DELAWARE 2015 TOXICS RELEASE INVENTORY REPORT

RELEASES TO AIR DOWN 12% (-93,000 POUNDS)

RELEASES TO WATER UP 32% (+931,000 POUNDS)

RELEASES TO LAND UP 62% (+11,000 POUNDS)

Prepared by the EPCRA Reporting Program
Department of Natural Resources and Environmental Control

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DNREC MISSION STATEMENT

The mission of the Department of Natural Resources and Environmental Control is to ensure the wise management, conservation, and enhancement of the State's natural resources, protect public health and the environment, provide quality outdoor recreation, improve the quality of life, and educate the public on historic, cultural, and natural resource use, requirements and issues.

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Executive Summary

The 2015 Toxics Release Inventory data set marks 29 years of data collected from covered facilities being made available to the public. The Toxics Release Inventory continues to strive to provide the public with information about chemical uses, releases, and waste management activities occurring at these facilities.

For 2015, 59 facilities submitted reports for 90 different chemicals. Approximately 4.6 million pounds were reported as being released on-site, an increase of 849,000 pounds or 23% compared to 2014. Of this amount, approximately 29,000 pounds were released to land, while 712,000 pounds were released to air, and approximately 3.9 million pounds were released to water. Increases were primarily due to the releases of nitrate compounds to water, which were up 837,000 compared to 2014. The Delaware City Refinery (DCR), Perdue Georgetown, and Allen Harim Harbeson all reported significant increases in the release of nitrate compounds to water. Other significant changes impacting on-site releases for 2015 were reductions reported by the Delaware City Refinery in the release of sulfuric acid aerosols to air, and by Chemours Edge Moor in the release of carbonyl sulfide to air.

Overall, a summary of the data shows (amounts rounded to the nearest 1,000 pounds):

- The total amount released on-site to water increased by 931,000 pounds (32%) compared to 2014. This was largely due to an increase in releases of nitrate compounds reported by the Delaware City Refinery. Over the last 10 years, total releases to water for all facilities have increased by 219%, mainly due to the release of nitrate compounds to water. (See ***Releases to Water*** on page 9 for additional information.)
- The total amount of TRI chemicals reported as released on-site to air for 2015 decreased by 93,000 pounds (12%), compared to 2014. The largest reduction in this category was carbonyl sulfide released to air from Chemours Edge Moor. Over the last 10 years, total releases to air have trended downward 89%. (See ***Releases to Air*** on page 8 for additional information.)
- The total amount released on-site to land increased by 11,000 pounds (62%) compared to 2014. This was primarily the result of the U.S. Army's National Guard River Road Training Site Range reporting 16,000 pounds of lead released to land. Overall, however, releases to land have trended downward 96% since 2005. (See ***Releases to Land*** on page 10 for additional information.)
- The total amount for on-site release of carcinogens increased by 27,000 pounds (27%) for 2015, but has declined 285,000 pounds, or 69%, since 2005. (See ***Carcinogenic TRI Chemicals*** on page 27 for additional information.)
- The total amount for on-site release of persistent bioaccumulative toxins (PBTs) increased by 15,000 pounds (523%) for 2015. This was primarily the result of an increase in releases of lead to land by the U. S. Army's National Guard Training Site Range. (See ***Persistent Bioaccumulative Toxic (PBT) Chemicals*** on page 21 for additional information.)
- Total TRI waste, including releases on-site, transfers off-site for treatment and disposal, and waste management on-site, decreased by 14%, or 74.1 million pounds from 2014. On-site release amounts, reported above, were up 23%. Transfers off-site decreased 10%, primarily the result of decreases in off-site disposal and recycling. Waste managed on-site decreased by 15%, primarily due to decreases in on-site treatment.

What is the Toxics Release Inventory?

The Toxics Release Inventory, or TRI, is a publicly available data set containing information reported annually for toxic chemicals manufactured, processed, or otherwise used by certain facilities in Delaware and throughout the United States. Each year, these facilities report releases and waste management information for covered chemicals. The reportable list of toxic chemicals for 2015 included 595 individual chemicals and 31 chemical categories. October of 2016 marked the 30th anniversary of the establishment of TRI under Title III, Section 313, of the 1986 Federal Superfund Amendments and Reauthorization Act (SARA 313) to provide information to the public about the presence and release of toxic chemicals in their communities. Title III is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). See ***Appendix A*** for more information.

Covered facilities report TRI information to the EPA and to the state in which the facility is located. In Delaware, the EPCRA Reporting Program within the Department of Natural Resources and Environmental Control (DNREC) receives and compiles TRI data from facilities located within the State. The DNREC EPCRA Reporting Program maintains a TRI database that is updated as new reports and revisions to old reports are received. The database currently contains 29 years of reported data. Most releases reported under TRI are also regulated through Federal and/or State permits.

This report contains detail from every 2015 TRI report or report revision from Delaware facilities received by DNREC as of October 1, 2016. Facilities must submit these reports to DNREC and the EPA by July 1 of each year. Several types of analyses are presented in this report based on this data and data from prior years. See ***Access to TRI Files,*** **under** ***For Further Information*****,** on page 49 for details.

Reporting Requirements

A facility is required to submit a report for a listed toxic chemical if the facility meets all of the following criteria:

1. Employs the equivalent of 10 or more full-time employees,
2. Is a covered industry, or is a Federal facility (See Table 1 on the next page for a list of reporting industries), and,
3. Manufactures or processes more than 25,000 pounds, or otherwise uses more than 10,000 pounds, of the listed toxic chemical during the course of the calendar year. Threshold limits for specific chemicals known as PBTs (Persistent Bioaccumulative Toxics) are lower (see Table 7 on page 21).

Note that from time to time, the EPA proposes changes in reporting requirements. It gives agencies, reporting facilities, and other interested parties time to comment on these changes prior to making a final decision about the proposed change. See page 5 for more details.

Facilities that meet the criteria for reporting must submit one report for each listed toxic chemical if it was manufactured, processed, or otherwise used above threshold quantities. The reports cover releases and waste management activities during the prior calendar year.

It is important to note that a facility may need to report even if it has no releases of toxic chemicals, because reporting is based on the amount manufactured, processed, or otherwise used, and not the amount released.

Table 1 is a list of covered industries reporting to the Delaware TRI program for 2015, along with the corresponding three primary digits of the North American Industrial Classification System (NAICS) Codes. NAICS 6-digit codes are used to identify the type of activities performed at a facility. Each industry sector represented by facilities reporting in Delaware for 2015 is shown in Table 5 on page 17. NAICS codes were used in TRI starting in 2006 to provide more discrimination between the various industry sectors reporting to TRI versus the previously used SIC codes.

TABLE 1
NAICS COVERED INDUSTRIES

NAICS CODES	2015 INDUSTRY
212	Mining
221	Utilities
311	Food Manufacturing
313	Textile Products Mfg.
324	Petroleum and Coal Products Mfg.
325	Chemical Manufacturing
326	Plastics and Rubber Manufacturing
327	Nonmetallic Mineral Product Mfg.
331	Primary Metal Manufacturing
332	Fabricated Metal Product Mfg.
333	Equipment Mfg.
335	Electrical Equipment Mfg.
337	Furniture Manufacturing
339	Misc. Manufacturing
424	Wholesalers, Non-Durable Goods
454	Non-Store Retailers
928	National Security

The standard Form R report (see ***Appendix L*** for Form R) contains general facility information and complete data about on-site releases, off-site transfers, and on-site waste management activities. Form R can be used for all TRI reports. In lieu of Form R, the optional short Form A report (see ***Appendix M*** for Form A) may be used provided certain criteria are met. Form A, initiated in the 1997 reporting year, is a two-page report that provides facility information (essentially the same as Form R) and identification of the chemical, but does not provide any release, transfer, or waste management data. In Delaware, 14% of the TRI reports were filed as Form A for 2015. After a facility determines that it must report on a given chemical, the facility is eligible to use Form A if:

For non-PBT chemicals:

1. The total annual reportable amount (including the sum of on and off-site releases, disposal, treatment, recovery for recycle or energy) is less than 500 pounds; and,
2. The total annual amount of the chemical manufactured, processed, or otherwise used does not exceed 1,000,000 pounds.

For Persistent Bioaccumulative Toxic (PBT) Chemicals including dioxins:

1. **PBTs, including dioxins and dioxin-like compounds, may not be reported on Form A.**
2. Form R, Schedule 1 is an additional form that is required for dioxins.

Because of the lack of data in the Form A reports, DNREC has been collaborating with the reporting facilities and emphasizing the importance of reporting on Form R.

Limitations of TRI Data

The user of TRI data should be aware of its limitations in order to interpret its significance accurately.

- **NOT ALL FACILITIES ARE REQUIRED TO REPORT.** A relatively small number of facilities in Delaware are required to report under TRI, based on the criteria listed on pages 2-3. TRI facilities are primarily industrial/manufacturing facilities and facilities report releases and other waste management activity to TRI. TRI does not account for amounts of hazardous material stored at facilities. The DNREC program addressing inventories of material stored on site, the Hazardous Chemical Reporting program known as "Tier II" (also administered under EPCRA), includes a much greater number of facilities. Facilities report amounts and the location of chemicals stored on-site to Tier II, but not releases. For further information, see ***Hazardous Chemical Reporting in Appendix A.***

- **OTHER SOURCES NOT COVERED UNDER TRI ALSO RELEASE TOXIC CHEMICALS.** Other significant sources of pollution include small businesses, motor vehicles and agricultural operations. For example, on-road motor vehicles released an estimated 7,633 tons to air in Delaware just for the chemicals ammonia (NH_3) and volatile organic compounds (VOCs), for 2008. NH_3 and many VOCs are also TRI chemicals. See page 6, which shows that total TRI on-site releases for 2015 are 4,603,520 pounds, or 2,302 tons.

- **FACILITIES ARE REQUIRED TO BASE TRI DATA ON MEASUREMENTS AND MONITORED DATA ONLY IF THESE ARE AVAILABLE AT THE FACILITY.** If such data is not available, quantities may be estimated based on published emission factors, mass balance calculations, or good engineering judgment. Additional monitoring equipment and measurements are not required. For 2015, 11% of the reports representing 15% of reported on-site release amounts were estimated using monitoring data, with the balance being split between emission factors, mass balance calculations, and other methods.

- **THE DATA ESTIMATION METHODS MAY CHANGE OR VARY.** The methods of estimating or basis of calculating data used by different facilities, or even the same facility over time, may vary, and may result in significant changes in reporting while the actual release may remain relatively unchanged. DNREC performs cross-checks of the data with other information sources to verify its accuracy and contacts facilities concerning apparent discrepancies.

- **FACILITIES MAY REVISE FORM R DATA AT ANY TIME.** These revisions sometimes involve significant changes for data previously reported by the facility.

- **THE DATA DOES NOT INDICATE THE AMOUNT OF HUMAN EXPOSURE.** An important consideration to keep in mind is that TRI does not provide an indication of potential exposure to the reported releases and cannot be used by itself to determine the impact on public health. The chemical's release rate, toxicity, and environmental fate, as well as local weather and wind direction and the proximity of nearby communities to the release must be considered when assessing exposures. Small releases of highly toxic chemicals may pose greater risks than large releases of less toxic chemicals. The potential for exposure increases the longer the chemical remains unchanged in the

environment. Some chemicals may quickly break down into less toxic forms, while others may accumulate in the environment, becoming a potential source of long-term exposure. The chemical exposure of a population depends on the environmental media (air, water, land) into which the chemical is released. The media also affect the type of exposure possible, such as inhalation, dermal exposure, or ingestion.

Despite these limitations, TRI serves as a valuable screening tool to identify areas of concern that may require further investigation.

Recent Developments in TRI Reporting

The TRI reporting requirements change as the EPA seeks to improve the program through changes to the list of reportable chemicals and through program expansions. Because of these changes, considerable caution must be exercised when comparing TRI data from previous years. Notations will be made to indicate which data is presented with adjustments in order to show it on a uniform year-to-year basis.

- **Recently Added Chemicals – Nonlyphenol, O-Nitrotoluene, Hydrogen Sulfide and PACs.** For the 2015 reporting year, a nonylphenol category was added to the list of reportable TRI chemicals. Nonlyphenol was reported by one Delaware facility, Croda, in their 2015 TRI report. For the 2014 reporting year, o-nitrotoluene was added to the list of reportable TRI chemicals. Per the National Toxicology Program (NTP), o-nitrotoluene has been classified as “reasonably anticipated to be a human carcinogen”. O-nitrotoluene was not reported by any Delaware facilities in the 2015 TRI Report. In the 2012 reporting year, hydrogen sulfide was added to the list of reportable chemicals. Hydrogen Sulfide reports accounted for the majority of TRI waste reported as managed on-site in 2015, accounting for 85%. In 2011, **16 new carcinogens**, four of which are in the polycyclic aromatic compounds (PAC) category, were added to the list of reportable chemicals. One of these 12 individually listed new chemicals, isoprene, was reported by VP Racing Fuels for 2015. PACs are reported as a category, so it is not possible to determine if any of the 4 facilities reporting PACs for 2015 reported any of these four new PAC chemicals.

- **Upcoming Changes –** The EPA has added the chemical 1-bromopropane for the 2016 reporting year, and a hexabromocyclododecane chemical category for the 2017 reporting year.

2015 Data Summary

Delaware 2015 and 2014 TRI totals for on-site releases, off-site transfers, and wastes managed on-site are displayed in Table 2 for direct comparisons. For 2015, 59 facilities submitted 220 reports for 90 different chemicals. Total on-site releases increased by 22.6% (849,415 pounds). This increase was primarily driven by increases in nitrates released to water reported by the Delaware City Refinery, Perdue Georgetown, and Allen Harim in Harbeson; and an increase in manganese compounds released to water reported by Chemours Edge Moor. Off-site transfers were down 10.3%, with large reductions in off-site disposal and recycling, and smaller reductions in off-site treatment and energy recovery. On-site waste management activities decreased by 14.8% compared to 2014. There were decreases in on-site treatment and on-site recycling, while on-site energy recovery showed little change.

TABLE 2
2015 TRI DATA SUMMARY
(IN POUNDS)

	2014	2015
No. of Facilities	57	59
No of Form As	31	31
No of Form Rs	177	189
No. of Chemicals	88	90
On-site Releases		
Air	805,127	712,043
Water	2,931,067	3,862,398
Land	17,910	29,078
Total On-Site Releases	3,754,104	4,603,520
Off-Site Transfers		
POTW's	934,025	1,035,534
Recycle	7,384,097	6,814,502
Energy Recovery	2,005,555	1,968,908
Treatment	314,129	229,453
Disposal	2,356,053	1,612,833
Total Off-Site Transfers	12,993,859	11,661,230
On-Site Waste Mgmt.		
Recycle	11,636,106	10,756,074
Energy Recovery	15,930,970	15,963,550
Treatment	470,213,664	397,416,374
Total On-Site Mgmt.	497,780,740	424,135,997
Total Waste	514,528,704	440,400,746

Types of Data

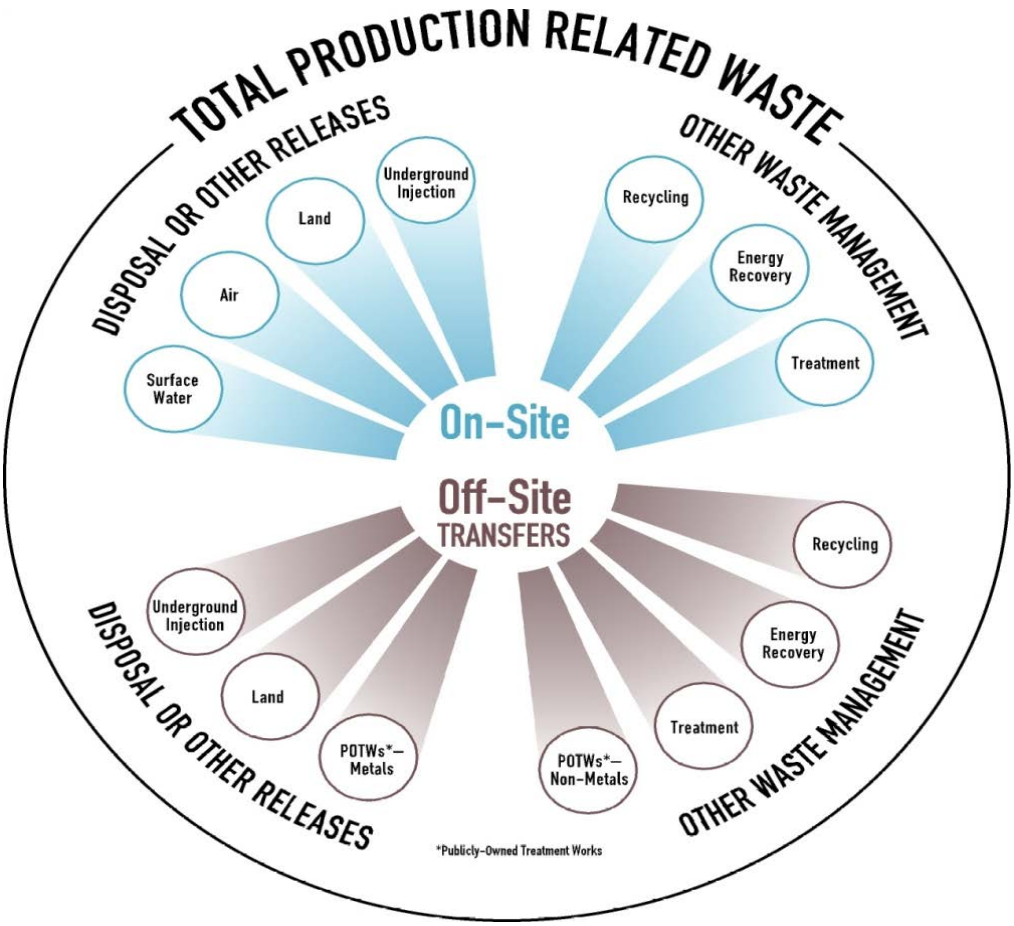
Table 2 lists the categories of data reported to Delaware and the EPA under the TRI program. Within the reports received from facilities, the data is broken down into additional sub-categories. For ease of presentation in this report, the data has been grouped into these categories as described below.

On-Site Releases: On-site releases in Delaware are to **air, water,** or **land**. There are four TRI categories, but one of these, **underground injection** of TRI chemical waste to wells, is not permitted in Delaware. The **release to air** category includes stack releases collected by mechanical means such as vents, ducts, or pipes, and fugitive releases escaping collection, including equipment leaks and evaporation. **Releases to water** are to water bodies, including streams, rivers, lakes, bays, or oceans. This includes releases from contained sources, such as industrial process outflow or open trenches. Releases to water which result from TRI-reportable chemicals in runoff and storm water runoff are also reportable. **Releases to land** are to (1) RCRA (Resource Conservation and Recovery Act) landfills, in which wastes are buried, (2) surface impoundments, which are uncovered holding areas used to volatilize and/or settle waste materials, (3) other land disposal such as waste piles or releases to land such as spills or leaks, (4) land application/treatment in which waste containing a listed chemical is applied to or incorporated into soil, and (5) other non-RCRA landfills.

Off-Site Transfers: Off-site transfers include transfer of chemical waste to **POTWs** (publicly owned treatment works, typically waste water treatment plants), **recycle** operations (five types), **energy recovery** operations (two types), **treatment** operations (six types), and **disposal** (fourteen types). The receiving facilities are separate from the facility generating the waste. These five main categories of off-site transfers cover the types of final off-site management undertaken for each chemical.

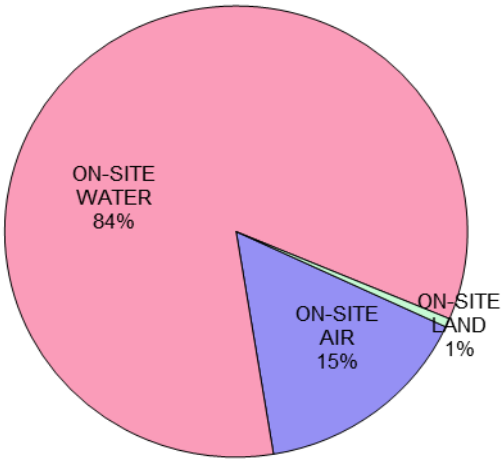
On-Site Waste Management: Waste management operations at the facility generating the waste are categorized to include **recycle**, **energy recovery**, and **treatment.**

The diagram below shows these types of data and how they are related to the four main categories of on- and off-site releases, disposals, and other waste management.



Amounts Reported: The amounts reported are in pounds per year, with a few exceptions, such as dioxins and dioxin like compounds, which are reported in grams. Certain chemical compounds have only the weight of the specific ion or elemental form reported instead of the entire compound, such as nitrate compounds or lead compounds. Also, specific chemicals are only required to be reported in certain states, such as hydrochloric and sulfuric acid, which are only required to be reported as aerosols or gases. For further information on the specific chemical reporting requirements, please refer to the TRI guidance documents at: https://ofmpub.epa.gov/apex/guideme_ext/f?p=104:41:::NO:::

FIGURE 1
2015 ON-SITE RELEASES



TOTAL REPORTED
4,603,520 POUNDS

On-Site Releases

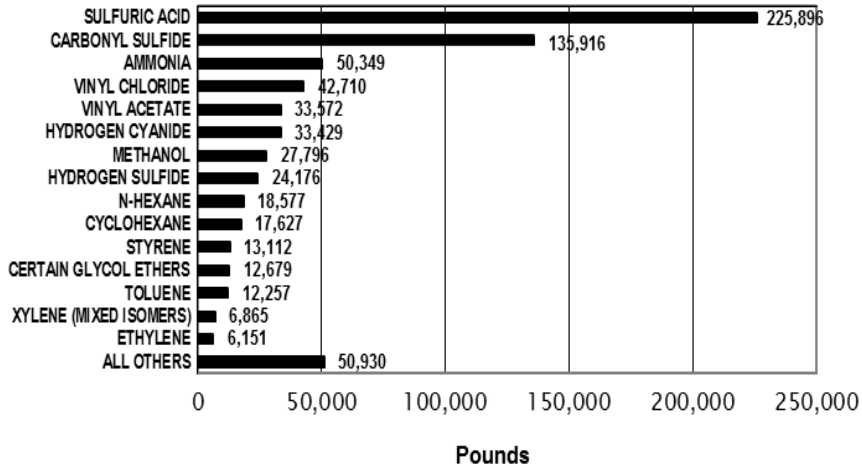
On-site TRI releases are emissions from a facility to the environment, including emissions to the air, discharges to surface water, and disposal onto or into the ground. These on-site releases to air, water, and land reported under TRI for 2015 made up 1% of all TRI-reported waste amounts. The remaining 99% of waste is managed on or off-site as shown in the diagram on the previous page and as seen in Figure 7 on page 13.

Figure 1 shows the totals of on-site releases reported in Delaware. A large portion, 84% of the total on-site release, is to water. Additional analysis of on-site releases is presented in Figures 2, 3, and 4, which show the top 15 chemicals released to air, water, and land. A trend graph for 2005-2015 for all reported on-site releases is on page 34, and a trend graph for the top five chemicals is on page 35. Additional detail about on-site releases can be found in Appendices C, E, F, and H.

Releases to Air

Figure 2 depicts the on-site releases to air of the top 15 chemicals compared to the other 65 chemicals that were reported as released to air in 2015. Sulfuric Acid aerosol (gas) releases, which make up 31.7% of all on-site releases to air, are released largely in the crude oil refining process by the Delaware City Refinery. Sulfuric acid releases have decreased by 24.3% compared to 2014. The second largest air-release, carbonyl sulfide (19.1%), was mostly released by the Chemours Edge Moor facility as a gas by-product of the titanium dioxide production process. Ammonia, which ranks third in releases to air (7.1%), can be used as a refrigerant for petrochemical, food processing, and chemical facilities and is also

FIGURE 2
TOP 15 CHEMICALS RELEASED TO AIR



a by-product of air pollution control activities. Four facilities reported releases of ammonia, with Delaware City Refinery releasing the largest amount to air at 50% of the total or 25,018 pounds. Vinyl chloride, which ranks fourth in releases to air, is used in the manufacture of polyvinylchloride (PVC). Formosa Plastics reported all of the releases to air of vinyl chloride and vinyl acetate, which make up 6.0% and 4.7% of releases, respectively. Hydrogen cyanide makes up 4.7% of all releases to air, and was only reported by the Delaware City Refinery. Methanol releases, 3.9% of all releases to air, were reported by eight facilities with BASF Corp reporting the highest amount, 20,069 pounds, or 72%. Hydrogen sulfide, which accounted for 3.4% of all on-site releases to air, was predominantly released to air by the Delaware City Refinery (64%) and by Mountaire Farms of Delaware (34%). N-hexane accounted for 2.6% of all releases to air, with the Delaware City Refinery reporting 18,567 pounds or 99.9%. Cyclohexane accounted for 2.5% of on-site releases to air, with Air Liquide Advanced Separations reporting 15,805 pounds or 90% of this amount. The remaining chemicals in Figure 2 were each less than 2.0% of total on-site releases to air.

TABLE 3

TRI CHEMICALS RELEASED TO WATER BY WATER BODY IN 2015

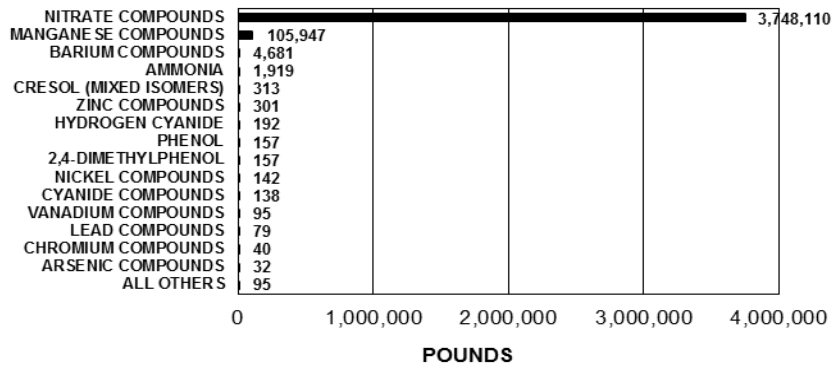
WATER BODY	NO. OF FACILITIES	NO. OF REPORTS	**RELEASE** (IN POUNDS)
ARMY CREEK	2	2	**135**
BEAVERDAM CREEK	1	1	**64,862**
CHRISTINA RIVER	2	3	**0**
DELAWARE RIVER	5	54	**3,479,252**
DRAWYER CREEK	1	2	**15**
ISLAND CREEK	1	3	**0**
SAVANNAH DITCH	1	1	**318,135**
UNNAMED WATER BODY	1	1	**0**
STATE TOTAL		67	**3,862,398**

Releases to Water

Releases to water made up the largest portion of on-site releases at 84%. Table 3 shows the total amount of TRI chemicals released to each water body that received a TRI chemical. Not every report to a water body in Table 3 shows a release quantity. In Delaware, 18 of the 67 reports listing a water body as a possible destination for a release to water did not report any quantities actually released to that water body. These facilities reporting zero for the release amount for a specific chemical met the TRI reporting requirements and did not have an actual release to the body of water, but had the potential of a release.

The Delaware River received 90.1% of all releases to water, the Savannah Ditch 8.2%, and Beaverdam Creek 1.7%. Figure 3 shows the relative relationship of the top 15 TRI chemicals to all other chemicals (25) reported as released to water. This clearly shows the influence that nitrate compounds have on the total. The nitrate compounds category was the top chemical released, (97% of the total release to water), followed by manganese compounds (2.7%), barium compounds (0.12%), and ammonia (0.05%). The remaining chemicals released to

FIGURE 3
TOP 15 CHEMICALS RELEASED TO WATER



water were each less than 0.01% of the total releases to water. The Delaware City Refinery reported a release of 3,365,078 pounds of nitrate compounds to water for 2015, Perdue Georgetown reported 318,135 pounds, and Allen Harim Harbeson reported 64,862. The biological treatment of nitrogen-containing substances such as ammonia and animal waste is responsible for the formation of nitrate compounds, which are released to water. Metallic compounds (barium, cobalt, chromium, copper, cyanide, lead, manganese, nickel, vanadium, and zinc) are generally products of fuel combustion, and petroleum, ore and metal refining. The Delaware City Refinery, Chemours Edge Moor, Johnson Controls Battery Plant, and V&S Delaware Galvanizing are the facilities reporting releasing of these metal compounds to water. Chemours Edge Moor reported 100% of the manganese compounds and barium compounds released to water.

TABLE 4

TRI CHEMICALS RELEASED TO WATER BY BASIN IN 2015

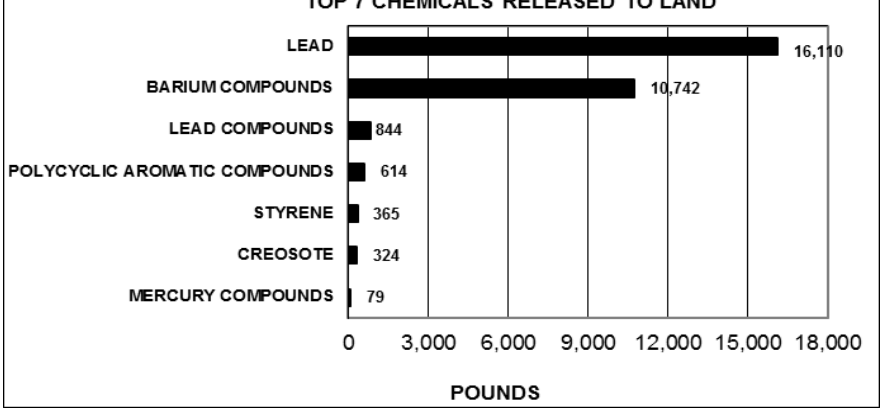
BASIN	RELEASE (IN POUNDS)	PERCENT
CHESAPEAKE	0	0.0%
DELAWARE BAY	3,751,177	97.1%
INLAND BAYS	0	0.0%
PIEDMONT	111,221	2.9%
STATE TOTAL	**3,862,398**	**100.0%**

Table 4 shows the total amount of TRI chemicals for 2015 released to each basin in the State of Delaware. The Inland Bays include lands that drain into the Indian River Bay/Rehoboth Bay area, then to the Atlantic Ocean. The Piedmont Basin contains lands that drain to the portion of the Delaware River above the City of New Castle. All the receiving streams, except the Island Creek, eventually feed into the Delaware Bay. Island Creek feeds into the Inland Bays and then into the Atlantic Ocean. The total amount released to water increased by 931,332 pounds in 2015, largely the result of increase in the reported release of nitrate compounds by the Delaware City Refinery. Additional discussion about these releases can be found in the ***Trend Analysis*** section starting on page 31.

Releases to Land

Releases to land are shown in Table 2 on page 6. These releases are relatively small, amounting to 1% of total on-site releases. Figure 4 shows the contribution for the 7 chemicals reported as being released to land. Nearly all the releases to land are metals and metal compounds except for creosote, polycyclic aromatic compounds (PACs), and styrene. Most of the metals and metal compounds reported are deposited by ammunition use, formed during combustion from metal impurities that exist in coal or oil, or in the base metal scrap produced in metal working processes. Lead, barium compounds, lead compounds, and

FIGURE 4
TOP 7 CHEMICALS RELEASED TO LAND



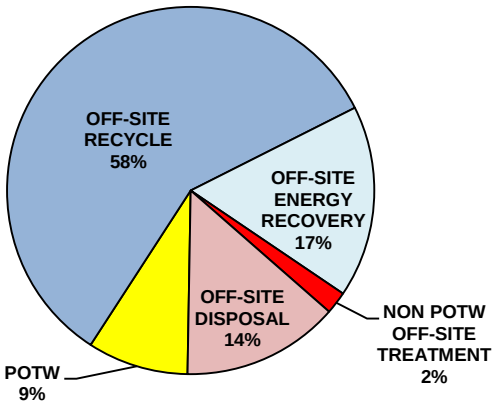
mercury compounds are the top 4 metals and metal compounds reported, accounted for 95.5% of all on-site releases to land and were primarily reported by two facilities. U. S. Army's National Guard Training Site Range reported the largest release to land, 16,082 pounds of lead. The Indian River Generating Station was second, reporting 11,666 pounds of metals, primarily barium compounds. All other chemicals accounted for approximately 4.5% of the on-site releases to land. Additional discussion about releases to land and their trends can be found in the ***Trend Analysis*** section starting on page 31.

Descriptions of some of the hazards that these chemicals, which were released to air, water, or land, may cause to humans, can be found in the ***Chemical Data Fact Sheets*** section under ***For Further Information*** on page 49. Facility specific information is available via the ***2015 TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 49.

Off-Site Transfers

Off-site transfers are material transfers to off-site locations for the purpose of disposal, recycling, energy recovery, or treatment. Treatment could be at a private waste treatment facility or at a POTW, typically a city or county wastewater treatment plant. The total amounts of chemical wastes transferred off-site decreased by 10.3% (1,332,629 pounds) since 2014. Off-site transfers account for 2.6% of total TRI waste and are about 2.5 times the amount released on-site. Overall decreases occurred in disposal, recycling, treatment, and energy recovery; and an increase occurred in transfers to POTWs. The largest reductions include Chemours Edge Moor with a decrease of 776,233 pounds of manganese compounds being transferred off-site for disposal due to the shutdown of production in September of 2016, and the 765,562 pound decrease in lead compounds transferred off-site for recycling by the Johnson Controls Battery Plant. The largest increase reported was an increase of 227,239 pounds in methanol released to the POTW by BASF Corp. Figure 5 shows the relative portions of the five off-site transfer categories. Table 2 on page 6 shows these amounts in tabular form, and ***Appendices D and G*** provide additional detail about transfers from each facility.

FIGURE 5
2015 OFF-SITE TRANSFERS



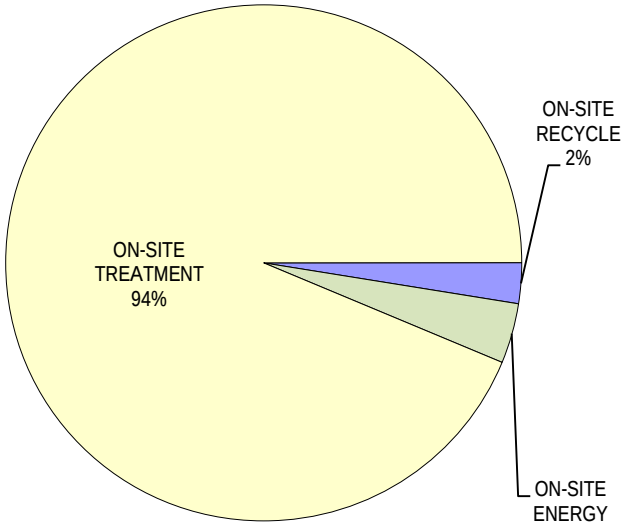
TOTAL REPORTED: 11,661,230 POUNDS

TRI chemicals in wastes are transported by various means from Delaware to their final destinations, most of which are out-of-state. For 2015, TRI chemicals were sent from Delaware TRI reporting facilities to 20 states, some as far away as Utah and Texas, in addition to locations in Delaware. Over 99% of TRI chemicals in all wastes shipped off-site (not including direct transfers to POTW's)

were sent to out-of-state locations for further processing and/or disposal. However, more than 99.9% of transfers to POTWs generated by Delaware facilities were treated in Delaware. Off-site transfer to recycle operations accounted for 58% of the amounts within the five categories in off-site transfers, while energy recovery accounted for 17%, disposals accounted for 14% of the transfers, transfers to POTWs accounted for 9%, and non-POTW treatment was 2%. Ninety-four percent of the transfers to POTWs were to the City of Wilmington POTW, and all but 862 pounds of the 1,035,534 pounds treated at all POTWs were treated at Delaware POTW facilities. BASF Corp makes 66% of the total TRI chemical transfers to the Wilmington POTW.

On-Site Waste Management

FIGURE 6
2015 ON-SITE WASTE MANAGEMENT



TOTAL REPORTED:
424,135,997 POUNDS

On-site waste management is the amount of waste that never leaves the facility and is managed by the facility on-site. These activities generally represent a lower risk to the environment, as the materials are typically destroyed on site, although a small fraction may escape treatment and these amounts are reported as on-site releases. The categories of **Treatment, Recycle, and Energy Recovery** are used to define on-site management activities related to TRI chemical wastes. The total amount of TRI chemicals managed on-site is 96.3% of the total TRI chemical waste. Figure 6 shows the portions of these wastes processed on-site. ***Appendices D and G*** provide additional detail for on-site waste management. Facility specific information is available via the ***2015 TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 49.

Waste Treatment (397,416,374 pounds) includes the amount of toxic material that was destroyed in on-site waste treatment operations. The Delaware City Refinery had the highest total amount of on-site waste treatment, combining for 381,709,226 pounds (96%) of the TRI waste treated on-site. Treatment of hydrogen sulfide at the Delaware City Refinery in the amount of 360,703,361 pounds was the highest single on-site treatment amount.

Recycled waste (10,756,074 pounds) is the quantity of toxic material recovered at the facility and made available for further use. Rohm & Haas (B2, B3, B8) recycled n,n-dimethylformamide, Air Liquide Advanced Separations recycled methanol and n-hexane, and

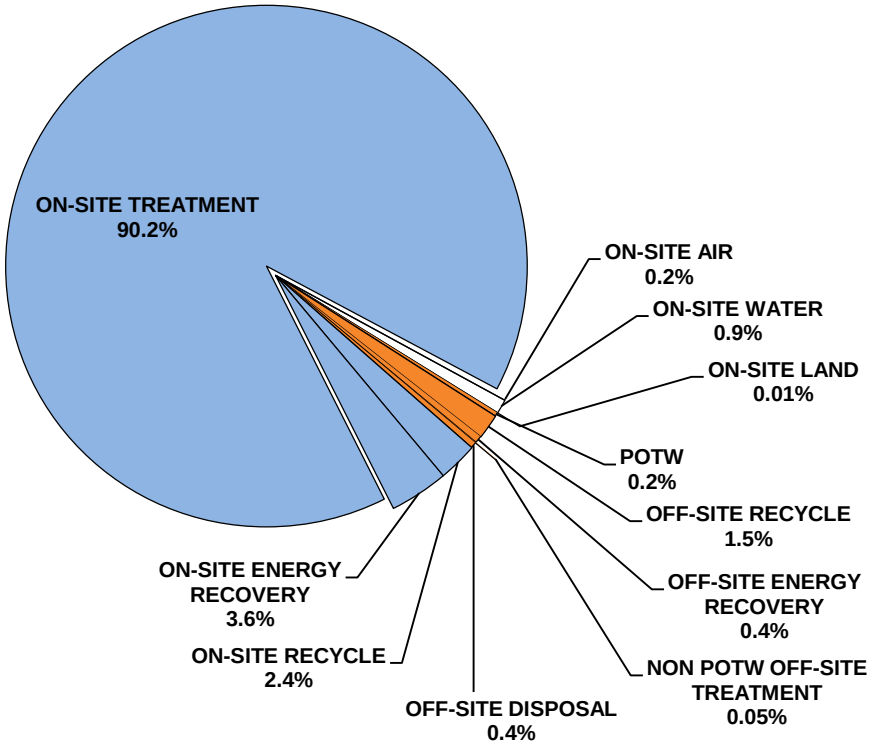
Orient recycled aniline, with these facilities combining to report 93.3% of the total amount recycled on-site.

Energy Recovery includes the quantity of toxic material that had heat value and was combusted in some form of energy recovery device such as a heat boiler. The Delaware City Refinery was the only facility in the State to report on-site energy recovery. For 2015, the refinery reported 15,963,550 pounds of TRI chemicals processed on-site for energy recovery, with ammonia accounting for 96.6% or 15.4 million pounds.

Total TRI Waste

Total TRI waste is the combined total of the on-site release, off-site transfer, and on-site waste management amounts in the TRI chemical reports. Figure 7 provides a perspective of the total TRI chemical waste picture in Delaware. About 1% of the total reported TRI waste is released on-site, 2.6% is transferred off-site for treatment or disposal, and 96.3% is managed on-site through treatment, energy recovery, and recycle operations by the facilities generating the waste. Figure 7 shows the relative portions of the various sub-categories of TRI release and waste management.

FIGURE 7
TOTAL 2015 TRI CHEMICAL MANAGEMENT
TOTAL REPORTED: 440,400,746 POUNDS

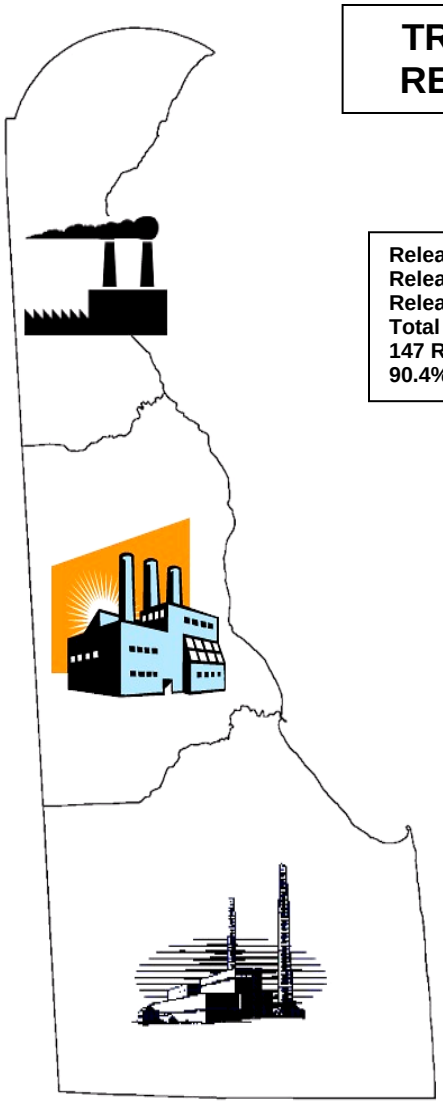


2015 Data Detail

On-Site Releases by County

Figure 8 below provides basic on-site release information for each county in the State.

FIGURE 8



TRI ON-SITE RELEASES REPORTED BY COUNTY

NEW CASTLE

Releases to Air = 665,372 Pounds
Releases to Water =3,479,401 Pounds
Releases to Land = 17,040 Pounds
Total On-Site Releases = 4,161,814 Pounds
147 Reports, 31 Facilities
90.4% of Statewide Releases

KENT

Releases to Air = 18,732 Pounds
Releases to Water = 0 Pounds
Releases to Land = 7 Pounds
Total On-Site Releases = 18,739 Pounds
33 Reports, 12 Facilities
0.4% of Statewide Releases

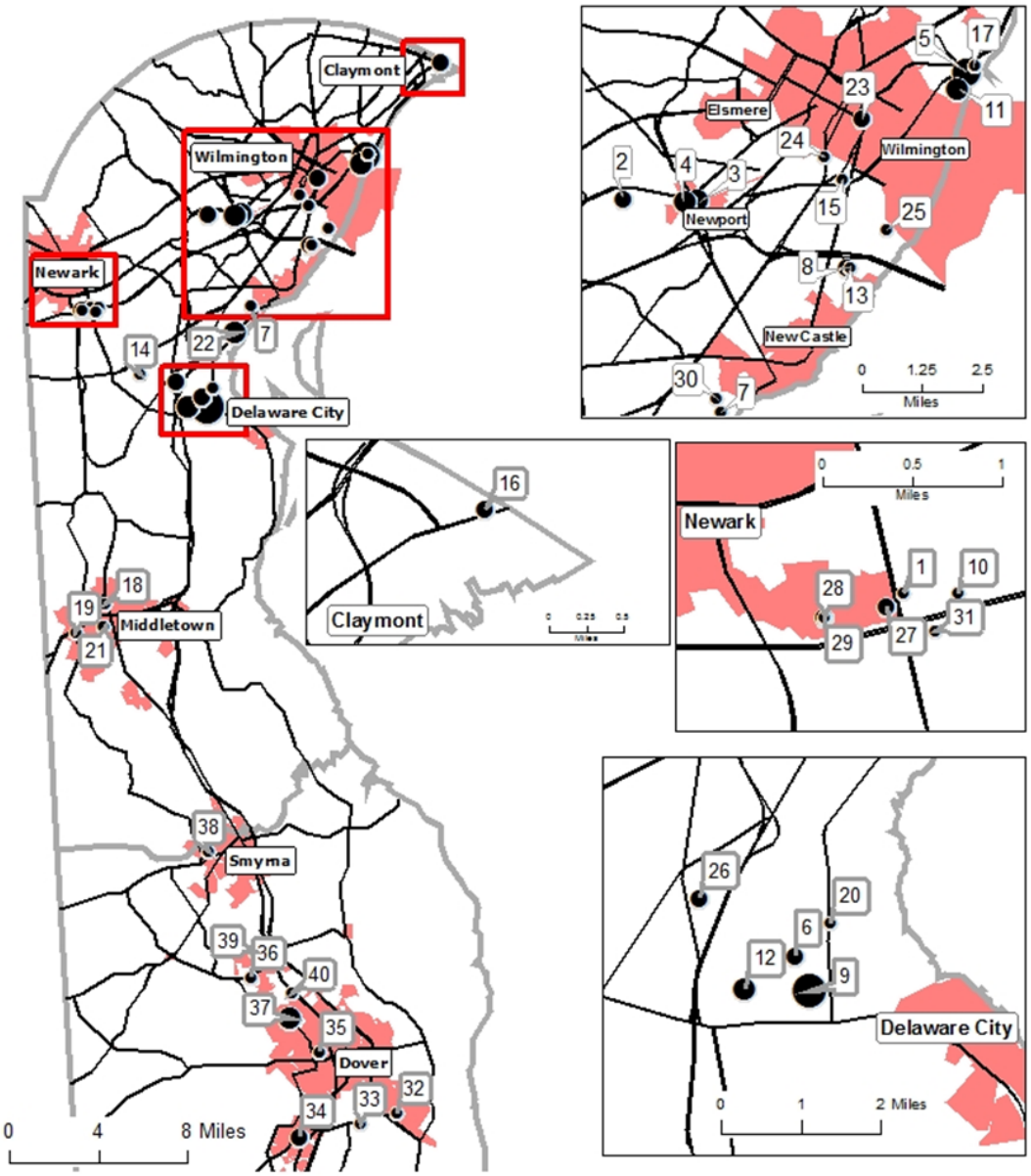
SUSSEX

Releases to Air = 27,939 Pounds
Releases to Water = 382,997 Pounds
Releases to Land = 12,031 Pounds
Total On-Site Releases = 422,967 Pounds
40 Reports, 16 Facilities
9.2% of Statewide Releases

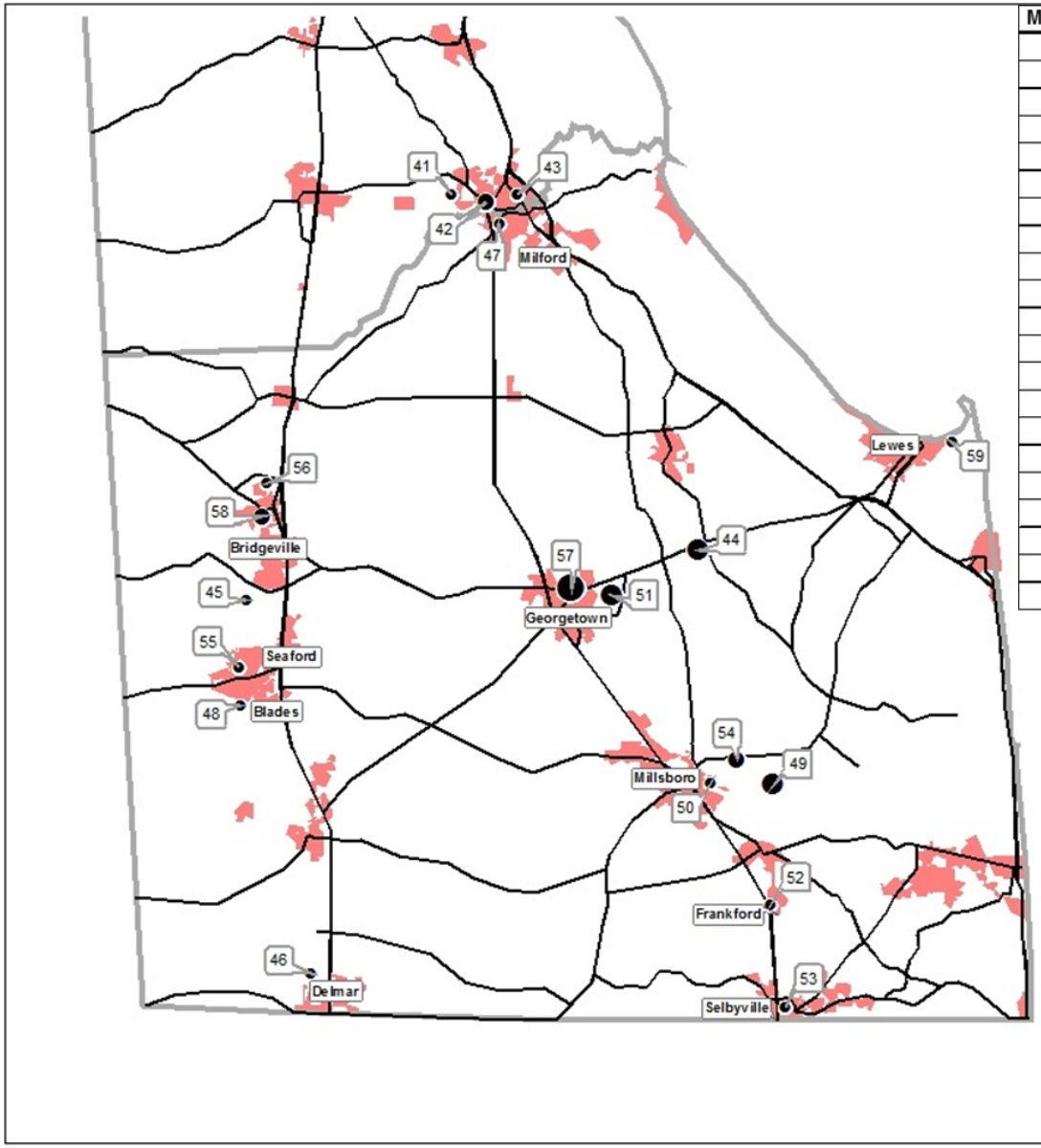
Source: DNREC 2015 TRI Database 10-1-16

Facility Locations and Information

Figure 9 on the following two pages shows the location of each reporting facility in the State, with the facility location marker size depicting the size of its on-site release relative to other facilities in Delaware. Facility contact information is in Appendix B. The ***2015 Facility Profiles*** provide a facility overview (see ***Access to TRI Files*** under the ***Further Information section*** on page 49).



MAP ID	FACILITY
	NEW CASTLE COUNTY
1	AEARO TECHNOLOGIES
2	AGILENT TECHNOLOGIES
3	AIR LIQUIDE ADVANCED SEPARATIONS
4	BASF CORP
5	CHEMOURS EDGE MOOR
6	CHEMOURS RED LION PLANT
7	COLOR WORKS PAINTING
8	CRODA
9	DELAWARE CITY REFINERY
10	DUHADAWAY TOOL AND DIE SHOP INC
11	EDGE MOOR/HAY ROAD ENERGY CENTERS
12	FORMOSA PLASTICS
13	FUJIFILM
14	HMA-HERITAGE CONCRETE-BEAR
15	HMA-HERITAGE CONCRETE-HEALD STREET
16	HONEYWELL
17	IKO
18	JOHNSON CONTROLS BATTERY PLANT
19	JOHNSON CONTROLS DISTRIBUTION
20	KUEHNE
21	MACDERMID
22	NATIONAL GUARD TRAINING RANGE
23	NORAMCO
24	OWEN STEEL COMPANY
25	PRINCE MINERALS LLC
26	ROGERS CORP
27	ROHM & HAAS B2,B3,B8
28	ROHM & HAAS B5, B6
29	ROHM & HAAS B7,B15
30	V&S DELAWARE GALVANIZING
31	VP RACING FUELS
	KENT COUNTY
32	DOVER AFB
33	GRIFFITH ENERGY-CARL KING
34	HANDY TUBE
35	HANESBRANDS
36	HMA-HERITAGE CONCRETE-CHESWOLD
37	HIRSH INDUSTRIES INC
38	METAL MASTERS
39	PPG INDUSTRIES
40	SERVICE ENERGY DOVER



MAP ID	FACILITY
	KENT COUNTY
41	BALTIMORE AIRCOIL COMPANY
42	DENTSPLY WEST PLANT
43	PERDUE MILFORD
	SUSSEX COUNTY
44	ALLEN HARIM FOODS - HARBESON
45	ALLEN HARIM FARMS - SEAFORD MILL
46	AMICK FARMS
47	DENTSPLY MAIN PLANT
48	GAC SEAFORD
49	INDIAN RIVER GENERATING STATION
50	INTERVET
51	JUSTIN TANKS
52	MOUNTAIRE FARMS - FRANKFORD
53	MOUNTAIRE FARMS - SELBYVILLE
54	MOUNTAIRE FARMS OF DELAWARE
55	ORIENT CORP
56	PERDUE BRIDGEVILLE
57	PERDUE GEORGETOWN
58	PICTSWEET BRIDGEVILLE
59	SPI PHARMA

The size of the facility marker indicates the relative amount of on-site release.

0 5 10
Miles

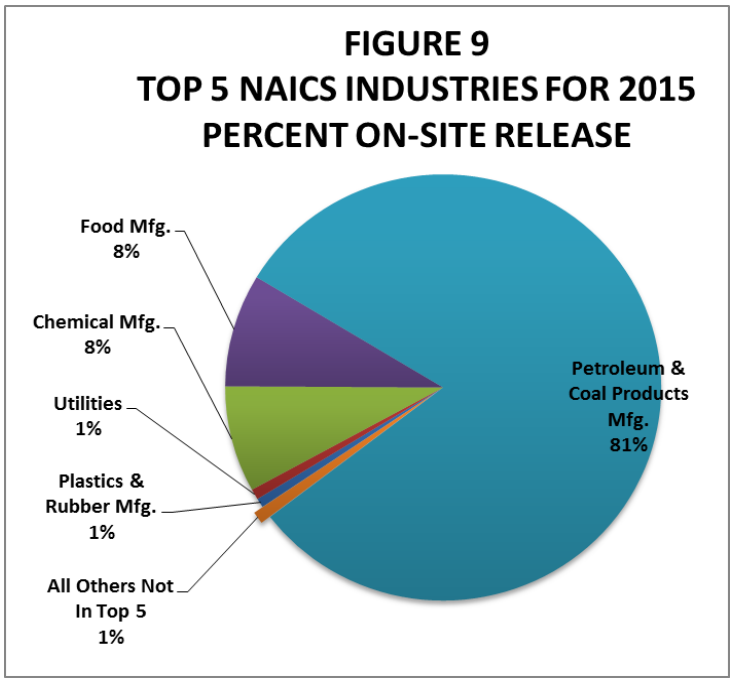
NAICS Industry Groups

Table 5 provides a description of each North American Industrial Classification System (NAICS) industry group and the number of facilities in each group that reported in Delaware, along with the total reported amounts for each NAICS code. This table also provides on-site releases, off-site transfers, and wastes managed on-site for each group.

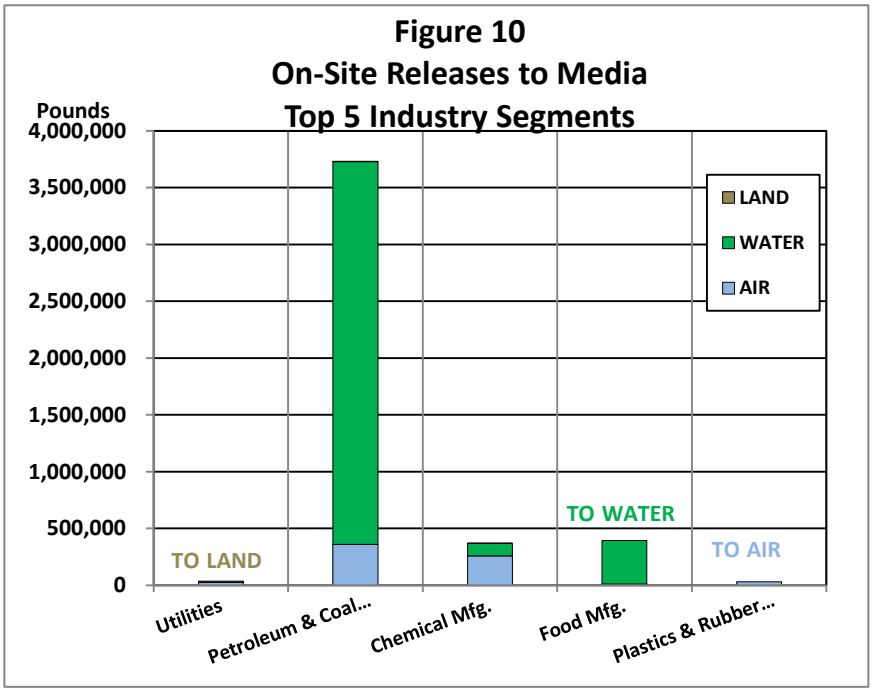
TABLE 5
2015 TRI DATA BY PRIMARY NAICS GROUP
(in pounds)

NAICS CODE	INDUSTRY GROUP	REPORTS	FACILITIES	FORM A	FORM R	ON-SITE RELEASE	OFF-SITE TRANSFERS	ON-SITE WASTE MGMT.
212	Mining	3	1	2	1	210	244	0
221	Utilities	12	2	0	12	36,941	369	1,679,518
311	Food Mfg.	24	10	15	9	393,454	9,468	526,513
313	Textile Products Mfg.	9	4	0	9	7,052	1,486,683	4,233,851
324	Petroleum & Coal Products Mfg.	43	4	4	39	3,728,167	276,421	397,673,198
325	Chemical Mfg.	77	15	5	72	369,979	4,064,433	15,436,292
326	Plastics & Rubber Mfg.	11	4	0	11	32,147	271,490	4,250,372
327	Non-metalic Mineral Product Mfg.	3	3	0	3	29	0	0
331	Primary Metal Mfg.	4	1	0	4	3,856	75,916	0
332	Fabricated Metal Product Mfg.	10	5	0	10	660	521,624	336,254
333	Equipment Mfg.	5	1	0	5	15	583,870	0
335	Electrical Equipment Mfg.	3	2	0	3	111	4,342,518	0
337	Furniture Manufacturing	1	1	0	1	12,678	0	0
339	Misc. Manufacturing	4	2	0	4	2,009	28,194	0
424	Wholesalers, Non-Durable Goods	2	1	2	0	0	0	0
454	Non-Store Retailers	3	1	3	0	0	0	0
928	National Security	6	2	0	6	16,211	0	0
	TOTAL	**220**	**59**	**31**	**189**	**4,603,520**	**11,661,230**	**424,135,997**

Figure 9 shows the percent contribution of each of the top five NAICS groups and all others not in the top five, compared to the reported total on-site releases. The top five NAICS groups 221 (Utilities), 311 (Food Manufacturing), 324 (Petroleum and Coal Products Mfg.), 325 (Chemical Mfg.), 326 (Plastics and Rubber Mfg.), account for 99% of the total on-site releases within the State. Facilities not in the top five NAICS industry groups contributed only 42,830 pounds of on-site releases, or 1% of the 2015 on-site release total.



Depending on the NAICS group, releases to air, water, and land can be very different. Figure 10 shows the top 5 NAICS groups in Delaware and to what media the releases occurred. For example, utilities reported having their releases split between air and land, with 68% of the releases to air and 32% of the releases to land. Chemical manufacturing reported 70% of their releases were to air, and 30% were to water. Plastics and rubber manufacturing reported 99% of their releases were to air. For petroleum & coal products, and for food manufacturing, most of their releases were to water – 90% and 97%. Keep in mind this is based on a small sample size due to the overall low number of facilities reporting in Delaware. Other states will have greatly different results among NAICS groups, particularly those states whose industries have little presence in Delaware, such as mining or forestry/paper products manufacturing.



RELEASES FROM THE TOP 15 FACILITIES

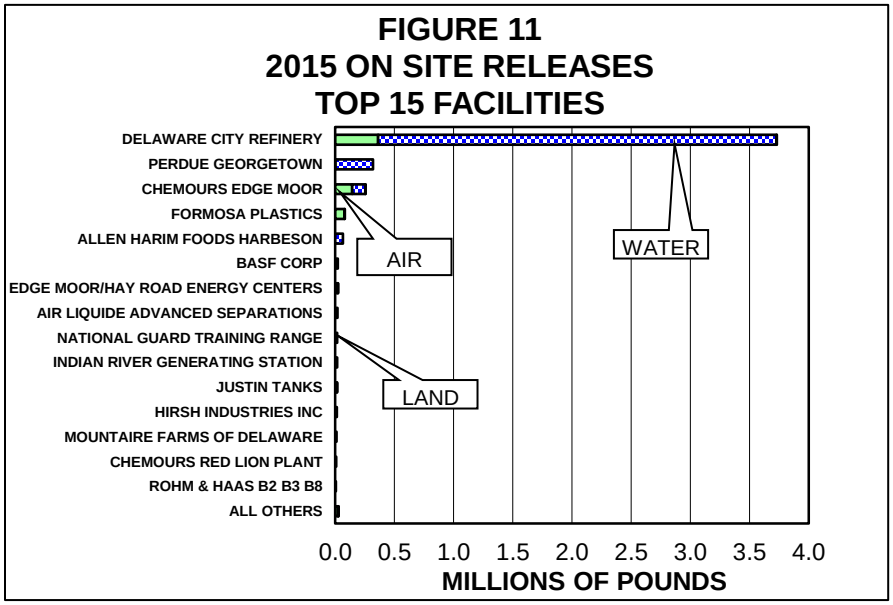


Figure 11 shows the relative contribution of each of the top 15 reporting facilities to on-site releases. The top five facilities accounted for 4,443,560 pounds, or 96.5% of all on-site releases. Of the 4,603,520 pounds that were reported as released on-site by all 59 facilities Statewide, the top 15 facilities accounted for total releases of 4,581,031 pounds, or 99.5% of the total on-site releases.

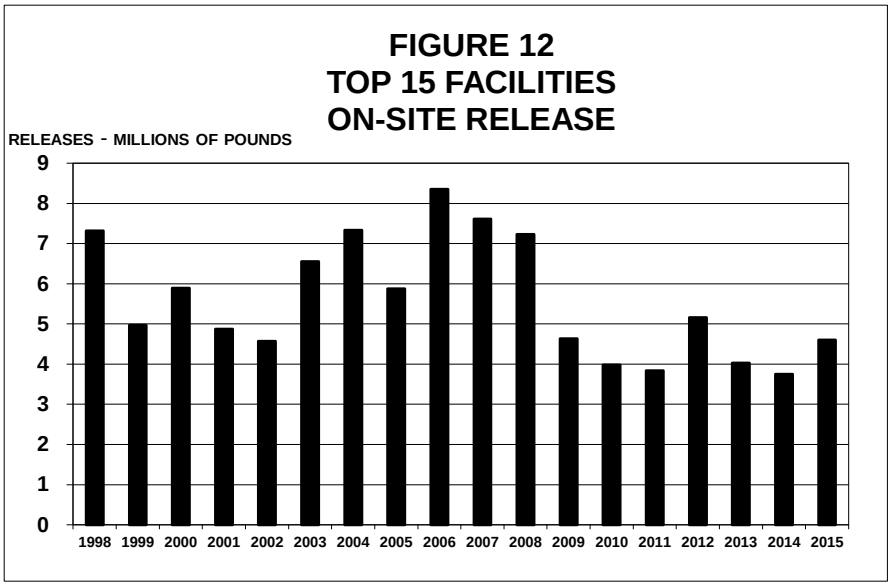
TABLE 6
TOP 15 FACILITIES 2014 AND 2015 RANKING BY ON-SITE RELEASE
(in pounds)

2014 RANK	2015 RANK	FACILITY	2015 TOTAL AIR	2015 TOTAL WATER	2015 TOTAL LAND	2015 ON-SITE RELEASE	2014 ON-SITE RELEASE	2014 TO 2015 CHANGE IN RELEASES	
1	1	DELAWARE CITY REFINERY	359,811	3,368,031	324	3,728,166	3,157,777	570,389	18%
3	2	PERDUE GEORGETOWN	330	318,135	-	318,465	176,004	142,461	81%
2	3	CHEMOURS EDGE MOOR	142,039	111,185	614	253,837	245,499	8,338	3%
4	4	FORMOSA PLASTICS	78,229	0	-	78,229	65,942	12,288	19%
NR	5	ALLEN HARIM FOODS HARBESON	-	64,862	-	64,862	-	64,862	-
5	6	BASF CORP	21,130	-	-	21,130	21,507	(377)	-2%
15	7	EDGE MOOR/HAY ROAD ENERGY CENT	20,944	36	-	20,980	2,971	18,009	606%
NR	8	AIR LIQUIDE ADVANCED SEPARATIONS	16,879	-	-	16,879	2,310	14,569	631%
DNR	9	NATIONAL GUARD TRAINING RANGE	-	-	16,082	16,082	-	16,082	-
6	10	INDIAN RIVER GENERATING STATION	4,296	-	11,665	15,961	19,738	(3,777)	-19%
7	11	JUSTIN TANKS	13,105	-	365	13,470	10,004	3,466	35%
9	12	HIRSH INDUSTRIES INC	12,678	-	-	12,678	7,062	5,616	80%
8	13	MOUNTAIRE FARMS OF DELAWARE	8,460	-	-	8,460	9,262	(802)	-9%
10	14	CHEMOURS RED LION PLANT	7,681	-	-	7,681	6,972	709	10%
12	15	ROHM & HAAS B2 B3 B8	4,150	-	-	4,150	4,150	0	0%
		ALL OTHERS	**22,311**	**149**	**28**	**22,489**	**24,907**	**(2,419)**	**-10%**
		TOP 15	**689,732**	**3,862,249**	**29,050**	**4,581,031**	**3,729,197**	**851,834**	**23%**
		STATE TOTALS, ALL FACILITIES	**712,043**	**3,862,398**	**29,078**	**4,603,520**	**3,754,104**	**849,415**	**23%**

NR- Not ranked in the top 15 for 2014
DNR- Did not report in 2014
Source: 2014 and 2015 DNREC TRI Databases, October 2016

Table 6 shows the 2015 ranking of the top 15 facilities along with their 2014 ranking and the reported amounts of on-site releases for both years. Releases to the environment because of remedial actions, accidents, or one-time catastrophic events are included in these values. The percent change in total on-site releases for each of the top 15 facilities from 2014 to 2015 is also shown, and some of these changes are significant.

Figure 12 shows the totals for on-site releases for the top 15 reporting facilities from 1998-2015. The total on-site release trend for these facilities is up 851,834 pounds (23%) since 2014 and down 2.7 million pounds (37%) since 1998 after reaching a peak of 8.4 million pounds in 2006. These facilities reported 99.5% of the total on-site releases in the State for 2015, while the remaining 44 facilities reported 0.5%.



Eleven facilities of the top 15 facilities reported an increase in on-site releases, while three reported a decrease, and one reported no change for 2015. Changes at the facility, such as the way releases are estimated, how waste is managed, changes in raw materials or processing methods, or installation of new or improved equipment possibly used to limit or eliminate releases of specific chemicals or all chemicals, may affect reported releases. The largest

changes reported by the top 15 facilities in on-site releases were increases in the release of nitrate compounds to water reported by the Delaware City Refinery, Perdue Georgetown, and Allen Harim Harbeson; up by 622,393 pounds, 149,461 pounds, and 64,862 pounds, respectively. Other large changes in on-site releases were a decrease in carbonyl sulfide released to the air by Chemours Edge Moor, down by 89,343 pounds since 2014; and a decrease in sulfuric acid released to air by the Delaware City Refinery, down by 72,738 pounds compared to 2014.

Although the TRI program itself does not regulate or limit emissions, other DNREC and federal programs do issue permits and limit emissions from operating facilities. TRI data is also shared with other programs within DNREC to verify data accuracy and to provide data and information to those programs.

Facilities No Longer Reporting to TRI

In the normal annual cycle of TRI reporting, some facilities may fall below the reporting thresholds and some facilities may close. In recent years, this involved the annual loss of 2-4 facilities, partially offset by 1-2 new facilities that started to report each year. There were no facilities that did not file TRI reports for 2015 because they closed permanently; but Chemours Edge Moor ceased operations in September of 2015, so they will not file 2016 TRI reports.

Facilities that did not file 2014 TRI reports because they closed permanently were: Evraz Claymont Steel, BASF Seaford, Motech Americas in Newark, and HMA Heritage Concrete in Frankford.

Chrome Deposit ceased operations and closed in 2012, and NRG Dover converted to natural gas and ceased burning coal. As a result, these two facilities did not file 2013 TRI reports.

The Sunoco plant located in Marcus Hook, PA, part of which is located in Delaware, closed at the end of 2011. Both Occidental Chemical in New Castle and Air Liquide America in Delaware City fell below the reporting thresholds. Pinnacle Foods in Millsboro converted to using only natural gas and as result also fell below reporting thresholds. These facilities did not file 2012 TRI reports.

INVISTA, formerly known as the DuPont Seaford nylon facility, fell below the reporting thresholds as a result of lower production and its power plant conversion from coal to natural gas. Also in 2011, Buck Algonquin, a specialty manufacturer of marine hardware with headquarters in Stevensville, Maryland, closed its Smyrna facility. These facilities did not file 2011 TRI reports.

Persistent Bioaccumulative Toxic (PBT) Chemicals, 2005-2015

For reporting year 2000 and beyond, the EPA established substantially lower reporting thresholds for 12 existing chemicals and one chemical category that are highly persistent and bioaccumulative in the environment. Six new chemicals and one new category were also added to the PBT list for 2000. The new thresholds apply regardless of whether the PBT chemical is manufactured, processed, or otherwise used. For 2011, four of the 16 new chemicals added (see page 5) are also PACs and they are now included in the PACs category.

Table 7 provides a current list of the PBT chemicals and their thresholds, and the number of reports received for each chemical for 2015.

TABLE 7
2015 DELAWARE PBT CHEMICALS AND REPORTING THRESHOLDS
(pounds/year)

Chemical or Chemical Category	Threshold (Pounds)	2015 REPORTS
Aldrin	100	0
Benzo[g,h,i]perylene	10	1
Chlordane	10	0
Dioxin and dioxin-like compounds category	0.1 grams	4
Heptachlor	10	0
Hexachlorobenzene	10	1
Isodrin	10	0
Lead	100	5
Lead and lead compounds	100	8
Mercury	10	2
Mercury compounds	10	4
Methoxychlor	100	0
Octachlorostyrene	10	1
Pendimethalin	100	0
Pentachlorobenzene	10	1
Polychlorinated biphenyls (PCBs)	10	1
Polycyclic aromatic compounds category (PA	100	4
Tetrabromobisphenol A	100	0
Toxaphene	10	0
Trifluralin	100	0
	TOTAL	32

PBTs are receiving increased scrutiny as we learn more about them, and reporting of PBTs is being progressively emphasized. These chemicals are of particular concern because they are not only toxic, but also because they remain in the environment for long periods of time, are not readily destroyed, and accumulate in body tissues.

In 2008, new data elements became available for dioxin and dioxin-like compounds (DLCs). The 17 compounds that fall under the TRI category of DLCs have a wide range (1.0000 to 0.0003) of toxicity; these values are called the Toxic Equivalent Factor (TEF). In order to compare them on an equal toxicity basis, we multiply the TEF by the pounds reported to get the Toxic Equivalent Quantity (TEQ). Facilities reporting on dioxins are also now required to report the amounts released or managed as waste for each of the 17 DLCs. See ***Appendix N*** for a copy of the DLC reporting form, Schedule 1. These amounts are provided along with the original amount reported in pounds. See pages 23-24 for additional detail on dioxins.

Table 8 shows the results of PBT reporting for 2013-2014 compared to total 2015 TRI data. The total count of PBT reports, 32, is lower than the counts of all recent years except for 2014. PBT on-site releases for 2015 comprise 0.4% of the total TRI on-site releases. Total PBT wastes are 1% of total TRI wastes. No PBT reports can be filed on Form A.

PBT on-site releases were higher for 2015 by 15,417 pounds (523%); with the greatest increase coming from the U. S. Army's National Guard River Road Training Site Range in New Castle with higher releases of lead to land by 16,082 pounds. This facility did not report previously because of troop deployments; the training range has not been used extensively in recent years. Lead made up 87.8% of the total on-site PBT releases for 2015. Since 2005, the trend of PBT on-site releases is down 43.5%.

TABLE 8
2015 TRI PBT DATA SUMMARY
(IN POUNDS)

	PBTs only 2013	PBTs only 2014	PBTs only 2015
No. of Facilities	21	16	18
No. of Form A's	NA	NA	NA
No. of Form R's	38	30	32
No. of Chemicals	11	11	11
On-Site Releases			
Air	1,499	1,046	626
Water	175	108	91
Land	7,073	1,793	17,647
On-Site Releases	8,747	2,947	18,364
Off-Site Transfers			
POTW's	27	3	27
Recycle	4,525,143	4,995,979	4,320,269
Energy Recovery	0	0	0
Treatment	0	0	0
Disposal	23,515	35,200	32,649
Total Transfers	4,548,685	5,031,182	4,352,945
On-Site Waste Mgmt.			
Recycle	2,220	2,570	3,224
Energy Recovery	0	0	0
Treatment	897	862	783
Total On-Site Mgmt.	3,117	3,432	4,007
Total PBT Waste	4,560,549	5,037,562	4,375,315

The total PBT waste amount decreased by 662,247 pounds (13%) for 2015 compared to 2014. The primary reason for this decrease was the decreased transfers of lead compounds to off-site recycling by the Johnson Controls Battery Plant.

Table 9, on page 23, shows the amounts of each PBT chemical reported as released by the TRI reporting facilities in 2015. The Delaware City Refinery reported the largest PBT release to air, 213 pounds of polycyclic aromatic compounds (PACs). Chemours Edge Moor reported the largest PBT release to water, 62 pounds of lead compounds. The U. S. Army's National Guard Training Site Range reported the largest release to land, 16,082 pounds of lead. Over 99% of the PBT amounts transferred off-site for recycle was lead compounds from Johnson Controls Battery Plant and Distribution Center. Additional detail for mercury and mercury compounds, another important PBT, is in a separate section on page 25.

Three companies (The Delaware City Refinery, IKO, and V&S Galvanizing) reported the entire amount of on-site PBT chemical waste management. The refinery treated 430 pounds of benzo(g,h,i)perylene and 353 pounds of polycyclic aromatic compounds (PACs) on-site. IKO recycled 382 pounds of PACs on-site and V&S Galvanizing recycled 2,842 pounds of lead on-site. ***Appendix I*** shows the PBT data detail, listing each PBT chemical and the facilities reporting on it.

TABLE 9

2015 PBT RELEASE SUMMARY

(REPORTED AMOUNTS IN POUNDS)

2015 PBT CHEMICAL	FORM R REPORTS	ON-SITE RELEASES TOTAL AIR	TOTAL WATER	TOTAL LAND	ON-SITE TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
CHEMNAME	REPORTS	AIR	WATER	LAND	TOTAL ON SITE	OFF SITE TRANS	ON SITE WASTE
BENZO (G,H,I)PERYLENE	1	0.50	4.00	0.00	4.50	0.00	430.00
DIOXIN AND DIOXIN-LIKE COMPOUNDS	4	0.0075	0.0084	0.00	0.0159	0.7630	0.00
HEXACHLOROBENZENE	1	0.0604	0.1564	0.00	0.2168	49.89	0.00
LEAD	5	8.10	2.80	16,110.20	16,121.10	5,923.73	2,842.00
LEAD COMPOUNDS	8	218.13	78.70	844.30	1,141.13	4,344,433.98	0.00
MERCURY	2	17.78	0.0030	0.00	17.78	2,120.03	0.00
MERCURY COMPOUNDS	4	96.73	1.41	79.20	177.34	12.59	0.00
OCTACHLOROSTYRENE	1	0.00	0.2130	0.00	0.2134	1.8805	0.00
PENTACHLOROBENZENE	1	0.0672	0.0480	0.00	0.1152	1.6960	0.00
POLYCHLORINATED BIPHENYLS (PCB's)	1	0.00	0.00	0.00	0.0048	3.99	0.00
POLYCYCLIC AROMATIC COMPOUNDS	4	284.17	3.61	613.50	901.28	396.30	734.60
TOTALS	**32**	**626**	**91**	**17,647**	**18,364**	**4,352,945**	**4,007**

Source: 2015 DNREC TRI Database, October 2016

Dioxins are reportable in grams and have been converted to pounds for this report.

Four decimal places are used where small amounts are not -0-.

Dioxin and Dioxin-Like Compounds

The term “dioxins” is used by the EPA TRI program and in this report to indicate the group of 17 dioxins and dioxin-like compounds (DLCs) reportable to TRI, out of a family of several hundred dioxins and dioxin-like compounds, including furans. These dioxins are also part of the PBT category, and you can see the totals for releases and other waste management in Table 9 above. In recent years, on-site release of DLCs has been in the range of 5.2-15.8 grams. For 2015, the amount was 7.2 grams.

On May 10, 2007, the EPA Toxics Release Inventory Program issued a final rule expanding reporting requirements for the DLCs category. The final rule requires that, in addition to the total amount released for the entire category, facilities must report the amount of each individual member for each release and waste management activity on a new form (Schedule 1). The reporting requirements of the final rule applied to the 2008 reporting year and to following years.

The reason for this rule is that the toxicity levels of these 17 DLCs vary greatly, and some compounds in this group have Toxic Equivalent Factors (TEF) **3,333 times less** than others. Because of this great variation, the Toxicity Equivalent Quantity (TEQ) is a way to show toxic chemical amounts on an equal toxicity basis. The EPA and DNREC use the individual mass quantity data to calculate TEQ amounts (Weight X TEF = TEQ). This data is available to the public along with the mass data. Table 10, on the following page, shows all 17 DLCs that are reportable to TRI and some basic information about them.

Among the “dioxins” included in TRI reports is the very toxic 2,3,7,8-TCDD dioxin (#1 in Table 10), which is the congener generally of most concern. All TRI “dioxins” are reportable in grams and were converted to pounds for this report since all other chemicals are reported in pounds (1 gram = 0.002205 pounds). You can see that TRI dioxin numbers 1 and 2 have the highest TEF (1.0000), and numbers 7 and 17 have the lowest (0.0003). This is a range of 3,333 to 1. In order to show the toxicity effects of the 17 dioxins on an equal basis, the amounts released in pounds are multiplied by their TEF. The resulting TEQ allows them to be compared on an equal toxicity level.

TABLE 10

DIOXIN TOXIC EQUIVALENT FACTORS (TEF)

TRI No.	Dioxin Chemical (DLC) Name	Abbreviated Name	CAS	TEF
1	2,3,7,8-tetrachlorodibenzo-p-dioxin	2,3,7,8-TCDD	1746-01-6	1.0000
2	1,2,3,7,8-pentachlorodibenzo-p-dioxin	1,2,3,7,8-PeCDD	40321-76-4	1.0000
3	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	1,2,3,4,7,8-HxCDD	39227-28-6	0.1000
4	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	1,2,3,6,7,8-HxCDD	57653-85-7	0.1000
5	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	1,2,3,7,8,9-HxCDD	19408-74-3	0.1000
6	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0100
7	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	1,2,3,4,6,7,8,9-OCDD	3268-87-9	0.0003
8	2,3,7,8-tetrachlorodibenzofuran	2,3,7,8-TCDF	51207-31-9	0.1000
9	1,2,3,7,8-pentachlorodibenzofuran	1,2,3,7,8-PeCDF	57117-41-6	0.0300
10	2,3,4,7,8-pentachlorodibenzofuran	2,3,4,7,8-PeCDF	57117-31-4	0.3000
11	1,2,3,4,7,8-hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF	70648-26-9	0.1000
12	1,2,3,6,7,8-hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF	57117-44-9	0.1000
13	1,2,3,7,8,9-hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF	72918-21-9	0.1000
14	2,3,4,6,7,8-hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF	60851-34-5	0.1000
15	1,2,3,4,6,7,8-heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0100
16	1,2,3,4,7,8,9-heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF	55673-89-7	0.0100
17	1,2,3,4,6,7,8,9-octachlorodibenzofuran	1,2,3,4,6,7,8,9-OCDF	39001-02-0	0.0003

Also, you can see how, for a dioxin like numbers 1 and 2, where the TEF is highest at 1.000, the TEQ amounts are greater than the weight percentages. Conversely, for dioxin numbers 7 and 17, where the TEF values are a low 0.003, the TEQ amounts are smaller than their weight percentages. For example, Chemours Edge Moor reported dioxin number 7 (TEF = 0.003) as 79.6% of the total weight, but this was only 9.9% of the TEQ. The total on-site release amounts in pounds and their corresponding TEQ amounts reported by the four facilities that reported on dioxins in Delaware for 2015 were calculated and are presented in the Table 11. The 2015 total of 0.015891 pounds, or 7.2145 grams, was released on-site, which is DOWN from the 2014 total of 0.026889 pounds, or 12.2076 grams. Because of the differences in distribution of individual dioxins and dioxin-like compounds, the rankings changed when comparing by pounds or by TEQ. In addition, the pounds released or managed as waste are shown in ***Appendix I***.

TABLE 11

FACILITIES SORTED BY DIOXIN TOXIC EQUIVALENT QUANTITY (TEQ)

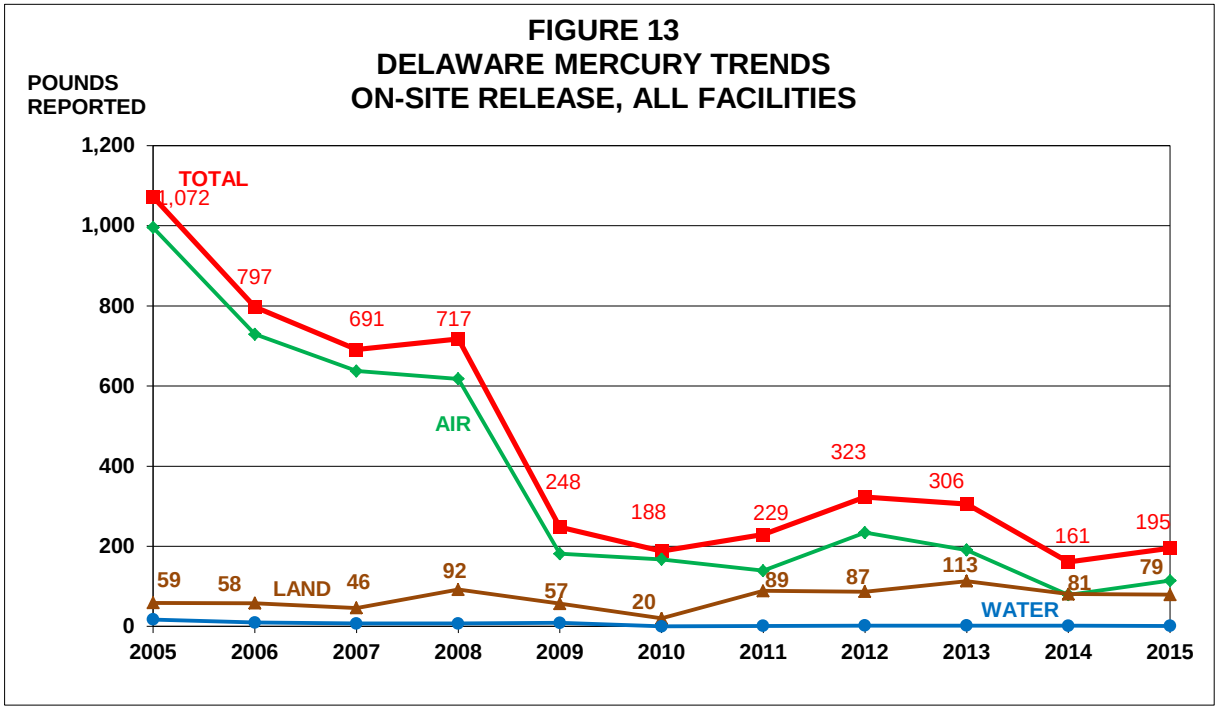
SORTED BY TOTAL ON-SITE TEQ FACILITY	TOTAL ON-SITE TEQ, LBS.	ON-SITE TEQ RANK	TOTAL ON-SITE LBS. RELEASE	ON-SITE LBS. RANK
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.0002107	1	0.006214	2
DELAWARE CITY REFINERY	0.0001540	2	0.001254	3
CHEMOURS EDGE MOOR	0.0000203	3	0.008414	1
FORMOSA PLASTICS	0.0000003	4	0.000008	4
TOTALS	0.0003854		0.015891	

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. Control of mercury and mercury compounds is becoming increasingly important as we learn more about mercury, and that mercury is a serious pollutant. Children, including unborn babies, exposed to mercury compounds can have impaired functions, including verbal, attention, motor control, and intelligence. Adults may be at lower risk than children, but mercury in fish consumed by adults may lead to problems similar to those found in children, as well as reproductive and cardiovascular problems. A significant source of mercury pollution comes from the air, as mercury released from power plants is deposited on water and land, where runoff may also migrate to the water. Many lakes and streams are impaired as a result of mercury releases from coal-burning power plants. As mercury makes its way into the food chain, restrictions on eating fish harvested from these water bodies are becoming more commonplace.

For 2015, total on-site releases of mercury and mercury compounds increased 34 pounds (21%) to a total of 195 pounds. This was largely the result of an increase in releases to air of 38 pounds by the Delaware City Refinery. On-site releases of mercury and mercury compounds on the whole are down 82% since 2005.

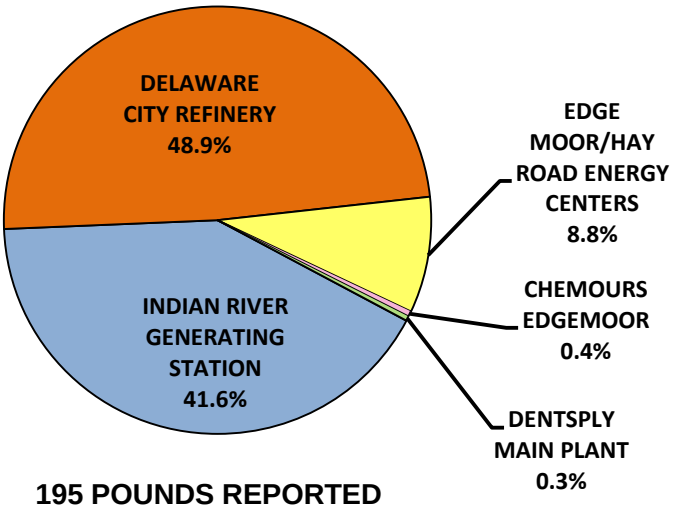
Figure 13 shows the combined trend for mercury and mercury compounds, and how the trend has been greatly influenced by on-site releases to air.



The Delaware City Refinery reported the highest on-site release amount of mercury for 2015, with the majority of releases to air. Indian River Generating was the second largest contributor for on-site mercury releases in 2015, with the majority of releases to land.

Figure 14 shows the percentage contributed by each of the facilities that reported a mercury or mercury compound release in 2015. On-site release amounts for mercury and mercury compounds can also be found in ***Appendix F*** on page F-8 and ***Appendix I*** on page I-1.

FIGURE 14
2015 ON-SITE MERCURY RELEASES FROM DELAWARE FACILITIES



195 POUNDS REPORTED RELEASED ON-SITE

TABLE 12
CARCINOGENS REPORTED BY
DELAWARE FACILITIES FOR 2015

CHEMICAL NAME	IARC	NO. OF REPORTS
4,4'-METHYLENEBIS(2-CHLOROANILINE)	1	1
ARSENIC COMPOUNDS	1	1
ASBESTOS (FRIABLE)	1	1
BENZENE	1	1
CHROMIUM COMPOUNDS	1	3
ETHYLENE OXIDE	1	1
NICKEL COMPOUNDS	1	4
VINYL CHLORIDE	1	1
1,3-BUTADIENE	2A	1
CREOSOTE	2A	1
LEAD	2A	5
LEAD COMPOUNDS	2A	8
POLYCHLORINATED BIPHENYLS	2A	1
TRICHLOROETHYLENE	2A	1
COBALT COMPOUNDS	2B	2
DICHLOROMETHANE	2B	1
ETHYLBENZENE	2B	3
HEXACHLOROBENZENE	2B	1
HYDRAZINE	2B	1
HYDRAZINE SULFATE	2B	1
NAPHTHALENE	2B	4
NICKEL	2B	3
NITROBENZENE	2B	1
P-CHLOROANILINE	2B	1
POLYCYCLIC AROMATIC COMPOUNDS	2B	4
PROPYLENE OXIDE	2B	1
STYRENE	2B	2
TETRACHLOROETHYLENE	2B	1
TOLUENE DIISOCYANATE (MIXED ISOMERS)	2B	2
VINYL ACETATE	2B	1
CHEMICALS = **30**	REPORTS = **59**	

Source: 2015 DNREC TRI Database, October 2016

Carcinogenic TRI Chemicals

Some chemicals are reportable under TRI because they are carcinogens, and are known or suspected to cause cancer in humans. Table 12 shows those carcinogens that were reported by Delaware facilities for 2015. Each chemical is determined to be a carcinogen by either the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP). Next to the chemical is their rating listed as: Known (1), Probable (2A), or Possible (2B) carcinogen. Of the 4.6 million pounds of TRI chemicals reported by facilities in Delaware as released on-site to the environment in 2015, 2.8% (127,844 pounds) were known or suspected carcinogens. For additional information on cancer rates and causes, please go to the Division of Public Health cancer web site listed in the "***For Further Information"*** section on page 49.

Carcinogen Trends, 2005-2015

Thirty-three facilities reported on carcinogens for 2015, two more than in 2014. The number of carcinogen reports increased by three to 59 in 2015, and the total number of reported carcinogenic chemicals remained at 30. On-site releases of all carcinogens increased 26.7% (26,928 pounds) compared to 2014, and have decreased 85.1% (729,027 pounds) since the peak in 1998. The largest increases in on-site releases were Formosa Plastics reported increase in vinyl acetate releases, and the National Guard's River Road Training Site Range reported increase in lead released to land. Other carcinogens saw smaller increases in releases, with some facilities reporting decreases.

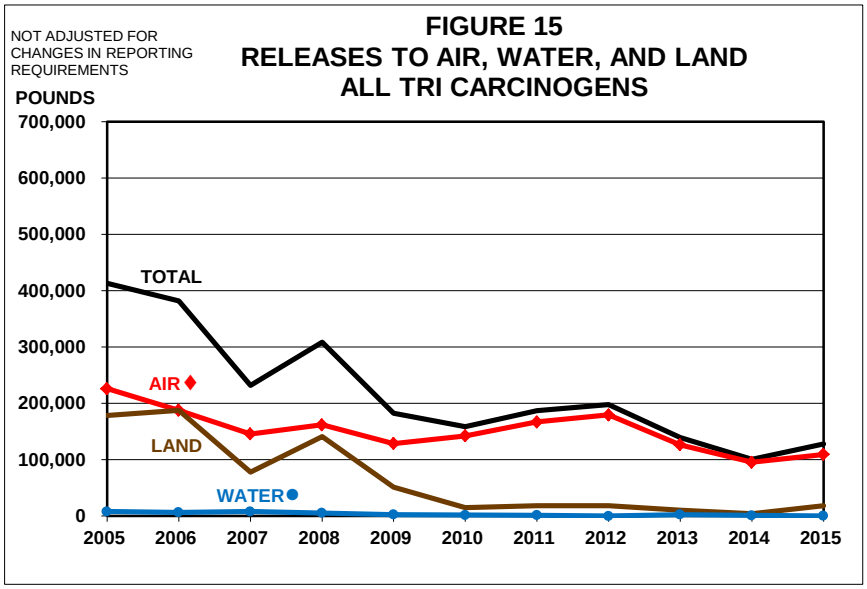
Table 13 shows amounts released on-site for carcinogens from 2005-2015, and Figure 15 shows the trend, which has been generally down during this time period.

TABLE 13
2005-2015 TRI CARCINOGENS
REPORTED ON-SITE RELEASES, NOT ADJUSTED

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
KNOWN											
AIR	98,107	66,475	56,287	69,781	60,664	63,975	70,033	73,545	58,914	59,175	51,188
WATER	4,643	5,222	6,435	4,452	2,059	576	1,318	121	429	1,187	226
LAND	134,194	143,115	46,021	104,112	26,843	8,843	552	558	411	0	0
KNOWN TOTAL	236,944	214,812	108,743	178,345	89,567	73,394	71,903	74,224	59,753	60,362	51,413
PROBABLE											
AIR	23,600	18,946	18,628	14,604	11,112	15,175	16,040	7,008	7,480	7,568	4,629
WATER	4	4	4	5	5	1,146	124	58	163	97	82
LAND	0	0	8,212	8,661	7,115	5,404	17,458	17,017	8,991	3,351	17,278
PROBABLE TOTAL	23,604	18,950	26,845	23,270	18,232	21,725	33,623	24,083	16,633	11,016	21,989
POSSIBLE											
AIR	104,480	102,414	70,722	77,436	56,817	63,059	80,974	98,864	60,152	28,732	53,472
WATER	3,416	1,544	1,655	1,170	522	38	25	20	2,053	29	30
LAND	44,500	44,251	24,005	28,203	17,459	615	562	901	947	817	979
POSSIBLE TOTAL	152,396	148,210	96,382	106,809	74,798	63,713	81,561	99,785	63,152	29,577	54,481
TOTAL AIR	226,188	187,836	145,637	161,821	128,593	142,210	167,047	179,417	126,545	95,475	109,289
TOTAL WATER	8,062	6,770	8,094	5,627	2,586	1,761	1,468	199	2,645	1,313	337
TOTAL LAND	178,694	187,366	78,238	140,976	51,417	14,862	18,572	18,476	10,348	4,168	18,257
GRAND TOTAL	412,943	381,972	231,970	308,424	182,596	158,832	187,087	198,092	139,538	100,955	127,884

Source: DNREC TRI 2015 Database, October 2016

For 2015, on-site releases of all carcinogens are up 26.7%, or 26,928 pounds. Figure 15 shows a trend for each of the category releases by media and the total reported carcinogen release. The general trend has been down. In recent years, releases to air have largely influenced the total, while releases to land and water play a much smaller part.



Known Carcinogens

Known Carcinogens, although having the least number of reports, are significant because of their high toxicity classification. Known carcinogens made up 40% of the total on-site carcinogen releases reported for 2015. Figure 16, on the next page, shows the trend of each of the three carcinogen groups and their effect on the total on-site release. On-site releases of known carcinogens decreased since 2014, down by 14.8%. On-site releases of known carcinogens are down 531,720 pounds (91.2%) since 1998.

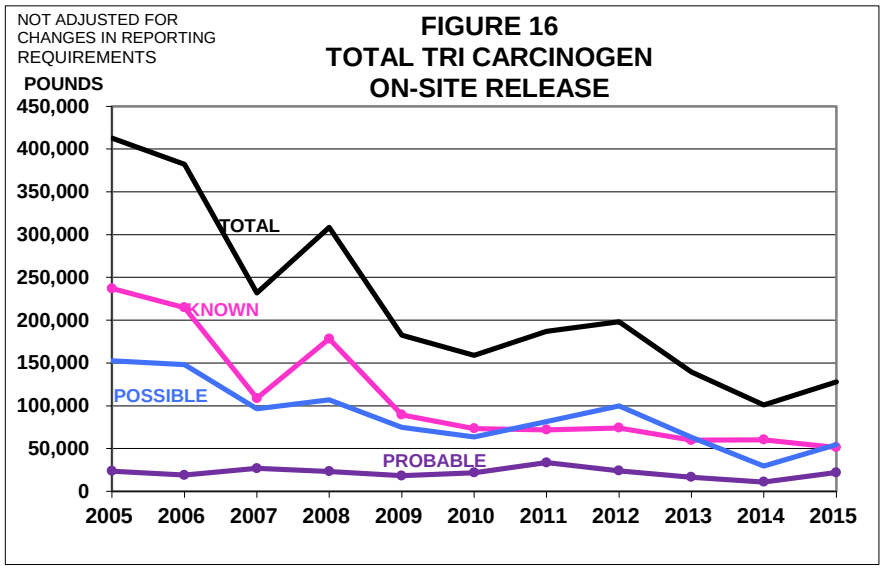
Almost all (99.6%) of the total known carcinogen amount was reported released on-site to air, 0% to land, and 0.4% to water for 2015. Releases to air of known carcinogens are

46.8% of all carcinogen on-site releases to air. Reported releases to air of known carcinogens decreased by 13.5% (7,987 pounds) in 2015, and are down 75.5% from the amount reported in 1998.

Vinyl chloride, with a total release to air of 42,710 pounds and only reported by Formosa Plastics, is the highest (83.1%) of the total releases in the known carcinogen category and also the highest of all 30 carcinogens reported. Vinyl chloride contributed 83.4% of the known carcinogen category releases to air in 2015, 39.1% of all carcinogen releases to air, and 33.4% of carcinogen total on-site releases in 2015. The second highest known carcinogen in 2015 was benzene. Benzene, largely released to air, and all from the Delaware City Refinery, has declined 90.4% from 58,371 pounds released in 1995 (from the Delaware City Refinery and the now closed Metachem facility) to 5,596 pounds in 2015. Benzene made up 10.9% of the known carcinogen releases to air for 2015, down from 23% for 1995.

Ethylene oxide, all of which was released to air (2,880 pounds), ranks third in total on-site releases in the known carcinogen category. Croda reported all of the ethylene oxide releases on-site for 2015, up from 2,688 pounds reported for 2014.

Nickel compounds rank fourth in total on-site releases in the known carcinogen category at 149 pounds, down from 1,086 pounds in 2014. Chemours Edge Moor reported 96.1% of the nickel compounds released for 2015. Releases of nickel compounds were mostly to water, with only seven pounds released to air. Nickel compounds contributed 63% (142 pounds) of all the known carcinogen releases to water.



Probable Carcinogens

This category has the least number of chemicals (6), and the least released on-site (17.2%), but has some important chemicals in it; such as lead and lead compounds, trichloroethylene (TCE), and creosote. During 2015, 78.6% of the six probable carcinogens reported was released on-site to land, while 21.1% was released to air, and 0.4% was released to water.

Lead, 99.8% of which was reported by the U. S. Army's National Guard River Road Training Site Range, was the highest reported amount of on-site release of a probable carcinogen, with 16,121 pounds for 2015, up from 52 pounds reported in 2014. Of the amount released in 2015, 16,110 pounds were released to land, and 8 pounds to air, and 3 pounds to water.

TCE reported by HandyTube was the second highest release of a probable carcinogen with 3,856 pounds reported as released to air. On-site releases decreased 2475 pounds (39.1%)

from 2014. TCE releases have trended downward, declining by 86.9% from 1995-2015, down from 29,332 pounds reported for 1995 to 3,856 pounds for 2015.

Lead compounds had the third highest reported amount of on-site release of a probable carcinogen, with 1,141 pounds for 2015, a decrease from 1,401 pounds reported in 2014. The Indian River Generating Station reported the highest release, 1,061 pounds to land and 26 pounds released to air, or 78% of the 6 facilities reporting lead compounds. The remaining 5 facilities had smaller amounts reported as released to air, water, or land.

The probable carcinogen on-site release total increased by 10,973 pounds (99.6%) for 2014-2015 and is now at 21,989 pounds, 41% of the 1998 amount.

Possible Carcinogens

This category has the most chemicals and number of reports, reporting 42.6% of all on-site releases for carcinogens. About 98.15% of the total possible carcinogen amount is reported as released on-site to air, 1.8% to land, and 0.05% to water. The trend for 2015 is up by 84.2%, or 24,904 pounds, and down 75.3%, or 165,739 pounds, since 1998. The highest chemical release in this category is vinyl acetate at 33,572 pounds, all of which was reported released to air by Formosa Plastics. Vinyl acetate makes up 61.6% of all possible carcinogen on-site releases. Reported on-site releases of vinyl acetate increased by 21,049 pounds (168%) for 2015.

Styrene is the second highest release in the possible carcinogen category for 2015, with reports totaling 13,482 pounds, all but 370 pounds to air. Justin Tanks reported 13,105 pounds of styrene released to air and 365 pounds released to land, up 34.6% from 10,004 pounds reported for 2014 and 99.9% of the total styrene release for 2015. The other facility reporting styrene was the Delaware City Refinery with 12 pounds. Reported styrene releases for 2015 increased by 3,462 pounds.

As before, in ***Limitations of TRI Data*** on Pages 4-5, we urge caution when using this data, as **the TRI data does not indicate the amount, if any, of human exposure**.

Trend Analysis

Effect of Chemical and Facility Group Additions, 1990-2015

Although the TRI program began with reporting for 1987, the next two years were marked with a change each year in the manufacturing, processing, and otherwise use threshold amounts. For 1987, the thresholds were 75,000 pounds for manufacturing and processing, and 10,000 pounds for otherwise use. For 1988, the thresholds were 50,000/10,000 pounds, and for 1989 and beyond, the thresholds were 25,000/10,000 pounds. It is not possible to make a meaningful comparison of trends during this time, as the number of facilities and the number of reports varied because of the changing reporting criteria.

Significant groups of chemicals and facilities were added to the TRI program:

- **Chemical List Changes -1995**

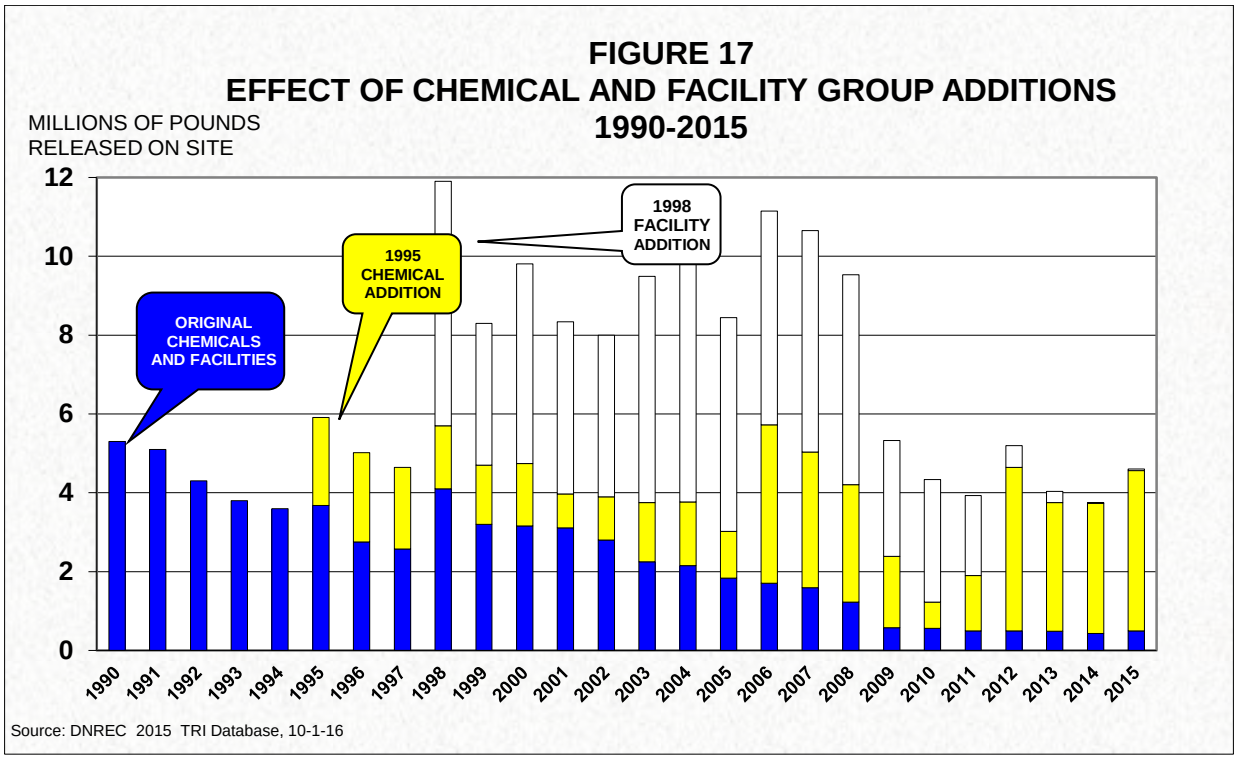
  For reporting year 1995 and beyond, the EPA significantly expanded the list of chemicals. The list increased by 282 chemicals and chemical categories, added to the original list of 238 chemicals. Also during 1989-1995, other chemicals and categories were added or deleted, including chemical categories which are highly persistent and bioaccumulative in the environment (PBTs), bringing the total chemical count for 1995 to 581 and the chemical category count to 30. See details on the PBT chemical reports starting on page 21, and in Appendix I.

  Other additions to the chemical list have occurred over time, including recently. In the 2011 reporting year, 16 new carcinogens, four of which are in the polycyclic aromatic compounds (PAC) category, were added to the list of reportable chemicals. For 2012, Hydrogen Sulfide was added to the list of reportable chemicals. Hydrogen Sulfide reports increased on-site treatment reported amounts by 329 million pounds in 2012 and is discussed in greater detail in ***On-site Waste Management Trends*** on page 38. For the 2014 reporting year, o-nitrotoluene was added to the list of reportable TRI chemicals. For 2015, a nonylphenol category was added to the list of reportable TRI chemicals. These additions bring the total chemical count to 595 listed chemicals and 31 chemical categories.

- **Industry Expansion - 1998**

  Beginning with the 1998 reporting year, the EPA added seven industries to the list of facilities covered under TRI. Prior to the 1998 reporting year, only manufacturers (and Federal facilities were required to report (see Table 1 on page 3). The greatest impact to Delaware is the Electric Utilities (NAICS 221). The industry expansion significantly increased the amount of reported releases. This did not necessarily represent an increase in toxic releases in Delaware, but rather provided additional information to the public. Other smaller groups as noted above, or even individual chemicals, are also added or deleted over time.

Figure 17 shows these effects starting in 1990 and following the trend of each group since it was added to the TRI program. Data from the beginning of the TRI program in 1987-89 is excluded because reporting requirements changed significantly and a valid comparison of that data with later data is not feasible.



The trend of each group and the reports affecting the trends will be discussed in this Trend Analysis section. All groups have changed over time, with increases and decreases reflecting both changes in business conditions and improvements in analysis. Table 14 shows the amount reported in millions of pounds for each group at the time it was added, the 2015 reported amount, and the amount of change since the time it was added. If each group had remained constant at the time of its addition, amounts reported for 2015 would be 13.73 million pounds instead of the 4.6 million pounds actually reported for 2015. Due to several factors, including facility efforts to reduce pollution, increased regulation, partial or complete shutdown of facilities, and declining business conditions, the reporting facilities in Delaware have effected a reduction of 9.13 million pounds, or 66%.

TABLE 14
TREND OF ON-SITE RELEASES FOR CHEMICAL AND FACILITY ADDITIONS

GROUP	STARTING YEAR AMOUNT Millions of Pounds	2015 AMOUNT Millions of Pounds	CHANGE SINCE STARTING Millions of Pounds	PERCENT CHANGE
Original Facilities and Chemicals	5.30	0.49	-4.81	-91%
1995 Chemical Addition	2.23	4.08	1.85	83%
1998 Facility Addition	6.20	0.04	-6.16	-99%
TOTAL	13.73	4.60	-9.13	-66%

TABLE 15
2005-2015 TRI DATA SUMMARY
(IN POUNDS)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
No. of Facilities	73	70	69	69	63	61	63	60	62	57	59
No. of Form As	53	45	44	31	29	31	34	33	33	31	31
No. of Form Rs	294	287	295	288	227	197	209	202	195	177	189
No. of Chemicals	103	101	102	100	90	79	90	88	91	88	90
On-Site Releases											
Air	6,478,578	6,341,764	6,920,245	5,845,072	3,194,221	3,519,986	2,416,526	1,109,209	998,934	805,127	712,043
Water	1,211,798	4,022,175	3,327,675	2,796,686	1,590,679	600,479	1,230,737	3,777,904	2,881,902	2,931,067	3,862,398
Land	752,894	781,701	406,188	885,976	537,489	210,747	278,669	306,702	151,956	17,910	29,078
Unadjusted On-Site Release	8,443,270	11,145,640	10,654,109	9,527,735	5,322,389	4,331,212	3,925,932	5,193,815	4,032,792	3,754,104	4,603,520
Off-site Transfers											
POTWs	1,514,575	1,421,647	1,243,125	1,117,335	636,602	996,970	1,048,588	814,866	935,842	934,025	1,035,534
Recycle	11,345,835	8,534,537	8,181,423	7,535,371	5,367,592	5,662,694	8,027,133	9,383,706	9,009,366	7,384,097	6,814,502
Energy Recovery	2,724,080	4,180,596	4,910,600	3,695,215	2,330,189	1,857,131	2,110,293	2,556,954	1,874,068	2,005,555	1,968,908
Treatment	194,679	237,073	171,044	150,297	140,248	336,190	274,727	963,123	1,112,090	314,129	229,453
Disposal	4,400,538	4,739,232	7,145,314	3,129,281	2,785,524	4,563,328	2,307,186	2,419,683	1,571,572	2,356,053	1,612,833
Total Transfers	20,179,707	19,113,085	21,651,506	15,627,498	11,260,156	13,416,312	13,767,928	16,138,331	14,502,937	12,993,859	11,661,230
On-Site Waste Mgmt.											
Recycle	10,079,028	10,594,593	10,945,896	10,870,477	5,630,119	7,678,337	7,974,584	9,326,213	11,642,121	11,636,106	10,756,074
Energy Recovery	19,624,524	17,937,031	20,387,061	20,932,200	14,670,034	-	9,172,883	16,227,012	15,659,902	15,930,970	15,963,550
Treatment	38,330,991	39,516,068	39,879,302	42,281,742	38,179,139	32,895,795	38,585,960	376,100,649	375,430,183	470,213,664	397,416,374
Total On-Site Mgmt.	68,034,543	68,047,692	71,212,259	74,084,419	58,479,292	40,574,132	55,733,427	401,653,874	402,732,206	497,780,740	424,135,997
Total Waste	96,657,520	98,306,417	103,517,874	99,239,652	75,061,836	58,321,655	73,427,286	422,986,019	421,267,934	514,528,704	440,400,747

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

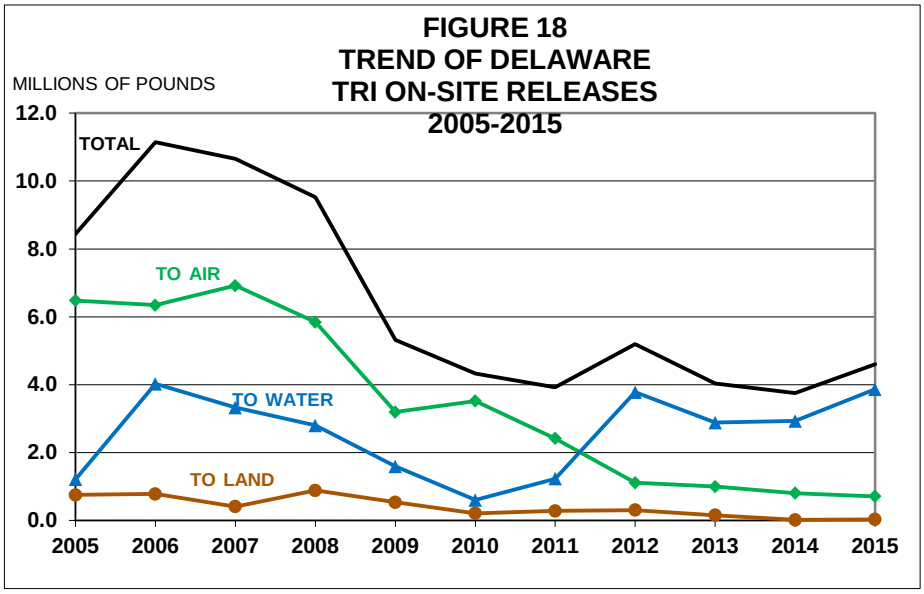
Release and Waste Management Trends, 2005-2015

Table 15 on page 33 shows amounts reported for each of the last 10 years. Earlier data is available back to 1987, the first year of the TRI program. Changes in reporting requirements over time have caused an increase both in the total number of chemicals and in the total number industries that are subject to reporting. Significant changes to the TRI reporting requirements occurred in 1995, 1998 and 2000, when large increases in chemicals (1995), industries subject to reporting (1998), and reductions in PBT thresholds (2000) occurred. The 2012 reporting year marked the addition of hydrogen sulfide to the list of reportable chemicals. Comparison of this data with earlier data must be done carefully, as some chemicals and/or industries may not have been required to report over the entire time.

The analysis presented in this section uses 2005 as a base year for presenting trends for all reportable chemicals and facilities. Sections covering on-site releases and off-site transfers are **not adjusted** for any changes in reporting requirements. However, in the on-site releases section, further analysis is presented on on-site releases, showing the impact of the Delaware City Refinery on the overall releases using 2011 as a base year. The on-site management section discusses the impact of the addition of hydrogen sulfide to the list of reportable chemicals.

On-Site Releases, 2005-2015

Figure 18 shows the on-site release trends during 2005-2015. On-site releases include emissions to the air, discharges to bodies of water and releases at the facility to land, including on-site landfills. On-site release amounts increased by 22.6% for 2015 (849,415 pounds) following a 6.9% decrease (278,463 pounds) for 2014.



Significant changes in the amounts reported for 2014-2015 include the facilities and chemicals shown in Table 16 on the next page. To put the changes in perspective for 2015, there were 64 reports with a higher amount, 82 reports with a lower amount, and 43 reports with no change from the 2014 amount. There were 9 reports with an increase greater than 10,000 pounds and 2 reports with a decrease greater than 10,000 pounds.

TABLE 16
REPORTS OF MAJOR CHANGES IN ON-SITE RELEASES FOR 2015 FROM 2014

FACILITY	CHEMICAL	MEDIA	CHANGE IN ON-SITE RELEASES (pounds)
Chemours Edge Moor	Carbonyl Sulfide	Air	-89,343
Delaware City Refinery	Sulfuric Acid	Air	-72,738
Allen Harim, Harbeson	Nitrate Compounds	Water	+64,862
Chemours Edge Moor	Manganese Compounds	Water	+97,005
Perdue Georgetown	Nitrate Compounds	Water	+149,461
Delaware City Refinery	Nitrate compounds	Water	+622,393

Some of these changes (higher or lower) may have been caused by normal year-to-year variations in production levels at the facility, the chemical content of raw materials, or by the new Delaware Regulation 1146, which started to take effect in 2009. Some changes may also have been caused by improvements in the way facilities estimate amounts. These changes are the primary reasons for the reductions and increases in the totals for 2014-2015. Changes are also discussed in the ***Facilities No Longer Reporting Section*** on page 19. Facility specific information is available via the ***2015 TRI Facility Profiles,*** see ***Access to TRI Files*** under the ***Further Information Section*** on page 49. In addition, you may contact a facility for a more in-depth discussion of the reasons for specific changes, and consult the appendices in this report for the exact amounts that were reported.

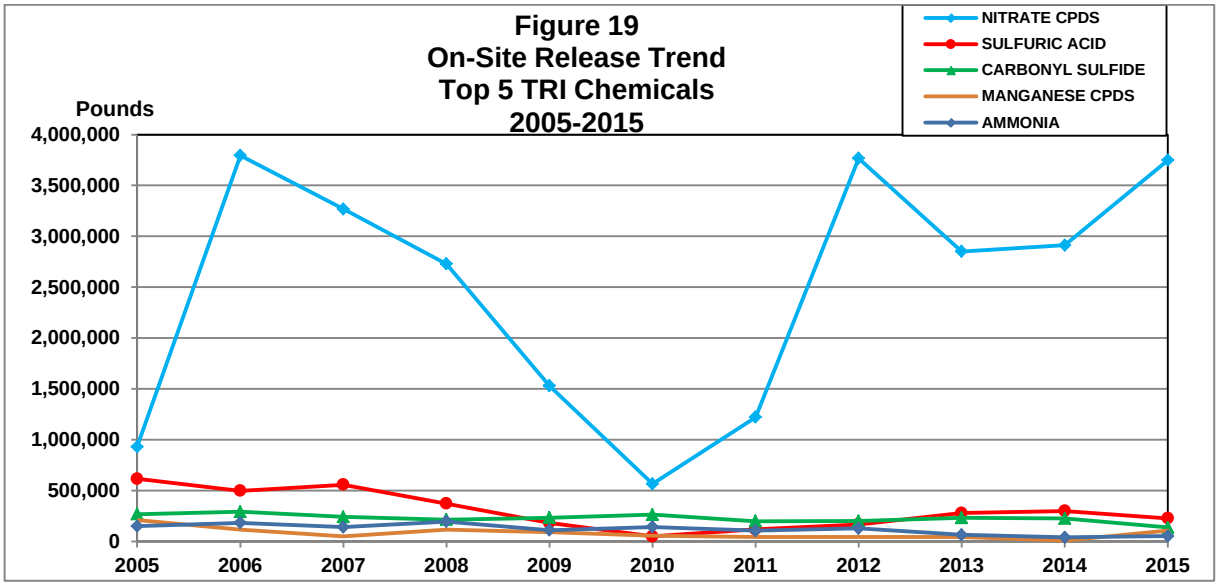
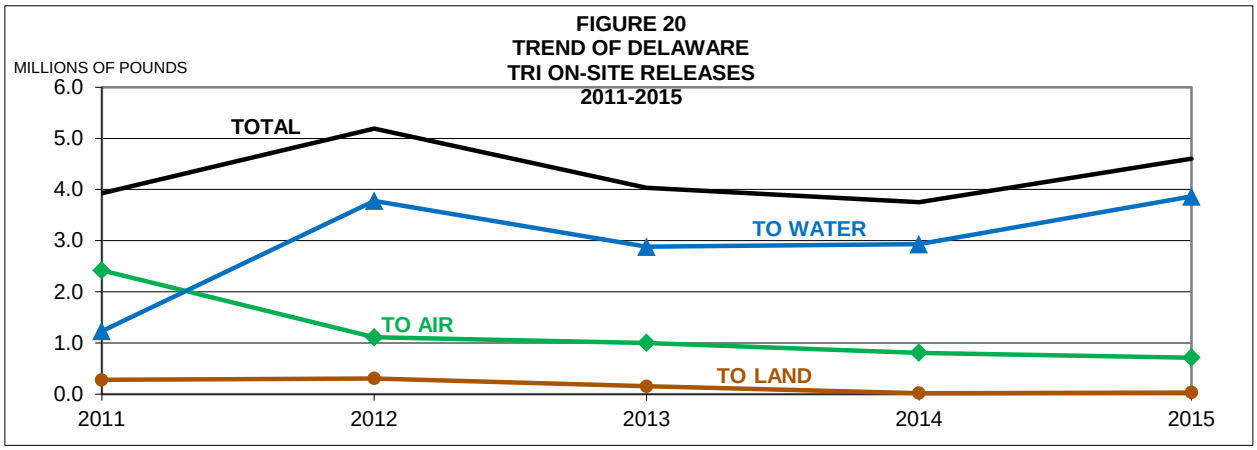
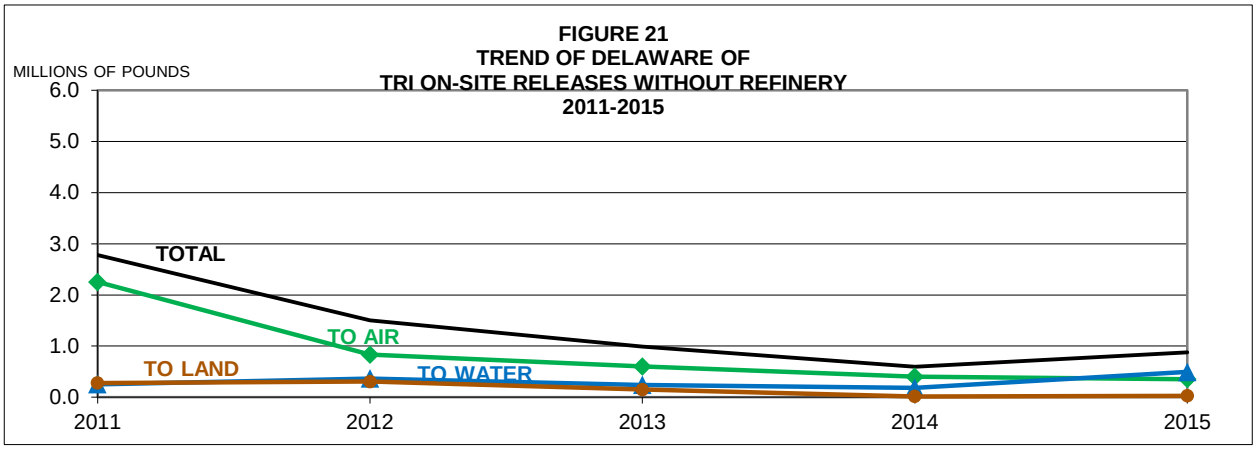


Figure 19 shows the trend since 2005 for the top five chemicals based on on-site release amounts reported for 2015 in Delaware. These five chemicals represent 92.7% of all on-site releases from the 90 chemicals reported in 2015. Nitrate compound releases trended

downward from 2006 through 2010, when the Delaware City Refinery was in the process of shutting down and preparing to be sold. From 2010 through 2012, nitrate compound releases trended upward with the refinery coming back online and being in full operation. Nitrate compound releases accounted for 81.4% (3.75 millions pounds) of all on-site releases in 2015. Sulfuric acid ranked second in on-site releases, accounting for 5% (225,896 pounds). Sulfuric acid releases have trended down from 2008 through 2010, but have trended upward since 2010 with the Delaware City Refinery coming back online. Carbonyl sulfide ranked third in on-site releases, accounting for 3% (135,916 pounds). Chemours Edge Moor released over 99% of the carbonyl sulfide reported to air in 2015, with past release amounts varying year to year. Manganese compounds accounted for 2.3% of the total in on-site releases. Ammonia accounted for 1% of the total on-site releases, up 33% since 2014, but with a general downward trend since 2005.

Figure 20 shows the on-site releases to air, water and land over the last 5 reporting years from 2011 through 2015. As the figure depicts, total releases mirror the trend of releases to water. This is due to nitrate compounds reported as released to water by the Delaware City Refinery, which accounted for 73% of all onsite releases in 2015. Figures 20 and 21 provide a side by side comparison showing the impact the refinery has on the overall on-site releases. Figure 21 shows all other on-site releases, with the releases of the Delaware City Refinery removed. Onsite releases reported from all other facilities have dropped by 68.5% (1.9 million pounds) since 2011, while total on-site releases, including the refinery releases, are up by 17.2% (677,588 pounds) compared to 2011. With the refinery removed, releases follow the trend

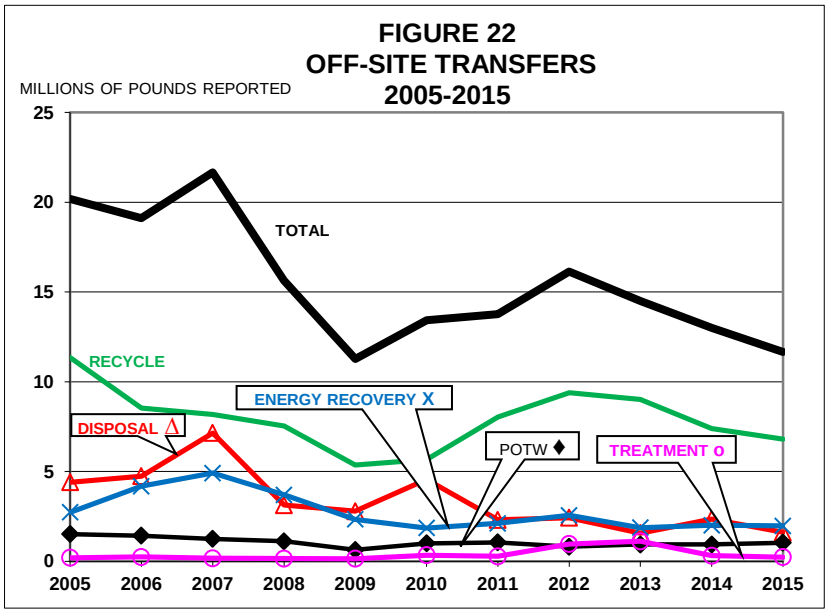




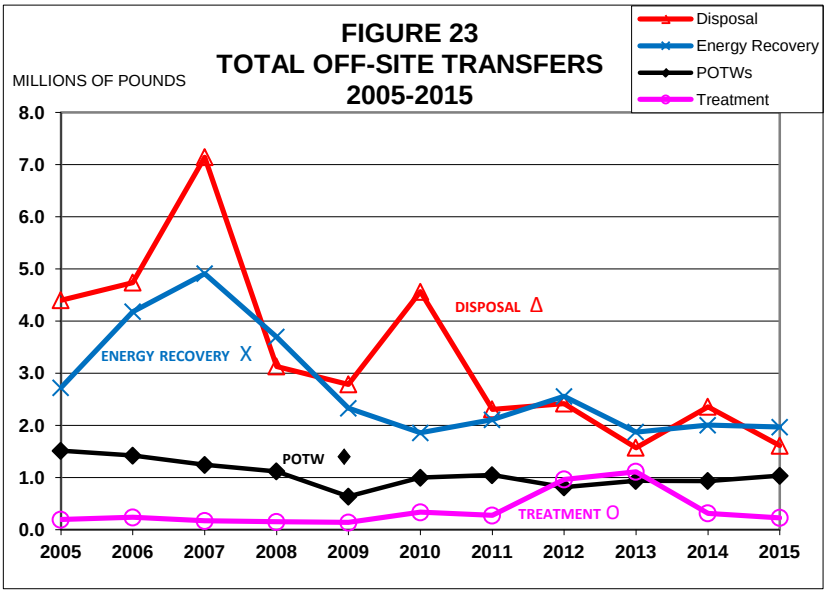
of releases to air, which have reduced significantly since 2011. As discussed previously, Delaware Regulation 1146 was a major factor in onsite release reductions. Another reason for the decrease in on-site releases is the economy, which effects production at the facilities and ultimately many of their on-site releases have declined in recent years and indirectly caused part of the reduction.

Off-Site Transfers, 2005-2015

An off-site transfer is a transfer of toxic chemicals as wastes to another facility that is physically separate from the reporting facility and may even be out-of-state (see page 11 for more information on off-site transfers). Chemicals are reported as transferred to an off-site facility when they are transported away from the reporting facility for the purposes of treatment at a publicly-owned treatment works (POTW, typically a waste water treatment plant), recycle, disposal, energy recovery, or non-POTW treatment facility. Although the off-site transfers may be of less immediate local concern than on-site releases, the transfers to POTWs, treatment, and disposal facilities still represent toxic chemicals as wastes that must be ultimately accounted for.



As noted on page 11 and seen in Table 15 on page 33, the amounts reported as transferred off-site are about 2.5 times greater than the amounts of on-site releases. Figures 22 and 23 show the trends in amounts of TRI chemicals in wastes transferred off-site for all facilities and chemicals reporting since 2005. To increase clarity, the lower portion (0 - 8 million pounds) of Figure 22 is expanded in Figure 23. For comparison, please look at the corresponding values in Table 15. Off-site transfers decreased 10.3% (1,332,629 pounds) in 2015, driven by decreases in amounts sent off-site for disposal, recycling and treatment, and offset partially by an increase in off-



site transfers to POTW's.

Table 17, below, shows that the largest off-site transfer decrease was for manganese compounds sent off-site for disposal by Chemours Edge Moor, followed by the decrease in recycling of lead compounds by the Johnson Controls Battery Plant. Noramco also sent less toluene off site for energy recovery, and BASF sent less biphenyl off site for treatment. The largest increase in off-site transfers was BASF's reported increase in methanol sent to the POTW. Fifty reports showed decreases, while 67 reported increases in off-site transfers for 2015.

TABLE 17
MAJOR CHANGES IN OFF-SITE TRANSFERS FOR 2015 FROM 2014

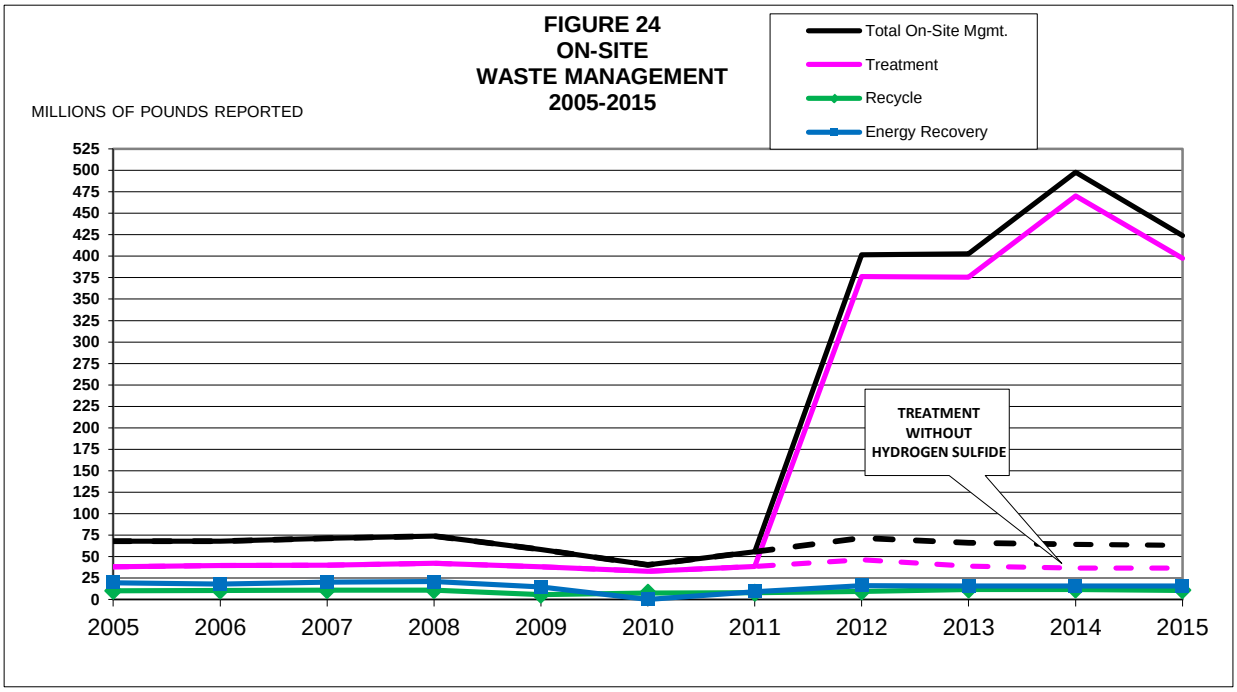
FACILITY	CHEMICAL	OFF-SITE METHOD	CHANGE (pounds)
Chemours Edge Moor	Manganese Compounds	Disposal	-776,233
Johnson Controls Plant	Lead Compounds	Recycle	-765,562
Noramco	Toluene	Energy Recovery	-178,040
BASF Corp	Biphenyl	Treatment	-136,265
BASF Corp	Methanol	POTW	+227,239

On-Site Waste Management, 2005-2015

At some facilities, wastes are managed on-site instead of being sent off-site for processing or disposal. On-site waste management (recycle, recovered for energy, or treated at the facility) is the processing of chemicals in wastes that do not leave the site of the reporting facility. These activities generally represent a lower risk to the environment, as the materials are typically destroyed, although a small fraction escapes treatment and these amounts are reported under on-site releases.

Although these amounts represent a loss of raw materials and/or finished product to the facility as waste, they are not as much of a threat to the environment as the on-site release categories since these amounts are treated or recycled and not disposed of or released to the on-site environment. There is, of course, the risk that these chemicals may be accidentally released on-site to the environment during the waste management process. Also, most waste management operations are not 100% efficient, so a portion of the waste being treated in these operations will be released on-site and must be accounted for in the on-site releases reported by the facility.

Figure 24 below shows the trends for the three on-site waste management activities since 2005. Overall, on-site waste management amounts decreased 14.8% (73,664,743 pounds) in 2015 compared to 2014. The on-site management of hydrogen sulfide accounted for 85.1% (360,881,650 pounds) of all on-site waste management activities, with the Delaware City Refinery treating the largest amount at 360,703,361 pounds. As noted on page 31, the addition of Hydrogen Sulfide to the list of reportable chemicals resulted in a 329 million pound increase in on-site treatment amounts reported for 2012.



The Delaware City Refinery is the only facility in the state that reports on-site energy recovery as part of its air pollution control activities. On-site energy recovery was up 0.2% (32,580 pounds) compared to 2014, with the refinery reporting ammonia as having the largest increase

in energy recovery compared to 2014.

The largest changes reported in on-site waste management for 2015 are:

TABLE 18

MAJOR CHANGES IN ON-SITE WASTE MANAGEMENT FOR 2015 FROM 2014

FACILITY	CHEMICAL	ON-SITE WASTE MANAGEMENT METHOD	AMOUNT OF CHANGE (pounds)
Delaware City Refinery	Hydrogen Sulfide	Treatment	-72,705,645
Air Liquide Advanced Sep.	Methanol	Recycle	-635,164
Air Liquide Advanced Sep.	N-Hexane	Recycle	-533,170
Delaware City Refinery	Carbonyl Sulfide	Treatment	-483,065
Chemours Edge Moor	Titanium Tetrachloride	Treatment	-413,242
Chemours Edge Moor	Hydrochloric Acid	Treatment	+1,283,130

These changes were balanced by smaller increases and decreases from other reports. Twenty-nine reports showed an increase in a waste management amount, while 37 reports showed a decrease for 2015. Total pounds for on-site waste management, excluding the addition of hydrogen sulfide, have decreased by 4,780,196 pounds, or 7%, over the last 10 years or since 2005. The on-site waste management amount totals are in Table 15 on page 33, and Figure 6 on page 12 shows the relative amounts.

Receiving TRI Chemicals in Wastes

When a facility transfers TRI chemical waste off-site, these wastes go to a receiving facility. Table 19 shows the total amounts of TRI chemicals reported as sent to 22 Delaware facilities from both in-state and out-of-state TRI facilities for 2015. The DNREC TRI program does not receive reports from any out-of-state TRI facilities that transfer wastes into Delaware; this data was obtained from the EPA.

TABLE 19
SUMMARY OF REPORTED TRI TRANSFERS
TO DELAWARE FACILITIES
FROM OTHER TRI FACILITIES IN 2015

(IN POUNDS)

DELAWARE RECEIVING FACILITY	TOTAL TRANSFERS TO DELAWARE FROM DELAWARE TRI FACILITIES	TOTAL TRANSFERS TO DELAWARE FROM OUT-OF-STATE TRI FACILITIES	TOTAL TRANSFERS RECEIVED BY DELAWARE FACILITIES
BEAR DE POTW	5		5
CLEAN DELAWARE, LLC	10		10
CLEAN EARTH OF NEW CASTLE	282	227	509
DELAWARE RECYCLABLE PRODUCTS INC.	8		8
DIAMOND STATE RECYCLING CORP	68,292		68,292
DSWA CENTRAL SOLID WASTE MANAGEMENT CENTER	6,314		6,314
DSWA CHERRY ISLAND LANDFILL	53,229		53,229
DSWA JONES CROSSROADS LANDFILL	82		82
DU PONT CHRISTINA LAB	174		174
FCC ENVIRONMENTAL		7,582	7,582
INDUSTRIAL RESOURCE NETWORK		250	250
ISDELL SANITATION & PUMPING SERVICE	1,534		1,534
KENT COUNTY REGIONAL WWTF	54,090		54,090
KENT SCRAP METALS	67,075		67,075
MIDDLETOWN-TOWNSEND-ODESSA TREATMENT PLANT	26		26
MOUNTAIRE FARMS RESOURCE RECOVERY PLANT	2,302		2,302
R & M RECYCLING LLC	7		7
RAVAGO RECYCLING	0		0
SEAFORD WASTEWATER TREATMENT FACILITY	1,900		1,900
SELBYVILLE WASTEWATER TREATMENT FACILITY	5,252		5,252
WASTE MANAGEMENT OF DELAWARE	5		5
WILMINGTON WASTEWATER TREATMENT PLANT	973,399		973,399
TOTAL TRI TRANSFERS REPORTED	1,233,986	8,059	1,242,045

Source: U.S. EPA 2015 Data October, 2016

The top receiving facility is the Wilmington Wastewater Treatment Plant, receiving TRI chemicals in wastewater from regional customers. Diamond State Recycling Corp. received the second largest amount, for recycle, from two Delaware customers. Kent Scrap Metal received the third highest amount, from one facility. The fourth largest amount transferred to a Delaware facility was to the Kent County Wastewater Treatment Plant, receiving TRI chemicals for treatment from two facilities in the county. DSWA's Cherry Island Landfill received the fifth highest amount, from three facilities in Delaware. These five receiving facilities accounted for 98% of all TRI chemicals received in Delaware from all in-state and out-of-state TRI facilities.

Pollution Prevention/Reduction Programs in Delaware

Data for TRI reportable chemicals and other chemicals is becoming increasingly more available to the public. This data availability has focused public attention and awareness on the existence and quantity of these chemicals and on their management and possible reduction. Although EPCRA does not require a facility to reduce releases of chemicals reportable under its programs, many companies and facilities are aware of the public availability of the data in this and other EPCRA reports and have implemented programs to reduce or eliminate releases of these chemicals. These programs may take the form of efficiency improvements, reuse, recycle, energy and material recovery, or material substitutions. The benefits of these programs are reduced raw material and waste disposal costs and reduced risks associated with the toxic chemicals. Also, these reductions demonstrate corporate responsibility to the facility's neighbors and improve the corporate image with the public.

There are numerous programs within DNREC that impact the management of TRI chemicals through the issuance of permits or through other regulatory and non-regulatory activities. Most releases reported under TRI are also regulated through air emission, water discharge, and/or land disposal permits. Potential sources of toxics undergo technical reviews through which potential threats to the environment and to human health are reviewed and identified prior to issuance of a permit. For example, the Engineering and Compliance Branch in the Division of Air Quality enforces a provision in the Clean Air Act Amendments of 1990 that targets the control of hazardous air pollutants (HAPs). Nearly all HAPs are also reportable TRI chemicals. In addition, the Engineering and Compliance staff monitors TRI data to assess whether a facility complies with its air permits for TRI chemicals. Another example is the work performed by the Accidental Release Prevention (ARP) program. The ARP staff uses the TRI data to detect deficiencies at a facility that might result in an increased risk of an accidental release.

DNREC's Division of Air Quality has monitored ambient air quality at locations around the State. For more information, please refer to the Delaware Air Quality Report paragraph in the ***For Further Information*** section on page 49 of this report.

In 2006, Delaware promulgated 7 DE Admin Code 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation, to establish sulfur dioxide (SO_2), nitrogen oxides (NOx), and mercury (Hg) air emissions limitations for coal-fired and residual oil-fired EGUs located in Delaware. Within 7 DE Admin Code two phases of emissions limitations were established, with the first phase that became effective in 2009, and a more restrictive second phase of emissions limitations that became effective in January of 2013. Significant reductions in NOx, SO_2 and Hg emissions have been achieved by the Delaware EGUs subject to Delaware 7 DE Admin Code 1146, and full compliance with the regulation's more restrictive second phase emissions limitations for 2013 and related consent decrees have been achieved.

The reduction in NOx, SO_2, and mercury emissions is:

1. Reducing the impact of those emissions on public health;
2. Aiding in Delaware's attainment of the State and National Ambient Air Quality Standard (NAAQS) for ground level ozone and fine particulate matter;
3. Helping to address local scale fine particulate and mercury problems attributable to coal and residual oil-fired electric generating units;
4. Improving visibility and helping to satisfy Delaware's EGU-related haze obligations.

In May 2011, the EPA proposed its "National Emissions Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance (http://www.epa.gov/ttn/atw/utility/fr16fe12.pdf update for 2011) for Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units". The EPA finalized these standards effective April 16, 2012 for new or reconstructed units and effective April 15, 2015 for existing units. The rule establishes emissions standards intended to:

1. Reduce the emissions of hazardous air pollutant (HAP) metals such as mercury (Hg), arsenic (As), nickel (Ni), cadmium (Cd), chromium (Cr), lead (Pb) and selenium (Se).
2. Reduce the emissions of acid gases including hydrogen chloride (HCl) and hydrogen fluoride (HF).
3. Reduce the emissions of particulate matter.

Subsequent to publishing the final rule "National Emissions Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units", EPA received petitions for reconsideration of the rule that may affect the new source standards. The latest updates of the air toxics standards for utilities can be found at: http://www.epa.gov/ttnatw01/utility/utilitypg.html.

National Perspective

The national 2015 TRI data was recently released by the EPA. Placing the 2015 Delaware reports alongside the 2015 EPA data yields some rankings that provide a perspective for Delaware in the national TRI picture. Changes in the 2015 final national values because of report additions or revisions may change these rankings.

TABLE 20
RANKING OF ON-SITE RELEASES FOR SELECT STATES

State	Rank, Based on Pounds	Total On-Site Release (Pounds)	Rank, Based on Release Per Person	Rank, Based on Pounds Release Per Square Mile
Alaska	1	585,741,000	1	16
Nevada	2	318,704,000	2	1
Utah	3	227,367,000	3	2
Texas	4	189,773,000	23	24
Delaware	44	4,603,520	30	6

The reported totals for five states were each over 100 million pounds for 2015.

This data shows that Delaware ranks 44th in the nation in total on-site releases by state for all TRI chemicals. This is 0.16% of the total on-site release amounts nationwide. Rankings can also be based on other criteria. Because Delaware has a small population (#45) and area (#49), releases are spread over fewer people and a smaller area, increasing the ranking on a per-person or per-square mile basis. Although Alaska reports, by far, had the highest amount of on-site releases, this state only received 215 reports from 32 facilities, less than Delaware's 220 reports from 59 facilities. Alaska reports are largely from mining operations, with over 568 million pounds (97% of the state total) reported released on-site for just two chemicals; lead compounds and zinc compounds.

Figure 25 shows the amounts of TRI on-site releases reported by four nearby states for 2011 through 2015. Pennsylvania reported the highest amount in on-site releases for 2015 at 38.6 million pounds and Virginia reported the second highest at 35 million pounds. On-site releases for the region have trended downward over the 5 year span; however Virginia had a significant increase for 2013 compared to 2012. Overall on-site releases for the 5 states are down 21% (29 million pounds) compared to 2011.

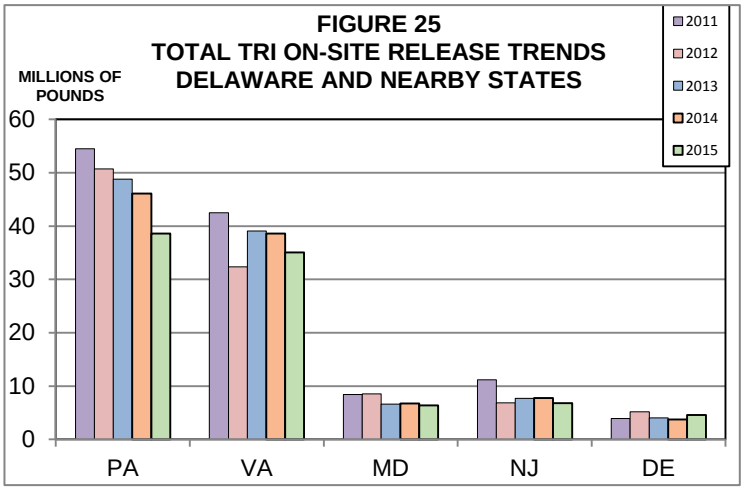


Table 21 compares releases from individual facilities nationally with releases from Delaware facilities. Nationally, 77 facilities had more **total on-site releases** than all the facilities in Delaware combined.

TABLE 21
SELECT FACILITY TOTAL ON-SITE RELEASES COMPARED TO DELAWARE

Facility, State	Rank	Total On-Site Release (Pounds)
Red Dog Operations, Alaska	1	542,093,000
Kennecott Utah Copper Mine, Utah	2	164,192,000
Newmont Mining Twin Creeks, Nevada	3	119,252,000
All Facilities Combined, Delaware	Lower than #77	4,603,520

Eighty facilities each reported over 4 million pounds released on-site for 2015.

Nationwide, 57 facilities each released more **dioxins* on-site** than all the facilities in Delaware combined. Table 22 shows the top three facilities in the nation compared to the Delaware total on-site release of dioxins.

TABLE 22
COMPARISON OF DIOXIN TOTALS FOR TOP 3 FACILITIES TO DELAWARE TOTAL

Facility, State	Rank	Total On-Site Dioxin Release (Grams)
US Magnesium LLC, Utah	1	18,826.5
Dow Chemical Co., Texas	2	5,648.1
Dow Chemical Co., Michigan	3	2,489.9
All Facilities Combined, Delaware	Lower than #57	7.2

Twenty-one facilities each reported over 50 grams of dioxins* released on site for 2015 and six of these released over 1,000 grams. These amounts reported do not differentiate between the highly toxic and the less toxic dioxins and dioxin-like compounds in this group.

* See pages 3 and 23-24 for notes on “Dioxins.”

Nationwide, 252 facilities each released more **mercury and mercury compounds on-site** than all the facilities in Delaware combined. Table 23 shows the top three facilities in the nation compared to the Delaware total on-site release of mercury.

TABLE 23

COMPARISON OF MERCURY TOTALS FOR TOP 3 FACILITIES TO DELAWARE TOTAL

Facility, State	**Rank**	**Total On-Site Mercury Release (Pounds)**
Newmont Mining Corp., Nevada	1	923,080
Barrick Goldstrike Mines, Nevada	2	750,534
Red Dog Operations, Alaska	3	404,373
All Facilities Combined, Delaware	Lower than #252	195

Some facilities in Delaware do rank near the top of the national rankings for specific categories. Relevant national rankings for facilities in Delaware for on-site releases and total waste reported are presented in the ***TRI Facility Profiles*** (see ***Access to TRI Files*** under the ***Further Information Section*** on page 49).

Nearby Facilities in Adjacent States

Some facilities, although not located in Delaware, may be important to the environment in Delaware. These facilities are located near our border and may release TRI chemicals, particularly to the air or water, which may migrate into Delaware. Table 24 on the next page is a listing of some nearby facilities with significant TRI release amounts. This data is from EPA's preliminary 2015 TRI data set, which was gathered in October 2015.

TABLE 24

2015 On-Site Releases From Nearby Facilities in Adjacent States

Facility	State	Chemical	Media	Amount (Pounds)
Chemours Chambers Works, Deepwater 1 ★	New Jersey	Nitrate compounds	Water	564,418*
National Refrigerants, Rosenhayn 2 ★	New Jersey	Chloro-difluoromethane	Air	36,851**
Paulsboro Refining, Paulsboro 3 ★	New Jersey	Hydrogen cyanide	Air	239,360**
Paulsboro Refining, Paulsboro	New Jersey	Nitrate compounds	Water	657,344*
QG, LLC, Altglen 4 ★	Pennsylvania	Toluene	Air	754,360**
PES Refinery, Philadelphia 5 ★	Pennsylvania	Benzene	Air	37,999**
PES Refinery, Philadelphia	Pennsylvania	Hydrogen cyanide	Air	94,692**
PES Refinery, Philadelphia	Pennsylvania	N-hexane	Air	39,316**
PES Refinery, Philadelphia	Pennsylvania	Sulfuric acid	Air	123,171*
Arkema, Bristol 6 ★	Pennsylvania	Methyl methacrylate	Air	33,750**
RR Donnelley, Lancaster 7 ★	Pennsylvania	Toluene	Air	175,024**
Brunner Island Electric, York Haven 8 ★	Pennsylvania	Sulfuric acid	Air	271,804**
Plymouth Tube, Salisbury 9 ★	Maryland	Trichlorethylene	Air	59,667**
Grace Davison Curtis Bay Works, Baltimore 10 ★	Maryland	Ammonia Ammonia	Air Water	182,393** 27,500*
Grace Davison Curtis Bay Works, Baltimore	Maryland	Nitrate compounds	Water	55,060*
Crown Food Packaging, Baltimore 11 ★	Maryland	N- Butyl alcohol	Air	46,756**
Salisbury Feed & Grain 12 ★	Maryland	N-Hexane	Air	222,769**
Brandon Shores Power Plant, Baltimore 13 ★	Maryland	Hydrochloric acid	Air	708,000**
Brandon Shores Power Plant, Baltimore	Maryland	Hydrogen fluoride	Air	97,800**
Brandon Shores Power Plant, Baltimore	Maryland	Sulfuric acid	Air	170,417*
Erachem, Baltimore 14 ★	Maryland	Nitrate compounds	Water	764,354*
Perdue Farms, Accomac 15 ★	Virginia	Hydrogen sulfide	Air	48,272**
Perdue Farms, Accomac	Virginia	Nitrate compounds	Water	300,875*

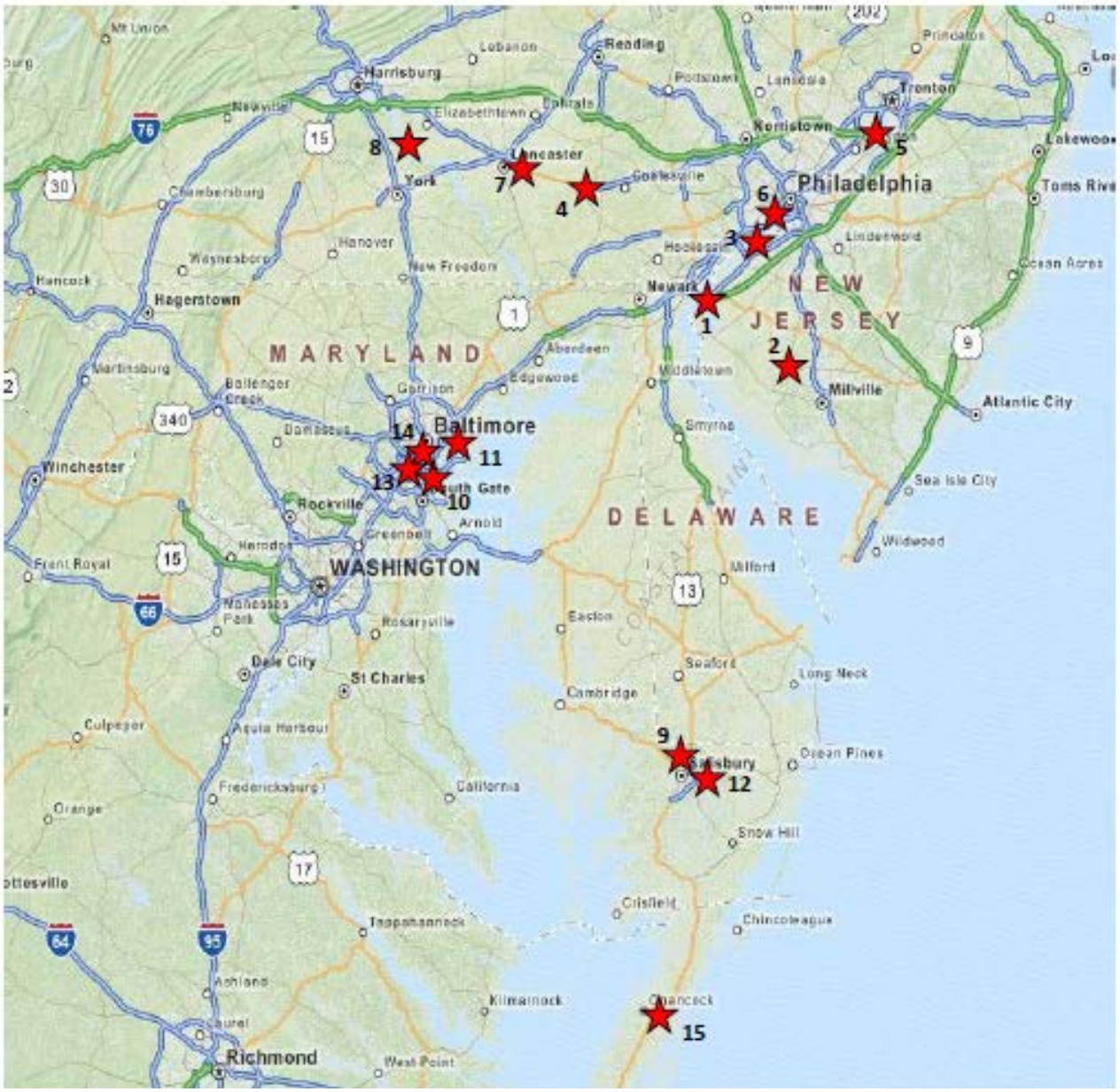
* Delaware State total releases for this chemical are higher

** Exceeds the Delaware State total for this chemical

As noted on pages 4-5, these amounts do not indicate the amount of human exposure. However, they do provide a comparison between releases in Delaware and some TRI chemicals released by nearby facilities in neighboring states.

Figure 26 shows the above nearby facilities and their proximity to Delaware. Each star represents a facility location in the table above that reported an on-site release for a TRI chemical.

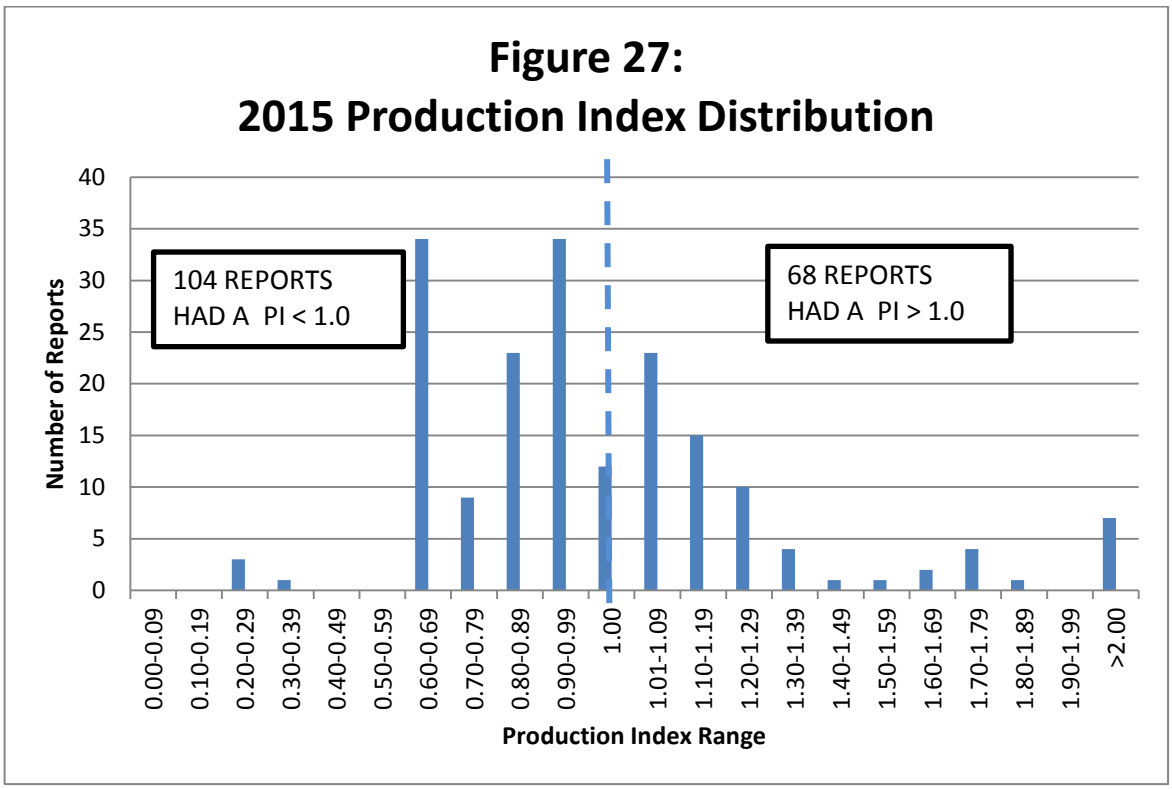
Figure 26
Facilities in Nearby States



TRI and the Economy

Facilities report a Production Index (PI) for each chemical. Along with TRI release and waste management data, this provides one way to estimate the impact of the economy, because the PI is the amount of production or activity directly associated with the demand for the chemical being reported. Some facilities, such as the power plants, can report the same PI for almost all of their chemicals, as they are directly related to the production of power. Other facilities, such as the ones in chemical manufacturing, report different PIs for different chemicals, as they are related more to the manufacture, process, or otherwise use of a specific chemical or line of chemicals. For some facilities, the determination of a PI is not precise, and therefore the PI may not be an exact indicator of production or chemical activity.

PI is reported as a number, representing the ratio of how production increased or decreased compared to the previous year. For example, a facility reporting an increase of 10% would report the PI as 1.10, while a facility reporting a decrease of 10%, would report the production as 90% of the previous year or a PI of 0.90. A facility having the same production level as the previous year would report the PI as 1.0. Figure 27 below, shows the distribution range of PIs reported. For 2015, of the 184 reports with PIs, 68 reported increases in production and 104 reported decreases. The remaining 12 reports had a 2015 production level equal to the previous year. The average PI reported was 1.068 or a 7% increase compared to 2014's production level.



FOR FURTHER INFORMATION

Access to the TRI Files - DNREC is responsible for collecting, processing, and distributing information submitted by Delaware facilities under the TRI program. This 2015 TRI report may be viewed at: http://www.dnrec.delaware.gov/SERC/Pages/Reports.aspx. TRI Facility Profiles for each reporting facility in Delaware, and a searchable database for TRI are also available at the same location. Information on TRI and other EPCRA programs is located at: http://www.dnrec.delaware.gov/SERC/Information/Pages/DataSearch.aspx.

The reports submitted by facilities are available for review through the Freedom of Information Act (FIOA) process from DNREC's EPCRA Reporting Program located at 89 Kings Highway in Dover. Custom reports can also be generated from the database. For information on placing a request, call the TRI Coordinator at (302) 739-9405 during business hours. An on-line FOIA application is also available at: http://www.dnrec.delaware.gov/Info/Pages/FOIA.aspx

Chemical Data Fact Sheets - A two-page fact sheet is available for most TRI chemicals reported in Delaware and contains information on chemical characteristics, health hazards, and ecological effects. The two-page fact sheets (ToxFAQ's) are available upon request from DNREC's TRI program or available through the Agency for Toxic Substances and Disease Registry (ATSDR) at: http://www.atsdr.cdc.gov/toxfaqs/index.asp or from the New Jersey Department of Health at: http://web.doh.state.nj.us/rtkhsfs/indexFs.aspx

EPA's TRI Home Page - The TRI home page provides information on the many facets of the TRI program at the EPA, including an Executive Summary, Q&A's, a link now to the preliminary 2015 national TRI data and early in 2016 year to the complete 2015 data, a current list of reportable chemicals, 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/.

TRI Reporting Forms – Reporting instructions, reporting guidance, and examples of the traditional paper reporting forms are at http://www2.epa.gov/toxics-release-inventory-tri-program/tri-reporting-forms-and-instructions.

Toxics Release Inventory National Analysis - The EPA's annual TRI report. It covers national information and provides a good perspective on how Delaware compares to other states: https://www.epa.gov/trinationalanalysis. The 2015 edition of this report will be available in January of 2016. It can also be obtained by calling the Federal EPCRA Information Hotline at 1-800-424-9346. Other searchable database programs such as Envirofacts, TRI.net, and TRI-CHIP are EPA-developed programs that provide public access to multiple environmental databases, including TRI. Links are available at http://www2.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools for data about hazardous waste, water permits, drinking water, Superfund sites, air, water, toxics, and more.

Chemical Reporting Rule – The EPA has issued the final Chemical Data Reporting (CDR) Rule. The purpose of this program is to collect information from manufacturers and importers of chemical substances and to make that information available for use by EPA. The rule was enhanced for 2012 reporting. More information can be found at: http://www.epa.gov/oppt/cdr/index.html

Delaware Division of Public Health Cancer Rates and Causes - This site provides data and answers to many cancer-related questions: http://www.dhss.delaware.gov/dhss/dph/dpc/cancer.html .

Right-to-Know Network (RTK NET) - Searchable nationwide TRI data is available through RTK NET. RTK NET 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 .

The Office of Pollution Prevention & Toxics - (OPPT) is a part of the EPA that:

- Promotes pollution prevention as the guiding principle for controlling industrial pollution;
- Promotes safer chemicals through a combination of regulatory and voluntary efforts;
- Promotes risk reduction so as to minimize exposure to existing substances such as lead, asbestos, dioxin, and polychlorinated biphenyls; and,
- Promotes public understanding of risks by providing understandable, accessible and complete information on chemical risks to the broadest audience possible.

International "TRI". The United States Toxics Release Inventory (TRI), the oldest and most comprehensive Pollutant Release and Transfer Register (PRTR) system in the world, is one of several similar programs established, or being established, by countries around the world. Industrial facilities in these countries are required to report their emissions and other waste management of toxic chemicals to databases in their respective countries. These databases are designed to track the quantities of chemicals that are released to the air, land or water, or transferred to another site for recycle, treatment or disposal. The term used internationally for these TRI-like systems is Pollutant Release and Transfer Register (PRTR). The EPA has a web site for PRTR, and it is http://www2.epa.gov/toxics-release-inventory-tri-program/tri-around-world. There are now over 50 countries participating in PRTR programs, and links to several international environmental agencies and programs, with more being developed each year.

Delaware Air Quality Report - The annual air quality report is prepared by the Air Surveillance Branch in the Air Quality Management Section of DNREC. This report presents data gathered from a statewide network of air monitoring stations, and includes analyses, trends, and other information regarding Delaware's ambient air quality. For more information, please call (302) 323-4542. This report is available on-line at:

http://www.dnrec.delaware.gov/Air/Pages/DAQ-Annual-Reports.aspx and air toxics information is at: http://www.dnrec.delaware.gov/dwhs/AQM/Pages/DATAS1.aspx.

Delaware's Department of Natural Resources and Environmental Control has a variety of environmental information, including this report and other publications and reports, which are available at: http://www.dnrec.delaware.gov/info/pages/ELibrary.aspx. Environmental Databases are available at: http://www.dnrec.delaware.gov/Info/Pages/GISData.aspx. Notifications of releases in Delaware can be found at: Delaware Environmental Release Notification System (DERNS).

Other Delaware EPCRA Information - In addition to TRI, there are other provisions of the Emergency Planning and Community Right to Know Act (EPCRA), which provide information to the public as well as to local emergency planning and response organizations. Delaware has its own EPCRA statute, which established these provisions under State law. For

additional information, visit the Delaware EPCRA website and Public Information tab at: http://www.serc.delaware.gov/epcra.shtml.

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

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APPENDICES

2015

APPENDIX A

WHAT IS COMMUNITY RIGHT-TO-KNOW?

TOXICS RELEASE INVENTORY

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

A dramatic and fatal accident involving the release of a large quantity of methyl isocyanate gas occurred in Bhopal, India on December 3, 1984. As a result of this release and similar, although less tragic, accidents that occurred in the United States, Congress enacted the Emergency Planning and Community Right to Know Act (EPCRA), as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. EPCRA requires certain facilities to report information about hazardous chemicals and substances at their facilities to Federal, state, and local authorities. The objective is to improve the ability of the facility and of local emergency response agencies to plan for and respond to chemical emergencies, and to give citizens information about chemicals present in their communities. Presidents have also issued Executive Orders to Federal agencies, which mandate their compliance with certain EPCRA requirements. In 1991, Delaware established its own EPCRA legislation that enhanced the Federal requirements.

EMERGENCY PLANNING

Each state was required to establish a State Emergency Response Commission (SERC) to oversee planning efforts. The SERC must appoint Local Emergency Planning Committees (LEPC), which in turn develop emergency response plans for their respective districts. In Delaware, the SERC is chaired by the Secretary of the Department of Public Safety. Emergency planning districts have been established in each county and for the City of Wilmington. Facilities having specifically identified Extremely Hazardous Substances above established threshold quantities are required to notify their LEPC. These facilities are the primary focus of planning activities.

EMERGENCY RELEASE NOTIFICATION

In the event of an accidental chemical release above an established amount, a facility is required to provide immediate notification of the release. A follow up written report is also required to provide details about the sequence of events, the actual response actions, and to identify any known or anticipated health risks associated with the release. The public may receive notification through the Environmental Release Notification System.

In response to Senate Bill 33, which became law in July 2001, the Department of Natural Resources and Environmental Control (DNREC) developed a system to allow Delawareans to learn promptly of releases or discharges of contaminants or pollutants that meet or exceed certain thresholds in their neighborhoods or throughout the state. When you register, you choose to be notified in one of three ways: By phone, by e-mail or by fax. You also can choose to be notified about releases from specific facilities or about all releases that occur in one or more zip codes throughout the state. Interested individuals may register for notification at: http://www.dnrec.state.de.us/dnrec2000/notification/pub/.

HAZARDOUS CHEMICAL REPORTING

Under U.S. Occupational Safety and Health Administration (OSHA) regulations, facilities are required to maintain a Safety Data Sheet (SDS) for each chemical on site. Under EPCRA, facilities are required to submit a list of their SDSs for hazardous chemicals on site above specific threshold amounts. This list must be updated as new chemicals are brought on site. In addition, facilities having such chemicals are required to file Hazardous Chemical Inventory Reports annually. These reports, also known as Tier II forms, can be filed on-line using Tier II

Manager™ and data is available immediately for use by the EPCRA Reporting Program and emergency planning and response agencies. The data provides information on the identity, hazards, amounts, and locations of reportable chemicals at the facility, as well as emergency contacts, and a site plan.

Fees are also collected based on the number and type of chemicals reported. The fees are primarily used to support operations of the LEPCs.

TOXICS RELEASE INVENTORY (TRI) REPORTING

Facilities covered under TRI are required to file annual reports contain on-site releases, off-site transfers, and on-site waste management activities related to their use of certain toxic chemicals. These reports can be filed electronically at the same time to EPA and DNREC using EPA's TRI-ME (TRI Made Easy) program. This data is compiled and made available to the public through this report and other means. For more information regarding TRI, please refer to the **Introduction** and **What is the Toxics Release Inventory?** sections contained in this report.

RISK MANAGEMENT PLANS

Additional information regarding hazardous chemicals is available to the public due to the requirements contained in Title I, Section 112(r) of the Federal Clean Air Act Amendments of 1990. Section 112(r) requires that facilities handling substances with catastrophic potential submit a Risk Management Plan (RMP) that contains an executive summary, registration, off-site consequence analysis (OCA), five-year accident history, and a summary of their prevention and emergency response programs. The OCA consists of a "worst case" release scenario and an "alternative" release scenario. The "worst case" scenario estimates the area and populations affected by a catastrophic release. The 'worst case" scenario is a hypothetical, conservative modeling exercise. Emergency planners use the toxic "alternative" scenario as a more realistic modeling exercise.

The information contained in the RMP builds upon the right-to-know principles of EPCRA by making all of the information including the OCA and five-year accident history available to local communities, emergency planners, and other stakeholders. Concerned citizens or the media may ask facilities to explain the risk management programs that they use to prevent or minimize the consequence of a catastrophic release. EPA encourages this communication to reduce the risk. This is similar to the way public knowledge of chemical releases to the environment through the availability of TRI data has led reporting facilities to reduce their toxic releases. Because of security concerns, the RMP information is restricted. However, this information is available for Delaware facilities by contacting the Accidental Release Prevention Program (ARP) http://www.awm.delaware.gov/EPR/Pages/AccidentalReleasePrevention.aspx or by contacting the EPA Region 3 reading room at: http://www.epa.gov/libraries/region3.html.

In Delaware, the Extremely Hazardous Substances Risk Management Act first passed in 1988, and amended in 1998, adopted new federal guidelines that enhance the community right-to-know information. The Delaware Accidental Release Program (ARP) has been granted full authority by the US EPA to administer the program within DNREC, reviews the facility RMPs for accuracy and completeness and inspects facilities to ensure that appropriate accidental release prevention programs have been implemented. For more information on accidental release prevention in Delaware, please refer to the DNREC ARP website above.

APPENDIX B

FACILITY CONTACT INFORMATION

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FACILITY CONTACT INFORMATION

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MOUNTAIRE FARMS - SELBYVILLE
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MOUNTAIRE FARMS OF DELAWARE
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APPENDIX B

FACILITY CONTACT INFORMATION

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TIMOTHY GAUTHIER
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451 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

ROHM & HAAS B5, B6
351 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

ROHM & HAAS B7, B15
50 BELLEVUE RD
NEWARK, DE 19713
KELLY BLOCK
(302) 366-0500

SERVICE ENERGY DOVER
3799 N DUPONT HWY
DOVER, DE 19901
DON STEINER
(302) 734-7433

APPENDIX B

FACILITY CONTACT INFORMATION

SPI PHARMA
40 CAPE HENLOPEN DR
LEWES, DE 19958-1196
JOHN CREIGHTON
(616) 283-8506

V&S DELAWARE GALVANIZING
511 CARROLL DRIVE
NEW CASTLE, DE 19720
IONUT ROIBU
(302) 322-1420

VP RACING FUELS
16 BROOKHILL DR
NEWARK, DE 19702-1301
MARC WESLER
(302) 368-1500

APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
AEARO TECHNOLOGIES							
Diisocyanates	0	2	0	0	2	10,034	0
Toluene diisocyanate (mixed isomers)	0	6	0	0	6	3,272	0
AEARO TECHNOLOGIES Total	**0**	**8**	**0**	**0**	**8**	**13,306**	**0**
AGILENT TECHNOLOGIES							
Acetonitrile	0	71	0	0	71	18,206	0
Methanol	0	1,646	0	0	1,646	45,246	0
Toluene	0	37	0	0	37	130,007	0
AGILENT TECHNOLOGIES Total	**0**	**1,754**	**0**	**0**	**1,754**	**193,459**	**0**
AIR LIQUIDE ADVANCED SEPARATIONS							
Cyclohexane	0	15,805	0	0	15,805	5,578	0
Methanol	0	10	0	0	10	70,073	2,243,710
N,N-Dimethylformamide	0	25	0	0	25	25,500	0
n-Hexane	0	10	0	0	10	0	1,861,822
N-Methyl-2-pyrrolidone	0	1,029	0	0	1,029	142,058	0
AIR LIQUIDE ADVANCED SEPARATIONS Total	**0**	**16,879**	**0**	**0**	**16,879**	**243,209**	**4,105,532**
ALLEN HARIM FARMS SEAFORD MILL							
Manganese Compounds	1	0	0	0	0	0	0
Zinc Compounds	1	0	0	0	0	0	0
ALLEN HARIM FARMS SEAFORD MILL Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**
ALLEN HARIM FOODS HARBESON							
Nitrate compounds	0	0	64,862	0	64,862	0	0
Peracetic acid	1	0	0	0	0	0	0
ALLEN HARIM FOODS HARBESON Total	**1**	**0**	**64,862**	**0**	**64,862**	**0**	**0**
AMICK FARMS							
Copper Compounds	1	0	0	0	0	0	0
Manganese Compounds	1	0	0	0	0	0	0
Zinc Compounds	1	0	0	0	0	0	0
AMICK FARMS Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
BALTIMORE AIRCOIL COMPANY							
Chromium Compounds	0	5	0	0	5	199,817	0
Cobalt Compounds	0	0	0	0	0	24,570	0
Copper Compounds	0	0	0	0	0	32,708	0
Manganese Compounds	0	5	0	0	5	97,474	0
Nickel Compounds	0	5	0	0	5	229,301	0
BALTIMORE AIRCOIL COMPANY Total	**0**	**15**	**0**	**0**	**15**	**583,870**	**0**
BASF CORP							
Aniline	0	23	0	0	23	9,139	1,094
Biphenyl	0	108	0	0	108	134,026	2,321
Cyclohexane	0	40	0	0	40	14,125	3,417
Methanol	0	20,069	0	0	20,069	768,284	1,170,739
Nitrate compounds	0	0	0	0	0	19,986	0
Nitric acid	0	0	0	0	0	0	20,309
N-Methyl-2-pyrrolidone	0	0	0	0	0	137,536	11
p-Chloroaniline	0	9	0	0	9	112,173	423
Xylene (mixed isomers)	0	881	0	0	881	708	4,102
BASF CORP Total	**0**	**21,130**	**0**	**0**	**21,130**	**1,195,977**	**1,202,416**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
CHEMOURS EDGE MOOR							
Arsenic Compounds	0	0	32	0	32	89	0
Barium Compounds	0	2	4,681	0	4,683	5,029	0
Carbonyl sulfide	0	135,437	0	0	135,437	0	0
Chlorine	0	3,389	0	0	3,389	0	1,583,989
Chromium Compounds	0	1	40	0	40	97,446	0
Cobalt Compounds	0	0	16	0	16	2,716	0
Dioxin and Dioxin-like Compounds	0	0	0	0	0	1	0
Hexachlorobenzene	0	0	0	0	0	50	0
Hydrochloric acid	0	2,751	0	0	2,751	0	7,918,972
Lead Compounds	0	0	62	0	62	11,804	0
Manganese Compounds	0	0	105,947	0	105,947	865,335	0
Mercury Compounds	0	1	0	0	1	8	0
Nickel Compounds	0	1	142	0	143	10,497	0
Octachlorostyrene	0	0	0	0	0	2	0
Pentachlorobenzene	0	0	0	0	0	2	0
Phosgene	0	251	0	0	251	0	165,815
Polychlorinated biphenyls	0	0	0	0	0	4	0
Polycyclic aromatic compounds	0	70	0	614	684	0	0
Titanium tetrachloride	0	50	0	0	50	0	823,251
Toluene	0	73	0	0	73	23,147	0
Vanadium Compounds	0	1	95	0	96	64,758	0
Zinc Compounds	0	12	169	0	181	13,960	0
CHEMOURS EDGE MOOR Total	**0**	**142,039**	**111,185**	**614**	**253,837**	**1,094,847**	**10,492,028**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
CHEMOURS RED LION PLANT							
Hydrazine	0	0	0	0	0	0	0
Hydrazine sulfate	0	0	0	0	0	0	0
Hydrogen Sulfide	0	174	0	0	174	0	0
Sulfuric acid	0	7,507	0	0	7,507	0	0
CHEMOURS RED LION PLANT Total	**0**	**7,681**	**0**	**0**	**7,681**	**0**	**0**
COLOR WORKS PAINTING							
Manganese	0	0	0	0	0	1,101	0
COLOR WORKS PAINTING Total	**0**	**0**	**0**	**0**	**0**	**1,101**	**0**
CRODA							
Certain Glycol Ethers	0	1	0	0	1	2,357	0
Diethanolamine	0	12	0	0	12	800	0
Ethylene glycol	0	0	0	0	0	54,520	0
Ethylene oxide	0	2,880	0	0	2,880	0	38,748
Methanol	0	29	0	0	29	9,126	0
Naphthalene	0	2	0	0	2	310	0
n-Butyl alcohol	0	119	0	0	119	275	0
Nonylphenol	0	376	0	0	376	0	0
Propylene oxide	0	227	0	0	227	0	8,722
CRODA Total	**0**	**3,646**	**0**	**0**	**3,646**	**67,388**	**47,470**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DELAWARE CITY REFINERY							
1,2,4-Trimethylbenzene	0	1,020	5	0	1,025	0	62,593
1,3-Butadiene	0	490	0	0	490	0	0
2,4-Dimethylphenol	0	0	157	0	157	0	219,922
Ammonia	0	25,018	1,918	0	26,936	0	15,485,033
Anthracene	0	10	5	0	15	0	0
Asbestos (friable)	0	0	0	0	0	220,500	0
Benzene	0	5,585	11	0	5,596	249	415,706
Benzo(g,h,i)perylene	0	1	4	0	5	0	430
Carbon disulfide	0	1,108	0	0	1,108	0	4,290,899
Carbonyl sulfide	0	479	0	0	479	0	14,648,589
Creosote	0	57	0	324	381	52,473	0
Cresol (mixed isomers)	0	0	313	0	313	0	338,789
Cumene	0	3,030	5	0	3,035	0	3,726
Cyanide Compounds	0	0	138	0	138	0	13,664
Cyclohexane	0	1,782	5	0	1,787	0	7,011
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0
Ethylbenzene	0	1,733	5	0	1,738	141	50,438
Ethylene	0	6,151	0	0	6,151	0	0
Hydrochloric acid	0	172	0	0	172	0	87,834
Hydrogen cyanide	0	33,429	192	0	33,621	0	460,889
Hydrogen Sulfide	0	15,479	1	0	15,480	0	360,703,361
Lead Compounds	0	105	2	0	107	495	0
Mercury Compounds	0	94	1	0	95	4	0
Methanol	0	5,304	5	0	5,309	0	8,930
Molybdenum trioxide	0	14	0	0	14	5	0
Naphthalene	0	2,042	0	0	2,042	0	11,924
n-Hexane	0	18,567	5	0	18,572	0	118,040
Nitrate compounds	0	0	3,365,078	0	3,365,078	0	0
Phenanthrene	0	1	5	0	6	212	38
Phenol	0	136	157	0	293	0	318,136
Polycyclic aromatic compounds	0	213	4	0	217	0	353
Propylene	0	5,073	0	0	5,073	0	0
Styrene	0	7	5	0	12	0	1,084
Sulfuric acid	0	217,011	0	0	217,011	0	0
Tetrachloroethylene	0	9	0	0	9	0	0
Toluene	0	11,014	5	0	11,019	362	217,944
Xylene (mixed isomers)	0	4,677	5	0	4,682	1,766	207,483
DELAWARE CITY REFINERY Total	**0**	**359,811**	**3,368,031**	**324**	**3,728,166**	**276,208**	**397,672,816**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	ON-SITE RELEASES TO WATER	ON-SITE RELEASES TO LAND	ON-SITE RELEASES TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
DENTSPLY MAIN PLANT							
Mercury	0	1	0	0	1	2,120	0
DENTSPLY MAIN PLANT Total	**0**	**1**	**0**	**0**	**1**	**2,120**	**0**
DENTSPLY WEST PLANT							
Methanol	0	641	0	0	641	9,939	0
Methyl methacrylate	0	524	0	0	524	79	0
Toluene	0	842	0	0	842	15,874	0
DENTSPLY WEST PLANT Total	**0**	**2,008**	**0**	**0**	**2,008**	**25,891**	**0**
DOVER AFB							
1,2,4-Trimethylbenzene	0	24	0	0	24	0	0
Cumene	0	25	0	0	25	0	0
Ethylbenzene	0	25	0	0	25	0	0
Naphthalene	0	28	0	0	28	0	0
Xylene (mixed isomers)	0	27	0	0	27	0	0
DOVER AFB Total	**0**	**129**	**0**	**0**	**129**	**0**	**0**
DUHADAWAY TOOL & DIE SHOP INC							
Chromium	0	0	0	0	0	11,907	0
Nickel	0	0	0	0	0	7,462	0
DUHADAWAY TOOL & DIE SHOP INC Total	**0**	**0**	**0**	**0**	**0**	**19,369**	**0**
EDGE MOOR/HAY ROAD ENERGY CENTERS							
Ammonia	0	20,927	1	0	20,928	369	0
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0
Mercury	0	17	0	0	17	0	0
Nitrate compounds	0	0	35	0	35	0	0
Polycyclic aromatic compounds	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS Total	**0**	**20,944**	**36**	**0**	**20,980**	**369**	**0**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
FORMOSA PLASTICS							
Ammonia	0	1,947	0	0	1,947	0	0
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0
Vinyl acetate	0	33,572	0	0	33,572	0	0
Vinyl chloride	0	42,710	0	0	42,710	94	206,273
FORMOSA PLASTICS Total	**0**	**78,229**	**0**	**0**	**78,229**	**94**	**206,273**
FUJIFILM							
Ethylene glycol	1	0	0	0	0	0	0
FUJIFILM Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
GAC SEAFORD							
1,2,4-Trimethylbenzene	1	0	0	0	0	0	0
GAC SEAFORD Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
GRIFFITH ENERGY - CARL KING							
1,2,4-Trimethylbenzene	1	0	0	0	0	0	0
Naphthalene	1	0	0	0	0	0	0
Xylene (mixed isomers)	1	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
HANDYTUBE							
Chromium	0	0	0	0	0	33,164	0
Manganese	0	0	0	0	0	3,476	0
Nickel	0	0	0	0	0	30,831	0
Trichloroethylene	0	3,856	0	0	3,856	8,445	0
HANDYTUBE Total	**0**	**3,856**	**0**	**0**	**3,856**	**75,916**	**0**
HANESBRANDS							
Nitrate compounds	0	0	0	0	0	49,136	0
Zinc Compounds	0	0	0	0	0	562	0
HANESBRANDS Total	**0**	**0**	**0**	**0**	**0**	**49,698**	**0**
HIRSH INDUSTRIES INC							
Certain Glycol Ethers	0	12,678	0	0	12,678	0	0
HIRSH INDUSTRIES INC Total	**0**	**12,678**	**0**	**0**	**12,678**	**0**	**0**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
HMA - HERITAGE CONCRETE BEAR							
Lead	0	0	0	6	6	0	0
HMA - HERITAGE CONCRETE BEAR Total	**0**	**0**	**0**	**6**	**6**	**0**	**0**
HMA - HERITAGE CONCRETE CHESWOLD							
Lead	0	0	0	7	7	0	0
HMA - HERITAGE CONCRETE CHESWOLD Total	**0**	**0**	**0**	**7**	**7**	**0**	**0**
HMA - HERITAGE CONCRETE HEALD STREET							
Lead	0	0	0	15	15	0	0
HMA - HERITAGE CONCRETE HEALD STREET Total	**0**	**0**	**0**	**15**	**15**	**0**	**0**
HONEYWELL							
Boron trifluoride	0	443	0	0	443	0	80,435
Hydrogen fluoride	0	546	0	0	546	0	146
Methanol	0	8	0	0	8	840	0
HONEYWELL Total	**0**	**997**	**0**	**0**	**997**	**840**	**80,581**
IKO							
Polycyclic aromatic compounds	0	1	0	0	1	396	382
IKO Total	**0**	**1**	**0**	**0**	**1**	**396**	**382**
INDIAN RIVER GENERATING STATION							
Ammonia	0	1,257	0	0	1,257	0	74,605
Barium Compounds	0	57	0	10,742	10,799	0	0
Hydrochloric acid	0	1,043	0	0	1,043	0	801,045
Hydrogen fluoride	0	543	0	0	543	0	40,286
Lead Compounds	0	16	0	844	860	0	0
Mercury Compounds	0	2	0	79	81	0	0
Sulfuric acid	0	1,378	0	0	1,378	0	763,582
INDIAN RIVER GENERATING STATION Total	**0**	**4,296**	**0**	**11,666**	**15,961**	**0**	**1,679,518**
INTERVET							
Mercury Compounds	0	0	0	0	0	1	0
INTERVET Total	**0**	**0**	**0**	**0**	**0**	**1**	**0**

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APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
JOHNSON CONTROLS BATTERY PLANT							
Antimony Compounds	0	0	0	0	0	10,496	0
Lead Compounds	0	97	15	0	111	2,572,989	0
JOHNSON CONTROLS BATTERY PLANT Total	**0**	**97**	**15**	**0**	**111**	**2,583,485**	**0**
JOHNSON CONTROLS DISTRIBUTION							
Lead Compounds	0	0	0	0	0	1,759,032	0
JOHNSON CONTROLS DISTRIBUTION Total	**0**	**0**	**0**	**0**	**0**	**1,759,032**	**0**
JUSTIN TANKS							
Styrene	0	13,105	0	365	13,470	365	24,840
JUSTIN TANKS Total	**0**	**13,105**	**0**	**365**	**13,470**	**365**	**24,840**
KUEHNE							
Chlorine	0	46	0	0	46	0	0
KUEHNE Total	**0**	**46**	**0**	**0**	**46**	**0**	**0**
MACDERMID							
Diisocyanates	1	0	0	0	0	0	0
Toluene diisocyanate (mixed isomers)	1	0	0	0	0	0	0
MACDERMID Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**
METAL MASTERS							
Chromium	0	1	0	0	1	201,714	0
Nickel	0	1	0	0	1	66,027	0
METAL MASTERS Total	**0**	**1**	**0**	**0**	**1**	**267,741**	**0**
MOUNTAIRE FARMS - FRANKFORD MILL							
Copper Compounds	1	0	0	0	0	0	0
Manganese Compounds	1	0	0	0	0	0	0
Zinc Compounds	1	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
MOUNTAIRE FARMS - SELBYVILLE							
Ammonia	0	0	0	0	0	9,355	26,776
Peracetic acid	0	467	0	0	467	0	146,598
MOUNTAIRE FARMS - SELBYVILLE Total	**0**	**467**	**0**	**0**	**467**	**9,355**	**173,374**

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2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
MOUNTAIRE FARMS OF DELAWARE							
Copper Compounds	1	0	0	0	0	0	0
Hydrogen Sulfide	0	8,193	0	0	8,193	0	119,589
Manganese Compounds	1	0	0	0	0	0	0
Peracetic acid	0	267	0	0	267	0	128,850
Zinc Compounds	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE Total	**3**	**8,460**	**0**	**0**	**8,460**	**0**	**248,439**
NATIONAL GUARD TRAINING SITE RANGE							
Lead	0	0	0	16,082	16,082	0	0
NATIONAL GUARD TRAINING SITE RANGE Total	**0**	**0**	**0**	**16,082**	**16,082**	**0**	**0**
NORAMCO							
Dichloromethane	0	1,920	0	0	1,920	13,213	13,213
Ethylene glycol	0	10	0	0	10	6,330	0
Formic acid	0	13	0	0	13	0	18,641
Methanol	0	89	0	0	89	110,616	110,615
N,N-Dimethylformamide	0	0	0	0	0	8,350	0
n-Butyl alcohol	0	201	0	0	201	676,819	676,819
Peracetic acid	0	10	0	0	10	0	35,845
Toluene	0	291	0	0	291	682,391	682,391
NORAMCO Total	**0**	**2,534**	**0**	**0**	**2,534**	**1,497,719**	**1,537,524**
ORIENT CORP							
Aniline	0	79	0	0	79	1,982	1,870,000
Chromium Compounds	0	0	0	0	0	0	0
Nitrobenzene	0	2	0	0	2	0	0
Zinc Compounds	0	0	0	0	0	0	0
ORIENT CORP Total	**0**	**81**	**0**	**0**	**81**	**1,982**	**1,870,000**
OWEN STEEL COMPANY							
Lead Compounds	0	0	0	0	0	110	0
Manganese Compounds	0	22	0	0	22	1,300	0
Nickel Compounds	0	1	0	0	1	2,800	0
OWEN STEEL COMPANY Total	**0**	**23**	**0**	**0**	**23**	**4,210**	**0**

Source: DNREC 2015 TRI Database, October, 2016
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
PERDUE BRIDGEVILLE							
Copper Compounds	1	0	0	0	0	0	0
Manganese Compounds	1	0	0	0	0	0	0
Zinc Compounds	1	0	0	0	0	0	0
PERDUE BRIDGEVILLE Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**
PERDUE GEORGETOWN							
Hydrogen Sulfide	0	330	0	0	330	0	58,700
Nitrate compounds	0	0	318,135	0	318,135	90	0
PERDUE GEORGETOWN Total	**0**	**330**	**318,135**	**0**	**318,465**	**90**	**58,700**
PERDUE MILFORD							
Peracetic acid	0	0	0	0	0	23	46,000
PERDUE MILFORD Total	**0**	**0**	**0**	**0**	**0**	**23**	**46,000**
PICTSWEET BRIDGEVILLE							
Ammonia	0	1,200	0	0	1,200	0	0
PICTSWEET BRIDGEVILLE Total	**0**	**1,200**	**0**	**0**	**1,200**	**0**	**0**
PPG INDUSTRIES							
Certain Glycol Ethers	0	0	0	0	0	1,388	0
Ethylene glycol	0	0	0	0	0	5,767	0
Lead Compounds	0	0	0	0	0	3	0
Zinc Compounds	0	44	0	0	44	4,968	0
PPG INDUSTRIES Total	**0**	**44**	**0**	**0**	**44**	**12,126**	**0**
PRINCE MINERALS LLC							
Barium Compounds	1	0	0	0	0	0	0
Manganese Compounds	0	210	0	0	210	244	0
Nickel Compounds	1	0	0	0	0	0	0
PRINCE MINERALS LLC Total	**2**	**210**	**0**	**0**	**210**	**244**	**0**
ROGERS CORP							
Copper	0	10	0	0	10	8,810	0
Ethylbenzene	0	500	0	0	500	1,200	24,000
Xylene (mixed isomers)	0	1,280	0	0	1,280	4,600	96,000
ROGERS CORP Total	**0**	**1,790**	**0**	**0**	**1,790**	**14,610**	**120,000**

Source: DNREC 2015 TRI Database, October, 2016
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX C

2015 ON-SITE RELEASES BY FACILITY AND CHEMICAL

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
ROHM & HAAS B2 B3 B8							
Diisocyanates	0	0	0	0	0	7,374	0
N,N-Dimethylformamide	0	4,150	0	0	4,150	1,304,303	4,233,851
ROHM & HAAS B2 B3 B8 Total	**0**	**4,150**	**0**	**0**	**4,150**	**1,311,677**	**4,233,851**
ROHM & HAAS B5 B6							
4,4'-Methylenebis(2-chloroaniline)	0	0	0	0	0	2,786	0
Diisocyanates	0	2	0	0	2	15,503	0
N-Methyl-2-pyrrolidone	0	2,099	0	0	2,099	69,827	0
ROHM & HAAS B5 B6 Total	**0**	**2,101**	**0**	**0**	**2,101**	**88,116**	**0**
ROHM & HAAS B7 B15							
Diisocyanates	0	2	0	0	2	18,626	0
N-Methyl-2-pyrrolidone	0	799	0	0	799	18,566	0
ROHM & HAAS B7 B15 Total	**0**	**801**	**0**	**0**	**801**	**37,192**	**0**
SERVICE ENERGY DOVER							
1,2,4-Trimethylbenzene	1	0	0	0	0	0	0
Toluene	1	0	0	0	0	0	0
SERVICE ENERGY DOVER Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**
SPI PHARMA							
Chlorine	1	0	0	0	0	0	0
Nitric acid	1	0	0	0	0	0	0
SPI PHARMA Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**
V&S DELAWARE GALVANIZING							
Lead	0	8	3	0	11	5,924	2,842
Zinc Compounds	0	493	132	0	625	223,279	333,412
V&S DELAWARE GALVANIZING Total	**0**	**501**	**135**	**0**	**636**	**229,203**	**336,254**
VP RACING FUELS							
Isoprene	1	0	0	0	0	0	0
Lead Compounds	0	1	0	0	1	0	0
Methanol	1	0	0	0	0	0	0
Toluene	1	0	0	0	0	0	0
VP RACING FUELS Total	**3**	**1**	**0**	**0**	**1**	**0**	**0**
STATE TOTALS	**31**	**712,043**	**3,862,398**	**29,078**	**4,603,520**	**11,661,230**	**424,135,997**

Source: DNREC 2015 TRI Database, October, 2016
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
AEARO TECHNOLOGIES										
Diisocyanates	0	0	0	10,034	0	10,034	0	0	0	0
Toluene diisocyanate (mixed isomers)	0	0	0	3,272	0	3,272	0	0	0	0
AEARO TECHNOLOGIES Total	**0**	**0**	**0**	**13,306**	**0**	**13,306**	**0**	**0**	**0**	**0**
AGILENT TECHNOLOGIES										
Acetonitrile	0	0	18,206	0	0	18,206	0	0	0	0
Methanol	0	0	45,088	158	0	45,246	0	0	0	0
Toluene	0	0	129,929	78	0	130,007	0	0	0	0
AGILENT TECHNOLOGIES Total	**0**	**0**	**193,223**	**236**	**0**	**193,459**	**0**	**0**	**0**	**0**
AIR LIQUIDE ADVANCED SEPARATIONS										
Cyclohexane	0	0	5,578	0	0	5,578	0	0	0	0
Methanol	0	0	0	70,073	0	70,073	2,243,710	0	0	2,243,710
N,N-Dimethylformamide	17,400	0	8,100	0	0	25,500	0	0	0	0
n-Hexane	0	0	0	0	0	0	1,861,822	0	0	1,861,822
N-Methyl-2-pyrrolidone	125,178	0	16,880	0	0	142,058	0	0	0	0
AIR LIQUIDE ADVANCED SEPARATIONS Total	**142,578**	**0**	**30,558**	**70,073**	**0**	**243,209**	**4,105,532**	**0**	**0**	**4,105,532**
ALLEN HARIM FARMS SEAFORD MILL										
Manganese Compounds	0	0	0	0	0	0	0	0	0	0
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
ALLEN HARIM FARMS SEAFORD MILL Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
ALLEN HARIM FOODS HARBESON										
Nitrate compounds	0	0	0	0	0	0	0	0	0	0
Peracetic acid	0	0	0	0	0	0	0	0	0	0
ALLEN HARIM FOODS HARBESON Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AMICK FARMS										
Copper Compounds	0	0	0	0	0	0	0	0	0	0
Manganese Compounds	0	0	0	0	0	0	0	0	0	0
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
AMICK FARMS Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
BALTIMORE AIRCOIL COMPANY										
Cobalt Compounds	0	24,570	0	0	0	24,570	0	0	0	0
Copper Compounds	0	32,708	0	0	0	32,708	0	0	0	0
Manganese Compounds	0	97,474	0	0	0	97,474	0	0	0	0
Nickel Compounds	0	229,301	0	0	0	229,301	0	0	0	0
CHROMIUM COMPOUNDS2	0	199,817	0	0	0	199,817	0	0	0	0
BALTIMORE AIRCOIL COMPANY Total	**0**	**583,870**	**0**	**0**	**0**	**583,870**	**0**	**0**	**0**	**0**
BASF CORP										
Aniline	8,012	0	898	229	0	9,139	0	0	1,094	1,094
Biphenyl	6,666	0	120,065	7,295	0	134,026	0	0	2,321	2,321
Cyclohexane	0	14,125	0	0	0	14,125	0	0	3,417	3,417
Methanol	585,374	175,813	5,952	1,145	0	768,284	355,500	0	815,239	1,170,739
Nitrate compounds	19,986	0	0	0	0	19,986	0	0	0	0
Nitric acid	0	0	0	0	0	0	0	0	20,309	20,309
N-Methyl-2-pyrrolidone	19,528	0	118,008	0	0	137,536	0	0	11	11
p-Chloroaniline	2,590	0	22,024	87,557	2	112,173	0	0	423	423
Xylene (mixed isomers)	203	0	505	0	0	708	0	0	4,102	4,102
BASF CORP Total	**642,359**	**189,938**	**267,452**	**96,226**	**2**	**1,195,977**	**355,500**	**0**	**846,916**	**1,202,416**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CHEMOURS EDGE MOOR										
Arsenic Compounds	0	0	0	0	89	89	0	0	0	0
Barium Compounds	0	0	0	0	5,029	5,029	0	0	0	0
Carbonyl sulfide	0	0	0	0	0	0	0	0	0	0
Chlorine	0	0	0	0	0	0	0	0	1,583,989	1,583,989
Cobalt Compounds	0	0	0	0	2,716	2,716	0	0	0	0
Dioxin and Dioxin-like Compounds	0	0	0	0	1	1	0	0	0	0
Hexachlorobenzene	0	0	0	0	50	50	0	0	0	0
Hydrochloric acid	0	0	0	0	0	0	0	0	7,918,972	7,918,972
Lead Compounds	0	0	0	0	11,804	11,804	0	0	0	0
Manganese Compounds	0	0	0	0	865,335	865,335	0	0	0	0
Mercury Compounds	0	0	0	0	8	8	0	0	0	0
Nickel Compounds	0	0	0	0	10,497	10,497	0	0	0	0
Octachlorostyrene	0	0	0	0	2	2	0	0	0	0
Pentachlorobenzene	0	0	0	0	2	2	0	0	0	0
Phosgene	0	0	0	0	0	0	0	0	165,815	165,815
Polychlorinated biphenyls	0	0	0	0	4	4	0	0	0	0
Polycyclic aromatic compounds	0	0	0	0	0	0	0	0	0	0
Titanium tetrachloride	0	0	0	0	0	0	0	0	823,251	823,251
Toluene	0	16,080	0	0	7,067	23,147	0	0	0	0
Vanadium Compounds	0	0	0	0	64,758	64,758	0	0	0	0
Zinc Compounds	0	0	0	0	13,960	13,960	0	0	0	0
CHROMIUM COMPOUNDS2	0	0	0	0	97,446	97,446	0	0	0	0
CHEMOURS EDGE MOOR Total	**0**	**16,080**	**0**	**0**	**1,078,767**	**1,094,847**	**0**	**0**	**10,492,028**	**10,492,028**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
CHEMOURS RED LION PLANT										
Hydrazine	0	0	0	0	0	0	0	0	0	0
Hydrazine sulfate	0	0	0	0	0	0	0	0	0	0
Hydrogen Sulfide	0	0	0	0	0	0	0	0	0	0
Sulfuric acid	0	0	0	0	0	0	0	0	0	0
CHEMOURS RED LION PLANT Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
COLOR WORKS PAINTING										
Manganese	0	1,101	0	0	0	1,101	0	0	0	0
COLOR WORKS PAINTING Total	**0**	**1,101**	**0**	**0**	**0**	**1,101**	**0**	**0**	**0**	**0**
CRODA										
Certain Glycol Ethers	2,357	0	0	0	0	2,357	0	0	0	0
Diethanolamine	800	0	0	0	0	800	0	0	0	0
Ethylene glycol	54,520	0	0	0	0	54,520	0	0	0	0
Ethylene oxide	0	0	0	0	0	0	0	0	38,748	38,748
Methanol	826	0	8,300	0	0	9,126	0	0	0	0
Naphthalene	0	0	0	310	0	310	0	0	0	0
n-Butyl alcohol	275	0	0	0	0	275	0	0	0	0
Propylene oxide	0	0	0	0	0	0	0	0	8,722	8,722
Nonylphenol	0	0	0	0	0	0	0	0	0	0
CRODA Total	**58,778**	**0**	**8,300**	**310**	**0**	**67,388**	**0**	**0**	**47,470**	**47,470**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
DELAWARE CITY REFINERY										
1,2,4-Trimethylbenzene	0	0	0	0	0	0	0	0	62,593	62,593
1,3-Butadiene	0	0	0	0	0	0	0	0	0	0
2,4-Dimethylphenol	0	0	0	0	0	0	0	0	219,922	219,922
Ammonia	0	0	0	0	0	0	0	15,415,415	69,618	15,485,033
Anthracene	0	0	0	0	0	0	0	0	0	0
Asbestos (friable)	0	0	0	0	220,500	220,500	0	0	0	0
Benzene	0	42	0	173	34	249	0	289,368	126,338	415,706
Benzo(g,h,i)perylene	0	0	0	0	0	0	0	0	430	430
Carbon disulfide	0	0	0	0	0	0	0	109,395	4,181,504	4,290,899
Carbonyl sulfide	0	0	0	0	0	0	0	76,940	14,571,649	14,648,589
Creosote	0	0	0	0	52,473	52,473	0	0	0	0
Cresol (mixed isomers)	0	0	0	0	0	0	0	22,514	316,275	338,789
Cumene	0	0	0	0	0	0	0	0	3,726	3,726
Cyanide Compounds	0	0	0	0	0	0	0	0	13,664	13,664
Cyclohexane	0	0	0	0	0	0	0	0	7,011	7,011
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	0	1	0	125	15	141	0	0	50,438	50,438
Ethylene	0	0	0	0	0	0	0	0	0	0
Hydrochloric acid	0	0	0	0	0	0	0	0	87,834	87,834
Hydrogen cyanide	0	0	0	0	0	0	0	0	460,889	460,889
Hydrogen Sulfide	0	0	0	0	0	0	0	0	360,703,361	360,703,361
Lead Compounds	0	82	0	0	414	495	0	0	0	0
Mercury Compounds	0	0	0	0	3	4	0	0	0	0
Methanol	0	0	0	0	0	0	0	0	8,930	8,930
Molybdenum trioxide	0	5	0	0	0	5	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0	11,924	11,924
n-Hexane	0	0	0	0	0	0	0	0	118,040	118,040
Nitrate compounds	0	0	0	0	0	0	0	0	0	0
Phenanthrene	0	212	0	0	0	212	0	0	38	38
Phenol	0	0	0	0	0	0	0	49,918	268,218	318,136
Polycyclic aromatic compounds	0	0	0	0	0	0	0	0	353	353
Propylene	0	0	0	0	0	0	0	0	0	0
Styrene	0	0	0	0	0	0	0	0	1,084	1,084
Sulfuric acid	0	0	0	0	0	0	0	0	0	0
Tetrachloroethylene	0	0	0	0	0	0	0	0	0	0
Toluene	0	3	0	184	176	362	0	0	217,944	217,944
Xylene (mixed isomers)	0	9	0	523	1,233	1,766	0	0	207,483	207,483
DELAWARE CITY REFINERY Total	**0**	**354**	**0**	**1,005**	**274,849**	**276,208**	**0**	**15,963,550**	**381,709,266**	**397,672,816**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
DENTSPLY MAIN PLANT										
Mercury	0	2,120	0	0	0	2,120	0	0	0	0
DENTSPLY MAIN PLANT Total	**0**	**2,120**	**0**	**0**	**0**	**2,120**	**0**	**0**	**0**	**0**
DENTSPLY WEST PLANT										
Methanol	86	0	9,853	0	0	9,939	0	0	0	0
Methyl methacrylate	79	0	0	0	0	79	0	0	0	0
Toluene	0	0	15,874	0	0	15,874	0	0	0	0
DENTSPLY WEST PLANT Total	**165**	**0**	**25,726**	**0**	**0**	**25,891**	**0**	**0**	**0**	**0**
DOVER AFB										
1,2,4-Trimethylbenzene	0	0	0	0	0	0	0	0	0	0
Cumene	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0	0	0
Xylene (mixed isomers)	0	0	0	0	0	0	0	0	0	0
DOVER AFB Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DUHADAWAY TOOL & DIE SHOP INC										
Chromium	0	11,462	0	0	445	11,907	0	0	0	0
Nickel	0	7,224	0	0	238	7,462	0	0	0	0
DUHADAWAY TOOL & DIE SHOP INC Total	**0**	**18,686**	**0**	**0**	**683**	**19,369**	**0**	**0**	**0**	**0**
EDGE MOOR/HAY ROAD ENERGY CENTERS										
Ammonia	369	0	0	0	0	369	0	0	0	0
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0	0	0	0
Mercury	0	0	0	0	0	0	0	0	0	0
Nitrate compounds	0	0	0	0	0	0	0	0	0	0
Polycyclic aromatic compounds	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS Total	**369**	**0**	**0**	**0**	**0**	**369**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
FORMOSA PLASTICS										
Ammonia	0	0	0	0	0	0	0	0	0	0
Dioxin and Dioxin-like Compounds	0	0	0	0	0	0	0	0	0	0
Vinyl acetate	0	0	0	0	0	0	0	0	0	0
Vinyl chloride	0	26	0	0	68	94	0	0	206,273	206,273
FORMOSA PLASTICS Total	**0**	**26**	**0**	**0**	**68**	**94**	**0**	**0**	**206,273**	**206,273**
FUJIFILM										
Ethylene glycol	0	0	0	0	0	0	0	0	0	0
FUJIFILM Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GAC SEAFORD										
1,2,4-Trimethylbenzene	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRIFFITH ENERGY - CARL KING										
1,2,4-Trimethylbenzene	0	0	0	0	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0	0	0
Xylene (mixed isomers)	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HANDYTUBE										
Chromium	0	33,014	0	0	150	33,164	0	0	0	0
Manganese	0	3,462	0	0	14	3,476	0	0	0	0
Nickel	0	30,599	0	0	232	30,831	0	0	0	0
Trichloroethylene	0	0	0	8,445	0	8,445	0	0	0	0
HANDYTUBE Total	**0**	**67,075**	**0**	**8,445**	**396**	**75,916**	**0**	**0**	**0**	**0**
HANESBRANDS										
Nitrate compounds	49,136	0	0	0	0	49,136	0	0	0	0
Zinc Compounds	532	0	0	0	30	562	0	0	0	0
HANESBRANDS Total	**49,668**	**0**	**0**	**0**	**30**	**49,698**	**0**	**0**	**0**	**0**
HIRSH INDUSTRIES INC										
Certain Glycol Ethers	0	0	0	0	0	0	0	0	0	0
HIRSH INDUSTRIES INC Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
HMA - HERITAGE CONCRETE BEAR										
Lead	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE BEAR Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HMA - HERITAGE CONCRETE CHESWOLD										
Lead	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE CHESWOLD Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HMA - HERITAGE CONCRETE HEALD STREET										
Lead	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE HEALD STREET Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HONEYWELL										
Boron trifluoride	0	0	0	0	0	0	0	0	80,435	80,435
Hydrogen fluoride	0	0	0	0	0	0	0	0	146	146
Methanol	120	0	0	720	0	840	0	0	0	0
HONEYWELL Total	**120**	**0**	**0**	**720**	**0**	**840**	**0**	**0**	**80,581**	**80,581**
IKO										
Polycyclic aromatic compounds	0	386	0	0	10	396	382	0	0	382
IKO Total	**0**	**386**	**0**	**0**	**10**	**396**	**382**	**0**	**0**	**382**
INDIAN RIVER GENERATING STATION										
Ammonia	0	0	0	0	0	0	0	0	74,605	74,605
Barium Compounds	0	0	0	0	0	0	0	0	0	0
Hydrochloric acid	0	0	0	0	0	0	0	0	801,045	801,045
Hydrogen fluoride	0	0	0	0	0	0	0	0	40,286	40,286
Lead Compounds	0	0	0	0	0	0	0	0	0	0
Mercury Compounds	0	0	0	0	0	0	0	0	0	0
Sulfuric acid	0	0	0	0	0	0	0	0	763,582	763,582
INDIAN RIVER GENERATING STATION Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,679,518**	**1,679,518**
INTERVET										
Mercury Compounds	0	0	0	0	1	1	0	0	0	0
INTERVET Total	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
JOHNSON CONTROLS BATTERY PLANT										
Antimony Compounds	0	10,496	0	0	0	10,496	0	0	0	0
Lead Compounds	3	2,552,981	0	0	20,005	2,572,989	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT Total	**3**	**2,563,477**	**0**	**0**	**20,005**	**2,583,485**	**0**	**0**	**0**	**0**
JOHNSON CONTROLS DISTRIBUTION										
Lead Compounds	23	1,759,009	0	0	0	1,759,032	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION Total	**23**	**1,759,009**	**0**	**0**	**0**	**1,759,032**	**0**	**0**	**0**	**0**
JUSTIN TANKS										
Styrene	0	0	0	365	0	365	24,840	0	0	24,840
JUSTIN TANKS Total	**0**	**0**	**0**	**365**	**0**	**365**	**24,840**	**0**	**0**	**24,840**
KUEHNE										
Chlorine	0	0	0	0	0	0	0	0	0	0
KUEHNE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MACDERMID										
Diisocyanates	0	0	0	0	0	0	0	0	0	0
Toluene diisocyanate (mixed isomers)	0	0	0	0	0	0	0	0	0	0
MACDERMID Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
METAL MASTERS										
Chromium	0	200,452	0	0	1,262	201,714	0	0	0	0
Nickel	0	65,644	0	0	383	66,027	0	0	0	0
METAL MASTERS Total	**0**	**266,096**	**0**	**0**	**1,645**	**267,741**	**0**	**0**	**0**	**0**
MOUNTAIRE FARMS - FRANKFORD MILL										
Copper Compounds	0	0	0	0	0	0	0	0	0	0
Manganese Compounds	0	0	0	0	0	0	0	0	0	0
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MOUNTAIRE FARMS - SELBYVILLE										
Ammonia	5,252	2,302	0	0	1,801	9,355	0	0	26,776	26,776
Peracetic acid	0	0	0	0	0	0	0	0	146,598	146,598
MOUNTAIRE FARMS - SELBYVILLE Total	**5,252**	**2,302**	**0**	**0**	**1,801**	**9,355**	**0**	**0**	**173,374**	**173,374**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
MOUNTAIRE FARMS OF DELAWARE										
Copper Compounds	0	0	0	0	0	0	0	0	0	0
Hydrogen Sulfide	0	0	0	0	0	0	0	0	119,589	119,589
Manganese Compounds	0	0	0	0	0	0	0	0	0	0
Peracetic acid	0	0	0	0	0	0	0	0	128,850	128,850
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**248,439**	**248,439**
NATIONAL GUARD TRAINING SITE RANGE										
Lead	0	0	0	0	0	0	0	0	0	0
NATIONAL GUARD TRAINING SITE RANGE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NORAMCO										
Dichloromethane	6	0	13,207	0	0	13,213	0	0	13,213	13,213
Ethylene glycol	0	6,330	0	0	0	6,330	0	0	0	0
Formic acid	0	0	0	0	0	0	0	0	18,641	18,641
Methanol	5,531	0	105,085	0	0	110,616	0	0	110,615	110,615
N,N-Dimethylformamide	8,350	0	0	0	0	8,350	0	0	0	0
n-Butyl alcohol	33,841	0	642,978	0	0	676,819	0	0	676,819	676,819
Peracetic acid	0	0	0	0	0	0	0	0	35,845	35,845
Toluene	12	0	682,379	0	0	682,391	0	0	682,391	682,391
NORAMCO Total	**47,740**	**6,330**	**1,443,649**	**0**	**0**	**1,497,719**	**0**	**0**	**1,537,524**	**1,537,524**
ORIENT CORP										
Aniline	1,900	0	0	0	82	1,982	1,700,000	0	170,000	1,870,000
Nitrobenzene	0	0	0	0	0	0	0	0	0	0
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
CHROMIUM COMPOUNDS2	0	0	0	0	0	0	0	0	0	0
ORIENT CORP Total	**1,900**	**0**	**0**	**0**	**82**	**1,982**	**1,700,000**	**0**	**170,000**	**1,870,000**
OWEN STEEL COMPANY										
Lead Compounds	0	110	0	0	0	110	0	0	0	0
Manganese Compounds	0	1,300	0	0	0	1,300	0	0	0	0
Nickel Compounds	0	2,800	0	0	0	2,800	0	0	0	0
OWEN STEEL COMPANY Total	**0**	**4,210**	**0**	**0**	**0**	**4,210**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
PERDUE BRIDGEVILLE										
Copper Compounds	0	0	0	0	0	0	0	0	0	0
Manganese Compounds	0	0	0	0	0	0	0	0	0	0
Zinc Compounds	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PERDUE GEORGETOWN										
Hydrogen Sulfide	0	0	0	0	0	0	0	0	58,700	58,700
Nitrate compounds	0	0	0	0	90	90	0	0	0	0
PERDUE GEORGETOWN Total	**0**	**0**	**0**	**0**	**90**	**90**	**0**	**0**	**58,700**	**58,700**
PERDUE MILFORD										
Peracetic acid	23	0	0	0	0	23	0	0	46,000	46,000
PERDUE MILFORD Total	**23**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**46,000**	**46,000**
PICTSWEET BRIDGEVILLE										
Ammonia	0	0	0	0	0	0	0	0	0	0
PICTSWEET BRIDGEVILLE Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PPG INDUSTRIES										
Certain Glycol Ethers	543	0	0	199	646	1,388	0	0	0	0
Ethylene glycol	2,585	0	0	82	3,100	5,767	0	0	0	0
Lead Compounds	1	0	0	0	2	3	0	0	0	0
Zinc Compounds	1,967	0	0	0	3,001	4,968	0	0	0	0
PPG INDUSTRIES Total	**5,096**	**0**	**0**	**281**	**6,749**	**12,126**	**0**	**0**	**0**	**0**
PRINCE MINERALS LLC										
Barium Compounds	0	0	0	0	0	0	0	0	0	0
Manganese Compounds	0	0	0	0	244	244	0	0	0	0
Nickel Compounds	0	0	0	0	0	0	0	0	0	0
PRINCE MINERALS LLC Total	**0**	**0**	**0**	**0**	**244**	**244**	**0**	**0**	**0**	**0**
ROGERS CORP										
Copper	5	8,800	0	0	5	8,810	0	0	0	0
Ethylbenzene	0	0	0	1,200	0	1,200	0	0	24,000	24,000
Xylene (mixed isomers)	0	0	0	4,600	0	4,600	0	0	96,000	96,000
ROGERS CORP Total	**5**	**8,800**	**0**	**5,800**	**5**	**14,610**	**0**	**0**	**120,000**	**120,000**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX D

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY FACILITY

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
ROHM & HAAS B2 B3 B8										
Diisocyanates	0	0	0	7,374	0	7,374	0	0	0	0
N,N-Dimethylformamide	81,455	1,056,937	0	0	165,911	1,304,303	4,233,566	0	285	4,233,851
ROHM & HAAS B2 B3 B8 Total	**81,455**	**1,056,937**	**0**	**7,374**	**165,911**	**1,311,677**	**4,233,566**	**0**	**285**	**4,233,851**
ROHM & HAAS B5 B6										
4,4'-Methylenebis(2-chloroaniline)	0	0	0	0	2,786	2,786	0	0	0	0
Diisocyanates	0	0	0	13,866	1,637	15,503	0	0	0	0
N-Methyl-2-pyrrolidone	0	67,208	0	2,619	0	69,827	0	0	0	0
ROHM & HAAS B5 B6 Total	**0**	**67,208**	**0**	**16,485**	**4,423**	**88,116**	**0**	**0**	**0**	**0**
ROHM & HAAS B7 B15										
Diisocyanates	0	0	0	7,841	10,785	18,626	0	0	0	0
N-Methyl-2-pyrrolidone	0	17,580	0	986	0	18,566	0	0	0	0
ROHM & HAAS B7 B15 Total	**0**	**17,580**	**0**	**8,827**	**10,785**	**37,192**	**0**	**0**	**0**	**0**
SERVICE ENERGY DOVER										
1,2,4-Trimethylbenzene	0	0	0	0	0	0	0	0	0	0
Toluene	0	0	0	0	0	0	0	0	0	0
SERVICE ENERGY DOVER Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SPI PHARMA										
Chlorine	0	0	0	0	0	0	0	0	0	0
Nitric acid	0	0	0	0	0	0	0	0	0	0
SPI PHARMA Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
V&S DELAWARE GALVANIZING										
Lead	0	5,580	0	0	344	5,924	2,842	0	0	2,842
Zinc Compounds	0	177,336	0	0	45,943	223,279	333,412	0	0	333,412
V&S DELAWARE GALVANIZING Total	**0**	**182,916**	**0**	**0**	**46,287**	**229,203**	**336,254**	**0**	**0**	**336,254**
VP RACING FUELS										
Lead Compounds	0	0	0	0	0	0	0	0	0	0
Methanol	0	0	0	0	0	0	0	0	0	0
Toluene	0	0	0	0	0	0	0	0	0	0
Isoprene	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
STATE TOTALS	**1,035,534**	**6,814,502**	**1,968,908**	**229,453**	**1,612,833**	**11,661,230**	**10,756,074**	**15,963,550**	**397,416,374**	**424,135,997**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX E

2015 ON-SITE RELEASE SUMMARY BY FACILITY

FACILITY - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES				TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND	TOTAL		
DELAWARE CITY REFINERY	359,811	3,368,031	324	3,728,166	276,208	397,672,816
PERDUE GEORGETOWN	330	318,135	0	318,465	90	58,700
CHEMOURS EDGE MOOR	142,039	111,185	614	253,837	1,094,847	10,492,028
FORMOSA PLASTICS	78,229	0	0	78,229	94	206,273
ALLEN HARIM FOODS HARBESON	0	64,862	0	64,862	0	0
BASF CORP	21,130	0	0	21,130	1,195,977	1,202,416
EDGE MOOR/HAY ROAD ENERGY CENTERS	20,944	36	0	20,980	369	0
AIR LIQUIDE ADVANCED SEPARATIONS	16,879	0	0	16,879	243,209	4,105,532
NATIONAL GUARD TRAINING SITE RANGE	0	0	16,082	16,082	0	0
INDIAN RIVER GENERATING STATION	4,296	0	11,666	15,961	0	1,679,518
JUSTIN TANKS	13,105	0	365	13,470	365	24,840
HIRSH INDUSTRIES INC	12,678	0	0	12,678	0	0
MOUNTAIRE FARMS OF DELAWARE	8,460	0	0	8,460	0	248,439
CHEMOURS RED LION PLANT	7,681	0	0	7,681	0	0
ROHM & HAAS B2 B3 B8	4,150	0	0	4,150	1,311,677	4,233,851
HANDYTUBE	3,856	0	0	3,856	75,916	0
CRODA	3,646	0	0	3,646	67,388	47,470
NORAMCO	2,534	0	0	2,534	1,497,719	1,537,524
ROHM & HAAS B5 B6	2,101	0	0	2,101	88,116	0
DENTSPLY WEST PLANT	2,008	0	0	2,008	25,891	0
ROGERS CORP	1,790	0	0	1,790	14,610	120,000
AGILENT TECHNOLOGIES	1,754	0	0	1,754	193,459	0
PICTSWEET BRIDGEVILLE	1,200	0	0	1,200	0	0
HONEYWELL	997	0	0	997	840	80,581
ROHM & HAAS B7 B15	801	0	0	801	37,192	0
V&S DELAWARE GALVANIZING	501	135	0	636	229,203	336,254
MOUNTAIRE FARMS - SELBYVILLE	467	0	0	467	9,355	173,374
PRINCE MINERALS LLC	210	0	0	210	244	0
DOVER AFB	129	0	0	129	0	0
JOHNSON CONTROLS BATTERY PLANT	97	15	0	111	2,583,485	0
ORIENT CORP	81	0	0	81	1,982	1,870,000
KUEHNE	46	0	0	46	0	0
PPG INDUSTRIES	44	0	0	44	12,126	0
OWEN STEEL COMPANY	23	0	0	23	4,210	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	15	15	0	0
BALTIMORE AIRCOIL COMPANY	15	0	0	15	583,870	0
AEARO TECHNOLOGIES	8	0	0	8	13,306	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	7	7	0	0
HMA - HERITAGE CONCRETE BEAR	0	0	6	6	0	0
VP RACING FUELS	1	0	0	1	0	0

Source: DNREC 2015 TRI Database, October, 2016
All amounts are in pounds

APPENDIX E

2015 ON-SITE RELEASE SUMMARY BY FACILITY

FACILITY - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES				TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
	TO AIR	TO WATER	TO LAND	TOTAL		
METAL MASTERS	1	0	0	1	267,741	0
DENTSPLY MAIN PLANT	1	0	0	1	2,120	0
IKO	1	0	0	1	396	382
AMICK FARMS	0	0	0	0	0	0
GAC SEAFORD	0	0	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL	0	0	0	0	0	0
HANESBRANDS	0	0	0	0	49,698	0
SPI PHARMA	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0
ALLEN HARIM FARMS SEAFORD MILL	0	0	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION	0	0	0	0	1,759,032	0
FUJIFILM	0	0	0	0	0	0
PERDUE MILFORD	0	0	0	0	23	46,000
SERVICE ENERGY DOVER	0	0	0	0	0	0
DUHADAWAY TOOL & DIE SHOP INC	0	0	0	0	19,369	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0
COLOR WORKS PAINTING	0	0	0	0	1,101	0
INTERVET	0	0	0	0	1	0
MACDERMID	0	0	0	0	0	0
Grand Total	**712,043**	**3,862,398**	**29,078**	**4,603,520**	**11,661,230**	**424,135,997**

Source: DNREC 2015 TRI Database, October, 2016
All amounts are in pounds

APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
1,2,4-Trimethylbenzene							
DELAWARE CITY REFINERY	0	1,020	5	0	1,025	0	62,593
DOVER AFB	0	24	0	0	24	0	0
GAC SEAFORD	1	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
1,2,4-Trimethylbenzene Total	**3**	**1,044**	**5**	**0**	**1,049**	**0**	**62,593**
1,3-Butadiene							
DELAWARE CITY REFINERY	0	490	0	0	490	0	0
1,3-Butadiene Total	**0**	**490**	**0**	**0**	**490**	**0**	**0**
2,4-Dimethylphenol							
DELAWARE CITY REFINERY	0	0	157	0	157	0	219,922
2,4-Dimethylphenol Total	**0**	**0**	**157**	**0**	**157**	**0**	**219,922**
4,4'-Methylenebis(2-chloroaniline)							
ROHM & HAAS B5 B6	0	0	0	0	0	2,786	0
4,4'-Methylenebis(2-chloroaniline) Total	**0**	**0**	**0**	**0**	**0**	**2,786**	**0**
Acetonitrile							
AGILENT TECHNOLOGIES	0	71	0	0	71	18,206	0
Acetonitrile Total	**0**	**71**	**0**	**0**	**71**	**18,206**	**0**
Ammonia							
DELAWARE CITY REFINERY	0	25,018	1,918	0	26,936	0	15,485,033
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	20,927	1	0	20,928	369	0
FORMOSA PLASTICS	0	1,947	0	0	1,947	0	0
INDIAN RIVER GENERATING STATION	0	1,257	0	0	1,257	0	74,605
MOUNTAIRE FARMS - SELBYVILLE	0	0	0	0	0	9,355	26,776
PICTSWEET BRIDGEVILLE	0	1,200	0	0	1,200	0	0
Ammonia Total	**0**	**50,349**	**1,919**	**0**	**52,268**	**9,724**	**15,586,414**
Aniline							
BASF CORP	0	23	0	0	23	9,139	1,094
ORIENT CORP	0	79	0	0	79	1,982	1,870,000
Aniline Total	**0**	**102**	**0**	**0**	**102**	**11,121**	**1,871,094**

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All Amounts Are in Pounds

APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Anthracene							
DELAWARE CITY REFINERY	0	10	5	0	15	0	0
Anthracene Total	**0**	**10**	**5**	**0**	**15**	**0**	**0**
Antimony Compounds							
JOHNSON CONTROLS BATTERY PLANT	0	0	0	0	0	10,496	0
Antimony Compounds Total	**0**	**0**	**0**	**0**	**0**	**10,496**	**0**
Arsenic Compounds							
CHEMOURS EDGE MOOR	0	0	32	0	32	89	0
Arsenic Compounds Total	**0**	**0**	**32**	**0**	**32**	**89**	**0**
Asbestos (friable)							
DELAWARE CITY REFINERY	0	0	0	0	0	220,500	0
Asbestos (friable) Total	**0**	**0**	**0**	**0**	**0**	**220,500**	**0**
Barium Compounds							
CHEMOURS EDGE MOOR	0	2	4,681	0	4,683	5,029	0
INDIAN RIVER GENERATING STATION	0	57	0	10,742	10,799	0	0
PRINCE MINERALS LLC	1	0	0	0	0	0	0
Barium Compounds Total	**1**	**59**	**4,681**	**10,742**	**15,482**	**5,029**	**0**
Benzene							
DELAWARE CITY REFINERY	0	5,585	11	0	5,596	249	415,706
Benzene Total	**0**	**5,585**	**11**	**0**	**5,596**	**249**	**415,706**
Benzo(g,h,i)perylene							
DELAWARE CITY REFINERY	0	1	4	0	5	0	430
Benzo(g,h,i)perylene Total	**0**	**1**	**4**	**0**	**5**	**0**	**430**
Biphenyl							
BASF CORP	0	108	0	0	108	134,026	2,321
Biphenyl Total	**0**	**108**	**0**	**0**	**108**	**134,026**	**2,321**

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APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Boron trifluoride							
HONEYWELL	0	443	0	0	443	0	80,435
Boron trifluoride Total	**0**	**443**	**0**	**0**	**443**	**0**	**80,435**
Carbon disulfide							
DELAWARE CITY REFINERY	0	1,108	0	0	1,108	0	4,290,899
Carbon disulfide Total	**0**	**1,108**	**0**	**0**	**1,108**	**0**	**4,290,899**
Carbonyl sulfide							
CHEMOURS EDGE MOOR	0	135,437	0	0	135,437	0	0
DELAWARE CITY REFINERY	0	479	0	0	479	0	14,648,589
Carbonyl sulfide Total	**0**	**135,916**	**0**	**0**	**135,916**	**0**	**14,648,589**
Certain Glycol Ethers							
CRODA	0	1	0	0	1	2,357	0
HIRSH INDUSTRIES INC	0	12,678	0	0	12,678	0	0
PPG INDUSTRIES	0	0	0	0	0	1,388	0
Certain Glycol Ethers Total	**0**	**12,680**	**0**	**0**	**12,680**	**3,745**	**0**
Chlorine							
CHEMOURS EDGE MOOR	0	3,389	0	0	3,389	0	1,583,989
KUEHNE	0	46	0	0	46	0	0
SPI PHARMA	1	0	0	0	0	0	0
Chlorine Total	**1**	**3,435**	**0**	**0**	**3,435**	**0**	**1,583,989**
Chromium							
DUHADAWAY TOOL & DIE SHOP INC	0	0	0	0	0	11,907	0
HANDYTUBE	0	0	0	0	0	33,164	0
METAL MASTERS	0	1	0	0	1	201,714	0
Chromium Total	**0**	**1**	**0**	**0**	**1**	**246,785**	**0**

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2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Chromium Compounds							
BALTIMORE AIRCOIL COMPANY	0	5	0	0	5	199,817	0
CHEMOURS EDGE MOOR	0	1	40	0	40	97,446	0
ORIENT CORP	0	0	0	0	0	0	0
Chromium Compounds Total	**0**	**6**	**40**	**0**	**45**	**297,263**	**0**
Cobalt Compounds							
BALTIMORE AIRCOIL COMPANY	0	0	0	0	0	24,570	0
CHEMOURS EDGE MOOR	0	0	16	0	16	2,716	0
Cobalt Compounds Total	**0**	**0**	**16**	**0**	**16**	**27,286**	**0**
Copper							
ROGERS CORP	0	10	0	0	10	8,810	0
Copper Total	**0**	**10**	**0**	**0**	**10**	**8,810**	**0**
Copper Compounds							
AMICK FARMS	1	0	0	0	0	0	0
BALTIMORE AIRCOIL COMPANY	0	0	0	0	0	32,708	0
MOUNTAIRE FARMS - FRANKFORD MILL	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
Copper Compounds Total	**4**	**0**	**0**	**0**	**0**	**32,708**	**0**
Creosote							
DELAWARE CITY REFINERY	0	57	0	324	381	52,473	0
Creosote Total	**0**	**57**	**0**	**324**	**381**	**52,473**	**0**
Cresol (mixed isomers)							
DELAWARE CITY REFINERY	0	0	313	0	313	0	338,789
Cresol (mixed isomers) Total	**0**	**0**	**313**	**0**	**313**	**0**	**338,789**

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APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Cumene							
DELAWARE CITY REFINERY	0	3,030	5	0	3,035	0	3,726
DOVER AFB	0	25	0	0	25	0	0
Cumene Total	**0**	**3,055**	**5**	**0**	**3,060**	**0**	**3,726**
Cyanide Compounds							
DELAWARE CITY REFINERY	0	0	138	0	138	0	13,664
Cyanide Compounds Total	**0**	**0**	**138**	**0**	**138**	**0**	**13,664**
Cyclohexane							
AIR LIQUIDE ADVANCED SEPARATIONS	0	15,805	0	0	15,805	5,578	0
BASF CORP	0	40	0	0	40	14,125	3,417
DELAWARE CITY REFINERY	0	1,782	5	0	1,787	0	7,011
Cyclohexane Total	**0**	**17,627**	**5**	**0**	**17,632**	**19,703**	**10,428**
Dichloromethane							
NORAMCO	0	1,920	0	0	1,920	13,213	13,213
Dichloromethane Total	**0**	**1,920**	**0**	**0**	**1,920**	**13,213**	**13,213**
Diethanolamine							
CRODA	0	12	0	0	12	800	0
Diethanolamine Total	**0**	**12**	**0**	**0**	**12**	**800**	**0**
Diisocyanates							
AEARO TECHNOLOGIES	0	2	0	0	2	10,034	0
MACDERMID	1	0	0	0	0	0	0
ROHM & HAAS B2 B3 B8	0	0	0	0	0	7,374	0
ROHM & HAAS B5 B6	0	2	0	0	2	15,503	0
ROHM & HAAS B7 B15	0	2	0	0	2	18,626	0
Diisocyanates Total	**1**	**6**	**0**	**0**	**6**	**51,537**	**0**
Dioxin and Dioxin-like Compounds							
CHEMOURS EDGE MOOR	0	0	0	0	0	1	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0
Dioxin and Dioxin-like Compounds Total	**0**	**0**	**0**	**0**	**0**	**1**	**0**

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APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Ethylbenzene							
DELAWARE CITY REFINERY	0	1,733	5	0	1,738	141	50,438
DOVER AFB	0	25	0	0	25	0	0
ROGERS CORP	0	500	0	0	500	1,200	24,000
Ethylbenzene Total	**0**	**2,258**	**5**	**0**	**2,263**	**1,341**	**74,438**
Ethylene							
DELAWARE CITY REFINERY	0	6,151	0	0	6,151	0	0
Ethylene Total	**0**	**6,151**	**0**	**0**	**6,151**	**0**	**0**
Ethylene glycol							
CRODA	0	0	0	0	0	54,520	0
FUJIFILM	1	0	0	0	0	0	0
NORAMCO	0	10	0	0	10	6,330	0
PPG INDUSTRIES	0	0	0	0	0	5,767	0
Ethylene glycol Total	**1**	**10**	**0**	**0**	**10**	**66,617**	**0**
Ethylene oxide							
CRODA	0	2,880	0	0	2,880	0	38,748
Ethylene oxide Total	**0**	**2,880**	**0**	**0**	**2,880**	**0**	**38,748**
Formic acid							
NORAMCO	0	13	0	0	13	0	18,641
Formic acid Total	**0**	**13**	**0**	**0**	**13**	**0**	**18,641**
Hexachlorobenzene							
CHEMOURS EDGE MOOR	0	0	0	0	0	50	0
Hexachlorobenzene Total	**0**	**0**	**0**	**0**	**0**	**50**	**0**
Hydrazine							
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0
Hydrazine Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Hydrazine sulfate							
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0
Hydrazine sulfate Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Hydrochloric acid							
CHEMOURS EDGE MOOR	0	2,751	0	0	2,751	0	7,918,972
DELAWARE CITY REFINERY	0	172	0	0	172	0	87,834
INDIAN RIVER GENERATING STATION	0	1,043	0	0	1,043	0	801,045
Hydrochloric acid Total	**0**	**3,966**	**0**	**0**	**3,966**	**0**	**8,807,851**
Hydrogen cyanide							
DELAWARE CITY REFINERY	0	33,429	192	0	33,621	0	460,889
Hydrogen cyanide Total	**0**	**33,429**	**192**	**0**	**33,621**	**0**	**460,889**
Hydrogen fluoride							
HONEYWELL	0	546	0	0	546	0	146
INDIAN RIVER GENERATING STATION	0	543	0	0	543	0	40,286
Hydrogen fluoride Total	**0**	**1,089**	**0**	**0**	**1,089**	**0**	**40,432**
Hydrogen Sulfide							
CHEMOURS RED LION PLANT	0	174	0	0	174	0	0
DELAWARE CITY REFINERY	0	15,479	1	0	15,480	0	360,703,361
MOUNTAIRE FARMS OF DELAWARE	0	8,193	0	0	8,193	0	119,589
PERDUE GEORGETOWN	0	330	0	0	330	0	58,700
Hydrogen Sulfide Total	**0**	**24,176**	**1**	**0**	**24,176**	**0**	**360,881,650**
Isoprene							
VP RACING FUELS	1	0	0	0	0	0	0
Isoprene Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Lead							
HMA - HERITAGE CONCRETE BEAR	0	0	0	6	6	0	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	0	7	7	0	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	0	15	15	0	0
NATIONAL GUARD TRAINING SITE RANGE	0	0	0	16,082	16,082	0	0
V&S DELAWARE GALVANIZING	0	8	3	0	11	5,924	2,842
Lead Total	**0**	**8**	**3**	**16,110**	**16,121**	**5,924**	**2,842**

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2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Lead Compounds							
CHEMOURS EDGE MOOR	0	0	62	0	62	11,804	0
DELAWARE CITY REFINERY	0	105	2	0	107	495	0
INDIAN RIVER GENERATING STATION	0	16	0	844	860	0	0
JOHNSON CONTROLS BATTERY PLANT	0	97	15	0	111	2,572,989	0
JOHNSON CONTROLS DISTRIBUTION	0	0	0	0	0	1,759,032	0
OWEN STEEL COMPANY	0	0	0	0	0	110	0
PPG INDUSTRIES	0	0	0	0	0	3	0
VP RACING FUELS	0	1	0	0	1	0	0
Lead Compounds Total	**0**	**218**	**79**	**844**	**1,141**	**4,344,434**	**0**
Manganese							
COLOR WORKS PAINTING	0	0	0	0	0	1,101	0
HANDYTUBE	0	0	0	0	0	3,476	0
Manganese Total	**0**	**0**	**0**	**0**	**0**	**4,577**	**0**
Manganese Compounds							
ALLEN HARIM FARMS SEAFORD MILL	1	0	0	0	0	0	0
AMICK FARMS	1	0	0	0	0	0	0
BALTIMORE AIRCOIL COMPANY	0	5	0	0	5	97,474	0
CHEMOURS EDGE MOOR	0	0	105,947	0	105,947	865,335	0
MOUNTAIRE FARMS - FRANKFORD MILL	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
OWEN STEEL COMPANY	0	22	0	0	22	1,300	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
PRINCE MINERALS LLC	0	210	0	0	210	244	0
Manganese Compounds Total	**5**	**237**	**105,947**	**0**	**106,184**	**964,353**	**0**
Mercury							
DENTSPLY MAIN PLANT	0	1	0	0	1	2,120	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	17	0	0	17	0	0
Mercury Total	**0**	**18**	**0**	**0**	**18**	**2,120**	**0**
Mercury Compounds							
CHEMOURS EDGE MOOR	0	1	0	0	1	8	0
DELAWARE CITY REFINERY	0	94	1	0	95	4	0
INDIAN RIVER GENERATING STATION	0	2	0	79	81	0	0
INTERVET	0	0	0	0	0	1	0
Mercury Compounds Total	**0**	**97**	**1**	**79**	**177**	**13**	**0**

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Methanol							
AGILENT TECHNOLOGIES	0	1,646	0	0	1,646	45,246	0
AIR LIQUIDE ADVANCED SEPARATIONS	0	10	0	0	10	70,073	2,243,710
BASF CORP	0	20,069	0	0	20,069	768,284	1,170,739
CRODA	0	29	0	0	29	9,126	0
DELAWARE CITY REFINERY	0	5,304	5	0	5,309	0	8,930
DENTSPLY WEST PLANT	0	641	0	0	641	9,939	0
HONEYWELL	0	8	0	0	8	840	0
NORAMCO	0	89	0	0	89	110,616	110,615
VP RACING FUELS	1	0	0	0	0	0	0
Methanol Total	**1**	**27,796**	**5**	**0**	**27,801**	**1,014,124**	**3,533,994**
Methyl methacrylate							
DENTSPLY WEST PLANT	0	524	0	0	524	79	0
Methyl methacrylate Total	**0**	**524**	**0**	**0**	**524**	**79**	**0**
Molybdenum trioxide							
DELAWARE CITY REFINERY	0	14	0	0	14	5	0
Molybdenum trioxide Total	**0**	**14**	**0**	**0**	**14**	**5**	**0**
N,N-Dimethylformamide							
AIR LIQUIDE ADVANCED SEPARATIONS	0	25	0	0	25	25,500	0
NORAMCO	0	0	0	0	0	8,350	0
ROHM & HAAS B2 B3 B8	0	4,150	0	0	4,150	1,304,303	4,233,851
N,N-Dimethylformamide Total	**0**	**4,175**	**0**	**0**	**4,175**	**1,338,153**	**4,233,851**
Naphthalene							
CRODA	0	2	0	0	2	310	0
DELAWARE CITY REFINERY	0	2,042	0	0	2,042	0	11,924
DOVER AFB	0	28	0	0	28	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
Naphthalene Total	**1**	**2,072**	**0**	**0**	**2,072**	**310**	**11,924**
n-Butyl alcohol							
CRODA	0	119	0	0	119	275	0
NORAMCO	0	201	0	0	201	676,819	676,819
n-Butyl alcohol Total	**0**	**320**	**0**	**0**	**320**	**677,094**	**676,819**

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FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
n-Hexane							
AIR LIQUIDE ADVANCED SEPARATIONS	0	10	0	0	10	0	1,861,822
DELAWARE CITY REFINERY	0	18,567	5	0	18,572	0	118,040
n-Hexane Total	**0**	**18,577**	**5**	**0**	**18,582**	**0**	**1,979,862**
Nickel							
DUHADAWAY TOOL & DIE SHOP INC	0	0	0	0	0	7,462	0
HANDYTUBE	0	0	0	0	0	30,831	0
METAL MASTERS	0	1	0	0	1	66,027	0
Nickel Total	**0**	**1**	**0**	**0**	**1**	**104,320**	**0**
Nickel Compounds							
BALTIMORE AIRCOIL COMPANY	0	5	0	0	5	229,301	0
CHEMOURS EDGE MOOR	0	1	142	0	143	10,497	0
OWEN STEEL COMPANY	0	1	0	0	1	2,800	0
PRINCE MINERALS LLC	1	0	0	0	0	0	0
Nickel Compounds Total	**1**	**7**	**142**	**0**	**149**	**242,598**	**0**
Nitrate compounds							
ALLEN HARIM FOODS HARBESON	0	0	64,862	0	64,862	0	0
BASF CORP	0	0	0	0	0	19,986	0
DELAWARE CITY REFINERY	0	0	3,365,078	0	3,365,078	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	35	0	35	0	0
HANESBRANDS	0	0	0	0	0	49,136	0
PERDUE GEORGETOWN	0	0	318,135	0	318,135	90	0
Nitrate compounds Total	**0**	**0**	**3,748,110**	**0**	**3,748,110**	**69,212**	**0**
Nitric acid							
BASF CORP	0	0	0	0	0	0	20,309
SPI PHARMA	1	0	0	0	0	0	0
Nitric acid Total	**1**	**0**	**0**	**0**	**0**	**0**	**20,309**
Nitrobenzene							
ORIENT CORP	0	2	0	0	2	0	0
Nitrobenzene Total	**0**	**2**	**0**	**0**	**2**	**0**	**0**

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APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
N-Methyl-2-pyrrolidone							
AIR LIQUIDE ADVANCED SEPARATIONS	0	1,029	0	0	1,029	142,058	0
BASF CORP	0	0	0	0	0	137,536	11
ROHM & HAAS B5 B6	0	2,099	0	0	2,099	69,827	0
ROHM & HAAS B7 B15	0	799	0	0	799	18,566	0
N-Methyl-2-pyrrolidone Total	**0**	**3,927**	**0**	**0**	**3,927**	**367,987**	**11**
Nonylphenol							
CRODA	0	376	0	0	376	0	0
Nonylphenol Total	**0**	**376**	**0**	**0**	**376**	**0**	**0**
Octachlorostyrene							
CHEMOURS EDGE MOOR	0	0	0	0	0	2	0
Octachlorostyrene Total	**0**	**0**	**0**	**0**	**0**	**2**	**0**
p-Chloroaniline							
BASF CORP	0	9	0	0	9	112,173	423
p-Chloroaniline Total	**0**	**9**	**0**	**0**	**9**	**112,173**	**423**
Pentachlorobenzene							
CHEMOURS EDGE MOOR	0	0	0	0	0	2	0
Pentachlorobenzene Total	**0**	**0**	**0**	**0**	**0**	**2**	**0**
Peracetic acid							
ALLEN HARIM FOODS HARBESON	1	0	0	0	0	0	0
MOUNTAIRE FARMS - SELBYVILLE	0	467	0	0	467	0	146,598
MOUNTAIRE FARMS OF DELAWARE	0	267	0	0	267	0	128,850
NORAMCO	0	10	0	0	10	0	35,845
PERDUE MILFORD	0	0	0	0	0	23	46,000
Peracetic acid Total	**1**	**744**	**0**	**0**	**744**	**23**	**357,293**
Phenanthrene							
DELAWARE CITY REFINERY	0	1	5	0	6	212	38
Phenanthrene Total	**0**	**1**	**5**	**0**	**6**	**212**	**38**
Phenol							
DELAWARE CITY REFINERY	0	136	157	0	293	0	318,136
Phenol Total	**0**	**136**	**157**	**0**	**293**	**0**	**318,136**

Source: DNREC 2015 TRI Database, October, 2016
A "1" in the Form A column indicates a Form A report

All Amounts Are in Pounds

APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Phosgene							
CHEMOURS EDGE MOOR	0	251	0	0	251	0	165,815
Phosgene Total	**0**	**251**	**0**	**0**	**251**	**0**	**165,815**
Polychlorinated biphenyls							
CHEMOURS EDGE MOOR	0	0	0	0	0	4	0
Polychlorinated biphenyls Total	**0**	**0**	**0**	**0**	**0**	**4**	**0**
Polycyclic aromatic compounds							
CHEMOURS EDGE MOOR	0	70	0	614	684	0	0
DELAWARE CITY REFINERY	0	213	4	0	217	0	353
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0
IKO	0	1	0	0	1	396	382
Polycyclic aromatic compounds Total	**0**	**284**	**4**	**614**	**901**	**396**	**735**
Propylene							
DELAWARE CITY REFINERY	0	5,073	0	0	5,073	0	0
Propylene Total	**0**	**5,073**	**0**	**0**	**5,073**	**0**	**0**
Propylene oxide							
CRODA	0	227	0	0	227	0	8,722
Propylene oxide Total	**0**	**227**	**0**	**0**	**227**	**0**	**8,722**
Styrene							
DELAWARE CITY REFINERY	0	7	5	0	12	0	1,084
JUSTIN TANKS	0	13,105	0	365	13,470	365	24,840
Styrene Total	**0**	**13,112**	**5**	**365**	**13,482**	**365**	**25,924**
Sulfuric acid							
CHEMOURS RED LION PLANT	0	7,507	0	0	7,507	0	0
DELAWARE CITY REFINERY	0	217,011	0	0	217,011	0	0
INDIAN RIVER GENERATING STATION	0	1,378	0	0	1,378	0	763,582
Sulfuric acid Total	**0**	**225,896**	**0**	**0**	**225,896**	**0**	**763,582**

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APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Tetrachloroethylene							
DELAWARE CITY REFINERY	0	9	0	0	9	0	0
Tetrachloroethylene Total	**0**	**9**	**0**	**0**	**9**	**0**	**0**
Titanium tetrachloride							
CHEMOURS EDGE MOOR	0	50	0	0	50	0	823,251
Titanium tetrachloride Total	**0**	**50**	**0**	**0**	**50**	**0**	**823,251**
Toluene							
AGILENT TECHNOLOGIES	0	37	0	0	37	130,007	0
CHEMOURS EDGE MOOR	0	73	0	0	73	23,147	0
DELAWARE CITY REFINERY	0	11,014	5	0	11,019	362	217,944
DENTSPLY WEST PLANT	0	842	0	0	842	15,874	0
NORAMCO	0	291	0	0	291	682,391	682,391
SERVICE ENERGY DOVER	1	0	0	0	0	0	0
VP RACING FUELS	1	0	0	0	0	0	0
Toluene Total	**2**	**12,257**	**5**	**0**	**12,262**	**851,781**	**900,335**
Toluene diisocyanate (mixed isomers)							
AEARO TECHNOLOGIES	0	6	0	0	6	3,272	0
MACDERMID	1	0	0	0	0	0	0
Toluene diisocyanate (mixed isomers) Total	**1**	**6**	**0**	**0**	**6**	**3,272**	**0**
Trichloroethylene							
HANDYTUBE	0	3,856	0	0	3,856	8,445	0
Trichloroethylene Total	**0**	**3,856**	**0**	**0**	**3,856**	**8,445**	**0**
Vanadium Compounds							
CHEMOURS EDGE MOOR	0	1	95	0	96	64,758	0
Vanadium Compounds Total	**0**	**1**	**95**	**0**	**96**	**64,758**	**0**
Vinyl acetate							
FORMOSA PLASTICS	0	33,572	0	0	33,572	0	0
Vinyl acetate Total	**0**	**33,572**	**0**	**0**	**33,572**	**0**	**0**
Vinyl chloride							
FORMOSA PLASTICS	0	42,710	0	0	42,710	94	206,273
Vinyl chloride Total	**0**	**42,710**	**0**	**0**	**42,710**	**94**	**206,273**

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All Amounts Are in Pounds

APPENDIX F

2015 ON-SITE RELEASES BY CHEMICAL AND FACILITY

FACILITY/CHEMICAL	FORM A	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	OFF-SITE TRANSFERS	ON-SITE WASTE MANAGEMENT
Xylene (mixed isomers)							
BASF CORP	0	881	0	0	881	708	4,102
DELAWARE CITY REFINERY	0	4,677	5	0	4,682	1,766	207,483
DOVER AFB	0	27	0	0	27	0	0
GRIFFITH ENERGY - CARL KING	1	0	0	0	0	0	0
ROGERS CORP	0	1,280	0	0	1,280	4,600	96,000
Xylene (mixed isomers) Total	**1**	**6,865**	**5**	**0**	**6,870**	**7,074**	**307,585**
Zinc Compounds							
ALLEN HARIM FARMS SEAFORD MILL	1	0	0	0	0	0	0
AMICK FARMS	1	0	0	0	0	0	0
CHEMOURS EDGE MOOR	0	12	169	0	181	13,960	0
HANESBRANDS	0	0	0	0	0	562	0
MOUNTAIRE FARMS - FRANKFORD MILL	1	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	1	0	0	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	1	0	0	0	0	0	0
PPG INDUSTRIES	0	44	0	0	44	4,968	0
V&S DELAWARE GALVANIZING	0	493	132	0	625	223,279	333,412
Zinc Compounds Total	**5**	**549**	**301**	**0**	**850**	**242,770**	**333,412**
Grand Total	**31**	**712,043**	**3,862,398**	**29,078**	**4,603,520**	**11,661,230**	**424,135,997**

Source: DNREC 2015 TRI Database, October, 2016
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All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
1,2,4-Trimethylbenzene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	62,593	62,593
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GAC SEAFORD	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
SERVICE ENERGY DOVER	0	0	0	0	0	0	0	0	0	0
1,2,4-Trimethylbenzene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**62,593**	**62,593**
1,3-Butadiene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
1,3-Butadiene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2,4-Dimethylphenol										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	219,922	219,922
2,4-Dimethylphenol Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**219,922**	**219,922**
4,4'-Methylenebis(2-chloroaniline)										
ROHM & HAAS B5 B6	0	0	0	0	2,786	2,786	0	0	0	0
4,4'-Methylenebis(2-chloroaniline) Total	**0**	**0**	**0**	**0**	**2,786**	**2,786**	**0**	**0**	**0**	**0**
Acetonitrile										
AGILENT TECHNOLOGIES	0	0	18,206	0	0	18,206	0	0	0	0
Acetonitrile Total	**0**	**0**	**18,206**	**0**	**0**	**18,206**	**0**	**0**	**0**	**0**
Ammonia										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	15,415,415	69,618	15,485,033
EDGE MOOR/HAY ROAD ENERGY CENTERS	369	0	0	0	0	369	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	74,605	74,605
MOUNTAIRE FARMS - SELBYVILLE	5,252	2,302	0	0	1,801	9,355	0	0	26,776	26,776
PICTSWEET BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
Ammonia Total	**5,621**	**2,302**	**0**	**0**	**1,801**	**9,724**	**0**	**15,415,415**	**170,999**	**15,586,414**
Aniline										
BASF CORP	8,012	0	898	229	0	9,139	0	0	1,094	1,094
ORIENT CORP	1,900	0	0	0	82	1,982	1,700,000	0	170,000	1,870,000
Aniline Total	**9,912**	**0**	**898**	**229**	**82**	**11,121**	**1,700,000**	**0**	**171,094**	**1,871,094**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Anthracene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
Anthracene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Antimony Compounds										
JOHNSON CONTROLS BATTERY PLANT	0	10,496	0	0	0	10,496	0	0	0	0
Antimony Compounds Total	**0**	**10,496**	**0**	**0**	**0**	**10,496**	**0**	**0**	**0**	**0**
Arsenic Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	89	89	0	0	0	0
Arsenic Compounds Total	**0**	**0**	**0**	**0**	**89**	**89**	**0**	**0**	**0**	**0**
Asbestos (friable)										
DELAWARE CITY REFINERY	0	0	0	0	220,500	220,500	0	0	0	0
Asbestos (friable) Total	**0**	**0**	**0**	**0**	**220,500**	**220,500**	**0**	**0**	**0**	**0**
Barium Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	5,029	5,029	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
PRINCE MINERALS LLC	0	0	0	0	0	0	0	0	0	0
Barium Compounds Total	**0**	**0**	**0**	**0**	**5,029**	**5,029**	**0**	**0**	**0**	**0**
Benzene										
DELAWARE CITY REFINERY	0	42	0	173	34	249	0	289,368	126,338	415,706
Benzene Total	**0**	**42**	**0**	**173**	**34**	**249**	**0**	**289,368**	**126,338**	**415,706**
Benzo(g,h,i)perylene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	430	430
Benzo(g,h,i)perylene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**430**	**430**
Biphenyl										
BASF CORP	6,666	0	120,065	7,295	0	134,026	0	0	2,321	2,321
Biphenyl Total	**6,666**	**0**	**120,065**	**7,295**	**0**	**134,026**	**0**	**0**	**2,321**	**2,321**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Boron trifluoride										
HONEYWELL	0	0	0	0	0	0	0	0	80,435	80,435
Boron trifluoride Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80,435**	**80,435**
Carbon disulfide										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	109,395	4,181,504	4,290,899
Carbon disulfide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**109,395**	**4,181,504**	**4,290,899**
Carbonyl sulfide										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	76,940	14,571,649	14,648,589
Carbonyl sulfide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**76,940**	**14,571,649**	**14,648,589**
Certain Glycol Ethers										
CRODA	2,357	0	0	0	0	2,357	0	0	0	0
HIRSH INDUSTRIES INC	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES	543	0	0	199	646	1,388	0	0	0	0
Certain Glycol Ethers Total	**2,900**	**0**	**0**	**199**	**646**	**3,745**	**0**	**0**	**0**	**0**
Chlorine										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	1,583,989	1,583,989
KUEHNE	0	0	0	0	0	0	0	0	0	0
SPI PHARMA	0	0	0	0	0	0	0	0	0	0
Chlorine Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,583,989**	**1,583,989**
Chromium										
DUHADAWAY TOOL & DIE SHOP INC	0	11,462	0	0	445	11,907	0	0	0	0
HANDYTUBE	0	33,014	0	0	150	33,164	0	0	0	0
METAL MASTERS	0	200,452	0	0	1,262	201,714	0	0	0	0
Chromium Total	**0**	**244,928**	**0**	**0**	**1,857**	**246,785**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Chromium Compounds										
BALTIMORE AIRCOIL COMPANY	0	199,817	0	0	0	199,817	0	0	0	0
CHEMOURS EDGE MOOR	0	0	0	0	97,446	97,446	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
Chromium Compounds Total	**0**	**199,817**	**0**	**0**	**97,446**	**297,263**	**0**	**0**	**0**	**0**
Cobalt Compounds										
BALTIMORE AIRCOIL COMPANY	0	24,570	0	0	0	24,570	0	0	0	0
CHEMOURS EDGE MOOR	0	0	0	0	2,716	2,716	0	0	0	0
Cobalt Compounds Total	**0**	**24,570**	**0**	**0**	**2,716**	**27,286**	**0**	**0**	**0**	**0**
Copper										
ROGERS CORP	5	8,800	0	0	5	8,810	0	0	0	0
Copper Total	**5**	**8,800**	**0**	**0**	**5**	**8,810**	**0**	**0**	**0**	**0**
Copper Compounds										
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
BALTIMORE AIRCOIL COMPANY	0	32,708	0	0	0	32,708	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
Copper Compounds Total	**0**	**32,708**	**0**	**0**	**0**	**32,708**	**0**	**0**	**0**	**0**
Creosote										
DELAWARE CITY REFINERY	0	0	0	0	52,473	52,473	0	0	0	0
Creosote Total	**0**	**0**	**0**	**0**	**52,473**	**52,473**	**0**	**0**	**0**	**0**
Cresol (mixed isomers)										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	22,514	316,275	338,789
Cresol (mixed isomers) Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22,514**	**316,275**	**338,789**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Cumene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	3,726	3,726
DOVER AFB	0	0	0	0	0	0	0	0	0	0
Cumene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,726**	**3,726**
Cyanide Compounds										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	13,664	13,664
Cyanide Compounds Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,664**	**13,664**
Cyclohexane										
AIR LIQUIDE ADVANCED SEPARATIONS	0	0	5,578	0	0	5,578	0	0	0	0
BASF CORP	0	14,125	0	0	0	14,125	0	0	3,417	3,417
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	7,011	7,011
Cyclohexane Total	**0**	**14,125**	**5,578**	**0**	**0**	**19,703**	**0**	**0**	**10,428**	**10,428**
Dichloromethane										
NORAMCO	6	0	13,207	0	0	13,213	0	0	13,213	13,213
Dichloromethane Total	**6**	**0**	**13,207**	**0**	**0**	**13,213**	**0**	**0**	**13,213**	**13,213**
Diethanolamine										
CRODA	800	0	0	0	0	800	0	0	0	0
Diethanolamine Total	**800**	**0**	**0**	**0**	**0**	**800**	**0**	**0**	**0**	**0**
Diisocyanates										
AEARO TECHNOLOGIES	0	0	0	10,034	0	10,034	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
ROHM & HAAS B2 B3 B8	0	0	0	7,374	0	7,374	0	0	0	0
ROHM & HAAS B5 B6	0	0	0	13,866	1,637	15,503	0	0	0	0
ROHM & HAAS B7 B15	0	0	0	7,841	10,785	18,626	0	0	0	0
Diisocyanates Total	**0**	**0**	**0**	**39,115**	**12,422**	**51,537**	**0**	**0**	**0**	**0**
Dioxin and Dioxin-like Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	1	1	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
Dioxin and Dioxin-like Compounds Total	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Ethylbenzene										
DELAWARE CITY REFINERY	0	1	0	125	15	141	0	0	50,438	50,438
DOVER AFB	0	0	0	0	0	0	0	0	0	0
ROGERS CORP	0	0	0	1,200	0	1,200	0	0	24,000	24,000
Ethylbenzene Total	**0**	**1**	**0**	**1,325**	**15**	**1,341**	**0**	**0**	**74,438**	**74,438**
Ethylene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
Ethylene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Ethylene glycol										
CRODA	54,520	0	0	0	0	54,520	0	0	0	0
FUJIFILM	0	0	0	0	0	0	0	0	0	0
NORAMCO	0	6,330	0	0	0	6,330	0	0	0	0
PPG INDUSTRIES	2,585	0	0	82	3,100	5,767	0	0	0	0
Ethylene glycol Total	**57,105**	**6,330**	**0**	**82**	**3,100**	**66,617**	**0**	**0**	**0**	**0**
Ethylene oxide										
CRODA	0	0	0	0	0	0	0	0	38,748	38,748
Ethylene oxide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**38,748**	**38,748**
Formic acid										
NORAMCO	0	0	0	0	0	0	0	0	18,641	18,641
Formic acid Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,641**	**18,641**
Hexachlorobenzene										
CHEMOURS EDGE MOOR	0	0	0	0	50	50	0	0	0	0
Hexachlorobenzene Total	**0**	**0**	**0**	**0**	**50**	**50**	**0**	**0**	**0**	**0**
Hydrazine										
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0	0	0	0
Hydrazine Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Hydrazine sulfate										
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0	0	0	0
Hydrazine sulfate Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Hydrochloric acid										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	7,918,972	7,918,972
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	87,834	87,834
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	801,045	801,045
Hydrochloric acid Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8,807,851**	**8,807,851**
Hydrogen cyanide										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	460,889	460,889
Hydrogen cyanide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**460,889**	**460,889**
Hydrogen fluoride										
HONEYWELL	0	0	0	0	0	0	0	0	146	146
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	40,286	40,286
Hydrogen fluoride Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,432**	**40,432**
Hydrogen Sulfide										
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	360,703,361	360,703,361
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	119,589	119,589
PERDUE GEORGETOWN	0	0	0	0	0	0	0	0	58,700	58,700
Hydrogen Sulfide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**360,881,650**	**360,881,650**
Isoprene										
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
Isoprene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Lead										
HMA - HERITAGE CONCRETE BEAR	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE CHESWOLD	0	0	0	0	0	0	0	0	0	0
HMA - HERITAGE CONCRETE HEALD STREET	0	0	0	0	0	0	0	0	0	0
NATIONAL GUARD TRAINING SITE RANGE	0	0	0	0	0	0	0	0	0	0
V&S DELAWARE GALVANIZING	0	5,580	0	0	344	5,924	2,842	0	0	2,842
Lead Total	**0**	**5,580**	**0**	**0**	**344**	**5,924**	**2,842**	**0**	**0**	**2,842**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Lead Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	11,804	11,804	0	0	0	0
DELAWARE CITY REFINERY	0	82	0	0	414	495	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
JOHNSON CONTROLS BATTERY PLANT	3	2,552,981	0	0	20,005	2,572,989	0	0	0	0
JOHNSON CONTROLS DISTRIBUTION	23	1,759,009	0	0	0	1,759,032	0	0	0	0
OWEN STEEL COMPANY	0	110	0	0	0	110	0	0	0	0
PPG INDUSTRIES	1	0	0	0	2	3	0	0	0	0
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
Lead Compounds Total	**27**	**4,312,182**	**0**	**0**	**32,225**	**4,344,434**	**0**	**0**	**0**	**0**
Manganese										
COLOR WORKS PAINTING	0	1,101	0	0	0	1,101	0	0	0	0
HANDYTUBE	0	3,462	0	0	14	3,476	0	0	0	0
Manganese Total	**0**	**4,563**	**0**	**0**	**14**	**4,577**	**0**	**0**	**0**	**0**
Manganese Compounds										
ALLEN HARIM FARMS SEAFORD MILL	0	0	0	0	0	0	0	0	0	0
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
BALTIMORE AIRCOIL COMPANY	0	97,474	0	0	0	97,474	0	0	0	0
CHEMOURS EDGE MOOR	0	0	0	0	865,335	865,335	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
OWEN STEEL COMPANY	0	1,300	0	0	0	1,300	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
PRINCE MINERALS LLC	0	0	0	0	244	244	0	0	0	0
Manganese Compounds Total	**0**	**98,774**	**0**	**0**	**865,579**	**964,353**	**0**	**0**	**0**	**0**
Mercury										
DENTSPLY MAIN PLANT	0	2,120	0	0	0	2,120	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
Mercury Total	**0**	**2,120**	**0**	**0**	**0**	**2,120**	**0**	**0**	**0**	**0**
Mercury Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	8	8	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	3	4	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	0	0
INTERVET	0	0	0	0	1	1	0	0	0	0
Mercury Compounds Total	**0**	**1**	**0**	**0**	**12**	**13**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Methanol										
AGILENT TECHNOLOGIES	0	0	45,088	158	0	45,246	0	0	0	0
AIR LIQUIDE ADVANCED SEPARATIONS	0	0	0	70,073	0	70,073	2,243,710	0	0	2,243,710
BASF CORP	585,374	175,813	5,952	1,145	0	768,284	355,500	0	815,239	1,170,739
CRODA	826	0	8,300	0	0	9,126	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	8,930	8,930
DENTSPLY WEST PLANT	86	0	9,853	0	0	9,939	0	0	0	0
HONEYWELL	120	0	0	720	0	840	0	0	0	0
NORAMCO	5,531	0	105,085	0	0	110,616	0	0	110,615	110,615
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
Methanol Total	**591,937**	**175,813**	**174,278**	**72,096**	**0**	**1,014,124**	**2,599,210**	**0**	**934,784**	**3,533,994**
Methyl methacrylate										
DENTSPLY WEST PLANT	79	0	0	0	0	79	0	0	0	0
Methyl methacrylate Total	**79**	**0**	**0**	**0**	**0**	**79**	**0**	**0**	**0**	**0**
Molybdenum trioxide										
DELAWARE CITY REFINERY	0	5	0	0	0	5	0	0	0	0
Molybdenum trioxide Total	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**
N,N-Dimethylformamide										
AIR LIQUIDE ADVANCED SEPARATIONS	17,400	0	8,100	0	0	25,500	0	0	0	0
NORAMCO	8,350	0	0	0	0	8,350	0	0	0	0
ROHM & HAAS B2 B3 B8	81,455	1,056,937	0	0	165,911	1,304,303	4,233,566	0	285	4,233,851
N,N-Dimethylformamide Total	**107,205**	**1,056,937**	**8,100**	**0**	**165,911**	**1,338,153**	**4,233,566**	**0**	**285**	**4,233,851**
Naphthalene										
CRODA	0	0	0	310	0	310	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	11,924	11,924
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
Naphthalene Total	**0**	**0**	**0**	**310**	**0**	**310**	**0**	**0**	**11,924**	**11,924**
n-Butyl alcohol										
CRODA	275	0	0	0	0	275	0	0	0	0
NORAMCO	33,841	0	642,978	0	0	676,819	0	0	676,819	676,819
n-Butyl alcohol Total	**34,116**	**0**	**642,978**	**0**	**0**	**677,094**	**0**	**0**	**676,819**	**676,819**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
n-Hexane										
AIR LIQUIDE ADVANCED SEPARATIONS	0	0	0	0	0	0	1,861,822	0	0	1,861,822
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	118,040	118,040
n-Hexane Total	**0**	**0**	**0**	**0**	**0**	**0**	**1,861,822**	**0**	**118,040**	**1,979,862**
Nickel										
DUHADAWAY TOOL & DIE SHOP INC	0	7,224	0	0	238	7,462	0	0	0	0
HANDYTUBE	0	30,599	0	0	232	30,831	0	0	0	0
METAL MASTERS	0	65,644	0	0	383	66,027	0	0	0	0
Nickel Total	**0**	**103,467**	**0**	**0**	**853**	**104,320**	**0**	**0**	**0**	**0**
Nickel Compounds										
BALTIMORE AIRCOIL COMPANY	0	229,301	0	0	0	229,301	0	0	0	0
CHEMOURS EDGE MOOR	0	0	0	0	10,497	10,497	0	0	0	0
OWEN STEEL COMPANY	0	2,800	0	0	0	2,800	0	0	0	0
PRINCE MINERALS LLC	0	0	0	0	0	0	0	0	0	0
Nickel Compounds Total	**0**	**232,101**	**0**	**0**	**10,497**	**242,598**	**0**	**0**	**0**	**0**
Nitrate compounds										
ALLEN HARIM FOODS HARBESON	0	0	0	0	0	0	0	0	0	0
BASF CORP	19,986	0	0	0	0	19,986	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
HANESBRANDS	49,136	0	0	0	0	49,136	0	0	0	0
PERDUE GEORGETOWN	0	0	0	0	90	90	0	0	0	0
Nitrate compounds Total	**69,122**	**0**	**0**	**0**	**90**	**69,212**	**0**	**0**	**0**	**0**
Nitric acid										
BASF CORP	0	0	0	0	0	0	0	0	20,309	20,309
SPI PHARMA	0	0	0	0	0	0	0	0	0	0
Nitric acid Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20,309**	**20,309**
Nitrobenzene										
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
Nitrobenzene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
N-Methyl-2-pyrrolidone										
AIR LIQUIDE ADVANCED SEPARATIONS	125,178	0	16,880	0	0	142,058	0	0	0	0
BASF CORP	19,528	0	118,008	0	0	137,536	0	0	11	11
ROHM & HAAS B5 B6	0	67,208	0	2,619	0	69,827	0	0	0	0
ROHM & HAAS B7 B15	0	17,580	0	986	0	18,566	0	0	0	0
N-Methyl-2-pyrrolidone Total	**144,706**	**84,788**	**134,888**	**3,605**	**0**	**367,987**	**0**	**0**	**11**	**11**
Nonylphenol										
CRODA	0	0	0	0	0	0	0	0	0	0
Nonylphenol Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Octachlorostyrene										
CHEMOURS EDGE MOOR	0	0	0	0	2	2	0	0	0	0
Octachlorostyrene Total	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**
p-Chloroaniline										
BASF CORP	2,590	0	22,024	87,557	2	112,173	0	0	423	423
p-Chloroaniline Total	**2,590**	**0**	**22,024**	**87,557**	**2**	**112,173**	**0**	**0**	**423**	**423**
Pentachlorobenzene										
CHEMOURS EDGE MOOR	0	0	0	0	2	2	0	0	0	0
Pentachlorobenzene Total	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**
Peracetic acid										
ALLEN HARIM FOODS HARBESON	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS - SELBYVILLE	0	0	0	0	0	0	0	0	146,598	146,598
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	128,850	128,850
NORAMCO	0	0	0	0	0	0	0	0	35,845	35,845
PERDUE MILFORD	23	0	0	0	0	23	0	0	46,000	46,000
Peracetic acid Total	**23**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**357,293**	**357,293**
Phenanthrene										
DELAWARE CITY REFINERY	0	212	0	0	0	212	0	0	38	38
Phenanthrene Total	**0**	**212**	**0**	**0**	**0**	**212**	**0**	**0**	**38**	**38**
Phenol										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	49,918	268,218	318,136
Phenol Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49,918**	**268,218**	**318,136**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Phosgene										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	165,815	165,815
Phosgene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**165,815**	**165,815**
Polychlorinated biphenyls										
CHEMOURS EDGE MOOR	0	0	0	0	4	4	0	0	0	0
Polychlorinated biphenyls Total	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**
Polycyclic aromatic compounds										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	353	353
EDGE MOOR/HAY ROAD ENERGY CENTERS	0	0	0	0	0	0	0	0	0	0
IKO	0	386	0	0	10	396	382	0	0	382
Polycyclic aromatic compounds Total	**0**	**386**	**0**	**0**	**10**	**396**	**382**	**0**	**353**	**735**
Propylene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
Propylene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Propylene oxide										
CRODA	0	0	0	0	0	0	0	0	8,722	8,722
Propylene oxide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8,722**	**8,722**
Styrene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	1,084	1,084
JUSTIN TANKS	0	0	0	365	0	365	24,840	0	0	24,840
Styrene Total	**0**	**0**	**0**	**365**	**0**	**365**	**24,840**	**0**	**1,084**	**25,924**
Sulfuric acid										
CHEMOURS RED LION PLANT	0	0	0	0	0	0	0	0	0	0
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER GENERATING STATION	0	0	0	0	0	0	0	0	763,582	763,582
Sulfuric acid Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**763,582**	**763,582**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Tetrachloroethylene										
DELAWARE CITY REFINERY	0	0	0	0	0	0	0	0	0	0
Tetrachloroethylene Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Titanium tetrachloride										
CHEMOURS EDGE MOOR	0	0	0	0	0	0	0	0	823,251	823,251
Titanium tetrachloride Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**823,251**	**823,251**
Toluene										
AGILENT TECHNOLOGIES	0	0	129,929	78	0	130,007	0	0	0	0
CHEMOURS EDGE MOOR	0	16,080	0	0	7,067	23,147	0	0	0	0
DELAWARE CITY REFINERY	0	3	0	184	176	362	0	0	217,944	217,944
DENTSPLY WEST PLANT	0	0	15,874	0	0	15,874	0	0	0	0
NORAMCO	12	0	682,379	0	0	682,391	0	0	682,391	682,391
SERVICE ENERGY DOVER	0	0	0	0	0	0	0	0	0	0
VP RACING FUELS	0	0	0	0	0	0	0	0	0	0
Toluene Total	**12**	**16,083**	**828,182**	**262**	**7,243**	**851,781**	**0**	**0**	**900,335**	**900,335**
Toluene diisocyanate (mixed isomers)										
AEARO TECHNOLOGIES	0	0	0	3,272	0	3,272	0	0	0	0
MACDERMID	0	0	0	0	0	0	0	0	0	0
Toluene diisocyanate (mixed isomers) Total	**0**	**0**	**0**	**3,272**	**0**	**3,272**	**0**	**0**	**0**	**0**
Trichloroethylene										
HANDYTUBE	0	0	0	8,445	0	8,445	0	0	0	0
Trichloroethylene Total	**0**	**0**	**0**	**8,445**	**0**	**8,445**	**0**	**0**	**0**	**0**
Vanadium Compounds										
CHEMOURS EDGE MOOR	0	0	0	0	64,758	64,758	0	0	0	0
Vanadium Compounds Total	**0**	**0**	**0**	**0**	**64,758**	**64,758**	**0**	**0**	**0**	**0**
Vinyl acetate										
FORMOSA PLASTICS	0	0	0	0	0	0	0	0	0	0
Vinyl acetate Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Vinyl chloride										
FORMOSA PLASTICS	0	26	0	0	68	94	0	0	206,273	206,273
Vinyl chloride Total	**0**	**26**	**0**	**0**	**68**	**94**	**0**	**0**	**206,273**	**206,273**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX G

2015 OFF-SITE TRANSFERS AND WASTE MANAGED ON-SITE BY CHEMICAL

	OFF SITE TRANSFERS						ON SITE WASTE MANAGEMENT			
CHEMICAL/FACILITY	POTW	RECYCLE	ENERGY RECOVERY	TREATMENT	DISPOSAL	TOTAL	RECYCLE	ENERGY RECOVERY	TREATMENT	TOTAL
Xylene (mixed isomers)										
BASF CORP	203	0	505	0	0	708	0	0	4,102	4,102
DELAWARE CITY REFINERY	0	9	0	523	1,233	1,766	0	0	207,483	207,483
DOVER AFB	0	0	0	0	0	0	0	0	0	0
GRIFFITH ENERGY - CARL KING	0	0	0	0	0	0	0	0	0	0
ROGERS CORP	0	0	0	4,600	0	4,600	0	0	96,000	96,000
Xylene (mixed isomers) Total	**203**	**9**	**505**	**5,123**	**1,233**	**7,074**	**0**	**0**	**307,585**	**307,585**
Zinc Compounds										
ALLEN HARIM FARMS SEAFORD MILL	0	0	0	0	0	0	0	0	0	0
AMICK FARMS	0	0	0	0	0	0	0	0	0	0
CHEMOURS EDGE MOOR	0	0	0	0	13,960	13,960	0	0	0	0
HANESBRANDS	532	0	0	0	30	562	0	0	0	0
MOUNTAIRE FARMS - FRANKFORD MILL	0	0	0	0	0	0	0	0	0	0
MOUNTAIRE FARMS OF DELAWARE	0	0	0	0	0	0	0	0	0	0
ORIENT CORP	0	0	0	0	0	0	0	0	0	0
PERDUE BRIDGEVILLE	0	0	0	0	0	0	0	0	0	0
PPG INDUSTRIES	1,967	0	0	0	3,001	4,968	0	0	0	0
V&S DELAWARE GALVANIZING	0	177,336	0	0	45,943	223,279	333,412	0	0	333,412
Zinc Compounds Total	**2,499**	**177,336**	**0**	**0**	**62,935**	**242,770**	**333,412**	**0**	**0**	**333,412**
STATE TOTALS	**1,035,534**	**6,814,502**	**1,968,908**	**229,453**	**1,612,833**	**11,661,230**	**10,756,074**	**15,963,550**	**397,416,374**	**424,135,997**

Source: DNREC 2015 TRI Database, October, 2016

All Amounts Are in Pounds

APPENDIX H

2015 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
Nitrate compounds	0	3,748,110	0	3,748,110	69,212	0
Sulfuric acid	225,896	0	0	225,896	0	763,582
Carbonyl sulfide	135,916	0	0	135,916	0	14,648,589
Manganese Compounds	237	105,947	0	106,184	964,353	0
Ammonia	50,349	1,919	0	52,268	9,724	15,586,414
Vinyl chloride	42,710	0	0	42,710	94	206,273
Hydrogen cyanide	33,429	192	0	33,621	0	460,889
Vinyl acetate	33,572	0	0	33,572	0	0
Methanol	27,796	5	0	27,801	1,014,124	3,533,994
Hydrogen Sulfide	24,176	1	0	24,176	0	360,881,650
n-Hexane	18,577	5	0	18,582	0	1,979,862
Cyclohexane	17,627	5	0	17,632	19,703	10,428
Lead	8	3	16,110	16,121	5,924	2,842
Barium Compounds	59	4,681	10,742	15,482	5,029	0
Styrene	13,112	5	365	13,482	365	25,924
Certain Glycol Ethers	12,680	0	0	12,680	3,745	0
Toluene	12,257	5	0	12,262	851,781	900,335
Xylene (mixed isomers)	6,865	5	0	6,870	7,074	307,585
Ethylene	6,151	0	0	6,151	0	0
Benzene	5,585	11	0	5,596	249	415,706
Propylene	5,073	0	0	5,073	0	0
N,N-Dimethylformamide	4,175	0	0	4,175	1,338,153	4,233,851
Hydrochloric acid	3,966	0	0	3,966	0	8,807,851
N-Methyl-2-pyrrolidone	3,927	0	0	3,927	367,987	11
Trichloroethylene	3,856	0	0	3,856	8,445	0
Chlorine	3,435	0	0	3,435	0	1,583,989
Cumene	3,055	5	0	3,060	0	3,726
Ethylene oxide	2,880	0	0	2,880	0	38,748
Ethylbenzene	2,258	5	0	2,263	1,341	74,438
Naphthalene	2,072	0	0	2,072	310	11,924
Dichloromethane	1,920	0	0	1,920	13,213	13,213
Lead Compounds	218	79	844	1,141	4,344,434	0
Carbon disulfide	1,108	0	0	1,108	0	4,290,899
Hydrogen fluoride	1,089	0	0	1,089	0	40,432
1,2,4-Trimethylbenzene	1,044	5	0	1,049	0	62,593
Polycyclic aromatic compounds	284	4	614	901	396	735
Zinc Compounds	549	301	0	850	242,770	333,412
Peracetic acid	744	0	0	744	23	357,293
Methyl methacrylate	524	0	0	524	79	0
1,3-Butadiene	490	0	0	490	0	0
Boron trifluoride	443	0	0	443	0	80,435
Creosote	57	0	324	381	52,473	0
Nonylphenol	376	0	0	376	0	0
n-Butyl alcohol	320	0	0	320	677,094	676,819
Cresol (mixed isomers)	0	313	0	313	0	338,789

Source: DNREC 2015 TRI Database, October, 2016 All amounts are in pounds

APPENDIX H

2015 ON-SITE RELEASE SUMMARY BY CHEMICAL

CHEMICAL - RANKED BY TOTAL ON-SITE RELEASE	ON-SITE RELEASES TO AIR	TO WATER	TO LAND	TOTAL	TRANSFERS OFF-SITE	ON-SITE WASTE MGMT.
Phenol	136	157	0	293	0	318,136
Phosgene	251	0	0	251	0	165,815
Propylene oxide	227	0	0	227	0	8,722
Mercury Compounds	97	1	79	177	13	0
2,4-Dimethylphenol	0	157	0	157	0	219,922
Nickel Compounds	7	142	0	149	242,598	0
Cyanide Compounds	0	138	0	138	0	13,664
Biphenyl	108	0	0	108	134,026	2,321
Aniline	102	0	0	102	11,121	1,871,094
Vanadium Compounds	1	95	0	96	64,758	0
Acetonitrile	71	0	0	71	18,206	0
Titanium tetrachloride	50	0	0	50	0	823,251
Chromium Compounds	6	40	0	45	297,263	0
Arsenic Compounds	0	32	0	32	89	0
Mercury	18	0	0	18	2,120	0
Cobalt Compounds	0	16	0	16	27,286	0
Anthracene	10	5	0	15	0	0
Molybdenum trioxide	14	0	0	14	5	0
Formic acid	13	0	0	13	0	18,641
Diethanolamine	12	0	0	12	800	0
Ethylene glycol	10	0	0	10	66,617	0
Copper	10	0	0	10	8,810	0
Tetrachloroethylene	9	0	0	9	0	0
p-Chloroaniline	9	0	0	9	112,173	423
Diisocyanates	6	0	0	6	51,537	0
Phenanthrene	1	5	0	6	212	38
Toluene diisocyanate (mixed isomers)	6	0	0	6	3,272	0
Benzo(g,h,i)perylene	1	4	0	5	0	430
Nitrobenzene	2	0	0	2	0	0
Chromium	1	0	0	1	246,785	0
Nickel	1	0	0	1	104,320	0
Hexachlorobenzene	0	0	0	0	50	0
Octachlorostyrene	0	0	0	0	2	0
Antimony Compounds	0	0	0	0	10,496	0
Pentachlorobenzene	0	0	0	0	2	0
4,4'-Methylenebis(2-chloroaniline)	0	0	0	0	2,786	0
Dioxin and Dioxin-like Compounds	0	0	0	0	1	0
Polychlorinated biphenyls	0	0	0	0	4	0
Isoprene	0	0	0	0	0	0
Nitric acid	0	0	0	0	0	20,309
Copper Compounds	0	0	0	0	32,708	0
Hydrazine	0	0	0	0	0	0
Hydrazine sulfate	0	0	0	0	0	0
Asbestos (friable)	0	0	0	0	220,500	0
Manganese	0	0	0	0	4,577	0
STATE TOTALS	**712,043**	**3,862,398**	**29,078**	**4,603,520**	**11,661,230**	**424,135,997**

All amounts are in pounds

Source: DNREC 2015 TRI Database, October, 2016

APPENDIX I

2015 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
Benzo(g,h,i)perylene						
DELAWARE CITY REFINERY	0.50	4.00	0.00	4.50	0.00	430.00
Benzo(g,h,i)perylene Total	**0.50**	**4.00**	**0.00**	**4.50**	**0.00**	**430.00**
Dioxin and Dioxin-like Compounds						
CHEMOURS EDGE MOOR	0.000062	0.008352	0.000000	0.008414	0.762769	0.000000
DELAWARE CITY REFINERY	0.001254	0.000000	0.000000	0.001254	0.000000	0.001254
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.006214	0.000000	0.000000	0.006214	0.000000	0.000000
FORMOSA PLASTICS	0.000008	0.000000	0.000000	0.000008	0.000249	0.000000
Dioxin and Dioxin-like Compounds Total	**0.007539**	**0.008352**	**0.000000**	**0.015891**	**0.7630**	**0.001254**
Hexachlorobenzene						
CHEMOURS EDGE MOOR	0.06	0.16	0.00	0.22	49.89	0.00
Hexachlorobenzene Total	**0.06**	**0.16**	**0.00**	**0.22**	**49.89**	**0.00**
Lead						
HMA - HERITAGE CONCRETE BEAR	0.00	0.00	5.86	5.86	0.00	0.00
HMA - HERITAGE CONCRETE CHESWOLD	0.00	0.00	7.46	7.46	0.00	0.00
HMA - HERITAGE CONCRETE HEALD STREET	0.00	0.00	15.18	15.18	0.00	0.00
NATIONAL GUARD TRAINING SITE RANGE	0.00	0.00	16,081.70	16,081.70	0.00	0.00
V&S DELAWARE GALVANIZING	8.10	2.80	0.00	10.90	5,923.73	2,842.00
Lead Total	**8.10**	**2.80**	**16,110.20**	**16,121.10**	**5,923.73**	**2,842.00**
Lead Compounds						
CHEMOURS EDGE MOOR	0.00	61.90	0.00	61.90	11,804.40	0.00
DELAWARE CITY REFINERY	105.00	2.30	0.00	107.30	495.42	0.00
INDIAN RIVER GENERATING STATION	15.60	0.00	844.30	859.90	0.00	0.00
JOHNSON CONTROLS BATTERY PLANT	96.50	14.50	0.00	111.00	2,572,989.00	0.00
JOHNSON CONTROLS DISTRIBUTION	0.00	0.00	0.00	0.00	1,759,032.26	0.00
OWEN STEEL COMPANY	0.00	0.00	0.00	0.00	110.00	0.00
PPG INDUSTRIES	0.03	0.00	0.00	0.03	2.90	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	0.00	0.00
Lead Compounds Total	**218.13**	**78.70**	**844.30**	**1,141.13**	**4,344,433.98**	**0.00**
Mercury						
DENTSPLY MAIN PLANT	0.68	0.00	0.00	0.68	2,119.94	0.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	17.10	0.00	0.00	17.10	0.09	0.00
Mercury Total	**17.78**	**0.00**	**0.00**	**17.78**	**2,120.03**	**0.00**
Mercury Compounds						
CHEMOURS EDGE MOOR	0.81	0.01	0.00	0.82	7.65	0.00
DELAWARE CITY REFINERY	94.02	1.40	0.00	95.42	3.51	0.00
INDIAN RIVER GENERATING STATION	1.90	0.00	79.20	81.10	0.00	0.00
INTERVET	0.00	0.00	0.00	0.00	1.43	0.00
Mercury Compounds Total	**96.73**	**1.41**	**79.20**	**177.34**	**12.59**	**0.00**
Octachlorostyrene						
CHEMOURS EDGE MOOR	0.00	0.21	0.00	0.21	1.88	0.00
Octachlorostyrene Total	**0.00**	**0.21**	**0.00**	**0.21**	**1.88**	**0.00**

Source: DNREC TRI 2015 Database, October 2016.
All Amounts are in Pounds.

APPENDIX I

2015 PBT RELEASE AND TRANSFER DETAIL

PBT CHEMICAL / FACILITY	ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
Pentachlorobenzene						
CHEMOURS EDGE MOOR	0.07	0.05	0.00	0.12	1.70	0.00
Pentachlorobenzene Total	**0.07**	**0.05**	**0.00**	**0.12**	**1.70**	**0.00**
Polychlorinated biphenyls						
CHEMOURS EDGE MOOR	0.00	0.00	0.00	0.00	3.99	0.00
Polychlorinated biphenyls Total	**0.00**	**0.00**	**0.00**	**0.00**	**3.99**	**0.00**
Polycyclic aromatic compounds						
CHEMOURS EDGE MOOR	70.17	0.00	613.50	683.67	0.00	0.00
DELAWARE CITY REFINERY	213.03	3.56	0.00	216.59	0.00	353.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.30	0.05	0.00	0.35	0.00	0.00
IKO	0.67	0.00	0.00	0.67	396.30	381.60
Polycyclic aromatic compounds Total	**284.17**	**3.61**	**613.50**	**901.28**	**396.30**	**734.60**
STATE PBT TOTALS	**625.55**	**90.95**	**17,647.20**	**18,363.70**	**4,352,944.86**	**4,006.60**

Source: DNREC TRI 2015 Database, October 2016.
All Amounts are in Pounds.

APPENDIX J

2015 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
1,3-Butadiene						
DELAWARE CITY REFINERY	490.00	0.00	0.00	490.00	0.00	0.00
1,3-Butadiene Total	**490.00**	**0.00**	**0.00**	**490.00**	**0.00**	**0.00**
4,4'-Methylenebis(2-chloroaniline)						
ROHM & HAAS B5 B6	0.04	0.00	0.00	0.04	2,786.00	0.00
4,4'-Methylenebis(2-chloroaniline) Total	**0.04**	**0.00**	**0.00**	**0.04**	**2,786.00**	**0.00**
Arsenic Compounds						
CHEMOURS EDGE MOOR	0.09	32.25	0.00	32.34	88.77	0.00
Arsenic Compounds Total	**0.09**	**32.25**	**0.00**	**32.34**	**88.77**	**0.00**
Asbestos (friable)						
DELAWARE CITY REFINERY	0.00	0.00	0.00	0.00	220,500.00	0.00
Asbestos (friable) Total	**0.00**	**0.00**	**0.00**	**0.00**	**220,500.00**	**0.00**
Benzene						
DELAWARE CITY REFINERY	5,585.00	11.00	0.00	5,596.00	249.48	415,706.00
Benzene Total	**5,585.00**	**11.00**	**0.00**	**5,596.00**	**249.48**	**415,706.00**
Chromium Compounds						
BALTIMORE AIRCOIL COMPANY	5.00	0.00	0.00	5.00	199,817.00	0.00
CHEMOURS EDGE MOOR	0.57	39.74	0.00	40.31	97,445.71	0.00
ORIENT CORP	0.00	0.00	0.00	0.00	0.00	0.00
Chromium Compounds Total	**5.57**	**39.74**	**0.00**	**45.31**	**297,262.71**	**0.00**
Cobalt Compounds						
BALTIMORE AIRCOIL COMPANY	0.00	0.00	0.00	0.00	24,570.00	0.00
CHEMOURS EDGE MOOR	0.05	16.37	0.00	16.42	2,716.26	0.00
Cobalt Compounds Total	**0.05**	**16.37**	**0.00**	**16.42**	**27,286.26**	**0.00**
Creosote						
DELAWARE CITY REFINERY	57.00	0.00	324.00	381.00	52,473.00	0.00
Creosote Total	**57.00**	**0.00**	**324.00**	**381.00**	**52,473.00**	**0.00**
Dichloromethane						
NORAMCO	1,920.00	0.00	0.00	1,920.00	13,213.00	13,213.00
Dichloromethane Total	**1,920.00**	**0.00**	**0.00**	**1,920.00**	**13,213.00**	**13,213.00**
Ethylbenzene						
DELAWARE CITY REFINERY	1,733.00	5.00	0.00	1,738.00	141.07	50,438.00
DOVER AFB	25.00	0.00	0.00	25.00	0.00	0.00
ROGERS CORP	500.00	0.00	0.00	500.00	1,200.00	24,000.00
Ethylbenzene Total	**2,258.00**	**5.00**	**0.00**	**2,263.00**	**1,341.07**	**74,438.00**
Ethylene oxide						
CRODA	2,880.20	0.00	0.00	2,880.20	0.00	38,748.00
Ethylene oxide Total	**2,880.20**	**0.00**	**0.00**	**2,880.20**	**0.00**	**38,748.00**
Hexachlorobenzene						
CHEMOURS EDGE MOOR	0.06	0.16	0.00	0.22	49.89	0.00
Hexachlorobenzene Total	**0.06**	**0.16**	**0.00**	**0.22**	**49.89**	**0.00**
Hydrazine						
CHEMOURS RED LION PLANT	0.00	0.00	0.00	0.00	0.00	0.00
Hydrazine Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Hydrazine sulfate						
CHEMOURS RED LION PLANT	0.00	0.00	0.00	0.00	0.00	0.00
Hydrazine sulfate Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lead						
HMA - HERITAGE CONCRETE BEAR	0.00	0.00	5.86	5.86	0.00	0.00
HMA - HERITAGE CONCRETE CHESWOLD	0.00	0.00	7.46	7.46	0.00	0.00
HMA - HERITAGE CONCRETE HEALD STREET	0.00	0.00	15.18	15.18	0.00	0.00
NATIONAL GUARD TRAINING SITE RANGE	0.00	0.00	16,081.70	16,081.70	0.00	0.00
V&S DELAWARE GALVANIZING	8.10	2.80	0.00	10.90	5,923.73	2,842.00
Lead Total	**8.10**	**2.80**	**16,110.20**	**16,121.10**	**5,923.73**	**2,842.00**
Lead Compounds						
CHEMOURS EDGE MOOR	0.00	61.90	0.00	61.90	11,804.40	0.00
DELAWARE CITY REFINERY	105.00	2.30	0.00	107.30	495.42	0.00
INDIAN RIVER GENERATING STATION	15.60	0.00	844.30	859.90	0.00	0.00
JOHNSON CONTROLS BATTERY PLANT	96.50	14.50	0.00	111.00	2,572,989.00	0.00
JOHNSON CONTROLS DISTRIBUTION	0.00	0.00	0.00	0.00	1,759,032.26	0.00
OWEN STEEL COMPANY	0.00	0.00	0.00	0.00	110.00	0.00
PPG INDUSTRIES	0.03	0.00	0.00	0.03	2.90	0.00
VP RACING FUELS	1.00	0.00	0.00	1.00	0.00	0.00
Lead Compounds Total	**218.13**	**78.70**	**844.30**	**1,141.13**	**4,344,433.98**	**0.00**

Source: DNREC 2015 TRI Database, October 2016
All amounts are in pounds

APPENDIX J

2015 CARCINOGEN RELEASE AND TRANSFER DETAIL

CARCINOGEN / FACILITY	TOTAL ON-SITE RELEASES AIR	WATER	LAND	TOTAL	TRANSFERS OFF SITE	ON-SITE WASTE MGMT.
Naphthalene						
CRODA	2.00	0.00	0.00	2.00	310.00	0.00
DELAWARE CITY REFINERY	2,042.00	0.00	0.00	2,042.00	0.00	11,924.00
DOVER AFB	28.00	0.00	0.00	28.00	0.00	0.00
GRIFFITH ENERGY - CARL KING	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene Total	**2,072.00**	**0.00**	**0.00**	**2,072.00**	**310.00**	**11,924.00**
Nickel						
DUHADAWAY TOOL & DIE SHOP INC	0.00	0.00	0.00	0.00	7,462.00	0.00
HANDYTUBE	0.00	0.00	0.00	0.00	30,831.00	0.00
METAL MASTERS	0.50	0.00	0.00	0.50	66,027.00	0.00
Nickel Total	**0.50**	**0.00**	**0.00**	**0.50**	**104,320.00**	**0.00**
Nickel Compounds						
BALTIMORE AIRCOIL COMPANY	5.00	0.00	0.00	5.00	229,301.00	0.00
CHEMOURS EDGE MOOR	1.11	142.30	0.00	143.41	10,497.48	0.00
OWEN STEEL COMPANY	0.80	0.00	0.00	0.80	2,800.00	0.00
PRINCE MINERALS LLC	0.00	0.00	0.00	0.00	0.00	0.00
Nickel Compounds Total	**6.91**	**142.30**	**0.00**	**149.21**	**242,598.48**	**0.00**
Nitrobenzene						
ORIENT CORP	2.00	0.00	0.00	2.00	0.00	0.00
Nitrobenzene Total	**2.00**	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**
p-Chloroaniline						
BASF CORP	9.00	0.00	0.00	9.00	112,173.00	423.00
p-Chloroaniline Total	**9.00**	**0.00**	**0.00**	**9.00**	**112,173.00**	**423.00**
Polychlorinated biphenyls						
CHEMOURS EDGE MOOR	0.00	0.00	0.00	0.00	3.99	0.00
Polychlorinated biphenyls Total	**0.00**	**0.00**	**0.00**	**0.00**	**3.99**	**0.00**
Polycyclic aromatic compounds						
CHEMOURS EDGE MOOR	70.17	0.00	613.50	683.67	0.00	0.00
DELAWARE CITY REFINERY	213.03	3.56	0.00	216.59	0.00	353.00
EDGE MOOR/HAY ROAD ENERGY CENTERS	0.30	0.05	0.00	0.35	0.00	0.00
IKO	0.67	0.00	0.00	0.67	396.30	381.60
Polycyclic aromatic compounds Total	**284.17**	**3.61**	**613.50**	**901.28**	**396.30**	**734.60**
Propylene oxide						
CRODA	227.20	0.00	0.00	227.20	0.00	8,722.00
Propylene oxide Total	**227.20**	**0.00**	**0.00**	**227.20**	**0.00**	**8,722.00**
Styrene						
DELAWARE CITY REFINERY	7.35	5.00	0.00	12.35	0.00	1,084.00
JUSTIN TANKS	13,105.00	0.00	365.00	13,470.00	365.00	24,840.00
Styrene Total	**13,112.35**	**5.00**	**365.00**	**13,482.35**	**365.00**	**25,924.00**
Tetrachloroethylene						
DELAWARE CITY REFINERY	9.00	0.00	0.00	9.00	0.00	0.00
Tetrachloroethylene Total	**9.00**	**0.00**	**0.00**	**9.00**	**0.00**	**0.00**
Toluene diisocyanate (mixed isomers)						
AEARO TECHNOLOGIES	6.01	0.00	0.00	6.01	3,272.00	0.00
MACDERMID	0.00	0.00	0.00	0.00	0.00	0.00
Toluene diisocyanate (mixed isomers) Total	**6.01**	**0.00**	**0.00**	**6.01**	**3,272.00**	**0.00**
Trichloroethylene						
HANDYTUBE	3,856.00	0.00	0.00	3,856.00	8,445.00	0.00
Trichloroethylene Total	**3,856.00**	**0.00**	**0.00**	**3,856.00**	**8,445.00**	**0.00**
Vinyl acetate						
FORMOSA PLASTICS	33,572.00	0.00	0.00	33,572.00	0.00	0.00
Vinyl acetate Total	**33,572.00**	**0.00**	**0.00**	**33,572.00**	**0.00**	**0.00**
Vinyl chloride						
FORMOSA PLASTICS	42,710.00	0.40	0.00	42,710.40	94.00	206,273.00
Vinyl chloride Total	**42,710.00**	**0.40**	**0.00**	**42,710.40**	**94.00**	**206,273.00**
STATE TOTAL	**109,289**	**337**	**18,257**	**127,884**	**5,437,586**	**798,948**

Source: DNREC 2015 TRI Database, October 2016
All amounts are in pounds

GLOSSARY AND ACRONYMS

Accidental Release - The amount released to the environment as a result of catastrophic events, remedial actions, or one-time events not associated with production processes.

Aerosol - A gaseous form of a chemical, which includes mists, vapors, gases, and fogs, would be considered an aerosol. Hydrochloric and sulfuric acid aerosols are the reportable form of these two chemicals. These acids in aqueous solutions are no longer reportable under TRI, but an aerosol that is generated from a solution is reportable.

Air Releases - Point and non-point air emissions, or releases to air. Point releases are those chemicals released through **stacks**, vents, or other confined spaces and are usually regulated by permit. Non-point, or **fugitive**, releases include chemical leaks from valves, pump seals, etc., evaporative losses from surface impoundments (ponds) or spills, or releases from building ventilation systems.

ARP - DNREC's Accidental Release Program - Formerly known as the Industrial Disaster Prevention program, ARP provides protection for the lives and health of the citizens of Delaware by ensuring that companies with extremely hazardous substances have proper control plans and operations in place to prevent disasters.

Article - The term "Article" in 40 CFR Section 372.3, is defined as a manufactured item: (1) which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon shape or design; and (3) which does not release an EPCRA section 313 chemical under normal conditions of processing or use of that item at the facility or establishment.

ATSDR - Agency for Toxic Substances and Disease Registry – A federal public health agency of the U.S. Department of Health and Human Services**.** ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.

Bioaccumulate - Bioaccumulate means to increase the concentration of a chemical in a biological organism such as humans over time, compared to the chemical's concentration in the environment. Compounds accumulate in living things any time they are taken up and stored faster than they are broken down or excreted.

Bottom Ash - Ash that falls to the bottom of the combustion chamber in a process burning fuels like coal and oil. Bottom ash is removed for disposal on a regular basis. Also see **Fly Ash.**

BTU - British Thermal Unit - A unit of heat; the amount of heat required to raise one pound of water one Fahrenheit degree (39^oF to 40^oF). TBTU = one trillion BTUs.

CAA - Clean Air Act - The Clean Air Act is the law that defines EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The last major change in the law was enacted by Congress in 1990. Legislation passed since then has made several minor changes.

Carcinogen - A carcinogen is a substance that can cause cancer of some form.

CEM - Continuous Emissions Monitoring - A continuous emission monitoring system

(CEMS) is the total equipment necessary for the determination of a gas or particulate matter concentration or emission rate using continuous pollutant analyzer measurements. CEMS are required under some of the EPA regulations for either continual compliance determinations or determination of when standards have been exceeded.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. SARA made several important changes and additions to the program, including provision for the TRI Program in the Emergency Planning and Community Right-to-Know Act (See **EPCRA** and **SARA** below).

Chemical Abstracts Service (CAS) Registry Number - A numerical identification given to each unique chemical, which aids in the identification of a chemical with multiple synonyms (e.g., CAS 78-93-3 - methyl ethyl ketone, is also known as 2-butanone). Chemical categories under TRI do not possess a CAS numbers and are assigned category codes by the EPA. Lead compounds, for example, is category code N420.

De Minimis Concentration - The concentration below which a chemical does not need to be considered when it is present in mixtures. The de minimis concentration is 1.0%, or 0.1% if the chemical meets the OSHA carcinogen standard.

Disposal - Any underground injection, placement in landfills/surface impoundments, land treatment, or other intentional land disposal.

DNREC - Delaware Department of Natural Resources and Environmental Control – The State agency in Delaware that is responsible for environmental concerns. It has seven divisions, and the Cabinet Secretary reports to the Governor. The Division of Waste and Hazardous Substances is responsible for this report, and the Divisions of Air Quality, Watershed Stewardship, Parks and Recreation, Water, Fish and Wildlife, and the Office of the Secretary complete the Department.

Emission Factors - An Emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Emission factors are published emission rates of chemicals in particular processes, which are based on averaging a large sampling of representative processes.

Energy Recovery - The use of a waste product to create and utilize energy to generate steam, electricity, etc. A TRI chemical in waste must contain enough heating value to sustain the combustion process; otherwise it is considered only treatment or incineration of the waste.

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

EPA - United States Environmental Protection Agency.

EPCRA - Emergency Planning and Community Right-to-Know Act. Congress enacted the Emergency Planning and Community Right to Know Act as Title III of the Superfund Amendments and Reauthorization Act **(SARA**) of 1986. This act includes the TRI program, and more information can be found in Appendix A of this report.

EPCRA Section 313 Chemical - A chemical or chemical category listed in 40 CFR Section 372.65 (40 CFR Section 372.3) - see **Toxic Chemical and Modified Chemicals** below.

Facility - All buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and are owned or operated by the same person (or by any person that controls, is controlled by, or under common control with such person). A facility may contain more than one establishment, or distinct business unit.

Fly Ash - Ash that becomes airborne and escapes in the exhaust air from a combustion process that burns fuels like coal or oil. Fly ash can be controlled with air pollution control devices like precipitators and filters. Also see **Bottom Ash.**

FOIA - Freedom of Information Act - Originally signed into law on July 4, 1966 and amended in 1996, 2002 and 2007. This act allows for the full or partial disclosure of previously unreleased information and documents controlled by the United States Government. The Act defines agency records subject to disclosure, outlines disclosure procedures and grants some exemptions to the statute. Many states, including Delaware, have their own FOIA statutes.

Form A - A two-page report that a facility may use when certain criteria are met for a given chemical that must be reported. Refer to page 2 in this report for general reporting requirements, and pages 3-4 for details on eligibility and a description of the Form A data elements. The Form A provides basic facility information and the chemical identity, but does not provide other data that is given on the Form R. The Form A form is shown in Appendix N.

Form R- A five-page report that a facility must use (except when Form A eligibility applies) for reporting on each TRI chemical that the facility exceeds an applicable threshold. The Form R form is shown in Appendix M.

Fugitive Emissions - See **Air Releases.**

Hazardous Air Pollutants (HAPs) - Air pollutants that are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may present a threat of adverse human health effects or adverse environmental effects. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

IARC - International Agency for Research on Cancer (IARC) – IARC is part of the World Health Organization. IARC coordinates and conducts research on the causes of human cancer, the mechanisms of carcinogenesis, and develops scientific strategies for cancer control.

Import - To cause a chemical to be imported into the customs territory of the United States. For purposes of the definition, “to cause” means to intend that the chemical be imported and to control the identity of the imported chemical and the location and amount of the imported chemical. For TRI reporting purposes, “import” is the same as “manufacture”, as in either case the facility has caused the chemical to become present at the facility.

LEPC - Local Emergency Planning Committee (LEPC) - Each LEPC has specific duties to fulfill, and the State Emergency Response Commission (SERC) supervises and coordinates those activities. The LEPC's are required to have broad representation from many groups including state and local officials, media, law enforcement, fire service, EMS and health care, environmental, community groups and citizens and industrial facilities that use hazardous materials. The SERC also receives various reports from businesses that use or store hazardous chemicals, or that experience an emergency release of a hazardous substance, and must establish procedures for receiving and processing requests for information from the public. See **SERC** for more information.

Manufacture - To produce, prepare, compound or import a TRI chemical, including the coincidental production of the chemical as an intermediate, a by-product, or an impurity.

Mass Balance Calculation - A method of calculating amounts and concentrations at a point in a process based on known amounts and concentrations at other points in the process. The basic Mass Balance equation is: Input + Generation = Output + Consumption.

MSDS - Material Safety Data Sheet - A Material Safety Data Sheet (MSDS) is prepared by the manufacturer of a product. The purpose of the form is to provide information on the safe use, handling and potential hazards of a product. The form is required to be developed under 29 CFR Section 1910.1200(g). This form lists important attributes, including toxicity and safety information that a user or handler of the chemical is required to know about.

NAAQS - National Ambient Air Quality Standards - The Clean Air Act required EPA to set National Ambient Air Quality Standards (40 CFR Part 50) for pollutants considered harmful to public health and the environment. The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. They are: Carbon monoxide, lead, nitrogen dioxide, particulate matter (10 and 2.5 microns), ozone, and sulfur dioxide. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

NAICS - North American Industrial Classification System – This is a systematic classification system, which assigns a six-digit number to each commercial and industrial facility. It expands the four-digit classification categories used by the **Standard industrial Classification (SIC)** codes. It is used by government, industry, and sales organizations to reach targeted industries for data collection, enforcement, and sales. The TRI program converted to NAICS starting with the 2006 reporting year. The covered SIC codes were codes 10 (except 1011, 1081, and 1094), 12 (except 1241), or 20-39; industry codes 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce); or 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis). The NAICS codes are not directly translatable from the SIC codes, so a reference document is usually required to translate or compare the codes. The intent in converting to the NAICS codes was to more precisely define the TRI reporting universe without adding to or subtracting from it. Also see **SIC – Standard Industrial Classification.**

NESHAP - **National Emissions Standards for Hazardous Air Pollutants -** The Clean Air Act (**CAA**) requires the U. S. Environmental Protection Agency (**EPA**) to develop and enforce regulations to protect the general public from exposure to hazardous air pollutants (**HAPs**).

NPDES - National Pollutant Discharge Elimination System - The Clean Water Act (CWA) requires that all discharges of pollutants to surface waters (streams, rivers, lakes, bays, and oceans) must be authorized by a permit issued under the National Pollutant Discharge Elimination System (NPDES) program.

Off-site Transfers - Waste that is transferred off-site to another facility for the purpose of treatment, recycling, energy recovery, or disposal.

On-site Releases - Emissions from a facility to the environment as a result of normal operations or accidents. This includes emissions to the air, discharges to surface waters, disposal onto or in the ground, and underground injection. Underground injection is not an approved method of hazardous waste disposal in Delaware.

On-site Waste Management - Wastes that are treated, recycled, or recovered for energy at the facility. The disposal of a waste into an on-site landfill is considered a release by EPA, and thus is not included in this category.

OSHA - Occupational Safety and Health Administration - The Federal agency that has the responsibility to ensure a safe and healthful work environment.

Otherwise Use - Encompasses 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 a solvent used for cleaning, falls under the otherwise use category.

P2 - Pollution Prevention - Pollution Prevention (P2) means "source reduction," as defined under the Pollution Prevention Act and other practices that reduce or eliminate the creation of pollutants. This EPA program was created to encourage, assist and lead others to prevent pollution at the source. Improved operation and maintenance, material substitution, process and equipment modification, conservation practices, product modification, and in-process recycling are examples of pollution prevention. EPA provides incentives to businesses, including public recognition, tools, and technical assistance. Since reduction of waste at its source is emphasized, recycling, energy recovery, treatment, and disposal are not included within the definition of pollution prevention. Also see **Waste Management** below.

PAC - Polycyclic Aromatic Compounds - PACs are multi-numbered benzene-ring compounds. PACs contain polycyclic aromatic hydrocarbons (PAHs), substituted PAHs, and PAH derivatives.

PAH - Polynuclear Aromatic Hydrocarbon - Polynuclear aromatic hydrocarbons (PAHs) are hydrocarbon compounds with multiple benzene rings. PAHs are typical components of asphalts, fuels, oils, and greases. They are also called Polycyclic Aromatic Hydrocarbons. They are of concern because some of these compounds have been identified as carcinogens.

PCB - Polychlorinated Biphenyls - A group of toxic, persistent chemicals used in electrical transformers and capacitors for insulating purposes, and in gas pipeline systems as lubricants. The sale and new use of these chemicals were banned by law in 1979.

PBT - Persistent Bioaccumulative Toxin - PBT pollutants are chemicals that are toxic, persist in the environment and bioaccumulate (are not broken down or excreted), and thus pose risks to human health and ecosystems. The biggest concerns about PBT's are that they transfer rather easily among air, water, and land, and span boundaries of geography and generations.

PEL - Permissible Exposure Limit - OSHA sets permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances. PELs are regulatory limits on the amount or concentration of a substance in the air. PELs are enforceable. OSHA PELs are based on an 8-hour time weighted average (TWA) exposure.

pH - pH is a measure of the acidity in a liquid and is based on the concentration of hydrogen

ions in a water solution. High acid content will be indicated by a pH of less than 7.0, and low acidity, called alkalinity, is indicated by a pH higher than 7.0. Although the pH scale is 0-14, it is a logarithmic scale and the range is based on powers of 10. In the case of pH, the range is 1×10^{-7} to 1×10^{7} (0.0000001 to 10,000,000).

PM - Particulate Matter - Tiny particles of solid or liquid suspended in a gas or liquid. Sources of particulate matter can be man-made or natural. Some particulates occur naturally, originating from volcanoes, dust storms, forest and grassland fires, living vegetation, and sea spray. Human activities, such as the burning of fossil fuels in vehicles, power plants and various industrial processes also generate significant amounts of particulates. Increased levels of fine particles in the air are linked to health hazards such as heart disease, altered lung function and lung cancer. The notation PM_{10} is used to describe particles of 10 micrometers or less and $PM_{2.5}$ represents particles less than 2.5 micrometers in diameter. One micrometer is one millionth of a meter, or about 0.00004 inches.

POTW - Publicly Owned Treatment Works - Usually a municipal wastewater treatment facility.

PPA - Pollution Prevention Act of 1990 - Pollution prevention became a national policy with the Pollution Prevention Act of 1990. The Act established the waste management hierarchy whereby wastes should be prevented or reduced at the source whenever feasible, and safe disposal is the option of last resort.

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

RCRA - Resource Conservation and Recovery Act - The Resource Conservation and Recovery Act - commonly referred to as RCRA - is our nation's primary law governing the disposal of solid and hazardous waste. Congress passed RCRA on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:

- Protecting human health and the environment from the hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally-sound manner.

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

Regulation 1146 (7 DE Admin Code 1146) - This Delaware regulation establishes Nitrogen Oxides (NO_x), Sulfur Dioxide (SO_2), and mercury emissions limits to achieve reductions of those pollutants from Delaware's large electric generation units. The reduction in NO_X, SO_2, and mercury emissions will: 1) reduce the impact of those emissions on public health; 2) aid in Delaware's attainment of the State and National Ambient Air Quality Standard (NAAQS) for ground level ozone and fine particulate matter; 3) help address local scale fine particulate and mercury problems attributable to coal and residual oil-fired electric generating units, 4) satisfy Delaware's obligations under the Clean Air Mercury Rule (CAMR), and 5) improve visibility and help satisfy Delaware's EGU-related regional haze obligations.

Release - Any spilling, leaking, pumping, pouring, emitting, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles of any EPCRA Section 313 chemicals.

SARA - Superfund Amendments and Reauthorization Act of 1986 (SARA Title III), also known as The Emergency Planning and Community Right-to-Know Act (EPCRA), was enacted in 1986. This law provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals, may be subject to various reporting requirements. Reported information is then made publicly available through the **Toxics Release Inventory** and other programs so that interested parties may become informed about potentially dangerous chemicals in their community.

SDS - Material Safety Data Sheet - A Material Safety Data Sheet (MSDS) is prepared by the manufacturer of a product. The purpose of the form is to provide information on the safe use, handling and potential hazards of a product. The form is required to be developed under 29 CFR Section 1910.1200(g). This form lists important attributes, including toxicity and safety information that a user or handler of the chemical is required to know about.

Selective Catalytic Reduction (SCR) - Nitrogen oxides (NOx) emissions in boiler exhaust gas are converted into elemental nitrogen and water by injecting a nitrogen-based chemical reagent, most commonly ammonia, into the gas and then passing the gas through a catalyst bed where the NOx and ammonia react to form nitrogen and water vapor. Also see **SNCR** below.

Selective Non-Catalytic Reduction (SNCR) - Nitrogen oxides (NOx) emissions in boiler exhaust gas are converted into elemental nitrogen and water by injecting a nitrogen-based chemical reagent, most commonly urea or ammonia into the gas in the furnace. The SNCR method does not require a catalyst, but has lower conversion efficiency than the SCR method. Also see **SCR** above.

SERC - State Emergency Response Commission – The SERC's were created in response to the federal Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, and are comprised of representatives from various state and local government organizations and industry. The primary focus of a SERC is to enhance state and local emergency response and preparedness capabilities through better coordination and planning. See **LEPC (Local Emergency Planning committee)** for more information.

Standard Industrial Classification (SIC) Code - A four-digit code established by the Federal Office of Management and Budget used to describe the type of activity(s) at a facility. Facilities that engage in a variety of activities may possess multiple codes. Also see **North American Industrial Classification System (NAICS).** The TRI program converted to NAICS starting with the 2006 reporting year.

Stack Test - A process of sampling an exhaust stack to determine the contents, usually in percent concentration and cubic feet per hour. Sampling is usually done through a port or series of ports at an elevated point on the stack.

Teratogen - Any agent that can disturb the development of an embryo or fetus. Teratogens may cause a birth defect in the child. Or a teratogen may halt the pregnancy outright. The classes of teratogens include radiation, maternal infections, chemicals, and drugs.

TSCA - Toxic Substance Control Act – TSCA was enacted to provide information about all chemicals and to control the production of new chemicals that might present an unreasonable risk of injury to health or the environment. TSCA authorizes the Environmental Protection Agency to require testing of chemical substances. TSCA also provides authority to regulate the manufacturing, processing, import and use of chemicals. The manufacture use, and/or disposal of chemicals are covered in virtually every environmental law and in OSHA and DOT regulations, and TSCA fills the gaps in other laws and supplements sections of existing laws. EPA maintains and publishes the TSCA Inventory, which includes a list of chemicals manufactured, imported, or processed for commercial purposes in the United States. The TSCA Inventory is voluminous, with more than 75,000 chemical substances.

Toxic Chemical - A chemical or chemical category listed in 40 CFR Section 372.65 (40 CFR Section 372.3); causing acute human health risks, cancer or chronic (non-cancer) human health effects, and/or environmental effects.

Treatment - The removal, destruction, alteration, or stabilization of the waste. Biological treatment, incineration, and neutralization are examples of waste treatment. Wastewater treatment plants and hazardous waste incinerators are examples of treatment facilities.

TRI - The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

TSDF - Treatment, Storage, and Disposal Facility - A site where a hazardous substance is treated, stored or disposed of. TSDF facilities are regulated by EPA and states under the **Resource Conservation and Recovery Act (RCRA)**.

VOC - Volatile Organic Compounds - Chemical compounds containing carbon and hydrogen that readily evaporate at room temperature.

Waste Management - EPA interprets waste management to include the following activities: recycling, combustion for energy recovery, treatment for destruction, waste stabilization, and release, including disposal. Waste management does not include the storage, container transfer, or tank transfer if no recycling, combustion for energy, treatment for destruction, waste stabilization, or release of the chemical occurs at the facility.

More terms and acronyms can be found at: http://www.epa.gov/OCEPAterms/intro.htm .

APPENDIX L

TRI REPORTING FORMS - FORM R

TOXICS RELEASE INVENTORY

Sample Form R
For Reporting year 2015

Form Approved OMB Number: 2025-0009
Approval Expires: 11/30/2017 **Page 1 of 6**

EPA
United States
Environmental Protection Agency

FORM R

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also Known as Title III of the Superfund Amendments and Reauthorization Act

TRI Facility ID Number

Toxic Chemical, Category, or Generic Name

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank.	**Revision (Enter up to two code(s))**	**Withdrawal (Enter up to two code(s))**

IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1	Are you claiming the toxic chemical identified on page 2 as a trade secret? ☐ Yes (Answer question 2.2; attach substantiation forms) ☐ No (Do not answer 2.2; go to Section 3)	2.2	Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "Yes" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date signed:

SECTION 4. FACILITY IDENTIFICATION

4.1	Facility or Establishment Name	TRI Facility ID Number	
	Physical Street Address	Mailing Address (if different from physical street address)	
	City/County/Tribe/State/ZIP Code	City/State/ZIP Code	Country (Non-US)
4.2	This report contains information for: (Important: Check a or b; check c or d if applicable)	a. ☐ An entire facility b. ☐ Part of a facility c. ☐ A federal facility d. ☐ GOCO	
4.3	Technical Contact Name		Telephone Number (include area code and ext.)
	Email Address		
4.4	Public Contact Name		Telephone Number (include area code and ext.)
	Email Address		

4.5	NAICS Code(s) (6 digits)	Primary a.	b.	c.	d.	e.	f.
4.6	Dun & Bradstreet Number(s) (9 digits)	a.					
		b.					

SECTION 5. Parent Company Information

5.1	Name of U.S. Parent Company (for TRI Reporting purposes)		No U.S. Parent Company (for TRI Reporting purposes) ☐
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

EPA form 9350 -1 (Rev 06/2014) – Previous editions are obsolete.

DO NOT SUBMIT TO EPA

Sample Form R
For Reporting year 2015

Form Approved OMB Number: 2025-0009
Approval Expires: 11/30/2017 **Page 2 of 6**

FORM R **Part II. CHEMICAL-SPECIFIC INFORMATION**	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY
(Important: DO NOT complete this section if you are reporting a mixture component in Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY **(Important: DO NOT complete this section if you completed Section 1.)**

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import If Produce or Import c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity	a. ☐ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging e. ☐ As an impurity	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (Enter two digit code from instruction package.)	

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE

			A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Percent from Stormwater
5.1	Fugitive or non-point air emissions	NA ☐			
5.2	Stack or point air emissions	NA ☐			
5.3	Discharges to receiving streams or water bodies (Enter one name per box)	NA ☐			
	Stream or Water Body Name	Reach Code (optional)			
5.3.1					
5.3.2					
5.3.3					

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box ☐
and indicate the Part II, Section 5.3 page number in this box. ☐ (Example: 1, 2, 3, etc.)

EPA form 9350 -1 (Rev. 06/2014) – Previous editions are obsolete.

*For Dioxin or Dioxin-like compounds, report in grams/year.
**Range Codes: A= 1-10 pounds; B= 11-499 pounds; C= 500-999 pounds.

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FORM R Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE (continued)

		NA	A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)
5.4-5.5	Disposal to land on-site			
5.4.1	Class I Underground Injection Wells	☐		
5.4.2	Class II-V Underground Injection Wells	☐		
5.5.1A	RCRA Subtitle C landfills	☐		
5.5.1B	Other landfills	☐		
5.5.2	Land treatment/application farming	☐		
5.5.3A	RCRA Subtitle C surface impoundments	☐		
5.5.3B	Other surface impoundments	☐		
5.5.4	Other disposal	☐		

SECTION 6. TRANSFER(S) OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs) NA ☐

6.1.___	POTW Name						
POTW Address							
City		County		State		ZIP	

A. Quantity Transferred to this POTW (pounds/year*) (Enter range code** or estimate)	B. Basis of Estimate (Enter code)

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box ☐
and indicate the Part II, Section 6.1 page number in this box. ☐ (Example: 1, 2, 3, etc.)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS NA ☐

6.2.___	Off-Site EPA Identification Number (RCRA ID No.)								
Off-Site Location Name:									
Off-Site Address:									
City		County		State		ZIP		Country (non-US)	

Is this location under control of reporting facility or parent company? ☐ Yes ☐ No

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FORM R Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 6.2. TRANSFERS TO OTHER OFF-SITE LOCATION (CONTINUED)

A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (Enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

6.2____ Off-Site EPA Identification Number (RCRA ID No.)

Off-Site Location Name:

Off-Site Address:

City	County	State	ZIP	Country (non-US)

Is this location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (Enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment method is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (Enter code)	b. Waste Treatment Method(s) Sequence (Enter 3- or 4-character code(s))						c. Waste Treatment Efficiency (Enter 2 character code)
7A.1a	7A.1b		1		2		7A.1c
	3		4		5		
	6		7		8		
7A.2a	7A.2b		1		2		7A.2c
	3		4		5		
	6		7		8		
7A.3a	7A.3b		1		2		7A.3c
	3		4		5		
	6		7		8		
7A.4a	7A.4b		1		2		7A.4c
	3		4		5		
	6		7		8		
7A.5a	7A.5b		1		2		7A.5c
	3		4		5		
	6		7		8		

If additional pages of Part II, Section 6.2/7.A are attached, indicate the total number of pages in this ☐ box and indicate the Part II, Section 6.2/7.A page number in this box. ☐ (Example: 1, 2, 3, etc.)

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*For Dioxin or Dioxin-like compounds, report in grams/year.
**Range Codes: A= 1-10 pounds; B= 11-499 pounds; C= 500-999 pounds.

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Sample Form R
For Reporting year 2015

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FORM R **Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ NA Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods (Enter 3-character code(s))

1 ☐ 2 ☐ 3 ☐

SECTION 7C. ON-SITE RECYLING PROCESSES

☐ NA Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods (Enter 3-character code(s))

1. ☐ 2. ☐ 3. ☐

SECTION 8. SOURCE REDUCTION AND WASTE MANAGEMENT

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1 – 8.7 Production-Related Waste Managed					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1b	Total other on-site disposal or other releases				
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1d	Total other off-site disposal or other releases				
8.2	Quantity used for energy recovery on-site				
8.3	Quantity used for energy recovery off-site				
8.4	Quantity recycled on-site				
8.5	Quantity recycled off-site				
8.6	Quantity treated on-site				
8.7	Quantity treated off-site				
8.8	Non-production-related waste managed***				
8.9	☐ Production ratio or ☐ Activity ratio (select one and enter value to right)				
8.10	Did your facility engage in any newly implemented source reduction activities for this chemical during the reporting year? If so, complete the following section; if not, check NA. **NA** ☐				

	Source Reduction Activities (Enter code(s))	Methods to Identify Activity (Enter code(s))			Estimated annual reduction (Enter code(s)) (optional)
8.10.1		**a.**	**b.**	**c.**	**d.**
8.10.2		**a.**	**b.**	**c.**	**d.**
8.10.3		**a.**	**b.**	**c.**	**d.**
8.10.4		**a.**	**b.**	**c.**	**d.**

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*For Dioxin or Dioxin-like compounds, report in grams/year.

***Includes quantities released to the environment or transferred off-site as a result of remedial actions, catastrophic events, or other one-time events not associated with production processes

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Sample Form R
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FORM R **Part II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 8.11. DISPOSAL OR OTHER RELEASES, SOURCE REDUCTION, AND RECYCLING ACTIVITIES

8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, provide it here.

SECTION 9. MISCELLANEOUS INFORMATION

9.1	If you wish to submit any miscellaneous, additional, or optional information regarding your Form R submission, provide it here.

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APPENDIX M

TRI REPORTING FORMS - FORM A

TOXICS RELEASE INVENTORY

Sample Form A Page 1
For Reporting year 2015

Form Approved OMB Number: 2025-0009
Approval Expires: 11/30/2017

Page 1 of ___

EPA United States Environmental Protection Agency

TOXICS RELEASE INVENTORY FORM A

	TRI Facility ID Number

This section only applies if you are revising or withdrawing a previously submitted form, otherwise leave blank.	Revision (Enter up to two code(s))	Withdrawal (Enter up to two code(s))

IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1	Are you claiming the toxic chemical identified on page 2 as a trade secret? ☐ Yes (Answer question 2.2; attach substantiation forms) ☐ No (Do not answer 2.2; go to Section 3)	2.2	Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "Yes" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that to the best of my knowledge and belief, for each toxic chemical listed in this statement, the annual reportable amount as defined in 40 CFR 372.27(a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.

Name and official title of owner/operator or senior management official:	Signature:	Date signed:

SECTION 4. FACILITY IDENTIFICATION

4.1	Facility or Establishment Name	TRI Facility ID Number	
	Physical Street Address	Mailing Address (if different from physical street address)	
	City/County/Tribe/State/ZIP Code	City/State/ZIP Code	Country (Non-US)
4.2	This report contains information for: (Important: Check c or d if applicable)	c. ☐ A Federal facility	d. ☐ GOCO
4.3	Technical Contact Name		Telephone Number (include area code and ext.)
	Email Address		
4.4	Public Contact Name		Telephone Number (include area code and ext.)
	Email Address		
4.5	NAICS Code(s) (6 digits)	Primary a. / b. / c. / d. / e. / f.	
4.6	Dun & Bradstreet Number(s) (9 digits)	a. / b.	

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of U.S. Parent Company (for TRI Reporting purposes)		No U.S. Parent Company (for TRI Reporting purposes) ☐
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

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Sample Form A Page 2
For Reporting year 2015

Form Approved OMB Number: 2025-0009
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EPA FORM A PART II. CHEMICAL IDENTIFICATION Do not use this form for reporting PBT chemicals, including Dioxin and Dioxin-like Compounds*	TRI Facility ID Number

SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)	
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)	
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)	
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)
SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)	
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

*See the TRI Reporting Forms and Instructions manual for the list of PBT Chemicals (including Dioxin and Dioxin-like Compounds)

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United States Environmental Protection Agency

FORM R Schedule 1

TRI Facility ID Number

PART II. CHEMICAL-SPECIFIC INFORMATION (continued)

SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE

	5.1 NA	5.2 NA	5.3 Discharges to receiving streams or water bodies (Enter data for one stream or water body per box) NA		
	Fugitive or non-point air emissions	Stack or point air emissions	5.3.1	5.3.2	5.3.3
D. Mass (grams) of each compound in the category (1-17) 1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

If additional pages of Section 5.3 are attached, indicate the total number of pages in this box ☐

and indicate the Section 5.3 page number in this box ☐ **(Example: 1, 2, 3, etc.)**

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FORM R Schedule 1

TRI Facility ID Number

PART II. CHEMICAL-SPECIFIC INFORMATION (continued)

SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE

		5.4 – 5.5 Disposal to land on-site							
		5.4.1 NA ☐	**5.4.2** NA ☐	**5.5.1.A** NA ☐	**5.5.1.B** NA ☐	**5.5.2** NA ☐	**5.5.3A** NA ☐	**5.5.3B** NA ☐	**5.5.4** NA ☐
		Class I Underground Injection Wells	Class II-V Underground Injection Wells	RCRA Subtitle C landfills	Other landfills	Land treatment/ application farming	RCRA Subtitle C surface impoundments	Other surface impoundments	Other disposal
C. Mass (grams) of each compound in the category (1-17)	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								
	13								
	14								
	15								
	16								
	17								

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EPA Form 9350-3

Form Approved OMB Number: 2025-0009
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TRI Facility ID Number

FORM R Schedule 1
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)

SECTION 6. TRANSFERS OF DIOXIN AND DIOXIN-LIKE COMPOUNDS IN WASTES TO OFF-SITE LOCATIONS

6.1. DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs) NA ☐

6.1. __	C. Mass (grams) of Each Compound in the Category (1-17)																	
1		2		3		4		5		6		7		8		9		
10		11		12		13		14		15		16		17				

6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS NA ☐

6.2.__	D. Mass (grams) of each compound in the category (1-17)																	
1.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
2.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
3.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
4.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		

6.2.__	D. Mass (grams) of each compound in the category (1-17)																	
1.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
2.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
3.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		
4.	1		2		3		4		5		6		7		8			
9		10		11		12		13		14		15		16		17		

If additional pages of Section 6.1 or 6.2 are attached, indicate the total number of pages in this box ☐

and indicate the Section 6.1 or 6.2 page number in this box ☐ **(Example: 1, 2, 3, etc.)**

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TOXICS RELEASE INVENTORY

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FORM R Schedule 1
PART II. CHEMICAL-SPECIFIC INFORMATION (continued)

SECTIONS 8.1-8.8. WASTE MANAGEMENT QUANTITIES FOR DIOXIN AND DIOXIN-LIKE COMPOUNDS (current year only)

	8.1-8.7 Production-related waste managed										8.8
	8.1a Total on-site disposal to Class 1 Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	8.1b Total other on-site disposal or other releases	8.1c Total off-site disposal to Class 1 Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	8.1d Total other off-site disposal or other releases	8.2 Quantity used for energy recovery on-site	8.3 Quantity used for energy recovery off-site	8.4 Quantity recycled on-site	8.5 Quantity recycled off-site	8.6 Quantity treated on-site	8.7 Quantity treated off-site	Non-production related waste managed*
Column f. Mass (grams) of each compound in the category (1-17)											
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											

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*Includes quantities released to the environment or transferred off-site as a result of remedial actions, catastrophic events, or other one-time events not associated with production processes

EPCRA Reporting Program
Emergency Prevention and Response Section, DNREC
89 Kings Highway
Dover, DE 19901
(302) 739-9405

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is committed to affirmative action, equal opportunity,
and the diversity of its workforce.

Doc. No. 40-04-02/17/01/02