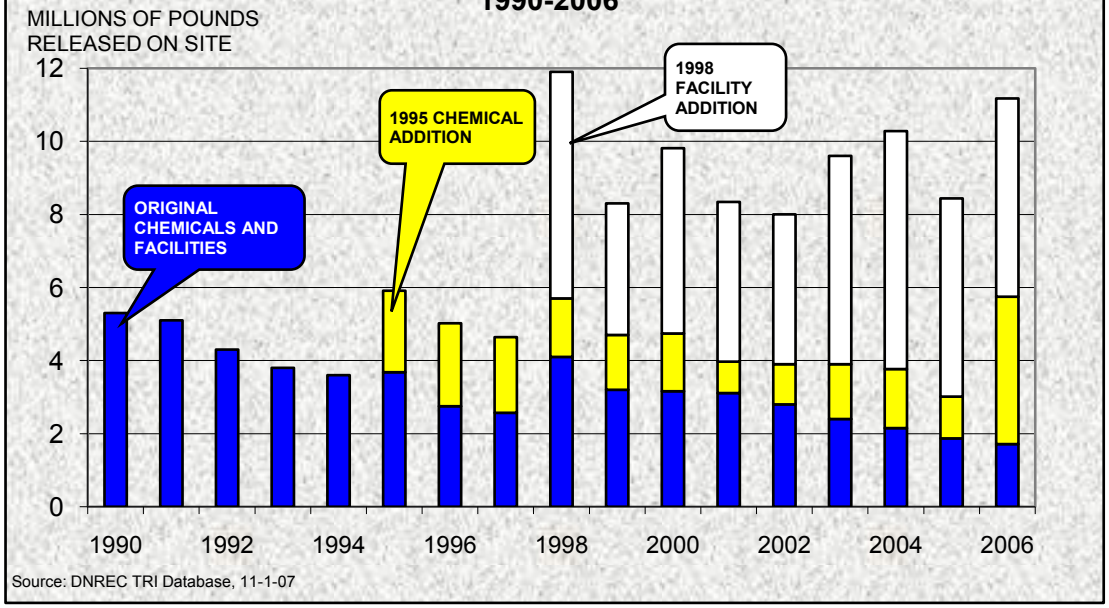
In addition to the reported releases for the latest year, DNREC also looks at how the releases are changing over time. If a type of release is trending up or down, we will look for reasons why. It may be because a new group of chemicals, such as the PBT's, is now being reported. It may be that a facility has changed the way it estimates the release because it found a more accurate way to do this, and the actual release may not have changed very much. Whatever the reason, we look at trends as long-term indicators for the way activity is changing. We also look at trends for potential issues that need investigation.

The EPA also adds chemicals and facilities to the TRI program when it discovers chemicals that are significant toxics or that some facilities as a group tend to manufacture or use toxic chemicals. Figure 7 shows the trend of the on-site releases since 1990. Figure 7 shows the result of adding chemicals and facilities and industry efforts to reduce releases. Usually a few chemicals are added or deleted every year and they are included in the totals for that year.

Since 1990, on-site releases of facilities and chemicals in the original TRI program list have trended down over time and are now 68% lower than the original amount reported.

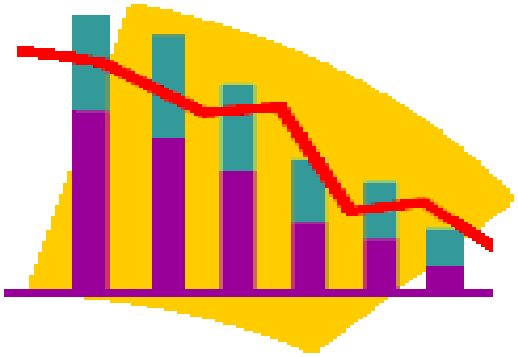
In 1995, a large group of chemicals was added and the total number of chemicals increased to 667 from the 365 reportable in 1994. This group trended down 50% since it was added in 1995, until 2006. In 2006 the Premcor refinery reported a large increase in the release of nitrate compounds because they changed their method of analyzing for this

FIGURE 7
EFFECT OF CHEMICAL AND FACILITY GROUP ADDITIONS
1990-2006



Source: DNREC TRI Database, 11-1-07

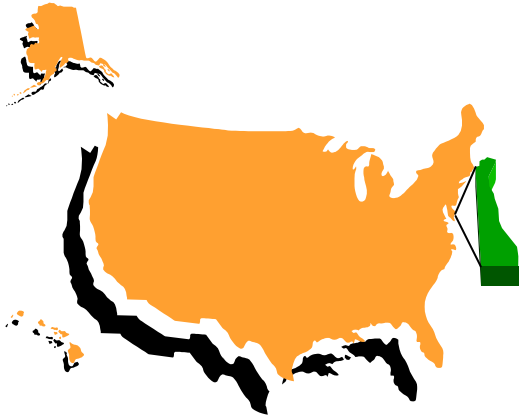
chemical. Now, this group shows an increase of 80% over the 1995 amount, or 1.8 million pounds.



In 1998, a group of facilities was added. This group included electric generating facilities, as well as some chemical and petroleum distribution facilities. The Indian River Power Plant and the Edge Moor/Hay Road Power Plant are significant facilities in this group. The 1998 Facility Addition group, almost unchanged for 2006, is now 12% lower than its original reported amount in 1998.

The amounts of on-site releases for two of the three groups are now lower than their original amounts. If each group had remained constant at its original reported amount, the amounts reported for 2006 would be 13.7 million pounds instead of the 11.2 million pounds actually reported, a reduction of 18%. We hope that this downward trend will continue.

NATIONAL PERSPECTIVE



Because Delaware is a small state, it may be helpful to see how it compares to other states and to the nation.

At the time of this report, the EPA has not released the national 2006 TRI report, so we could not compare our 2006 data with the national 2006 data. However, we did compare our 2006 data with the 2005 national data. Following are some highlights from this comparison:

1. Delaware ranks 40th in the nation for total on-site releases.

2. Fifty-four facilities in the nation each released more on-site individually that all the facilities in the State of Delaware combined.

3. Delaware provided 0.29% of the total on-site release amounts in the nation.

4. Some reports from nearby facilities in neighboring states exceed the amounts for all Delaware reports for a specific chemical. For example, one facility in Pennsylvania released 50,200 pounds of toluene to air. The Delaware total for toluene was 23,606 pounds. Another facility in Maryland released 175,000 pounds of hexane to air. The Delaware total for hexane was 65,016 pounds

Some facilities in Delaware do rank at or near the top of the national rankings for specific releases.

DuPont Edge Moor ranks #1 in the nation for off-site transfer of dioxin and dioxin-like compounds.

Formosa Plastics ranks #5 in the nation for on-site release of vinyl chloride and #14 in the nation for on-site release of vinyl acetate.

Premcor ranks #2 for total on-site release of all chemicals in the refinery category and #22 in all industries for on-site release of cyanide compounds.

Occidental Chemical has now closed their mercury-based operation, but in 2006 the facility ranked #75 (down from #28 in 2005) for total on-site release of mercury.

DaimlerChrysler ranks #65 for on-site release of certain glycol ethers.

The **Indian River Power Plant** ranks #60 for on-site release of hydrochloric acid.

These rankings may change when the 2006 data is published, as the new data may be greater than or less than the 2005 data for a specific comparison.

EPA CHANGES TO THE TRI PROGRAM

The EPA has enacted a change to the TRI reporting requirements for the short Form A for 2006. No amounts are reported on Form A, only that the facility manufactured, processed, or otherwise used the chemical at its facility. The change:

1. Increases the Form A total non-PBT chemical waste amount threshold for reporting to 5,000 pounds, up from the prior 500 pounds. If below this threshold, on-site release amounts, along with other waste management details, are not reported on Form A.
2. Establishes a non-PBT chemical on-site release threshold amount for Form A of 2,000 pounds. Again, lower amounts are not reported on Form A.
3. Allows reporting of PBT chemicals, except dioxins, on Form A if no release or disposal activities occur, and total waste management of the chemical is less than 500 pounds. No reporting of PBTs on Form A was allowed up through reporting year 2005.

We believe that there will be a significant loss of data nationwide associated with the possible conversion of the standard Form R reports to the short Form A reports. Because of this, DNREC continues to oppose this new rule and urges its repeal. Bills have been introduced in Congress to repeal this change, and twelve states through the Federal District Court in New York, have also recently asked the EPA to retract this change.

TRI facilities must now report using the 6-digit North American Industry Classification System (NAICS). The 4-digit Standard Industrial Classification (SIC) is no longer used for TRI reporting. This change will provide additional refinement in grouping the reporting facilities and analyzing their data.

The link to EPA's TRI page can be found in the ***Other Sources of Information*** section on page 18.

OTHER SOURCES OF INFORMATION

Information about TRI and related programs is available from several additional sources. Some of these sources are shown below. Other sources can be found in our DNREC *2006 TRI Data Detail Report.*

Access to the DNREC TRI Files - DNREC is responsible for collecting, processing, and distributing information submitted by Delaware facilities under the TRI program. The 1998-2006 TRI annual reports may be viewed at: http://www.serc.delaware.gov/reports.shtml. Additional details and information not contained in the reports are available to the public through the EPCRA Reporting Program located within DNREC. A searchable database is located at: http://www.serc.delaware.gov/services/search/index.shtml

Delaware's Department of Natural Resources and Environmental Control has publications, reports, and information available for a wide variety of programs at: http://www.dnrec.delaware.gov/info/ELibrary.htm.

In addition to TRI reports, there are other provisions of the Emergency Planning and Community Right to Know Act (EPCRA) that provide information to the public and to local emergency planning and response organizations. For additional information, visit the Delaware EPCRA website at: http://www.serc.delaware.gov/epcra.shtml.

EPA's TRI Home Page – The EPA TRI home page provides information on the many facets of the TRI program at EPA, including an Executive Summary, Q&A's, a link now to the 2005 TRI data, and later this year to 2006 data, a current list of reportable chemicals, reporting forms, state and federal program contacts, and various guidance documents available for downloading. This website has many links to other EPA and non-EPA sites associated with TRI. www.epa.gov/tri/.

Toxics Release Inventory Public Data Release - EPA's annual TRI report. It covers information nationwide and provides a good perspective on how Delaware compares to other states www.epa.gov/tri/tridata/index.htm. The 2006 edition of this report will be available later this year and will be available for review at the DNREC office at 156 South State Street in Dover. Paper copies can also be obtained by calling EPA at (202) 564-9554.

Right-to-know Network - Searchable nationwide TRI data is available through RTKNet. The RTKNet was established by two non-profit organizations to provide access to TRI and chemical data, link TRI with other environmental data, and exchange information among public interest groups. www.rtknet.org.

Delaware Public Health Cancer Rates and Causes – This site provides data and answers to many cancer-related questions. http://www.state.de.us/dhss/dph/dpc/cancer.html.

Delaware's Pollution Prevention Program is at: http://www.dnrec.state.de.us/dnrec2000/pollutionprevention.asp

Delaware
Toxics Release Inventory

Delaware Department of Natural Resources and Environmental Control

Emergency Planning and Community Right to Know Program
156 South State Street
Dover, Delaware 19901
302-739-9405

Doc. No. 40-09-04/08/01/02