



**Illinois Environmental
Protection Agency**
IEPA/ENV/03-005

**Environmental Quality Systems
1021 North Grand Avenue East
Springfield, Illinois 62706**

**FIFTEENTH ANNUAL
TOXIC CHEMICAL REPORT**



APRIL 2003

This page intentionally left blank.

PREFACE

USEPA ranked Illinois as the 13th largest state in the total pounds of Toxic Release Inventory (TRI) releases in the nation for reporting year 2000 (reporting ranged from under 8000 pounds to over 1 billion pounds annually) under the USEPA's *2000 Toxics Release Inventory Report*.

In Illinois EPA's *Fifteenth Annual Toxic Chemical Report*, for reporting year 2001, the amount of reported releases and transfers of 140.2 million pounds is from the 1,490 reporting facilities (4,576 individual chemical reports). The total figure for 2001 represents 21.9 million pounds (13.5%) less than that reported for 2000. Releases and transfers of 255 different toxic chemicals and chemical categories were reported.

The reports submitted by facilities in the persistent, bioaccumulative and toxic (PBT) category consisted of 20 chemicals and totaled 3.0 million pounds (2.2% of total reported chemicals). Fugitive and stack air emissions of 54.6 million pounds were down by 13.8 million pounds (20.2%) as compared to 2000. Water releases of 7.9 million pounds and on-site land releases of 22.7 million pounds, however have increased by 16.4% and 18.2%, respectively. Off-site transfers to POTWs of 10.5 million pounds have decreased by 10.7% and other off-site transfers of 44.2 million pounds have increased by 3.3%.

A new section on Waste Management Activities is presented in this report. Over 1746 million pounds of chemicals have been managed through energy recovery, recycling, and treatment.

In this fifteenth report, trend analyses continue to be reported for all media using the last five reporting years. In the past years, as in 2001, there has been a general downward trend of total environmental releases and transfers in Illinois even with the additional reporting requirements. We continue to provide the second year of the special trend analysis from 1992 to 2001 (TRI-10). While the data shows that approximately 57.3 million more pounds of releases and transfers have been reported for certain counties in Illinois over this ten-year period, there has been a 56.7 million pound decrease for others.



A handwritten signature in black ink that reads "Renee Cipriano" with a long horizontal flourish extending to the right.

Renee Cipriano, Director

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

Data collection and analysis of the 2001 data was performed in a different manner than in previous years. USEPA provided improved software and an opportunity for facilities to transmit reporting information electronically, which ultimately made the uploading of data into a combined database more expedient and efficient. Analysis of the 2001 data was done using the combined electronic data. Trends analyses were performed using the historical data collected by USEPA and provided on the internet. Additionally, the Illinois's EPA's 2001 data was compared to USEPA's 2001 data.

For the 2001 TRI report, 1,490 unique facilities have provided toxic chemical release information to the Illinois EPA. Since the reporting program mandated by federal law began in 1987, not including 1987, an average of around 1,424 facilities have reported each year, with the actual number ranging between 1,328 and 1,509. In 1989 and 2001, with the changes in reporting requirements, a reflected increase in reporting facilities occurred.

For calendar year 2001, Form R reports comprised 82% of the total reports and Form A, 18%. Over 4,576 individual toxic chemical release reports were submitted by the facilities, showing a total of 140.2 million pounds of releases and transfers. Over 255 different toxic chemicals or chemical compounds were reported. Zinc compounds had the highest reported release and transfer, at 28.2 million pounds, and was the most reported chemical. Nitrate compounds was second highest at 14.2 million pounds.

Facilities with persistent, bioaccumulative and toxic (PBT) chemicals and chemical categories were required to report for the first time in 2000. A total of 3.0 million pounds of PBTs were reported for 2001. This included twenty chemicals (eighteen above zero) and made up 2.2% of the total reported chemicals. The largest amount of PBT chemicals was lead compounds, classified as a PBT chemical in 2001, at 2.5 million pounds, most of which goes to RCRA landfills.

Facilities in Standard Industrial Classification (SIC) Code 4953 (Refuse systems (RCRA Subtitle C) exceeded all other industrial categories with reported releases and transfers of 23.7 million pounds, of which 3.4 million pounds goes to off-site transfer. Electric services (4911) were second at 18.5 million pounds.

Peoria County had the highest amount of total reported releases and transfers at 31.8 million pounds (22.8% of the total reported releases and transfers). Twenty-one facilities reported in Peoria County. Cook County was second at 27.5 million pounds (19.6% of the total reported releases and transfers), with 582 reporting facilities

Decatur in Macon County had the largest amount of total releases of combined fugitive and stack emissions at 5.6 million pounds (10.3% of the total reported releases). The total combined air emissions were at 54.6 million pounds (38.9% of the total reported releases).

Releases to the water totaled 7.9 million pounds (5.7% of the total reported releases and transfers). Only 75 out of 650 possible toxic chemicals are reported in Illinois. Nitrate compounds made up 7.6 million pounds of the total released to the water.

Releases to RCRA Subtitle C landfills for 22 chemicals from 7 facilities totaled 22.3 million pounds (15.9 % of the total reported releases and transfers). Zinc compounds made up 15.7 million pounds.

Other on-site land releases totaled 22.7 million pounds (16.2% of the total releases and transfers). Only 31 chemicals are reported and zinc compounds made up 15.7 million pounds, followed by manganese compounds at 2.7 million pounds.

Offsite transfers to POTWs show 99 chemicals. A total of 10.5 million pounds (7.5% of total reported releases and transfers) are sent to POTWs. Nitrate compounds made up the most at 5.8 million pounds, followed by ammonia and sulfuric acid at 1.0 million pounds each.

Other types of off-site transfers included 184 chemicals and total 44.2 million pounds (31.6% of total reported releases and transfers). Zinc compounds was the largest amount at 12.0 million pounds, followed by manganese compounds at 4.6 million pounds.

Waste management activities were reported for over 200 chemicals. Over 1746 million pounds of chemicals were managed through energy recovery, recycling and treatment. N-Hexane was the most managed at 689 million pounds and 1,2-dichloroethane second at 378 million pounds. Waste management activities for PBT chemicals totaled 11.2 million pounds.

Two different types of trend analyses were performed in this *Fifteenth Annual Toxic Chemical Report*. The first trend analysis includes comparison of the last five years to the base year of 1988. In the past years, there has been a general downward trend (except as stated below) of combined environmental releases and transfers in Illinois, even with the additional reporting requirements. This downward trend continues with a 13.5% decrease for the year 2001.

Peoria County had the largest five-year summary of the total reported releases and transfers at 133.1 million pounds, followed by Cook County at 117.2 million pounds.

Cook County had the largest five-year summary of the total number of reporting facilities at 2687, followed by Dupage County at 431. An increase in the number of facilities was evident due to the change in reporting requirements in 1998 and 2001.

Hydrochloric Acid was the largest five-year summary of total air releases (fugitive and stack) at 89.8 million pounds, followed by n-hexane at 44.0 million pounds.

Decatur, in Macon County, experienced the highest five-year summary of total air releases at 37.2 million pounds, followed by Danville, in Vermillion County, at 25.6 million pounds. Nitrate compounds in water had the largest five-year summary and totaled in the 28.7 million

pounds, followed by ammonia at 235 thousand pounds. Water releases increased during this study period.

On-site land releases for manganese compounds totaled 32.4 million pounds as the highest five-year summary, followed by zinc compounds at 15.8 million pounds. On-site land releases increased during this study period.

Total transfers to POTW included nitrate compounds, once again, as the largest amount transferred for a five-year summary at 26.7 million pounds, followed by ammonia at 7.4 million pounds.

Other off-site transfers had zinc compounds as the largest amount transferred for a five-year summary at 80.0 million pounds, followed by manganese compounds at 21.9 million pounds.

The second trend analysis is a special trend analysis of a current ten-year cycle that was reported for the first time last year, using the 1991-2000 time frame (TRI-10). We continue to provide this analysis, but have adjusted to the current time frame of 1992 to 2001. While the data shows that approximately a total of 57.3 million more pounds of releases have been reported for 41 counties in Illinois over this ten-year period, there has been a total 56.7 million pounds decrease for 48 other counties. Peoria County experienced the largest increase at 28.4 million pounds and Douglas County had the largest decrease at 23.3 million pounds.

CHANGE IN DATA COLLECTION AND ANALYSIS

In previous years (1988-2000), Illinois EPA maintained the facilities reported TRI data in a computer mainframe system. Although facilities were required to report modifications to their previous year's report, the data in the mainframe was "frozen" for data analysis. In addition, in order to perform meaningful trend analyses of total toxic chemical releases, including offsite transfers, the Illinois EPA utilized information reported by facilities for toxic chemicals which have been reportable in the same form for each of the years 1988-2000. This approach was called "normalizing". Offsite transfers for recycle or energy recovery, reportable for 1991 and later years were not considered. Previous yearly and trend analysis were performed on this frozen and normalized data.

Data collection for the 2001 data was done in a different manner for this *Fifteenth Annual Toxic Chemical Report*. In 2001, USEPA made software available to facilities to transmit reporting information electronically via computer discs. Although a similar software package was provided in earlier years, this current version performed better, was user friendly, and more readily available. Although reporting could still occur by paper, over 80 percent of the facilities chose the electronic route. For the next year, USEPA is looking into expanding this to include reporting via the internet.

Due to the resources needed for manual data entry, the Illinois EPA chose to electronically upload the 2001 data, which was ultimately more expedient and efficient. The forms submitted on paper

were manually entered. There were time constraints and technical difficulties in combining this data into the mainframe historical database. Data analysis of the 2001 data was performed using the one-year database. Historical data for trends analysis were downloaded from USEPA's database. The data sets were not "frozen" and reflected current information (as of January 9, 2003) submitted by facilities. Any discrepancies to previous reporting years were corrected in this report. However, the "normalization" approach mentioned above could not be performed. In addition, there are some minor differences in the way the data is analyzed this for this *Fifteenth Annual Toxic Chemical Report*.

CURRENT AND PAST YEAR (S) HIGHLIGHTS

Table 1 shows the total release and transfer for each media from the 1999 and 2000 report and Table 2 show the differences between year 2000 and the current year's 2001 report. The historical data have been updated to reflect current information. The tables show the total pounds and the percent changes for each media.

Figures 1 and 2 show the total releases and transfers for each media using the data above.

Table 1

MEDIA	1999 (pounds)	2000 (pounds)	DIFFERENCE (%)
Air Releases	85786128	68484330	-20.2%
Water Releases	6709810	6854570	2.2%
Onsite Land Releases	17665124	19238673	8.9%
Offsite Transfers to POTW	13629029	11775842	-13.6%
Other Offsite Transfers	39439595	42812938	8.6%
Total Releases and Transfers	176390492	162089248	-8.1%

Figure 1

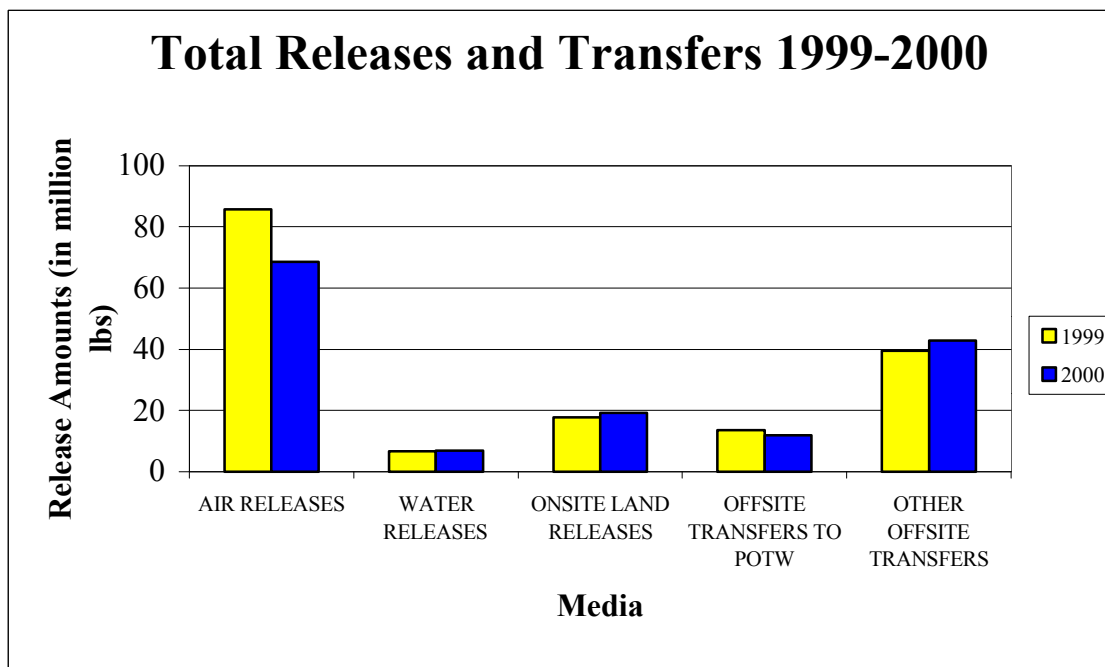


Table 2

MEDIA	2000 (pounds)	2001 (pounds)	DIFFERENCE (%)
Air Releases	68484330	54652141	-20.2%
Water Releases	6854570	7979354	16.4%
Onsite Land Releases	19238673	22740576	18.2%
Offsite Transfers to POTW	11775842	10521503	-10.7%
Other Offsite Transfers	42812938	44244451	3.3%
Total Releases and Transfers	162089248	140153038	-13.5%

Figure 2

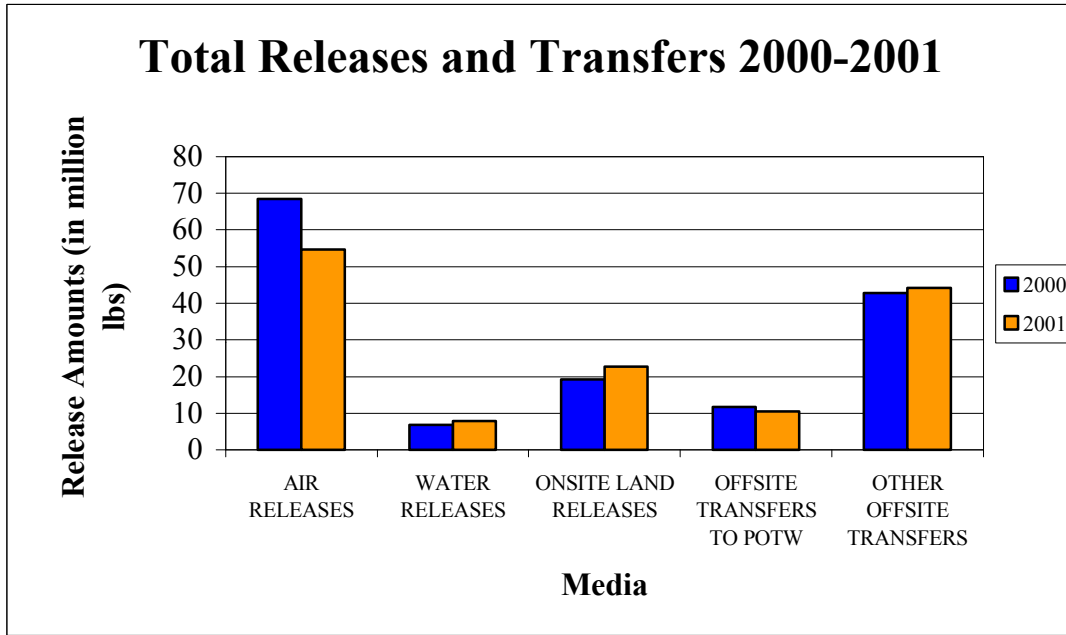


TABLE OF CONTENTS

Introduction	1
Emergency Planning and Community Right-to-Know Act	1
Section 313 (Annual Toxic Chemical Release Reporting)	1
Summary of Form R	1
Summary of Form A	2
Reporting Ranges	2
Explanation of Terms	2
Facilities and Chemicals Covered	5
Compliance	5
Limitations on Use of Information	6
Chemical Hazard Assessment	6
Toxicology	7
Analysis of Form R and Form A data for Calendar Year 2001	9
Releases and Transfers- Calendar Year 2001	10
Table 3 - Facility Releases- Top 20 Facilities	11
Map 1- Total Releases and Transfers- Top 20 Facilities by Zip Code	12
Toxic Chemical Summary	13
Table 4- Chemical Releases- Top 20 Chemicals	14
PBT Chemicals Summary	15
Table 5- PBT Chemicals 2000-2001	16
Figure 3- Total Releases and Transfers PBT Chemicals 2000-2001	17
Table 6- PBT Chemical Releases	18
Standard Industrial Classification (SIC) Summary	19
Table 7- Top 20 SIC Categories Reporting Since 1987	19
Table 8- SIC Code Releases- Top 20 SIC Codes	20
County Summary	21
Table 9- Releases By County- Top 20 Counties	22
Air Release Summary	23
Table 10- Top 20 Air Emissions	23
Map 2- Total Air Releases- Top 20 Zip Codes	24
Water Release Summary	25
Table 11- Total Water Releases- Top 20 Chemicals	25
UIC Release Summary	26
Table 12- Total UIC Releases	26
RCRA Subtitle C Landfill Release Summary	27

Table 13- Total RCRA Releases	27
Other Onsite Land Release Summary	28
Table 14- Total Onsite Land Releases- Top 20 Chemicals	28
Offsite Transfer to POTW Summary	29
Table 15- Total POTW Transfers- Top 20 Chemicals.....	29
Other Offsite Transfers Summary.....	30
Table 16- Total Other Offsite Transfers- Top 20 Chemicals	30
Total Releases and Transfers summary.....	31
Table 17- Total Releases and Transfers- Top 20 Chemicals	31
Table 18- Distribution of Total Releases and Transfers by Media of Release	32
Figure 4- Total Releases and Transfers Information	32
Figure 5- Total Releases and Transfers 1988-2001	33
Waste Management Activities.....	33
Table 19- Waste Management Activities- Top 20 Chemicals	35
Table 20- Waste Management Activities- PBT Chemicals	36
Analysis of Form R and Form A Data for Trend Analysis and Special Trend	
Analysis	37
Trend Analysis	38
County Releases and Transfers Trend.....	38
Table 21- County Releases and Transfers- Top 20 Counties.....	38
Table 22- County Releases and Transfers- All Counties	39,40
Table 23- Number of Reporting Facilities- Top 20 Counties	41
Figure 6- Number of Reporting Facilities 1988-2001	42
Air Release Trend	43
Table 24- Air Releases Trend- Top 20 Chemicals	43
Figure 7- Total Air Emissions 1988-2001	44
Air Release Trend By Zip Code.....	45
Table 25- Total Air Emissions- Top 20 Zip Codes.....	45
Water Release Trend	46
Table 26- Water releases Trend- Top 20 Chemicals	46
Figure 8- Total Water Releases 1988-2001	47
Onsite Land Release Trend	48
Table 27- Total Onsite Land Releases Trend- Top 20 Chemicals.....	48
Figure 9- Total Onsite Land Releases 1988-2001	49
Offsite Transfer to POTWs Trend.....	50
Table 28- Offsite Transfer to POTWs Trend- Top 20 Chemicals	50
Figure 10- Offsite Transfer to POTWs 1988-2001	51
Other Off-Site Transfer Trend.....	52
Table 29 - Other Off-Site Transfers Trend	52
Figure 11- Other Off-Site Transfers 1988-2001.....	53

Special Trend Analysis, 1992-2001	54
Release Analysis By County.....	54
Table 30- Counties With Increase in Releases and Transfers.....	55
Table 31- Counties With Decrease in Releases and Transfers	56
Illinois EPA Regulatory Programs	57
Utilization Of Form R Data	61
Changes in Reporting Requirements	63

APPENDICES

Appendix A - Form R.....	64
Appendix B - Toxicology References	70
Appendix C - Chemical Reference	71

THIS PAGE INTENTIONALLY LEFT BLANK

INTRODUCTION

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

Congress adopted Title III as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Title III is known as the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). EPCRA established programs to provide the public with important information on the hazardous chemicals in their communities, as well as providing emergency planning and notification requirements which help protect the public in the event of a release of hazardous chemicals.

SECTION 313 (Annual Toxic Chemical Release Reporting)

Section 313 of EPCRA requires annual reports to be filed by certain companies which release any of over 650 listed chemicals and compounds to the environment. This reporting covers routine releases and transfers that occur as a result of normal business operations within a calendar year, and non-routine or accidental releases.

In 1987, the Illinois General Assembly amended the Illinois Environmental Protection Act to provide a coordinated state implementation of Section 313. This amendment also established an orderly procedure for the public to access this information. Under the Act, the Illinois Environmental Protection Agency (Illinois EPA) is charged with the administration of Section 313, which requires industry to report annually to the USEPA and Illinois EPA via the toxic chemical release form (Form R and Form A).

Section 313 includes all routine and non-routine releases of toxic chemicals to the air, water and land, as well as transfers of wastes to off-site treatment, storage and disposal facilities. The information reported is not necessarily derived from actual monitoring or measurements, but may be estimated from published emission factors, material balance calculations, or engineering calculations.

SUMMARY OF FORM R

A complete copy of Form R is enclosed as Appendix A. In general, the information to be provided by the reporting facility can be summarized as follows:

- The name, location and type of business
- Whether the chemical is manufactured, processed, or otherwise used and the general categories of use of the chemical
- An estimate of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year
- Waste treatment/disposal methods and efficiency of methods for each waste stream
- Quantity of the chemical entering each environmental medium (air, water, land) annually
- Source reduction and recycling activities for the toxic chemical
- A certification by a senior official that the report is complete and accurate

SUMMARY OF FORM A

Form A Certification Statement, called Form A, was established in 1994. This form is based on an alternate threshold for facilities with small amounts of a chemical. The Form A serves to certify that a facility is not subject to Form R reporting for a specific toxic chemical. Like the Form R, the Form A consists of two parts, but only includes two pages.

- Facility identification information
- Chemical information

Since 1998, the Form A may be used to report multiple chemicals.

REPORTING RANGES

In some areas of Form R, reporting ranges are allowed using a designated code as follows:

A = 1-10 pounds

B = 11-499 pounds

C = 500-999 pounds

When a reporting range is provided, the numerical value of the upper end of the range is used in this report. In contrast, USEPA uses the mid-range to analyze the data.

EXPLANATION OF TERMS

In order to better understand the form and references made to the information reported, selected terms have been defined as follows:

"Chemical Abstracts Service Registry Number (CAS #)" - A numeric designation assigned by the American Chemical Society's Chemical Abstracts Service which uniquely identifies a chemical or chemical compound.

"Persistent Bioaccumulative Toxic (PBT) Chemical" – PBT pollutants are chemicals that are toxic, persist in the environment and bioaccumulate in food chains and, thus, pose risks to human health and ecosystems. The biggest concerns about PBTs are that they transfer rather easily among air, water, and land, and span boundaries of programs, geography, and generations.

"Persistence" – A chemical's persistence refers to the length of time the chemical can exist in the environment before being destroyed by natural processes. A common measure of persistence in an environmental medium is the chemical's half-life, or the amount of time necessary for half of the chemical present to be eliminated from the medium.

"Bioaccumulation" – Bioaccumulation is a general term that is used to describe the process by which organisms may accumulate chemical substances in their bodies. Bioaccumulation can occur in plants, animals and humans.

“Toxicity” – EPCRA 313 provides toxicity criteria to be used to determine whether chemicals should be added or deleted from the list of toxic chemicals.

Release

“Air Emissions” – Releases to air are reported either as point source or fugitive emissions. Point source emissions also referred to as stack emissions, occur through confined air streams, such as stacks, vents, ducts, or pipes. Fugitive emissions are all releases to air that are not released through a confined air stream. Fugitive emissions include equipment leaks, evaporative losses from surface impoundments and spills, and releases from building ventilation systems.

“Surface Water Discharge” – Releases to water include discharges to streams, rivers, lakes, oceans, and other bodies of water. This includes releases from contained sources, such as industrial process outflow pipes or open trenches. Releases due to runoff, including storm water runoff, are also reportable to TRI.

“Underground Injection” - Underground injection is the subsurface emplacement of fluids through wells. TRI chemicals associated with manufacturing, the petroleum industry, mining, commercial and service industries, and federal and municipal government-related activities may be injected into Class I, II, III, IV, or V wells, if they do not endanger underground sources of drinking water, public health, or the environment.

“RCRA Subtitle C Landfill”- The amount of toxic chemicals released to RCRA Subtitle C landfills.

“Other On-site Land Releases” – On-site releases to land occur within the boundaries of the reporting facility. Releases to land include disposal of toxic chemical in landfills (in which wastes are buried), land treatment/application farming (in which a waste containing a listed chemical is applied to or incorporated into soil), surface impoundments (which are uncovered holding areas used to volatilize and/or settle waste materials), and other land disposal methods (such as waste piles) or releases to land (such as spills or leak). Beginning with the 1996 reporting year, facilities separately report amounts released to RCRA subtitle C landfills from amounts released to other on-site landfills.

"SIC Code" - Standard Industrial Classification (SIC) Code - A two, three or four digit number code designed by the federal Office of Management and Budget in its "SIC Manual", which identifies an industry or industrial grouping. For example, the two-digit code "28" refers to the major group, "Chemicals and Allied Products," the three-digit code "281" refers to the industry group, "Industrial Inorganic Chemicals," and the four-digit code "2812" refers to the specific industry, "Alkalies and Chlorine." The four-digit code identifies a specific facility rather than company. TRI facilities may report up to six four-digit SIC codes that describe their operations.

Transfers

“Off-site Transfers to Publicly Owned Treatment Works (POTW)” – A POTW is a wastewater treatment facility that is owned by a state or municipality. Wastewaters are transferred through pipes or sewers to a POTW.

“Transfer to Off-Site Locations” – Transfer of toxic chemicals to a facility that is geographically or physically separate from the facility reporting under TRI. Chemicals reported as transferred are sent for the purposes of recycling, energy recovery, treatment, or disposal.

Waste Management Activities

“Released On and Off-site” – This is the total quantity of the toxic chemical that was released to the environment or disposed of at the facility (directly discharged to air, land, and water, and injected underground) or sent off-site for disposal.

“Released to the Environment due to one-time event(s)” (remedial or accidental release) - This amount is referred to as non-production related wastes and is the quantity released to the environment or sent off-site for recycling, energy recovery, treatment or disposal due to one-time events not associated with routine production practices. Such events include catastrophic events, such as accidental releases, as well as remedial actions.

“Recycled On-site” – This is the quantity of the toxic chemical recovered at the facility and made available for further use.

“Recycled Off-site” – This is the quantity of the toxic chemical that left the facility boundary for recycling, not the amount recovered at the off-site location.

“Energy Recovery On-site” – This is the quantity of toxic chemical that was combusted in some form of energy recovery device, such as a furnace, kiln, or boiler. There should be a heating value high enough to sustain combustion.

“Energy Recovery Off-site” - This is the quantity of toxic chemical that left the facility boundary for energy recovery, not the amount combusted at the off-site location.

“Treated On-site” – This is the quantity of toxic chemical destroyed in on-site waste treatment operations, not the amount that entered a treatment operation.

“Treated Off-site” – This is the quantity that left the facility boundary and was sent to POTWs or other off-site locations for treatment, not the amount that was destroyed at the off-site location(s).

“Wastestream” - An ongoing generation of waste which results from an industrial process or originates in an industrial area and which can be consistently described by the same physical and chemical characteristics.

FACILITIES AND CHEMICALS COVERED

Facilities subject to reporting under Section 313 are those that conduct manufacturing operations within the SIC codes identified below and have 10 or more full-time employees.

YEAR	SIC CODE	CATEGORY
1987	20 – 39	Original industries
1994		Federal facilities
1997 (new industries)	10 (except 1011, 1081, 1094)	Metal mining
	12 (except 1241)	Coal mining
	4911, 4931, 4939	Electrical utilities that combust coal and/or oil for the purpose of generating power
	4953	RCRA subtitle C hazardous waste treatment and disposal facilities
	5169	Chemical wholesale distributors
	5171	Petroleum terminals and bulk storage facilities
	7389	Solvent recovery services

In addition, for all but certain persistent bioaccumulative toxic (PBT) chemicals, the facility manufactures or processes more than 25, 000 pounds or otherwise uses more than 10, 000 pounds of any listed chemical during the calendar year. There are now more than 650 toxic chemicals and toxic chemical categories on the list of chemicals that must be reported under TRI.

For the 2000 reporting year, the reporting criteria were changed for certain PBT chemicals. TRI was expanded to include new PBT chemicals and reporting thresholds were lowered for both the newly added PBT chemicals and certain PBT chemicals already on the list. Therefore, USEPA established thresholds lower than the 25, 000 and 10,000 pounds. Also, in 2000, EPA added vanadium compounds to the TRI list and changed the reporting qualifier for vanadium.

For 2001, EPA classified lead and lead compounds as PBT chemicals and lowered their reporting thresholds. The lower reporting threshold applies to all lead except when lead is contained in a stainless steel, brass or bronze alloy. In addition, de minimus levels, activity thresholds, and alternate thresholds for select compounds have been changed.

The facilities that meet the above conditions are required to submit a Form R (or Form A) to both the Illinois EPA and the USEPA by July 1 of the following year. A completed Form R (or Form A) must be submitted for each chemical manufactured, processed, or otherwise used at each covered facility.

COMPLIANCE

In order to manage and process all of the data being supplied by industry under Section 313, the Illinois EPA developed a system of quality control. Obvious errors in the submissions were considered to be either "entry" or "technical" errors.

"Entry" errors, such as pages missing from the Form R or a submittal on a wrong form, prohibited

the data from being entered into the Agency's computer database. The Illinois EPA contacts the facility with a letter or by phone asking the owner or operator to correct the noted deficiency.

"Technical" errors are handled much the same way; however, the Agency is able to initially enter the data in the computer for later edits once the facility provides the correct information. It has been noted that numerous "technical" errors are made by facilities in the areas of CAS numbers and chemical name spellings.

LIMITATIONS ON USE OF INFORMATION

TRI reports reflect releases, transfers and waste management activities of chemicals, not exposures of the public to those chemicals. Release estimates alone are not sufficient to determine exposure or to calculate potential adverse effects on human health and the environment. Although additional information is necessary to assess exposure and risk, TRI data can be used to identify areas of potential concern. TRI, in conjunction with other information, can be used as a starting point in evaluating exposures that may result from releases and other waste management activities of toxic chemicals. The determination of potential risk depends upon many factors, including the toxicity of the chemical, the fate of the chemical after it is released, the locality of the release, and the human or other populations that are exposed to the chemical after its release.

Even with the expanded industry coverage, TRI does not address all sources of release and other waste management activities. Although TRI is successful in capturing information on a significant portion of toxic chemicals currently being used by covered industry sectors, it does not cover all chemicals or all sectors. In addition, facilities that do not meet the TRI threshold levels are not required to report. TRI data does not include toxic emissions from mobile sources, nor releases of pesticides, volatile organic compounds, and fertilizers or from many other non-industrial sources. Furthermore, facilities report estimated data and the program does not mandate that they monitor their releases. Various estimation techniques are used when monitoring data are not available. Variations between facilities can result from the use of different estimation methods.

The TRI data summarized in this report reflect chemical releases and waste management activities that occur in a given calendar year. Patterns of release and waste management activities can change dramatically from one year to the next. Thus, it is important to recognize that current facility activities may be different from those reported for 2000 or prior years.

CHEMICAL HAZARD ASSESSMENT

Having the data now available under EPCRA is only the first step in assessing the potential chemical hazards in Illinois. In order to comprehend this information and begin to realize how it may impact communities, other factors must be considered. The chemical properties and associated toxicology of the chemicals of concern should be considered.

TOXICOLOGY

In order to assess the significance of a chemical release of any kind, it is necessary to discuss some fundamentals of toxicology. Above all, it is necessary to appreciate the most basic concept of toxicology, "the dose makes the poison."

This fact indicates that all substances are poisons, even common items like table salt and sugar, if the dose is high enough. On the other hand, some substances are poisonous at relatively low doses. Many of the chemicals addressed by EPCRA Section 313 fall into this category.

Even with relatively poisonous substances no harm can occur unless there has been exposure to the substance (the dose). If there is no exposure, no matter how potent the poison, there can be no toxic response. For most types of chemical exposures, the body has defense mechanisms to protect against or repair the damage done by the chemical. As long as the protection and repair mechanisms are able to keep up with the effects of the chemical, no adverse effect is seen.

Once this threshold is exceeded, however, the magnitude of the response will be in direct proportion to the magnitude of the exposure. Eventually, if the exposure is long enough or severe enough, the chemical causes failure of some organ or organ system, resulting in incapacitation and ultimately death of the organism. This points out two concepts in toxicology, the concept of a threshold of toxicity and the concept of a target organ of a chemical.

For certain types of toxic actions, it is generally accepted that, in theory, any amount of toxic, even the smallest, has an effect. Certain types of cancer and reproductive effects fall into this "no threshold" category. Specifically, it is thought that this theory pertains to damage of genetic material by chemicals, by biological agents such as certain viruses, or by physical agents such as ionizing radiation.

Repair mechanisms are known to exist for genetic material, and damage often occurs in areas of the genetic material having no expressed function. Nevertheless, the theory holds that even one unrepaired injury to a key area of the genetic material can result in a mutated cell. If this cell continues to divide, it will produce a colony of genetically different cells. The consequences of this type of damage can be expressed as a birth defect, a mutation, a tumor, or the damage can cause a "silent mutation" in which there is no obvious effect (if the damage occurs in an area of the genetic material having no expressed function).

Since it is impossible to detect a single injury or even small numbers of injuries to the genetic material at this time, scientific studies to determine whether a chemical can cause genetic damage are designed to expose laboratory test organisms to high doses of the chemical in order to maximize the chances of seeing a response. For cancer tests, the results of positive tests at the high doses (doses which are almost always much larger than expected levels of human exposures) are then extrapolated downward to doses which are relevant to expected human exposures.

These extrapolations are usually expressed as the extra risk of contracting cancer above the "background" cancer incidence due to exposure to low levels of the chemical, such as one extra chance in 100,000 or one in a million. An extra risk of one chance in a hundred thousand or one in one million is generally considered insignificant, since there exists for everyone a similarly

small, unavoidable risk of death due to natural disasters such as floods, tornadoes, lightning, etc.

These concepts of:

- "the dose makes the poison";
- the requirement for a route of exposure;
- there may be specific target organs for a chemical;
- thresholds exist for some responses; and
- there are insignificant risk levels for those chemicals for which no threshold is thought to exist;

are concepts which may be used as part of the regulatory control strategy for releases of toxic chemicals to the environment.

As a result of spills, derailments, past disposal practices, industrial accidents, illegal dumping, etc., environmental, public safety and health agencies must on occasion respond to unplanned chemical releases to the environment. In fact, accidental conditions that result in major releases of toxic chemicals to the environment were the driving force behind passage of EPCRA's Community Right-to-Know requirements.

In cases of chemical emergencies it is critical to know the chemical, physical and toxicological properties of the chemical(s) released so that appropriate counter-measures can be undertaken as soon as possible. Knowledge of all important routes of exposure, any critical target organs, any especially sensitive populations, threshold and acutely toxic levels, and antidotes are all important in planning what to do should an emergency arise.

Even in cases that are not of an emergency nature, such as some spill cleanups, illegal dumping or past disposal practices, it is important to know the toxicological properties of the chemicals involved. Relevant routes of exposure, sensitive organs or populations, threshold levels or levels of insignificant exposure, and the potential fate of the chemicals in all environmental media are important subjects that must be addressed in assessing the amount of cleanup which may be necessary in the incident. In some cases, where similar-acting chemicals are involved, special care must be taken to account for additive effects on sensitive organs.

Information on the toxicological aspects of many chemicals of concern and on toxicology in general can be obtained from the references listed in Appendix B.

Many references are available which explain the properties and usage of various chemicals. An abbreviated listing of these references is presented in Appendix D

ANALYSIS OF FORM R AND FORM A DATA FOR CALENDAR YEAR 2001

BASIS

The time period covered for the 2001 TRI data release is reporting year 2001. A reporting year is the same as a calendar year. The 2001 data were required to be submitted to USEPA and the Illinois EPA by July 1, 2001. For the current calendar year analysis, all valid reports for chemicals reportable in 2001 are included in the release and transfer totals. This includes the new industries that were later required to report (new industrial categories beginning with the 1998 report), PBTs (reportable for the first time in 2000), and chemicals, which may be reportable in a different form than when they were first listed. For this reason, and due to other discrepancies in the way the data is queried, release totals in this section may differ from previous years and those given for 2001 in the "Trend Analysis, 1988-2001" section

RELEASES AND TRANSFERS

FACILITY SUMMARY

For calendar year 2001, 1,490 facilities provided information under the TRI program to Illinois EPA. Of this number, 1,287 facilities submitted toxic chemical release reports (a total of 4,576 reports) totaling 140.2 million pounds of total releases and transfers. The remaining 203 reported in error, were below reporting thresholds, provided duplicative Form R and Form A reports, or were missing required information.

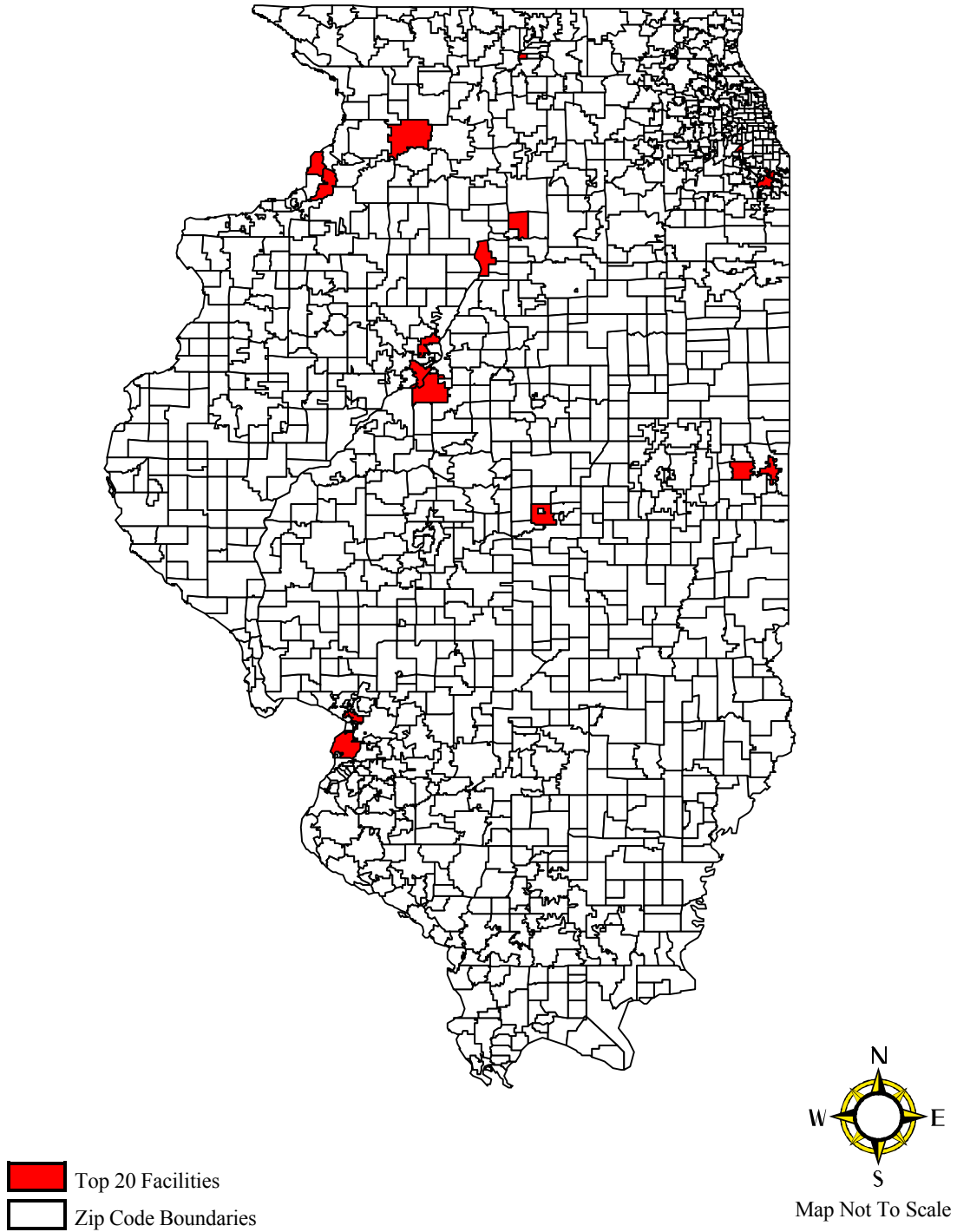
Table 3 lists the facilities reporting the top 20 total release and transfer amounts. The off-site transfer amounts do not include transfers for recycle, or energy recovery. The top 20 facilities reported releases and transfers of 71.0 million pounds (50.7% of the total reported releases and transfers).

Map 1 shows geographically the location of the top 20 facilities in Illinois.

By comparison, in 2000, nationwide, there were 23,484 facilities submitting 91,513 reports totaling 7.10 billion pounds of total releases and transfers. Also in 2000, Illinois was ranked as the 13th largest state for TRI releases.

	FACILITY NAME	CITY	FACILITY RELEASES (POUNDS)						OFFSITE TRANSFERS (#)		TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
			FUGITIVE AIR	STACK AIR	WATER	UIC	RCRA	OTHER ONSITE LAND	POTW	OFFSITE		
1	PEORIA DISPOSAL COMPANY #1	PEORIA	2	3105	1	0	19602662	0	8	4	19605782	10
2	KEYSTONE STEEL & WIRE COMPANY	PEORIA	21357	42914	1284	0	0	0	0	7691002	7756557	6
3	AMEREN ENERGY GENERATING COFFEEN	COFFEEN	11	4295910	1097	0	0	0	0	410878	4707896	17
4	TEEPAK LLC.	DANVILLE	120600	3399000	0	0	0	0	45400	0	3565000	2
5	ACME STEEL COMPANY - RIVERDALE PLANT	RIVERDALE	27515	5385	2027	0	0	0	8107	3375284	3418318	6
6	IBP INC.	JOSLIN	30529	18830	3201497	0	0	0	0	32973	3283829	7
7	NORTHWESTERN STEEL AND WIRE COMPANY	STERLING	23290	4575	9140	0	2753000	0	0	61230	2851235	6
8	AES- EDWARDS C/O CILCO	BARTONVILLE	0	2718213	0	0	0	0	0	0	2718213	12
9	AFFILIATED METALS COMPANY	GRANITE CITY	680	192	0	0	0	0	978527	1723995	2703394	1
10	VERMILION POWER STATION	OAKWOOD	499	2416873	8408	0	0	0	0	0	2425780	10
11	CARUS CHEMICAL COMPANY	LASALLE	519	5734	2299	0	0	0	110	2156740	2165401	5
12	CORN PRODUCTS ARGO PLANT	BEDFORD PARK	653009	800306	0	0	0	0	530999	15592	1999906	8
13	LTV STEEL COMPANY	CHICAGO	16984	0	0	0	0	0	63604	1844400	1924988	20
14	POWERTON GENERATING STATION	PEKIN	31	562842	1160	0	0	0	0	1345452	1909485	14
15	ENVIRITE OF ILLINOIS, INC.	HARVEY	98	98	0	0	0	0	20301	1819773	1840270	8
16	WILLIAMS ETHANOL SERVICES, INC.	PEKIN	953	83695	1694676	0	0	0	0	33043	1812367	16
17	ARCHER DANIELS MIDLAND EAST PLANT	DECATUR	90459	1718721	0	0	0	0	46	0	1809226	1
18	BEHR SPECIALTY METALS INC	ROCKFORD	0	65	0	0	0	0	0	1519468	1519533	2
19	3M COMPANY - CORDOVA	CORDOVA	36390	267257	1934	0	0	0	0	1195466	1501047	35
20	OLIN CORPORATION - ZONE 17 FACILITY	EAST ALTON	20034	45973	1834	0	0	0	0	1431747	1499588	8
TOP 20 FACILITIES TOTAL			1042960	16389686	4925356	0	22355662	0	1647102	24657048	71017814	194
TOP 20 PERCENTAGE OVER ALL FACILITIES			11.8%	35.9%	61.7%	0.0%	100.0%	0.0%	15.7%	55.7%	50.7%	4.2%
ALL REPORTED FACILITIES TOTAL			8807166	45665359	7982181	11679	22365694	374882	10521503	44244452	140153038	4576

Total Releases and Transfers Top 20 Facilities by Zip Code



TOXIC CHEMICAL SUMMARY

Releases and transfers of 255 different toxic chemicals and chemical categories during 2001 were reported by facilities. Table 4 lists release and transfer information for the 20 chemicals with the highest reported total amounts. The top 20 chemicals were reported at 118.3 million pounds (84.4% of the total reported releases and transfers).

Zinc compounds were the largest amount reported with 28.2 million pounds and nitrate compounds second with 14.2 million pounds. Zinc compounds were the chemicals most reported by 221 facilities, followed by lead from 212 facilities.

By comparison, nationwide in 2000, there are over 650 different TRI chemicals required to be reported, zinc compounds ranged from 255 to 762 million pounds, and nitrate compounds 12 to 285 million pounds.

	CAS #	CHEMICAL NAME	CHEMICAL RELEASES						OFFSITE TRANSFERS (#)		TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
			FUGITIVE AIR	STACK AIR	WATER	UIC	RCRA	OTHER ONSITE LAND	POTW	OFFSITE		
1	N982	ZINC COMPOUNDS	136779	222927	14816	327	15767011	52	58372	12032711	28232995	221
2	N511	NITRATE COMPOUNDS	3469	927	7667387	0	0	300104	5887467	368966	14228320	101
3	7647010	HYDROCHLORIC ACID (1995 AND AFTER "ACID	26256	13641926	0	0	0	0	1009	4142	13673333	66
4	110543	N-HEXANE	2147314	5513273	78	0	0	0	5927	29038	7695630	59
5	N450	MANGANESE COMPOUNDS	43704	51475	25590	0	2786358	0	26398	4591215	7524740	3
6	7664939	SULFURIC ACID - (1994 AND AFTER "ACID AEROSOLS"	2574	3804070	0	0	0	0	1008537	1694395	6509576	51
7	7664417	AMMONIA	438810	1717387	53730	4121	0	68672	1037633	2583439	5903792	131
8	67561	METHANOL	847716	1279926	27150	0	0	928	701833	1152983	4010536	1
9	78933	METHYL ETHYL KETONE	250990	591247	49	0	500	0	469713	2266189	3578688	55
10	75150	CARBON DISULFIDE	43455	3332760	1352	0	0	0	45409	15	3422991	6
11	108883	TOLUENE	1070009	1154427	1107	0	499	309	8875	674635	2909861	172
12	N040	BARIUM COMPOUNDS	1476	152712	71297	0	0	0	672	2488132	2714289	60
13	100425	STYRENE	428814	1313141	108	0	0	0	990	900134	2643187	68
14	7664393	HYDROGEN FLUORIDE	16588	2204761	1	0	0	0	222886	65019	2509255	40
15	N420	LEAD COMPOUNDS	6133	18577	4674	0	1500000	17	2404	950353	2482158	195
16	7440508	COPPER	16884	34119	4770	0	0	0	8170	2285395	2349338	159
17	N230	CERTAIN GLYCOL ETHERS	530768	1232961	1499	0	18200	0	184323	275221	2242972	159
18	1330207	XYLENE (MIXED ISOMERS)	469759	1235298	353	0	499	1059	2907	436482	2146357	154
19	N090	CHROMIUM COMPOUNDS (EXCEPT FOR CHROMITE	7166	14212	2551	0	438614	0	12022	1395412	1869977	111
20	7440666	ZINC (FUME OR DUST)	27295	147889	10	0	0	0	2580	1494999	1672773	22
TOP 20 CHEMICALS TOTAL			6515959	37664015	7876522	4448	20511681	371141	9688127	35688875	118320768	1834
TOP 20 PERCENTAGE OVER ALL			73.7%	82.2%	98.7%	38.1%	91.7%	98.9%	92.1%	80.7%	84.4%	38.8%
ALL REPORTED CHEMICALS TOTAL			8846931	45805210	7982181	11679	22365703	375380	10521503	44244451	140153038	4729

PERSISTENT, BIOACCUMULATIVE, TOXIC (PBT) CHEMICALS SUMMARY

For the reporting year 2000, TRI was expanded to include certain new persistent bioaccumulative toxic (PBT) chemicals. In addition, reporting thresholds were lowered for both the newly added PBT chemicals and certain PBT chemical already on the TRI list. Prior to the changes for the PBT chemicals, the reporting thresholds for all chemicals had been 25,000 pounds for manufacturing or processing the chemical and 10,000 pounds if otherwise used. Because PBT chemicals persist and bioaccumulate in the environment, they have the potential to cause greater exposure to humans and the environment over a longer period of time, making even small quantities of these chemicals a concern. Therefore EPA established lower thresholds for these chemicals. For those chemicals that are persistent and bioaccumulative, a threshold of 100 pounds manufactured, processed, or otherwise used was established. For the subset of PBT chemicals highly persistent and highly bioaccumulative, a threshold of 10 pounds was established. In addition, because dioxins are highly bioaccumulative, but are generally produced in extremely small amounts, the threshold for dioxin and dioxin-like compounds was set at 01. grams.

There are seven categories of PBT chemicals, which include

- dioxin and dioxin-like compounds (17 chemicals)
- lead and lead compounds (2 chemicals)
- mercury and mercury compounds (2 chemicals)
- polycyclic aromatic compounds (21 chemicals)
- polychlorinated biphenyls (1 chemical category)
- pesticides (8 chemical)
- other PBT chemicals (4 chemicals)

In Illinois, Table 5 shows, for the first year of reporting in 2000, eighteen PBT chemicals (sixteen above zero) were reported at 163 thousand pounds. In 2001 lead and lead compounds were included as PBT chemicals and the number for the twenty PBT chemicals (eighteen above zero), were reported at 3.0 million pounds. The PBT chemicals increased from 0.11% to 2.2% of the total reported toxic chemicals due to the addition of lead and lead compounds.

PBT CHEMICALS 2000-2001				
	CAS #	CHEMICAL NAME	2000 TOTAL RELEASES & TRANSFERS	2001 TOTAL RELEASES & TRANSFERS
1	309002	ALDRIN	1.50	1.08
2	191242	BENZO(G,H,I)PERYLENE	4006.90	18818.39
3	57749	CHLORDANE	31.00	28.79
4	N150	DIOXIN AND DIOXIN-LIKE COMPOUNDS *	88.30	55.67
5	76448	HEPTACHLOR	214.00	8.24
6	118741	HEXACHLOROBENZENE	25.50	30.93
7	465736	ISODRIN	0.00	0.00
8	7439921	LEAD	**	425499
9	N420	LEAD COMPOUNDS	**	2482158.00
10	7439976	MERCURY	1532.7	1234.88
11	N458	MERCURY COMPOUNDS	59638.00	66279.69
12	72435	METHOXYCHLOR	29.00	30.60
13	29082744	OCTOCHLOROSTYRENE	0.00	0.00
14	40487421	PENDIMETHALIN	90.00	1345.75
15	608935	PENTACHLOROBENZENE	78.00	70.59
16	1336363	POLYCHLORINATED BIPHENYLS	648.00	190.50
17	N590	POLYCYCLIC AROMATIC COMPOUNDS	96729.00	45837.78
18	79947	TETRABROMOBISPHENOL A	285.00	240.00
19	8001352	TOXAPHENE	9.00	0.92
20	1582098	TRIFLURALIN	34.00	1426.20
TOTAL REPORTED PBT CHEMICALS			163357.86	3043205.29

* Grams

** Lead was not a PBT chemical in 2000 is therefore excluded from the totals for 2000

Note: Some number differences may be due to database query methods and rounding

Figure 3 shows the change in PBT chemicals during the last two years.

Figure3

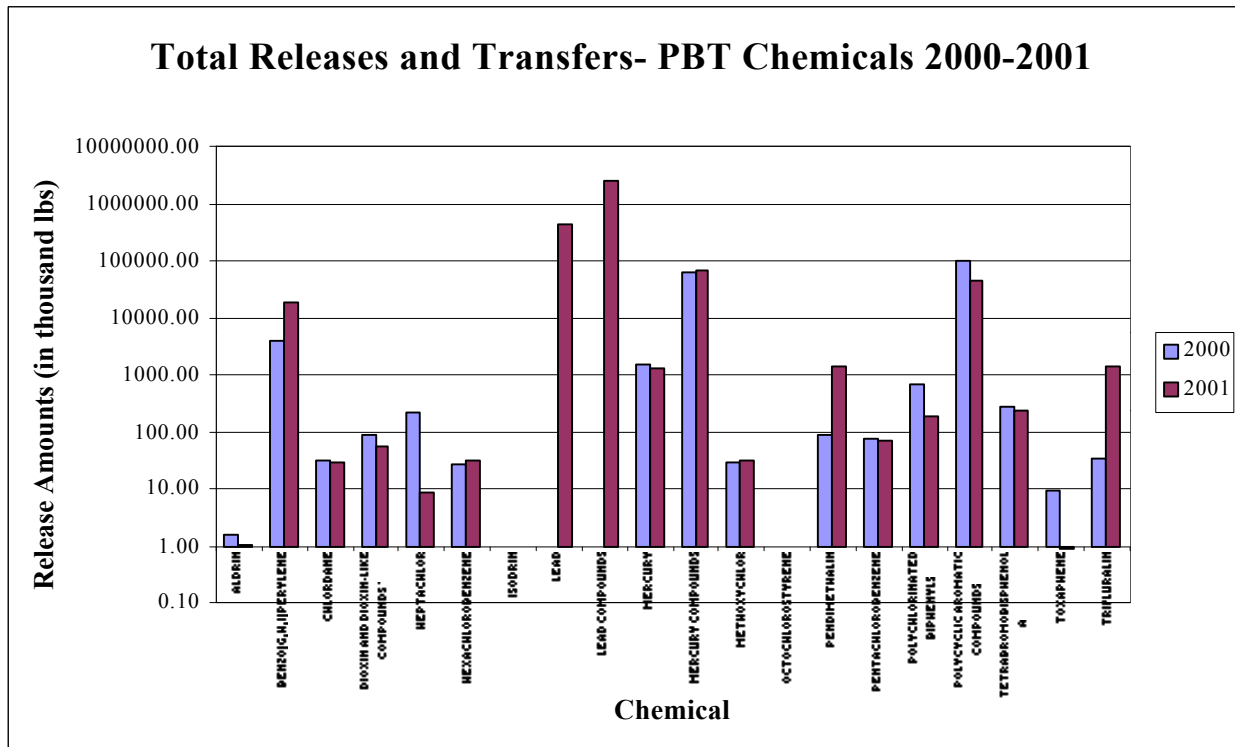


Table 6 lists Illinois EPA’s 2001 PBT totals for each media. The largest amount of PBT chemicals released is lead compounds at 2.5 million pounds, most of which (1.5 million pounds) goes to RCRA landfills.

Nationwide, production-related wastes for PBT chemicals totaled 71.6 million pounds in 2000.

	CAS #	CHEMICAL NAME	PBT CHEMICAL RELEASES (POUNDS, UNLESS NOTED)						OFFSITE TRANSFERS (#)		TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
			FUGITIVE AIR	STACK AIR	WATER	UIC	RCRA	OTHER ONSITE LAND	POTW	OFFSITE		
1	309002	ALDRIN	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.06	1.08	1
2	191242	BENZO(G,H,I)PERYLENE	232.45	79.94	25.00	0.00	0.00	0.00	13.00	18468.01	18818.39	21
3	57749	CHLORDANE	0.54	0.07	0.00	0.00	0.00	0.00	0.00	28.18	28.79	1
4	N150	DIOXIN AND DIOXIN-LIKE COMPOUNDS (grams)*	0.00	21.07	0.04	0.00	0.00	0.00	0.00	34.56	55.67	31
5	76448	HEPTACHLOR	0.15	0.02	0.00	0.00	0.00	0.00	0.00	8.07	8.24	2
6	118741	HEXACHLOROBENZENE	0.15	0.02	0.00	0.00	0.00	0.00	0.00	30.76	30.93	2
7	465736	ISODRIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
8	7439921	LEAD	8361	12757	722	0	11	0	999	402649	425499	212
9	N420	LEAD COMPOUNDS	6133	18577	4674	0	1500000	17	2404	950353	2482158	195
10	7439976	MERCURY	5.89	1079.68	2.20	0.00	0.00	0.00	5.42	141.69	1234.88	12
11	N458	MERCURY COMPOUNDS	28.45	4484.40	12.99	0.00	263.00	0.00	4.03	61486.82	66279.69	51
12	72435	METHOXYCHLOR	0.57	0.07	0.00	0.00	0.00	0.00	0.00	29.96	30.60	1
13	29082744	OCTOCHLOROSTYRENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
14	40487421	PENDIMETHALIN	40.82	3.02	0.00	0.00	0.00	0.00	0.00	1301.91	1345.75	1
15	608935	PENTACHLORO BENZENE	0.09	0.01	0.00	0.00	0.00	0.00	0.00	70.49	70.59	2
16	1336363	POLYCHLORINATED BIPHENYLS	0.01	0.00	0.00	0.00	0.00	0.00	0.00	190.49	190.50	3
17	N590	POLYCYCLIC AROMATIC COMPOUNDS	7371.58	9642.51	25.10	0.00	2112.00	0.00	53.80	26632.80	45837.78	47
18	79947	TETRABROMO BISPHENOL A	10.00	229.00	1.00	0.00	0.00	0.00	0.00	0.00	240.00	3
19	8001352	TOXAPHENE	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.92	1
20	1582098	TRIFLURALIN	26.62	3.24	0.00	0.00	0.00	0.00	0.00	1396.34	1426.20	1

STANDARD INDUSTRIAL CLASSIFICATION (SIC) SUMMARY

Facilities in 259 individual four-digit SIC codes have reported toxic chemical releases and transfers for calendar year 2001. Table 7 shows that seventeen of the top 20 SIC categories have been reporting since 1987.

Table 8 summarizes the information for the 20 SIC codes reporting the highest release and transfer totals. The largest amount of reported total releases and transfers is for the Refuse systems (RCRA subtitle c) category (SIC 4953) at 23.7 million pounds. Within this category, most of this amount goes to RCRA landfills at 19.6 million pounds. The top 20 SIC codes totaled 116.7 million pounds (83.4% of the total reported releases and transfers). The Paints, varnishes, lacquers, enamels and allied product category (SIC 2851) had the largest number of facilities (269) reporting.

Table 7

	CAS #	INDUSTRIAL CATEGORY	REPORTING REQUIREMENT
1	4953	<i>Refuse systems (RCRA subtitle C)</i>	<i>reporting since 1997 (new industry)</i>
2	4911	<i>Electric services</i>	<i>reporting since 1997 (new industry)</i>
3	3312	Steel works, blast furnaces (including coke ovens) and rolling mills	reporting since 1987 (orig industry)
4	2821	Plastic materials, synthetic resins, and non-vulcanizeable elastomers	reporting since 1987 (orig industry)
5	2075	Soybean oil mills	reporting since 1987 (orig industry)
6	2869	Industrial organic chemicals	reporting since 1987 (orig industry)
7	3471	Electroplating, plating, polishing, anodizing, and coloring	reporting since 1987 (orig industry)
8	2011	Meat packing plants	reporting since 1987 (orig industry)
9	3089	Plastic products	reporting since 1987 (orig industry)
10	3341	Secondary smelting and refining of nonferrous metals	reporting since 1987 (orig industry)
11	2046	Wet corn milling	reporting since 1987 (orig industry)
12	2819	Industrial inorganic chemicals	reporting since 1987 (orig industry)
13	2911	Petroleum refining	reporting since 1987 (orig industry)
14	3316	Cold-rolled steel sheet, strip, and bars	reporting since 1987 (orig industry)
15	2865	Cyclic organic crudes and intermediates, and organic dyes and pigments	reporting since 1987 (orig industry)
16	4931	<i>Electric and other services combined</i>	<i>reporting since 1997 (new industry)</i>
17	3366	Copper foundries	reporting since 1987 (orig industry)
18	3086	Plastic foam products	reporting since 1987 (orig industry)
19	2851	Paints, varnishes, lacquers, enamels, and allied products	reporting since 1987 (orig industry)
20	2873	Nitrogenous fertilizers	reporting since 1987 (orig industry)

	CAS #	INDUSTRIAL CATEGORY	SIC CODE RELEASES (POUNDS)						OFFSITE TRANSFERS (#)		TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
			FUGITIVE AIR	STACK AIR	WATER	UIC	RCRA	OTHER ONSITE LAND	POTW	OFFSITE		
1	4953	Refuse systems (RCRA subtitle C)	35925	20874	22	0	19602667	0	680592	3459214	23799294	142
2	4911	Electric services	3991	15539713	93404	0	370	0	0	2906022	18543500	240
3	3312	Steel works, blast furnaces (including coke ovens) and rolling mills	239909	344325	190088	0	2753000	0	240351	13096851	16864524	135
4	2821	Plastic materials, synthetic resins, and non-vulcanizeable elastomers	310229	3162864	144384	0	0	0	68088	3527339	7212904	263
5	2075	Soybean oil mills	1311152	5432785	2325	0	0	0	4625	1188	6752075	19
6	2869	Industrial organic chemicals	406061	1264577	1707398	0	0	0	1333499	773884	5485419	161
7	3471	Electroplating, plating, polishing, anodizing, and coloring	222543	169734	1137	0	0	0	2714533	1570329	4678276	255
8	2011	Meat packing plants	90258	18830	3948864	0	0	302625	20493	35236	4416306	12
9	3089	Plastic products	320970	3765900	5	0	0	0	45443	178005	4310323	46
10	3341	Secondary smelting and refining of nonferrous metals	59679	166408	2089	0	0	0	3494	3651145	3882815	56
11	2046	Wet corn milling	717524	1548493	24356	0	0	0	1125913	231785	3648071	38
12	2819	Industrial inorganic chemicals	19757	247353	6330	0	0	0	477001	2387978	3138418	36
13	2911	Petroleum refining	568965	768094	1395316	0	0	5969	0	120621	2858966	111
14	3316	Cold-rolled steel sheet, strip, and bars	3539	13833	120499	327	0	0	978527	1727749	2844474	14
15	2865	Cyclic organic crudes and intermediates, and organic dyes and pigments	97341	384446	59100	0	0	0	483100	695923	1719910	79
16	4931	Electric and other services combined	5	1706722	2396	0	0	0	0	0	1709123	29
17	3366	Copper foundries	1534	54920	11	0	0	0	61	1260919	1317445	11
18	3086	Plastic foam products	138746	1059952	0	0	0	0	0	36175	1234873	28
19	2851	Paints, varnishes, lacquers, enamels, and allied products	164948	177119	0	0	0	0	10395	858752	1211214	269
20	2873	Nitrogenous fertilizers	9861	1090665	70075	0	0	0	0	0	1170601	9
TOP 20 SIC CODES			4722937	36937607	7767799	327	22356037	308594	8186113	36519115	116798529	1953
TOP 20 PERCENTAGE OVER ALL			53.4%	80.6%	97.3%	2.8%	100.0%	82.2%	77.8%	82.6%	83.4%	41.4%
ALL REPORTED SIC CODES			8846931	45805210	7982181	11679	22365703	375380	10521503	44206614	140115201	4715

COUNTY SUMMARY

Table 9 presents the 20 counties with the highest reporting total releases and transfers for 2001. Peoria County had the largest amount of total releases and transfers at 31.8 million pounds. The top 20 counties total 124.3 million pounds (89.8% of the total reported releases and transfers). Although Cook County was second with total releases and transfers at 27.5 million pounds, it had the largest number of total facility reports at 582 (Peoria at 21).

		RELEASE BY COUNTY (POUNDS)						OFFSITE TRANSFERS (#)		TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
		FUGITIVE AIR	STACK AIR	WATER	UIC	RCRA	OTHER ONSITE LAND	POTW	OFFSITE		
1	PEORIA	92430	4013352	14505	0	19602662	0	202879	7964947	31890774	21
2	COOK	2269154	4081543	10556	11352	5747	0	5345389	15782121	27505863	582
3	MACON	848394	4787953	24398	0	64	0	714860	2118897	8494566	1
4	MADISON	340698	1690854	564663	0	0	0	1054454	3739640	7390308	32
5	VERMILLION	518510	6578427	10852	0	0	0	48275	200135	7356199	20
6	WILL	277308	2227171	1019566	0	0	3187	706889	1063580	5297701	56
7	ROCK ISLAND	97412	533107	3203461	0	0	0	21712	1239232	5094924	24
8	MONTGOMERY	8233	4343839	2350	0	0	0	0	414296	4768718	5
9	TAZEWELL	88217	825795	1817520	0	0	0	0	1447547	4179079	13
10	LASALLE	127067	1239222	142979	0	0	0	840	2100255	3610362	22
11	ST. CLAIR	118432	890108	637	0	0	0	993415	1530002	3532594	27
12	WHITESIDE	75287	130215	9140	0	2753000	0	32	64495	3032169	17
13	WINNEBAGO	130573	758180	164	0	0	0	448541	964425	2301882	76
14	OGLE	771306	564242	90	0	0	0	57	267725	1603420	14
15	GRUNDY	99058	1407921	6465	0	0	0	0	36143	1549587	11
16	ADAMS	143801	1326982	2207	0	0	0	4988	0	1477978	21
17	CRAWFORD	420573	282411	133710	0	0	5969	5	537817	1380486	5
18	CHRISTIAN	509	304014	501	0	0	0	999	1039669	1345692	4
19	DUPAGE	137892	554190	0	0	0	0	179773	428985	1300839	102
20	MORGAN	12576	1286273	3124	0	0	0	489	0	1302462	5
TOP 20 COUNTIES TOTAL		6577429	37825798	6966887	11352	22361473	9156	9723597	40939911	124415603	1058
TOP 20 PERCENTAGE		64.0%	77.1%	85.7%	97.2%	100.0%	0.8%	92.7%	93.3%	89.8%	89.8%
ALL REPORTED COUNTIES		8846931	45805210	7982181	11679	22365703	375380	10521503	44244451	140153038	1490

Note: Some number differences may be due to database query methods and rounding

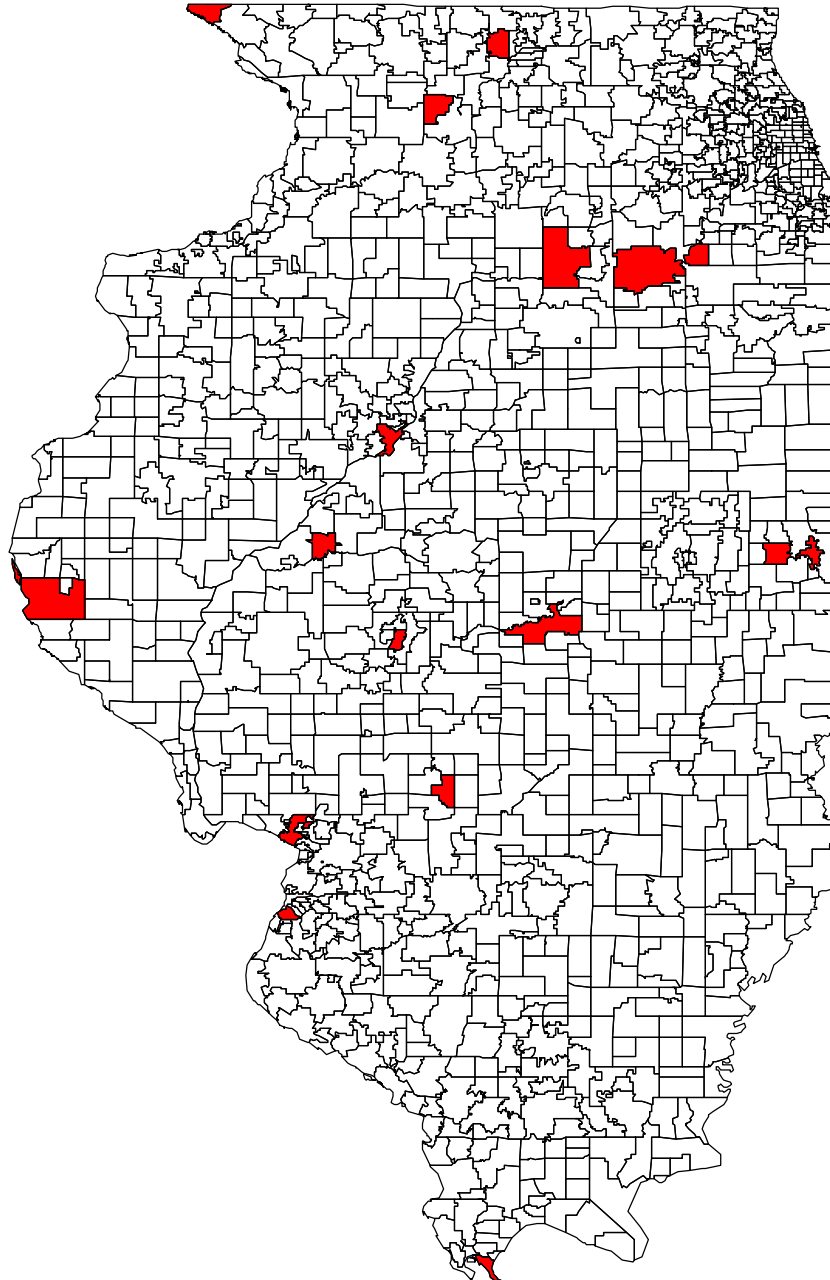
AIR RELEASE SUMMARY



Air emissions for calendar year 2001 in the 20 ZIP code areas with the highest reported totals are summarized in Table 10. Decatur had the largest total fugitive and stack release of 5.6 million pounds; Danville was second largest with 4.5 million pounds. Stack releases make up 84% of the total air emissions (for the top 20 facilities stack releases are about 89% of total). The top 20 zip code areas reported 37.0 million pounds (67.8% of the total reported releases in air emissions). Map 2 shows geographically the location of the top 20 zip code areas in Illinois. Air emissions total 38.9% of all reported releases and transfers in Illinois. Nationwide, there were 1,904 million pounds of air releases in 2000.

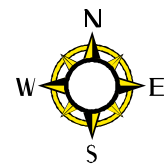
Table 10

	ZIP CODE	COUNTY	CITY	TOP 20 AIR EMISSIONS (POUNDS)			
				FUGITIVE AIR	STACK AIR	TOTAL RELEASES	TOTAL REPORTS
1	62521	MACON	DECATUR	848241	4756138	5604379	107
2	61832	VERMILION	DANVILLE	447548	4059263	4506811	36
3	62017	MONTGOMERY	COFFEEN	11	4295910	4295921	17
4	61607	PEORIA	BARTONVILLE	0	2718213	2718213	12
5	61858	VERMILION	OAKWOOD	499	2416873	2417372	10
6	60601	COOK	CHICAGO	590619	1382478	1973097	540
7	60499	COOK	BEDFORD PARK	693938	1120009	1813947	102
8	60450	GRUNDY	MORRIS	99058	1407921	1506979	69
9	62301	ADAMS	QUINCY	143801	1336601	1480402	45
10	62655	MORGAN	MEREDOSIA	2335	1286273	1288608	32
11	62002	MADISON	ALTON	43	1132232	1132276	22
12	61602	PEORIA	PEORIA	89412	1012908	1102320	51
13	61025	JO DAVIESS	EAST DUBUQUE	7666	1072028	1079694	8
14	62703	SANGAMON	SPRINGFIELD	1	985944	985945	13
15	62914	ALEXANDER	CAIRO	403596	522667	926263	7
16	61350	LASALLE	OTTAWA	80927	830348	911275	11
17	62206	ST. CLAIR	SAUGET	84663	752709	837372	145
18	61101	WINNEBAGO	ROCKFORD	105280	719389	824668	144
19	60410	WILL	CHANNAHON	139928	682299	822227	95
20	61054	OGLE	MOUNT MORRIS	577771	229941	807712	7
TOP 20 ZIP CODES (AIR)				4315337	32720142	37035479	1473
TOP 20 PERCENTAGE OVER ALL				48.8%	71.4%	67.8%	31.1%
ALL REPORTED FACILITIES (AIR)				8846931	45805210	54652141	4739

Total Air Releases- Top 20 Zip Codes



-  Top 20 Zip Codes
-  Zip Code Boundaries



Map Not To Scale

WATER RELEASE SUMMARY

Table 11 shows the top 20 chemicals released to the water in Illinois which is 7.9 million pounds (99.8% of the total amount reported released to water) in 2001. Only 75 out of 650 possible toxic chemicals are reported as being released. Nitrate compounds make up the largest amount at 7.6 million pounds (nearly 96% of the total), followed by barium at 71,297 pounds. Water releases total 5.7% of all reported releases and transfers in Illinois.

Nationwide, there were 260 million pounds of water releases in 2000.

Table 11

	CAS #	CHEMICAL NAME	TOTAL WATER RELEASES (POUNDS)
1	N511	NITRATE COMPOUNDS	7667387
2	N040	BARIUM COMPOUNDS	71297
3	7664417	AMMONIA	53730
4	N770	VANADIUM COMPOUNDS	32407
5	67561	METHANOL	27150
6	N450	MANGANESE COMPOUNDS	25590
7	N982	ZINC COMPOUNDS	14816
8	7632000	SODIUM NITRITE	14515
9	111422	DIETHANOLAMINE	11006
10	107211	ETHYLENE GLYCOL	9540
11	N100	COPPER COMPOUNDS	5597
12	149304	2-MERCAPTO BENZOTHAZOLE	5110
13	7440508	COPPER	4770
14	N420	LEAD COMPOUNDS	4674
15	7782505	CHLORINE	3869
16	7723140	PHOSPHORUS (YELLOW OR WHITE)	2998
17	7439965	MANGANESE	2961
18	7440020	NICKEL	2707
19	50000	FORMALDEHYDE	2414
20	75058	ACETONITRILE	2414
TOP 20 WATER RELEASES			7964952
TOP 20 PERCENTAGE OVER ALL REPORTED RELEASES			99.8%
ALL REPORTED WATER RELEASES			7979354

Note: Some number differences may be due to database query methods and rounding

UIC RELEASE SUMMARY

Three chemicals making up 11,679 pounds were released to underground injection wells from two facilities in Illinois in 2001 as shown in Table 12. UIC releases were negligible and only totaled .008% of all reported releases and transfers in Illinois.

Nationwide, there were 277 million pounds of UIC releases in 2000.

Table 12

	CAS #	CHEMICAL NAME	TOTAL UIC RELEASES (POUNDS)
1	111422	DIETHANOLAMINE	7231
2	7664417	AMMONIA	4121
3	N982	ZINC COMPOUNDS	327
ALL REPORTED UIC RELEASES			11679
UIC RELEASES OVER ALL			100.0%
ALL REPORTED UIC RELEASES			11679

Note: Some number differences may be due to database query methods and rounding

RCRA SUBTITLE C LANDFILL RELEASE SUMMARY

Table 13 shows releases to subtitle C landfills for twenty-two chemicals resulting in 22.3 millions pounds (100% of the total reported releases and transfers to RCRA landfills) from seven facilities in 2001, as shown in Table 13. Zinc compounds accounted for 70% of the total RCRA releases. RCRA releases totaled 15.9% of all reported total releases and transfers in Illinois.

Nationwide, there were 204 million pounds of subtitle C releases in 2000.

Table 13

	CAS #	CHEMICAL NAME	TOTAL RCRA RELEASES (POUNDS)
1	N982	ZINC COMPOUNDS	15767011
2	N450	MANGANESE COMPOUNDS	2786358
3	N420	LEAD COMPOUNDS	1500000
4	N078	CADMIUM COMPOUNDS	1338000
5	N090	CHROMIUM COMPOUNDS (EXCEPT FOR CHROMITE ORE MINED IN THE TRANSVAAL REG	438614
6	N100	COPPER COMPOUNDS	268450
7	N495	NICKEL COMPOUNDS	222002
8	N230	CERTAIN GLYCOL ETHERS	18200
9	111422	DIETHANOLAMINE	18200
10	85018	PHENANTHRENE	3630
11	N590	POLYCYCLIC AROMATIC COMPOUNDS	2112
12	N020	ARSENIC COMPOUNDS	778
13	78933	METHYL ETHYL KETONE	500
14	108883	TOLUENE	499
15	1330207	XYLENE (MIXED ISOMERS)	499
16	127184	TETRACHLOROETHYLENE	499
17	N458	MERCURY COMPOUNDS	263
18	7782492	SELENIUM	63
19	7439921	LEAD	11
20	108101	METHYL ISOBUTYL KETONE	10
21	108952	PHENOL	3
22	N096	COBALT COMPOUNDS	1
TOP 22 RCRA RELEASES			22365703
TOP 22 PERCENTAGE OVER ALL			100.0%
ALL REPORTED RCRA RELEASES			22365703

Note: Some number differences may be due to database query methods and rounding

OTHER ON-SITE LAND RELEASE SUMMARY

Table 14 shows the top 20 chemicals released to on-site land in Illinois which is 15.7 million pounds (69.3% of the total amount released to on-site land) in 2001. Only 31 out of 650 possible chemicals are reported as being released. Zinc compounds make up the highest amount at 15.7 million pounds, followed by manganese compounds at 2.7 million pounds. On-site land releases totaled 16.2% of all reported releases and transfers in Illinois.

Nationwide, there were 4,050 million pounds of onsite land releases in 2000.

Table 14

	CAS #	CHEMICAL NAME	TOTAL OTHER ON-SITE LAND RELEASES (POUNDS)
1	N982	ZINC COMPOUNDS	15767063
2	N450	MANGANESE COMPOUNDS	2786358
3	N420	LEAD COMPOUNDS	1500017
4	N078	CADMIUM COMPOUNDS	1338000
5	N090	CHROMIUM COMPOUNDS	438614
6	N511	NITRATE COMPOUNDS	300104
7	N100	COPPER COMPOUNDS	268450
8	N495	NICKEL COMPOUNDS	222002
9	7664417	AMMONIA	68174
10	111422	DIETHANOLAMINE	18202
11	N230	CERTAIN GLYCOL ETHERS	18200
12	85018	PHENANTHRENE	3630
13	N590	POLYCYCLIC AROMATIC COMPOUNDS	2112
14	7440020	NICKEL	2062
15	71432	BENZENE	1945
16	1330207	XYLENE (MIXED ISOMERS)	1558
17	67561	METHANOL	928
18	108883	TOLUENE	808
19	N020	ARSENIC COMPOUNDS	778
20	78933	METHYL ETHYL KETONE	500
TOP 20 ONSITE LAND RELEASES			15767563
TOP 20 PERCENTAGE OVER ALL REPORTED RELEASES			69.3%
ALL REPORTED ONSITE LAND RELEASES			22740576

Note: Some number differences may be due to database query methods and rounding

OFF-SITE TRANSFER TO POTW SUMMARY

Table 15 shows the top 20 chemicals transferred to POTWs in Illinois which is 10.3 million pounds (98.6% of the total amount released to POTWs) in 2001. Only 104 out of 650 possible chemicals are reported as being released in 2001. Nitrate compounds made up most of the transfers with 5.8 million pounds, followed by ammonia at 1.0 million pounds and sulfuric acid at 1.0 million pounds. POTW transfers totaled 7.5% of all reported releases and transfers in Illinois.

Nationwide, there were 343 million pounds of transfers to POTWs in 2000.

Table 15

	CAS #	CHEMICAL NAME	TOTAL OFF-SITE POTW TRANSFERS (POUNDS)
1	N511	NITRATE COMPOUNDS	5887467
2	7664417	AMMONIA	1037633
3	7664939	SULFURIC ACID - (1994 AND AFTER "ACID AEF	1008537
4	67561	METHANOL	701833
5	78933	METHYL ETHYL KETONE	469713
6	108952	PHENOL	273015
7	7664393	HYDROGEN FLUORIDE	222886
8	N230	CERTAIN GLYCOL ETHERS	184323
9	7632000	SODIUM NITRITE	97093
10	62533	ANILINE	79035
11	78922	SEC-BUTYL ALCOHOL	75185
12	7697372	NITRIC ACID	59956
13	N982	ZINC COMPOUNDS	58372
14	108101	METHYL ISOBUTYL KETONE	50367
15	75150	CARBON DISULFIDE	45409
16	107211	ETHYLENE GLYCOL	34436
17	N450	MANGANESE COMPOUNDS	26398
18	71363	N-BUTYL ALCOHOL	25854
19	N495	NICKEL COMPOUNDS	16709
20	75070	ACETALDEHYDE	15206
TOP 20 POTW TRANSFERS			10369427
TOP 20 PERCENTAGE OVER ALL TRANSFERS			98.6%
ALL REPORTED POTW TRANSFERS			10521503

Note: Some number differences may be due to database query methods and rounding

OTHER OFF-SITE TRANSFERS SUMMARY

Table 16 shows the top 20 chemicals transferred to off-site in Illinois which is 39.0 million pounds (88.3% of the total amount transferred off-site) in 2001. Only 184 out of 650 possible chemicals are reported as being transferred in 2001. Zinc compounds make up most of the transfers at 12.0 million pounds, followed by manganese compounds at 4.6 million pounds. Other off-site transfers totaled 31.6% of all reported releases and transfers in Illinois.

Nationwide, there were 598 million pounds of off-site transfers (to disposal) in 2000. This number cannot be compared to the Illinois data because the USEPA database includes in this category other off-site transfers such as wastewater treatment for non-POTWs, underground injection, landfill/surface impoundments, land treatment, and other land disposal.

Table 16

	CAS #	CHEMICAL NAME	TOTAL OTHER OFF-SITE TRANSFERS (POUNDS)
1	N982	ZINC COMPOUNDS	12032711
2	N450	MANGANESE COMPOUNDS	4591215
3	7664417	AMMONIA	2583439
4	N040	BARIUM COMPOUNDS	2488132
5	7440508	COPPER	2285395
6	78933	METHYL ETHYL KETONE	2266189
7	7664939	SULFURIC ACID (1994 AND AFTER "ACID AEROSOLS" ONLY)	1694395
8	7440666	ZINC (FUME OR DUST)	1494999
9	N090	CHROMIUM COMPOUNDS	1395412
10	67561	METHANOL	1152983
11	N100	COPPER COMPOUNDS	1090897
12	N420	LEAD COMPOUNDS	950353
13	7697372	NITRIC ACID	919065
14	100425	STYRENE	900134
15	108883	TOLUENE	674635
16	7429905	ALUMINUM (FUME OR DUST)	628211
17	N495	NICKEL COMPOUNDS	558073
18	60344	METHYL HYDRAZINE	505912
19	1330207	XYLENE (MIXED ISOMERS)	436482
20	7440020	NICKEL	413140
TOP 20 POTW TRANSFERS			39061772
TOP 20 PERCENTAGE OVER ALL TRANSFERS			88.3%
ALL REPORTED POTW TRANSFERS			44244451

Note: Some number differences may be due to database query methods and rounding

TOTAL RELEASE AND TRANSFER SUMMARY

Table 17 shows the top 20 chemicals released or transferred in Illinois, which is 118.3 million pounds (84.4% of the total amount released or transferred) in 2001. Zinc Compounds make up the largest amount released or transferred at 28.2 million pounds, followed by nitrate compounds at 14.2 million pounds.

Nationwide, there were 4,050 million pounds of releases and transfers in 2000.

Table 17

	CAS #	CHEMICAL NAME	TOTAL RELEASES & TRANSFERS	TOTAL REPORTS
1	N982	ZINC COMPOUNDS	28232995	221
2	N511	NITRATE COMPOUNDS	14228320	101
3	7647010	HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	13673333	66
4	110543	N-HEXANE	7695630	59
5	N450	MANGANESE COMPOUNDS	7524740	3
6	7664939	SULFURIC ACID - (1994 AND AFTER "ACID AEROSOLS" ONLY)	6509576	51
7	7664417	AMMONIA	5903792	131
8	67561	METHANOL	4010536	1
9	78933	METHYL ETHYL KETONE	3578688	55
10	75150	CARBON DISULFIDE	3422991	6
11	108883	TOLUENE	2909861	172
12	N040	BARIUM COMPOUNDS	2714289	60
13	100425	STYRENE	2643187	68
14	7664393	HYDROGEN FLUORIDE	2509255	40
15	N420	LEAD COMPOUNDS	2482158	195
16	7440508	COPPER	2349338	159
17	N230	CERTAIN GLYCOL ETHERS	2242972	159
18	1330207	XYLENE (MIXED ISOMERS)	2146357	154
19	N090	CHROMIUM COMPOUNDS (EXCEPT FOR CHROMITE ORE MINED IN THE TRANSVAAL REG	1869977	111
20	7440666	ZINC (FUME OR DUST)	1672773	22
TOP 20 RELEASES AND TRANSFERS			118320768	1834
TOP 20 PERCENTAGE OVER ALL			84.4%	39.5%
ALL REPORTED RELEASES AND TRANSFERS			140153038	4638

Note: Some number differences may be due to database query methods and rounding

Table 18 and Figure 4 shows the distribution of total releases and transfers for each of the media.

Table 18

MEDIA	2001 (pounds)
Air Releases	54652141
Water Releases	7979354
Other Onsite Land Releases	22740576
Offsite Transfers to POTW	10521503
Other Offsite Transfers	44244451
Total Releases and Transfers	140153038

Figure 4

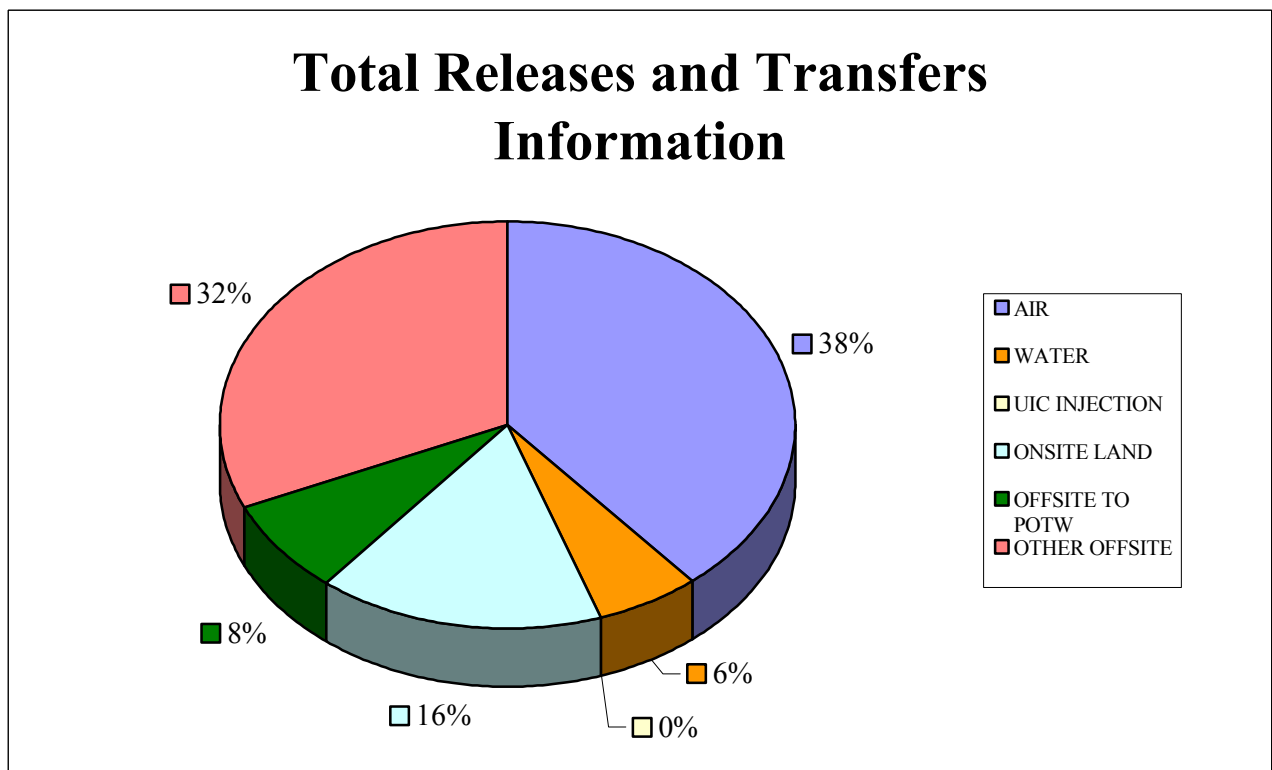
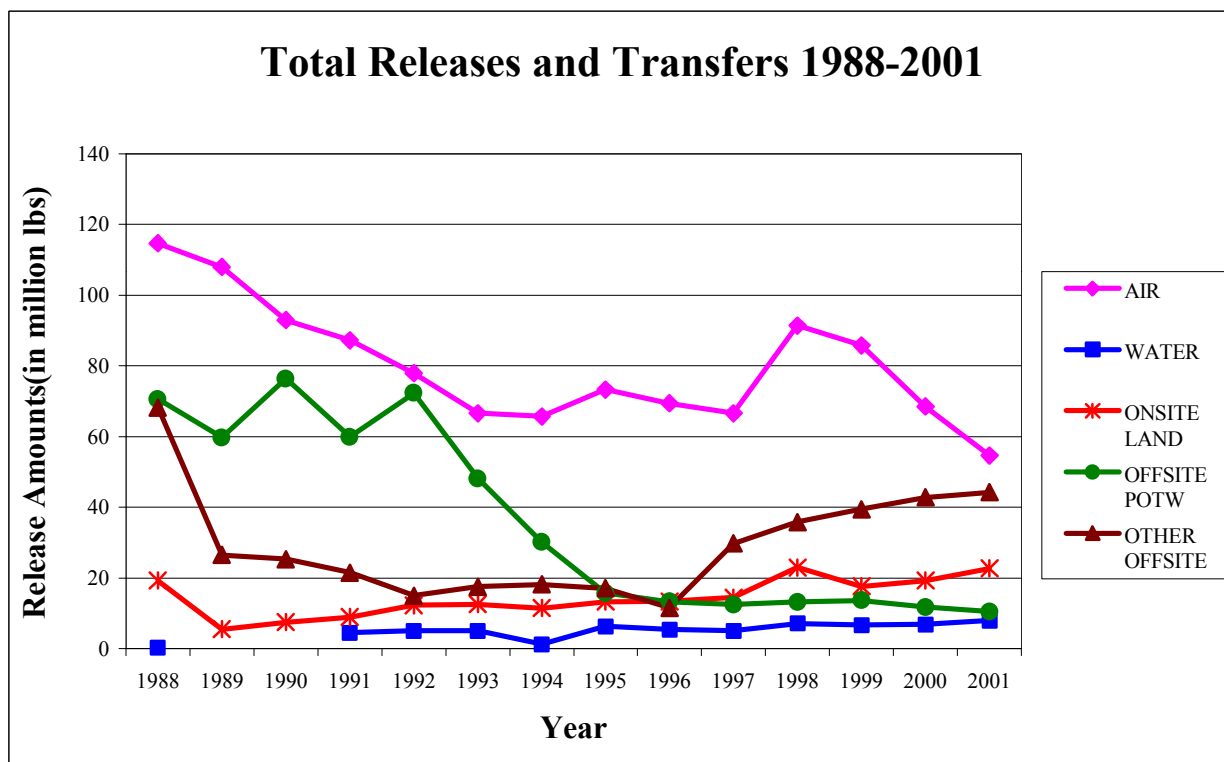


Figure 5 shows the change in releases and transfers from 1988 to 2001. Underground injection is virtually zero for all the data.



WASTE MANAGEMENT ACTIVITIES

Source reduction is defined in the Pollution Prevention Act (PPA) of 1990 as any practice that:

- reduces the amount of hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions); and
- reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

Source reduction can include modifications in equipment, process, procedure, or technology, reformulation or redesign of products, substitution of raw materials, and improvement in maintenance and inventory controls. Under this definition, waste management activities, including recycling, treatment, and disposal are not considered forms of source reduction.

The PPA requires facilities to report the quantities of TRI chemicals they manage in waste, both on and off-site. The PPA also requires facilities to provide information about the efforts they have made to reduce or eliminate those quantities. Reporting of information about source reduction (pollution prevention) efforts have been required beginning with reporting year 1991. The fact that a facility claimed source reduction activities for a chemical does not necessarily mean that the reduction in releases and transfers of the chemicals are attributable to those activities.

In the next two tables, total waste management activities include

- energy recovery on and off-site
- recycling on and off-site
- treatment on and off-site

It does not include amount released or remedial or accidental releases.

There are waste management activities reported for over 200 chemicals in 2001. The top twenty chemicals in this category are shown in Table 19 with total waste management activities at 1746 million pounds (94% of the total wastes managed). N-Hexane was the most managed at 689 million pounds, and 1,2,-dichloroethane second at 378 million pounds.

Additionally, for the top 20 chemicals,

- on-site energy recovery was at 33.2 million pounds or 88.9% of the total recovered
- off-site energy recovery was at 19.8 million pounds or 73.1% of the total recovered
- on-site recycling was at 1314 million pounds or 98.2% of the total recycled
- off-site recycling was at 83.5 million pounds or 82.3% of the total recycled
- on-site treatment was at 170.5 million pounds or 78.4% of the total treated
- off-site treatment was at 18.9 million pounds or 79.6% of the total treated

Nationwide, in 2000

- energy recovery resulted in 800.0 million pounds
- recycling resulted in 2,090 million pounds
- treatment resulted in 281.4 million pounds

Table 20 shows waste management activities for the PBT chemicals. Waste management activities for PBT chemicals totaled 11.2 million pounds.

	CHEMICAL NAME	CAS #	RELEASED (#)	WASTE MANAGEMENT ACTIVITIES FOR ALL CHEMICALS						REMEDIAL OR ACCIDENTAL RELEASE (#)	TOTAL WASTE MANAGEMENT ACTIVITIES (#)	TOTAL REPORTS
				ENERGY RECOVERY ONSITE (#)	ENERGY RECOVERY OFFSITE (#)	RECYCLED ONSITE (#)	RECYCLED OFFSITE (#)	TREATED ONSITE (#)	TREATED OFFSITE (#)			
1	N-HEXANE	110543	8858403	12711	148243	687039021	152447	1793922	27437	6627	689180408	59
2	1,2-DICHLOROETHANE	107062	20507	0	2	378000000	0	0	30	0	378000032	2
3	METHANOL	67561	2336346	3061411	3271942	113421915	46948	6127105	1816902	7266	127753489	102
4	TOLUENE	108883	2475229	1504352	5835255	86235683	4054403	6842210	1689192	7888	106168983	172
5	ETHYLENE	74851	1473270	26594508	0	0	0	57635491	0	96304	84326303	17
6	COPPER	7440508	2336593	0	0	574519	47198163	22353	22665	0	47817700	159
7	MALEIC ANHYDRIDE	108316	168483	0	566	0	0	29009725	4206	0	29014497	18
8	AMMONIA	7664417	3902065	0	13	9178448	2105990	9455350	1724772	3132	22467705	131
9	SULFURIC ACID - (1994 AND AFTER "ACID AEROSOLS" ONLY)	7664939	3804745	0	34500	10254	1723995	17331248	2707422	30010	21837429	51
10	ZINC COMPOUNDS	N982	34917283	0	2047	2677693	15512946	7010	207706	5625	18413027	221
11	HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	7647010	13708128	0	0	91377	0	17548323	8894	195882	17844476	66
12	XYLENE (MIXED ISOMERS)	1330207	1752544	686775	5536840	2292453	1318296	2012447	1945117	22949	13814877	154
13	METHYL ETHYL KETONE	78933	844818	477402	3139861	1674952	1089818	3975662	2690598	406	13048699	108
14	PHTHALIC ANHYDRIDE	85449	1094967	0	337735	2703185	39900	9543896	4755	0	12629471	14
15	NITRATE COMPOUNDS	N511	8746804	0	0	91374	0	5569838	5716046	1016	11378274	101
16	ACETONITRILE	75058	99150	0	701822	8672585	1114166	331727	11702	2406	10834408	5
17	TRICHLOROETHYLENE	79016	599778	0	30783	8998997	385573	49207	8840	93	9473493	54
18	EPICHLOROHYDRIN	106898	35028	0	0	9340293	0	97636	17	0	9437946	5
19	LEAD COMPOUNDS	N420	2898070	0	27	300295	8369145	3	36892	9045	8715408	195
20	CERTAIN GLYCOL ETHERS	N230	1826470	947950	773583	2716972	431631	3159466	371378	4	8400984	159
TOP 20 CHEMICALS TOTAL			91898681	33285109	19813219	1314020016	83543421	170512619	18994571	388653	1640557609	1793
TOP 20 PERCENTAGE OVER ALL			66.4%	88.9%	73.1%	98.2%	82.3%	78.4%	79.6%	72.4%	94.0%	37.8%
ALL REPORTING CHEMICALS TOTAL			138335955	37420572	27112233	1338305191	101456831	217377082	23855817	536806	1746064532	4739

Note: Some number differences may be due to database query methods and rounding

	CAS #	CHEMICAL NAME	RELEASE D (#)	WASTE MANAGEMENT ACTIVITIES FOR PBT CHEMICALS						R'MEDIAL OR AC'DNTAL RELEASE (#)	TOTAL WASTE MGMENT ACTIVITES (#)	TOTAL REPORTS
				ENERGY RECOVY ONSITE (#)	ENERGY RECOVY OFFSITE (#)	RECYCD ONSITE (#)	RECYCD OFFSITE (#)	TREATE D ONSITE (#)	TREATE D OFFSITE (#)			
1	309002	ALDRIN	1	0	0	0	0	211	0	0	212	1
2	191242	BENZO(G,H,I)PERYLENE	1328	0	9	251	34	365	49	923	2959	21
3	57749	CHLORDANE	29	0	0	0	0	5613	0	0	5642	1
4	N150	DIOXIN AND DIOXIN-LIKE COMPOUNDS	56	0	16	0	0	0	0	0	72	31
5	76448	HEPTACHLOR	8	0	0	0	0	1608	0	0	1616	1
6	118741	HEXACHLOROBENZENE	8	0	0	0	0	1547	23	0	1578	2
7	465736	ISODRIN	0	0	0	0	0	0	0	0	0	0
8	7439921	LEAD	389680	0	0	47131	1755145	0	262	2684	1805222	212
9	N420	LEAD COMPOUNDS	2898070	0	27	300295	8369145	3	36892	9045	8715408	195
10	7439976	MERCURY	1231	0	0	0	984	0	0	0	2215	12
11	N458	MERCURY COMPOUNDS	67552	0	0	30	12021	0	0	1	79604	51
12	72435	METHOXYCHLOR	31	0	0	0	0	5967	0	0	5998	1
13	608935	OCTOCHLOROSTYRENE										
14	40487421	PENDIMETHALIN	1346	0	0	0	0	259332	0	0	260678	1
15	608935	PENTACHLORO BENZENE	5	0	0	0	0	894	66	0	965	2
16	1336363	POLYCHLORINATED BIPHENYLS	1	0	0	0	0	98	190	0	289	3
17	N590	POLYCYCLIC AROMATIC COMPOUNDS	38667	0	2235	4607	12554	17955	2799	5957	84774	47
18	79947	TETRABROMO BISPHENOL A	239	0	100	0	0	0	0	0	339	3
19	8001352	TOXAPHENE	1	0	0	0	0	179	0	0	180	1
20	1582098	TRIFLURALIN	1426	0	0	0	0	278160	0	0	279586	1
			3399679	0	2387	352314	10149883	571933	40281	18611	11247337	586

ANALYSIS OF FORM R AND FORM A DATA FOR TREND ANALYSIS (BASE YEAR 1988) AND SPECIAL TREND ANALYSIS (TRI-10)

BASIS

Data collection for the 2001 data was done in a different manner for this *Fifteenth Annual Toxic Chemical Report*. In 2001 USEPA made software available to facilities to transmit reporting information electronically via computer discs. Although a similar software package was provided in earlier years, this current version performed better, was user friendly, and more readily available. Although reporting could still occur by paper, over 80 percent of the facilities chose the electronic route. For next year, USEPA is looking into expanding this to include reporting via the internet.

Due to high resource demands for manual data entry, the Illinois EPA chose to electronically upload the 2001 data, which was ultimately more expedient and efficient. There were time constraints and technical difficulties, however, in compiling this data with the mainframe historical database. Data analysis of the 2001 data was performed using the one-year database. Historical data for trends analysis were downloaded from USEPA's database. The data sets were not "frozen" and reflected current information submitted by facilities. Any discrepancies to previous reporting years were corrected in this report. However, the "normalization" approach mentioned above could not be performed. In addition, there are some minor differences in the way the data is analyzed for this *Fifteenth Annual Toxic Chemical Report*

Two different types of trend analysis were performed in this *Fifteenth Annual Toxic Chemical Report*: The first trend analysis includes comparison of the last five years to the base year of 1988. The second trend analysis is a special trend analysis of a current ten-year cycle, that was reported for the first time last year, using the 1991-2000 time frame (TRI-10). We also continue to provide this analysis, but have adjusted to the current time frame of 1992 to 2001

TREND ANALYSIS (BASE YEAR 1988)

The first trend analysis includes comparison of the last five years to the base year of 1988.

COUNTY RELEASE AND TRANSFERS TREND

Table 21 presents a five-year summation (1997-2001) of the total releases and transfers for the top 20 counties in Illinois, which is 674.9 million pounds (85.7% of the total amount released or transferred during these last five years). Peoria County reported the highest amount released or transferred at 133.1 million pounds, followed by Cook County at 117.2 million pounds.

From the base year of 1988, there is a general downward trend in the number of reported releases and transfers per county. The slight increase in 1998 was due to the addition of new reporting requirements.

Table 21

	COUNTY	BASE YEAR 1988	COUNTY RELEASES (POUNDS)					TOTAL RELEASES 97-01
			LAST FIVE YEARS					
			1997	1998	1999	2000	2001	
1	PEORIA	8318537	7190265	31589719	30585040	31821635	31890774	133077433
2	COOK	79252531	22394816	24263501	20792414	22267092	27505863	117223686
3	MADISON	21207251	11851604	14082217	15236931	15194967	7390308	63756027
4	MACON	1115426	12522362	10544876	10218306	7405156	8494566	49185265
5	WHITESIDE	4711748	15167006	13064007	10234093	6206694	3032169	47703969
6	VERMILION	6945379	5871250	6019200	7378879	8476617	7356199	35102144
7	WILL	8424279	3238089	4939554	6032153	7234107	5297701	26741604
8	MONTGOMERY	132212	454219	6130623	6818958	7932752	4768718	26105269
9	RANDOLPH	43396	10	9597470	13012019	1515326	397099	24521924
10	KANKAKEE	1173744	6444470	5919553	5999776	4130743	1015912	23510454
11	ROCK ISLAND	21695186	5003035	4354358	3912223	4044460	5094924	22409000
12	ST. CLAIR	10849254	3708145	4133311	5386119	3970765	3532594	20730934
13	TAZEWELL	1377071	529517	3625294	3400367	4764568	4179079	16498825
14	LASALLE	5022704	3141231	3143240	3023756	2668473	3610362	15587062
15	JODAVIESS	1627644	4260445	2430143	1459366	1346750	1147386	10644090
16	SANGAMON	347733	186150	2961295	3014160	2373415	1086015	9621034
17	GRUNDY	6021250	2041981	2417878	1467075	1073958	1549587	8550480
18	CHRISTIAN	0	250182	3479231	1388940	1646490	1345692	8110535
19	WINNEBAGO	3851452	1663034	1386557	1286038	1363146	2301882	8000656
20	DUPAGE	2844625	1288265	1161799	1167234	2930517	1300839	7848654
TOP 20 COUNTIES		184961422	107206076	155243826	151813847	138367629	122297669	674929047
TOP 20 PERCENTAGE OVERALL		80.2%	85.2%	84.9%	86.1%	85.4%	87.3%	85.7%
ALL REPORTED COUNTIES		230697275	125859045	182893723	176390492	162089248	140153038	787385546

Note: Some number differences may be due to database query methods and rounding

Table 22 shows the trend analysis for the remaining counties in Illinois, which ranges from 7.6 million pounds to 2,169 pounds

Table 22

	COUNTY	BASE YEAR 1988	COUNTY RELEASES (POUNDS)					TOTAL RELEASES 97-01
			LAST FIVE YEARS					
			1997	1998	1999	2000	2001	
21	OGLE	2481307	1482798	1290944	1731094	1557217	1603420	7665473
22	JASPER		255	2647280	2004208	2548923	272772	7473438
23	ADAMS	231635	1494358	1489629	1358908	1372404	1473143	7188442
24	LAKE	3267740	1183357	1749352	1426364	1239935	532165	6131173
25	MARION	1214484	1645369	1150206	869416	941329	740920	5347240
26	MORGAN	163992	83072	1181037	1324320	1453477	1284529	5326435
27	MCLEAN	354104	1944792	1386785	524148	764601	637148	5257474
28	COLES	2822733	881411	1073229	1255685	1253681	176514	4640520
29	CRAWFORD	2230639	408189	444878	653995	1265209	1380486	4152757
30	DOUGLAS	10457536	640841	738648	862467	861288	760435	3863679
31	PUTNAM	2391547	29700	1788860	1528475	256008	196402	3799445
32	ALEXANDER	522580	574968	752616	575057	927474	934345	3764460
33	MCDONOUGH	372510	95925	1441292	962827	980201	107207	3587452
34	MCHENRY	1841793	656293	466207	365656	722693	975603	3186452
35	FRANKLIN	238015	565733	619070	790695	887382	268882	3131762
36	MASSAC	382081	158984	1067009	1045507	616357	43244	2931100
37	FORD	250	762581	930541	910483	1750	6996	2612351
38	MARSHALL	365769	604262	542504	617848	357621	484363	2606598
39	CASS	93136	312269	414755	292045	353186	1088333	2460588
40	WILLIAMSON	577763	269110	677312	654247	665953	180306	2446928
41	KANE	2490303	342349	407720	335723	476601	555259	2117652
42	KNOX	356785	468533	530752	446488	361669	274599	2082042
43	MASON	1500	500	561465	457235	468393	532294	2019887
44	IROQUOIS	82950	391679	607890	289118	147678	440450	1876815
45	JACKSON	1255559	396299	656774	339537	305267	37877	1735754
46	STEPHENSON	654958	207209	177266	169331	242319	470041	1266167
47	LOGAN	73766	5105	287155	234470	375011	272637	1174378
48	EFFINGHAM	773110	257061	329402	135339	171722	119369	1012893
49	BOONE	2434976	249409	201801	147681	162686	213606	975183
50	EDGAR	72163	274846	183234	182789	148226	59641	848736
51	DEKALB	288844	225803	166484	146403	128586	116364	783640
52	KENDALL	1453958	467340	223392	62817	29667	44	783260

	COUNTY	BASE YEAR 1988	COUNTY RELEASES (POUNDS)					TOTAL RELEASES 97-01
			LAST FIVE YEARS					
			1997	1998	1999	2000	2001	
53	HARDIN	609771	0	0	252466	262294	262294	777054
54	PIKE	384	1321	210258	288406	230381	5640	736006
55	JEFFERSON	139318	168922	159560	120504	129196	144701	722883
56	CHAMPAIGN	688998	90196	103869	135777	197469	192745	720057
57	MOULTRIE	595299	124975	149264	191556	146955	92257	705007
58	FULTON	3321	257648	0	0	0	257648	515295
59	LIVINGSTON	256357	86471	101092	108793	136122	75839	508317
60	BUREAU	469948	92151	66491	80976	76329	47465	363412
61	WOODFORD	64325	23148	35227	245026	26075	277	329753
62	WAYNE	93645	160764	112800	22500	28319	1	324384
63	CLAY	126989	63630	32942	64054	62294	83744	306664
64	LEE	146900	36768	53263	43378	45256	96249	274914
65	LAWRENCE		171936	499	24740	0	25127	222302
66	WASHINGTON	1166681	43450	41873	54095	64146	1997	205561
67	PERRY	1300	25606	41290	20807	46611	51691	186005
68	CLINTON	46300	47893	19206	44703	14293	25003	151098
69	WARREN	57935	22093	37547	22923	7141	48141	137845
70	BOND	8814	21878	23015	28549	29411	23720	126573
71	RICHLAND	106399	49205	33197	8443	25969		116814
72	HENRY	28659	24167	51282	24297	7387	7292	114425
73	DEWITT	608250	4570	23880	26178	27613	27050	109291
74	SCHUYLER			99343				99343
75	PIATT	16750	15750	15142	17481	20481	23046	91900
76	FAYETTE	16054	14000	23277	22395	19725	8006	87403
77	WHITE	55253	16912	17401	19140	12293	2716	68462
78	USA						49134	49134
79	SHELBY	67436	1520	1520	1520	31224	999	36783
80	CARROLL	1019	10	5	4	5	25156	25180
81	CAIRO						20399	20399
82	CLARK	186701	845	901	874	17308	0	19928
83	WABASH	26530	4005	4715	3505	3005	4513	19743
84	QUINCY						10759	10759
85	MACOUPIN	25600	0	0	0	0	10425	10425
86	SALINE					6270	3562	9832
87	HANCOCK	250	255	4603	255	2570		7683
88	STARK	24563	1975	441	265	462	3543	6686
89	MERCER	500	500	500	500	500	793	2793
90	UNION		5	5	2159	0		2169
91	CAPRON							0
92	CUMBERLAND	145618						0
93	EDWARDS	1500						0
94	MONROE							0
95	WAUCONDA						0	0

Note: Some number differences may be due to database query methods and rounding

Table 23 presents a five-year summation (1997-2001) of the total number of reporting facilities for the top 20 counties in Illinois, which is 5647 (82.3% of the total number of facility reports during these last five years). Cook County had the highest number of facility reports at 2,687, followed by Dupage County at 431 facility reports.

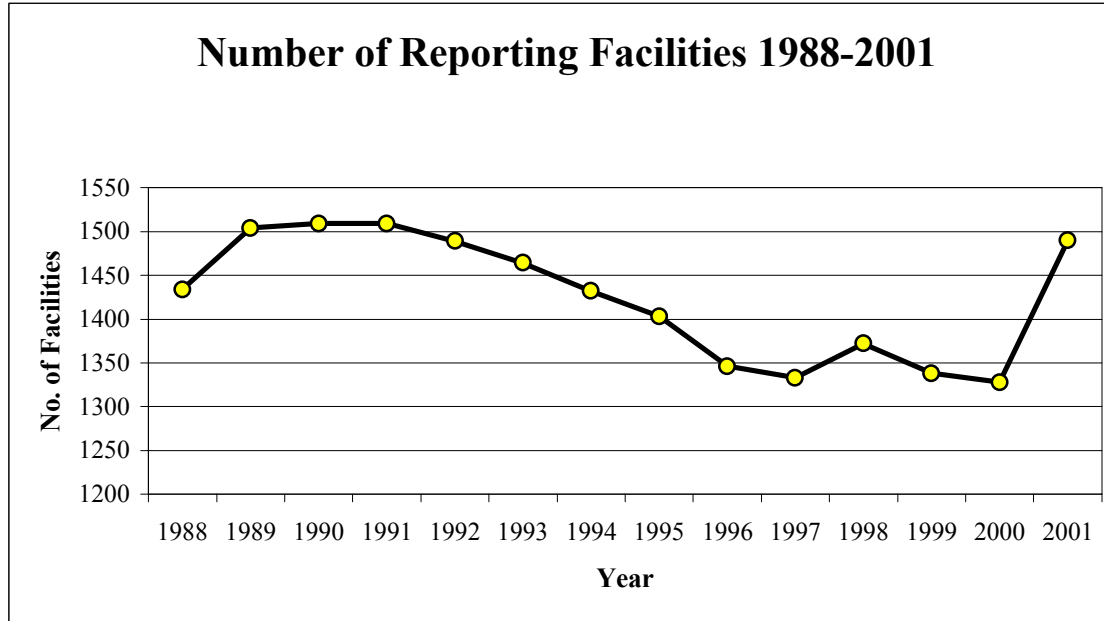
Table 23

		BASE YEAR 1988	NUMBER OF REPORTING FACILITIES					TOTAL 97-01
			1997	1998	1999	2000	2001	
1	COOK	649	527	534	530	514	582	2687
2	DUPAGE	71	86	83	80	80	102	431
3	WINNEBAGO	69	66	67	62	65	76	336
4	KANE	60	53	58	58	61	72	302
5	WILL	44	54	57	54	53	56	274
6	LAKE	50	48	48	49	49	58	252
7	MCHENRY	42	42	42	39	40	47	210
8	MADISON	36	25	26	28	30	32	141
9	ST CLAIR	22	23	27	25	27	27	129
10	LASALLE	27	25	25	23	22	22	117
11	ROCK ISLAND	19	18	18	19	20	24	99
12	ADAMS	11	17	17	18	18	21	91
13	PEORIA	21	15	16	19	19	21	90
14	VERMILION	15	16	17	17	17	20	87
15	MACON	14	20	19	18	20	1	78
16	KANKAKEE	19	17	16	15	14	15	77
17	WHITESIDE	14	15	15	12	12	17	71
18	OGLE		13	14	13	13	14	67
19	DEKALB	15	13	12	10	11	9	55
20	COLES	14	11	12	9	9	12	53
TOP 20 FACILITIES		1212	1104	1123	1098	1094	1228	5647
TOP 20 % OVER ALL		84.5%	82.8%	81.9%	82.1%	82.4%	82.4%	82.3%
ALL REPORTING FACILITIES		1434	1333	1372	1338	1328	1490	6861

Note: Some number differences may be due to database query methods and rounding

Figure 6 shows the change in the number of reporting facilities from 1988 through 2001. The number of facilities increased in 1998 and 2001 due to the change in reporting requirements.

Figure 6



AIR RELEASE TREND

Table 24 presents a five-year summation (1997-2001) of the total combined stack and fugitive emissions releases for the top 20 counties in Illinois, which is 329.6 million pounds (89.5% of the total amount released or transferred during these last five years). Hydrochloric Acid was reported as the chemical most released at 89.8 million pounds, followed by n-Hexane at 44.0 million pounds.

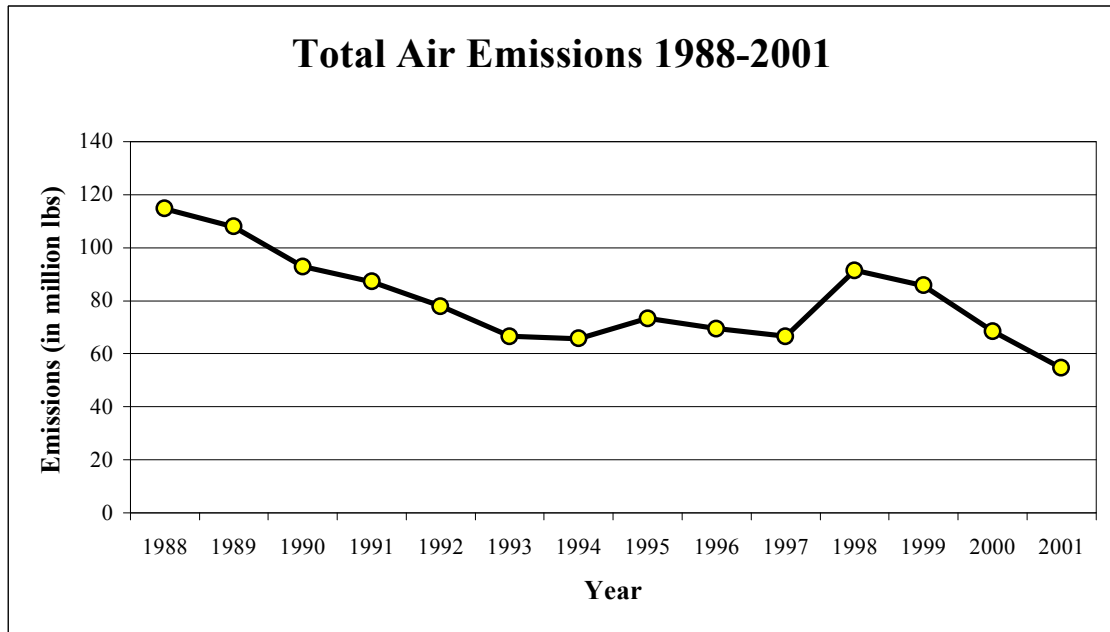
Figure 7 shows the change in the number of reporting facilities from 1988 through 2001. From the base year of 1988, there is a general downward trend in the number of reported air releases. The increase in 1998 was due to the addition of new reporting requirements.

Table 24

	CAS NO	CHEMICAL NAME	BASE YEAR 1988	COMBINED FUGITIVE AND STACK EMISSIONS (POUNDS)					TOTAL EMISSIONS 97-01
				LAST FIVE YEARS					
				1997	1998	1999	2000	2001	
1	7647010	HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	3049706	3246202	25042947	29023911	18846848	13668182	89828090
2	110543	N-HEXANE		9891754	10161935	7854726	8460254	7660587	44029256
3	7664417	AMMONIA	8346378	11590173	6858708	4694811	2755455	2156197	28055344
4	7664939	SULFURIC ACID (1994 AND AFTER "ACID AEROSOLS" ONLY)	1004568	1687245	8937525	7906220	4810059	3806644	27147693
5	75150	CARBON DISULFIDE	3265918	5377605	4414273	3501603	3267480	3376215	19937176
6	108883	TOLUENE	18763819	5222294	4334556	4108594	4032896	2224436	19922776
7	1330207	XYLENE (MIXED ISOMERS)	6953475	2891692	2631516	2510158	2397408	1705057	12135831
8	7664393	HYDROGEN FLUORIDE	177675	176637	3679061	2501185	2895393	2221349	11473625
9	N230	CERTAIN GLYCOL ETHERS	2977045	2519394	2531266	2357856	2193107	1763729	11365352
10	100425	STYRENE	1817954	1890156	2135652	2411044	2248327	1741955	10427134
11	67561	METHANOL	3454168	2244415	1774776	1717408	1815457	2127642	9679698
12	75092	DICHLOROMETHANE	4441496	1989159	1760330	1639405	1039551	940167	7368612
13	78933	METHYL ETHYL KETONE	5139280	1834533	1739658	1666849	1225736	842237	7309013
14	74851	ETHYLENE	5413770	1611136	1448444	1452690	1181634	1566780	7260684
15	79016	TRICHLOROETHYLENE	4285169	2639537	1615349	1253612	891972	577325	6977795
16	75683	1-CHLORO-1,1-DIFLUOROETHANE		870214	907270	951844	1023095	837797	4590220
17	71363	N-BUTYL ALCOHOL	1396092	882570	885814	794665	880339	422036	3865424
18	N982	ZINC COMPOUNDS	2121710	727826	794540	736729	668988	359706	3287789
19	108101	METHYL ISOBUTYL KETONE	1714980	727455	636805	477581	370614	317071	2529526
20	1717006	1,1-DICHLORO-1-FLUOROETHANE		420521	487593	664192	534892	381137	2488335
TOP 20 CHEMICALS TOTAL (AIR)			74323203	58440518	82778018	78225083	61539504	48696249	329679372
TOP 20 PERCENTAGE OVER ALL			64.83%	87.76%	90.55%	91.19%	89.86%	89.10%	89.85%
ALL REPORTED CHEMICALS TOTAL			114640340	66592045	91414040	85786128	68484330	54652141	366928684

Note: Some number differences may be due to database query methods and rounding

Figure 7



AIR RELEASE TREND BY ZIP CODE

Table 25 presents a five-year summation (1997-2001) of the total combined stack and fugitive emissions releases for the top 20 zip code areas in Illinois, which is 229.1million pounds (62.7% of the total amount released during these last five years). Decatur was reported as the zip code are with the most released at 37.2 million pounds, followed by Danville at 25.6 million pounds. Also, the analysis presented here is restricted to air emissions to give some indication of the possibility of human exposure. Of course, ZIP code areas vary in size and population. As the case has always been, toxic chemical release and transfer amounts are annual totals, so no inferences can be made from the following rankings relative to exposure dose and resultant human health effects of these air emissions in any of the ZIP codes listed.

From the base year of 1988, there is a general downward trend in the number of reported air releases. The increase in 1998 was due to the addition of new reporting requirements.

Table 25

	ZIP CODE	COUNTY	CITY	BASE YEAR 1988	TOTAL AIR EMISSIONS (POUNDS)					TOTAL RELEASES 97-01
					LAST FIVE YEARS					
					1997	1998	1999	2000	2001	
1	62521	MACON	DECATUR	403171	11041483	8603124	6898939	5059643	5604379	37207567
2	61832	VERMILION	DANVILLE	2604755	5552157	4906674	4833085	5785652	4506811	25584379
3	62217	RANDOLPH	BALDWIN			8450530	11751459	413836	396698	21012522
4	62017	MONTGOMERY	COFFEEN			4513765	4625677	4806829	4295921	18242192
5	60601	COOK	CHICAGO	17017695	3383258	3665888	3059779	3164443	1973097	15246465
6	60499	COOK	BEDFORD PARK	3153963	3352285	2801506	1764044	1759702	1813947	11491483
7	61607	PEORIA	BARTONVILLE			2797508	2823489	2894117	2718213	11233326
8	61025	JO DAVIESS	EAST DUBUQUE	1455897	4199800	2372900	1193300	1270219	1079694	10115913
9	62002	MADISON	ALTON	508334	508754	1453625	2777196	3381827	1132276	9253678
10	62703	SANGAMON	SPRINGFIELD	80089	78232	2825204	2826899	2177769	985945	8894048
11	60450	GRUNDY	MORRIS	5645046	1977384	2352640	1285891	1010880	1506979	8133775
12	61858	VERMILION	OAKWOOD			723790	2206290	2405582	2417372	7753033
13	62206	ST CLAIR	SAUGET	4947626	2000416	1976870	1739710	838960	837372	7393328
14	62301	ADAMS	QUINCY	226104	1483669	1467223	1334217	1322525	1480402	7088036
15	62084	MADISON	ROXANA	1767950	618944	1823714	1830710	1863720		6137088
16	61350	LA SALLE	OTTAWA	2135830	1200800	1239457	1041023	745604	1006274	5233158
17	61101	WINNEBAGO	ROCKFORD	2160867	1201627	1042264	1017670	1094663	824668	5180892
18	60410	WILL	CHANNAHON	1814871	1071943	1076929	979134	985528	822227	4935761
19	62655	MORGAN	MEREDOSIA	106158	49615	1034416	1135931	1229972	1288608	4738542
20	61054	OGLE	MOUNT MORRIS	1577000	855646	704531	926823	929445	807712	4224157
TOP 20 ZIP CODES (AIR)				45605356	38576013	55832558	56051266	43140914	35498593	229099344
TOP 20 PERCENTAGE OVER ALL				39.9%	57.6%	61.4%	66.2%	63.3%	65.3%	62.7%
ALL REPORTING ZIP CODES (AIR)				114243458	66974176	90977495	84698733	68118964	54396021	365165390

Note: Some number differences may be due to database query methods and rounding

WATER RELEASE TREND

Table 26 presents a five-year summation (1997-2001) of the total water releases for the top 20 chemicals in Illinois, which is 28.5 million pounds (99.6% of the total amount released during these last five years). Nitrate compounds were reported as the chemical most released at 27.3 million pounds, followed by ammonia at 235,103 pounds.

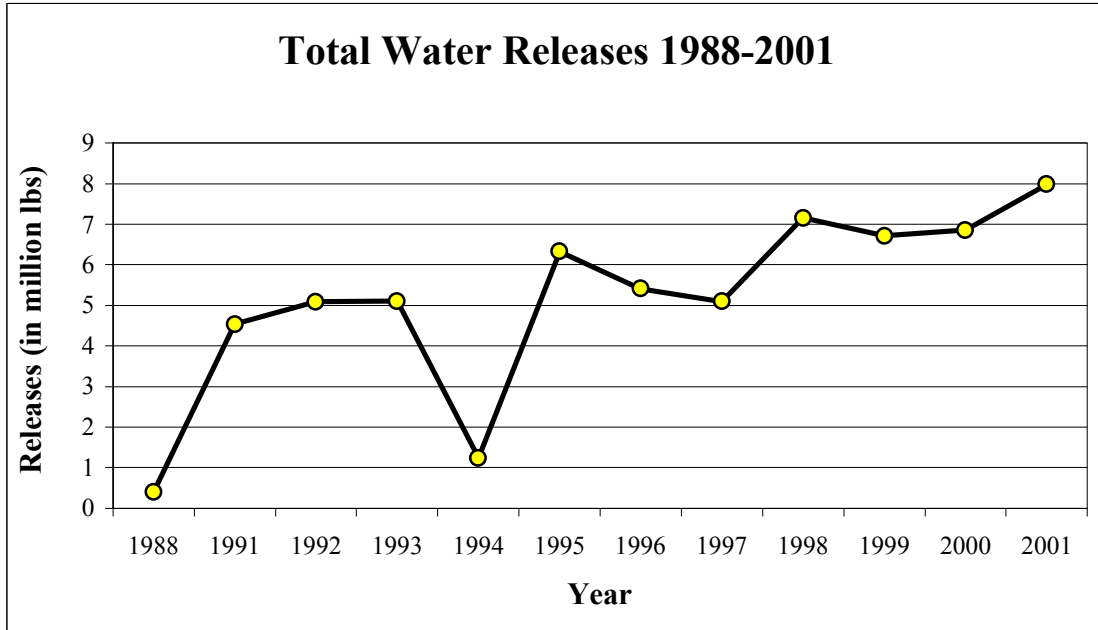
Table 26

	CAS #	CHEMICAL NAME	BASE YEAR 1988	WATER RELEASES (POUNDS)					TOTAL RELEASES 97-01
				LAST FIVE YEARS					
				1997	1998	1999	2000	2001	
1	N511	NITRATE COMPOUNDS		4836694	6881494	6243853	6526785	7667387	27319519
2	7664417	AMMONIA		86208	64018	69382	48372	53730	235502
3	N040	BARIUM COMPOUNDS		0	25372	125846	50588	71297	273103
4	67561	METHANOL	16500	60185	28700	23700	35795	27150	115345
5	N450	MANGANESE COMPOUNDS	4100	3039	11850	55516	21283	25590	114239
6	N982	ZINC COMPOUNDS	16300	14548	15571	33824	17685	14816	81896
7	N230	CERTAIN GLYCOL ETHERS		16406	16250	17250	27250	1499	62249
8	107211	ETHYLENE GLYCOL	172800	11281	12065	14053	21030	9540	56688
9	7632000	SODIUM NITRITE		5422	14270	13948	15121	14515	57854
10	N770	VANADIUM COMPOUNDS					28469	32407	60876
11	7782505	CHLORINE	41700	17041	18419	1940	9755	3869	33983
12	7439965	MANGANESE	26300	9212	9747	7273	7158	2961	27139
13	N100	COPPER COMPOUNDS	3600	722	6539	9422	3929	5597	25487
14	149304	2-MERCAPTO BENZOTHAZOLE		1025	6687	6097	5437	5110	23331
15	7440508	COPPER	10800	4992	4606	4292	5537	4770	19205
16	111422	DIETHANOLAMINE	60100	510	517	7074	4647	11006	23244
17	N495	NICKEL COMPOUNDS	3200	611	1210	14025	1567	1570	18372
18	N096	COBALT COMPOUNDS		858	1070	13545	1196	1254	17065
19	7440020	NICKEL	2700	3885	5117	2370	2523	2707	12717
20	7723140	PHOSPHORUS (YELLOW OR WHITE)	2000	3104	3511	3496	3298	2998	13303
TOP 20 CHEMICALS TOTAL (WATER)			360100	5075743	7127013	6666906	6837425	7959773	28591117
TOP 20 PERCENTAGE OVER ALL			92.0%	99.7%	99.7%	99.4%	99.7%	99.8%	99.6%
ALL REPORTED CHEMICALS TOTAL			391400	5093354	7151530	6709810	6854570	7979354	28695264

Note: Some number differences may be due to database query methods and rounding

Figure 8 shows the change in the water releases and transfers from 1988 through 2001. From the base year of 1988, in contrast to the other trend data, there is a general upward trend in the number of reported water releases. The increase in 1998 was due to the addition of new reporting requirements.

Figure 8



ON-SITE LAND RELEASE TREND

Table 27 presents a five-year summation (1997-2001) of the total on-site land releases for the top 20 chemicals in Illinois, which is 22.6 million pounds (99.8% of the total amount released during these last five years). Manganese compounds were reported as the chemical most released at 32.4 million pounds, followed by zinc compounds at 15.8 million pounds.

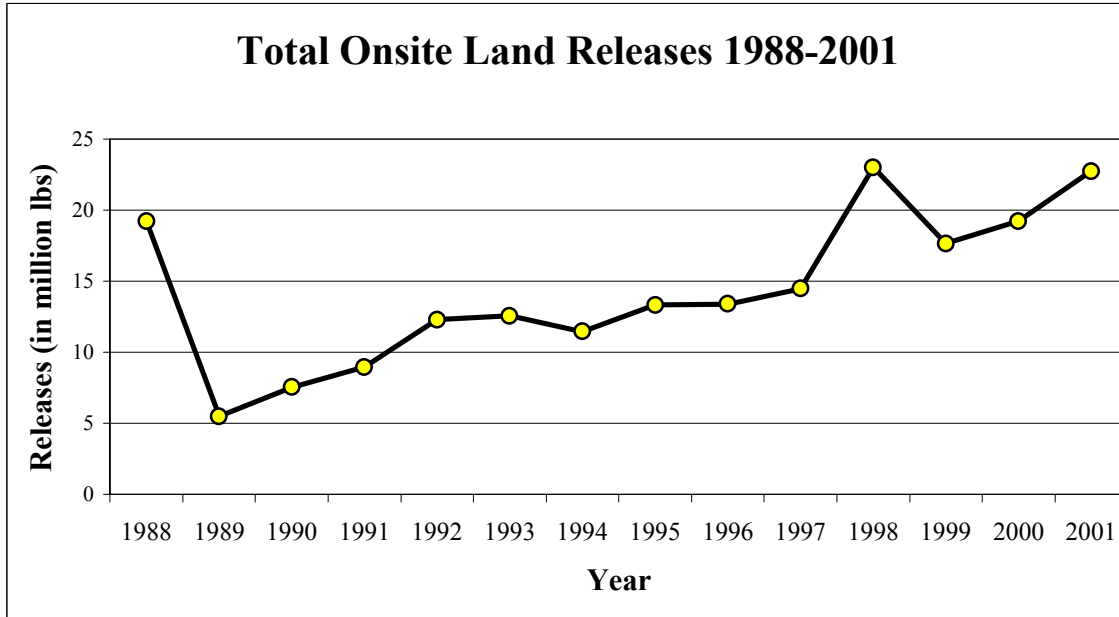
Table 27

	CAS #	CHEMICAL NAME	BASE YEAR 1988	TOTAL ONSITE LAND RELEASES (POUNDS)					TOTAL RELEASES 97-01
				LAST FIVE YEARS					
				1997	1998	1999	2000	2001	
1	N450	MANGANESE COMPOUNDS	2173	6496520	8792443	7391039	6972772	2786358	32439132
2	N982	ZINC COMPOUNDS	3760683					15767063	15767063
3	N040	BARIUM COMPOUNDS	1400080	12000	3504015	3441650	4473233	0	11430898
4	N420	LEAD COMPOUNDS	262677	831739	2280457	2034965	1946074	1500017	8593252
5	7440666	ZINC (FUME OR DUST)	138	3781000	3997690	93954		0	7872644
6	N090	CHROMIUM COMPOUNDS	72793	1742320	1799812	1922605	1321458	438614	7224809
7	7439965	MANGANESE	1351566	742252	732963	784050	952604	0	3211869
8	N100	COPPER COMPOUNDS	850	8	527091	498329	548213	268450	1842091
9	7440508	COPPER	44906	7643	6130	11042	1645210	0	1670025
10	N495	NICKEL COMPOUNDS	17125	1060	329376	386771	682246	222002	1621455
11	N078	CADMIUM COMPOUNDS			22400	98200	54221	1338000	1512821
12	N511	NITRATE COMPOUNDS		284147	57874	178771	17858	300104	838754
13	7429905	ALUMINUM (FUME OR DUST)	102271	330000	4800	1400		0	336200
14	N020	ARSENIC COMPOUNDS	0		96680	158409	74051	778	329918
15	7440473	CHROMIUM	183545	49478	87965	48363	125544	0	311350
16	7439921	LEAD	60000		71850	129278	31342	2	232472
17	7664417	AMMONIA	1978	37583	58228	29895	30470	68174	224350
18	7440020	NICKEL	2891	7442	39764	70151	94212	2062	213631
19	N096	COBALT COMPOUNDS	0	1900	101592	77505	17445	1	198443
20	7632000	SODIUM NITRITE		0	191177			0	191177
TOP 20 RELEASES (ONSITE LAND)			7263676	14325092	22702307	17356377	18986953	22691625	96062354
TOP 20 PERCENTAGE OVER ALL			37.8%	98.9%	98.7%	98.3%	98.7%	99.8%	98.9%
ALL REPORTED RELEASES TOTAL			19236659	14478288	23011945	17665124	19238673	22740576	97134606

Note: Some number differences may be due to database query methods and rounding

Figure 9 shows the change in the on-site land releases from 1988 through 2001. From the base year of 1988, in contrast to the other trend data, there is a general upward trend in the number of reported on-site land releases. The increase in 1998 was due to the addition of new reporting requirements.

Figure 9



OFF-SITE TRANSFER TO POTWs TREND

Table 28 presents a five-year summation (1997-2001) of the total off-site transfers to POTWs for the top 20 chemicals in Illinois, which is 59.3 million pounds (96.2% of the total amount transferred during these last five years). Nitrate compounds were reported as the chemical most released or transferred at 26.7 million pounds, followed by ammonia at 7.4 million pounds.

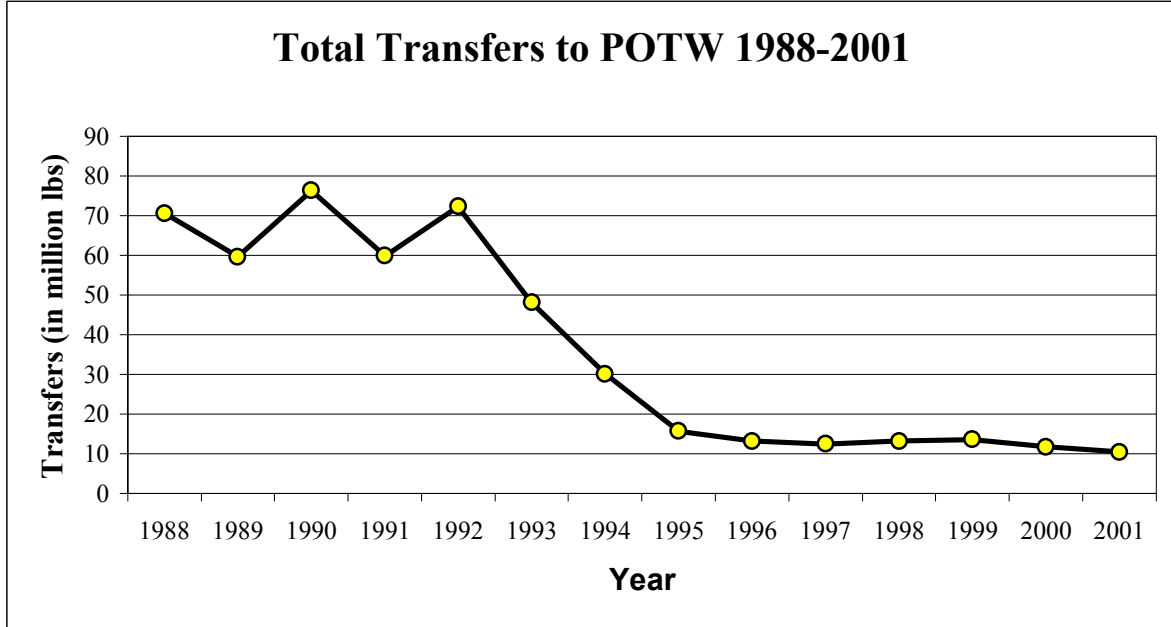
Table 28

	CAS #	CHEMICAL NAME	BASE YEAR 1988	OFFSITE TRANSFERS TO POTW (POUNDS)					TOTAL TRANSFERS 97-01
				LAST FIVE YEARS					
				1997	1998	1999	2000	2001	
1	N511	NITRATE COMPOUNDS		4041908	4687400	5760914	6361984	5887467	26739673
2	7664417	AMMONIA	1050007	1844444	1393717	1513277	1619914	1037633	7408985
3	67561	METHANOL	2049815	1565219	1246153	1660803	1183596	701833	6357604
4	64186	FORMIC ACID		1048734	1312598	1054427	79714	0	3495473
5	108952	PHENOL	1207206	920019	627530	533408	397727	273015	2751699
6	7664939	SULFURIC ACID (1994 AND AFTER "ACID AEROSOLS" ONLY)	10385421	156074	101487	707346	194003	1008537	2167447
7	78933	METHYL ETHYL KETONE	13970	320516	306207	354655	324522	469713	1775613
8	7664393	HYDROGEN FLUORIDE	30600	314995	556908	318586	251265	222886	1664640
9	N230	CERTAIN GLYCOL ETHERS	545757	276479	331316	208961	299468	184323	1300547
10	100027	4-NITROPHENOL	400000	6419	600208	523169	59511		1189307
11	7632000	SODIUM NITRITE		235097	198158	66703	296505	97093	893556
12	7439965	MANGANESE	23567	241824	574780	2457	5772	6844	831677
13	75150	CARBON DISULFIDE	36750	174780	158922	51690	48207	45409	479008
14	107211	ETHYLENE GLYCOL	454577	151833	49703	42728	105331	34436	384031
15	95476	O-XYLENE		109012	138920	115602	9396	12	372942
16	62533	ANILINE	688416	41000	74639	70369	86773	79035	351816
17	7697372	NITRIC ACID	336929	111290	63720	18126	74081	59956	327173
18	7664382	PHOSPHORIC ACID	761482	189356	131657				321013
19	78922	SEC-BUTYL ALCOHOL	7200	51519	49161	56907	51913	75185	284685
20	N982	ZINC COMPOUNDS	166391	57070	50060	40764	46380	58372	252646
TOP 20 CHEMICALS TOTAL (POTW)			18158088	11857588	12653244	13100892	11496062	10241749	59349535
TOP 20 PERCENTAGE OVERALL			25.7%	94.8%	95.6%	96.1%	97.6%	97.3%	96.2%
ALL REPORTED CHEMICALS TOTAL			70609561	12502286	13242386	13629029	11775842	10521503	61671045

Note: Some number differences may be due to database query methods and rounding

Figure 10 shows the change in the off-site transfer to POTWs from 1988 through 2001. From the base year of 1988, there is a general downward trend in the number of reported off-site transfers to POTWs.

Figure 10



OTHER OFF-SITE TRANSFER TREND

Table 29 presents a five-year summation (1997-2001) of the total other off-site transfers for the top 20 chemicals in Illinois, which is 176.5 million pounds (91.9% of the total amount transferred during these last five years). Zinc compounds were reported as the chemical most released or transferred at 80.0 million pounds, followed by manganese compounds at 2.2 million pounds.

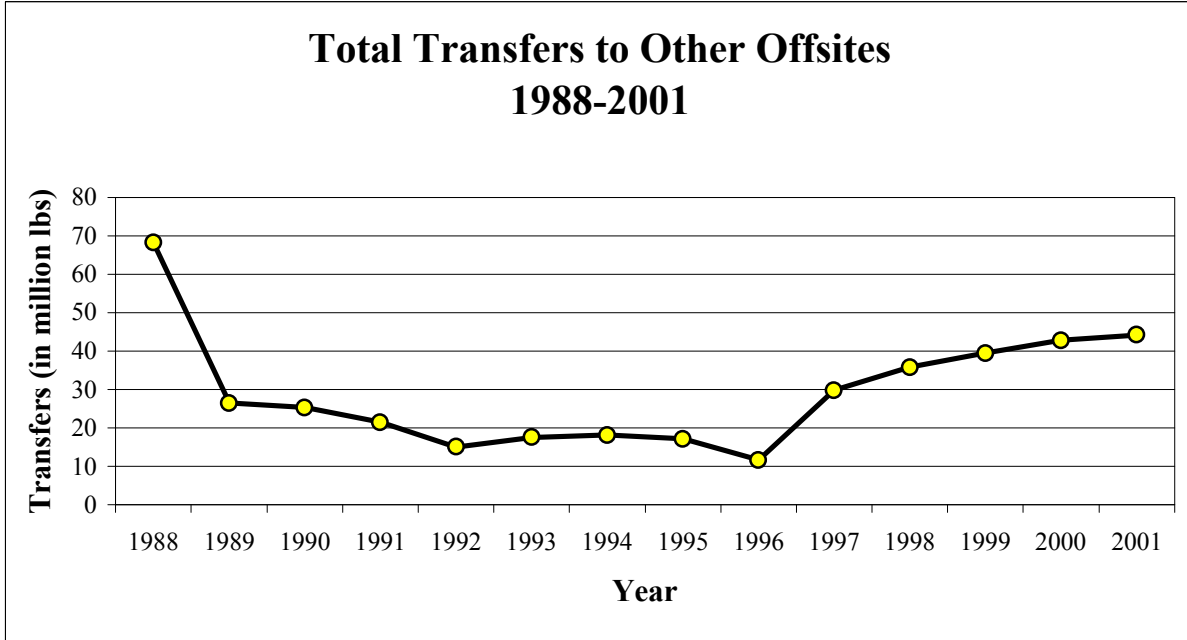
Table 29

	CAS #	CHEMICAL NAME	BASE YEAR 1988	OTHER OFF-SITE TRANSFERS (POUNDS)					TOTAL TRANSFERS 97-01
				LAST FIVE YEARS					
				1997	1998	1999	2000	2001	
1	N982	ZINC COMPOUNDS	6974689	15371855	17331789	16414599	18900219	12032711	80051173
2	N450	MANGANESE COMPOUNDS	1339031	2925944	3956240	5552083	4876618	4591215	21902100
3	85449	PHTHALIC ANHYDRIDE	2864647	2881496	3765102	2828724	2505214	4501	11985037
4	N040	BARIUM COMPOUNDS	2675594	212489	906177	2152477	2504936	2488132	8264211
5	N090	CHROMIUM COMPOUNDS	605927	701192	1343694	1927963	1814955	1395412	7183216
6	N420	LEAD COMPOUNDS	1041021	1258415	1632351	1664702	1411039	950353	6916860
7	7440508	COPPER	1083063	1269800	780486	799500	842528	2285395	5977709
8	7440666	ZINC (FUME OR DUST)	2267562	135758	216602	1626490	1975567	1494999	5449416
9	N100	COPPER COMPOUNDS	468451	274179	775803	895229	978806	1090897	4014914
10	7664417	AMMONIA	13726	118306	279549	266995	604668	2583439	3852957
11	7429905	ALUMINUM (FUME OR DUST)	179644	816170	746762	1026844	527920	628211	3745907
12	N495	NICKEL COMPOUNDS	97773	130185	627478	600969	671367	558073	2588072
13	78933	METHYL ETHYL KETONE	144515	33864	10370	9040	7837	2266189	2327300
14	7664939	SULFURIC ACID (1994 AND AFTER "ACID AEROSOLS" ONLY)	235755	176400	114139	21719	120750	1694395	2127403
15	7697372	NITRIC ACID	76490	338679	304647	220990	240661	919065	2024042
16	100425	STYRENE	220931	238322	255374	174614	316917	900134	1885361
17	N511	NITRATE COMPOUNDS		28668	60994	305168	941253	368966	1705049
18	7439965	MANGANESE	1019959	346817	233758	321493	449944	264221	1616233
19	7439921	LEAD	1168724	209037	305202	337323	330269	402649	1584480
20	67561	METHANOL	72353	12964	29525	35847	25349	1152983	1256668
TOP 20 OTHER OFF-SITE TRANSFERS			22549855	27480540	33676042	37182769	40046817	38071940	176458108
TOP 20 PERCENTAGE OVER ALL			33.0%	92.2%	94.1%	94.3%	93.5%	86.0%	91.9%
ALL REPORTING OTHER OFF-SITE TRANSFERS			68265637	29792470	35802380	39439595	42812938	44244451	192091833

Note: Some number differences may be due to database query methods and rounding

Figure 11 shows the change in the other off-site transfers from 1988 through 2001. From the base year of 1988 to 1992 there was a downward trend in the number of reported other off-site transfers. However, from 1996 to 2001 there has been a gradual upward trend.

Figure 11



SPECIAL TREND ANALYSIS, 1992-2001(TRI-10)

Last year, in the *Fourteenth Annual Toxic Chemical Report*, the Illinois EPA presented a special trend analysis using a ten-year time frame (TRI-10)(1991-2000). This TRI-10 analysis was a comparative yardstick that showed how specific areas around Illinois have performed for toxic chemical releases. Some areas of the State saw decreases in aggregate releases while other areas had increases or little change.

In this *Fifteenth Annual Toxic Chemical Report*, this special trend analysis is repeated, however, the cycle was shifted to calendar years 1992 as the beginning year of TRI-10, and 2001 as the final year to show a sliding time-frame. Another change is that the analysis is presented for the Illinois counties, rather than zip code.

RELEASE ANALYSIS BY COUNTY

The Agency analyzed the counties in Illinois to determine the number that had reported increases and decreases in TRI releases and transfers. The current analysis includes a total of 94 counties

Table 30 shows the total number of counties that had a TRI-10 increase. Forty-one counties had a combined increase in releases and transfers of 57.3 million pounds between 1992 and 2001.

Table 31 shows the total number of counties that had a TRI-10 decrease for 2001. Forty-eight counties had a combined decrease in releases and transfers of 56.7 million pounds between 1992 and 2001.

The net change in reported releases and transfers during this ten-year study period was a total increase of 651,791 pounds. It is important to highlight that over the TRI-10 period the reporting requirements have changed in specific years where more facilities are required to report. For example, there were seven new industrial categories that were required to report for the first time in 1998, and in 2001 there were additional requirements to report lead. This analysis uses raw totals that are not normalized as has been done in the past.

Table 30

		COUNTIES WITH CHANGE IN RELEASE & TRANSFERS (POUNDS)			
		1992	2000	2001	TRI01 92-01
1	PEORIA	3515481	31821635	31890774	28375293
2	MACON	1261362	7405156	8494566	7233204
3	MONTGOMERY	96191	7932752	4768718	4672527
4	TAZEWELL	648265	4764568	4179079	3530814
5	VERMILION	4693990	8476617	7356199	2662209
6	WILL	3556008	7234107	5297701	1741693
7	CHRISTIAN	0	1646490	1345692	1345692
8	ADAMS	327163	1372404	1473143	1145980
9	MORGAN	160524	1453477	1284529	1124005
10	SANGAMON	308802	2373415	1086015	777213
11	MASON	500	468393	532294	531794
12	CASS	572379	353186	1088333	515954
13	CRAWFORD	927237	1265209	1380486	453249
14	MCLEAN	185835	764601	637148	451313
15	IROQUOIS	49173	147678	440450	391277
16	RANDOLPH	44605	1515326	397099	352494
17	WINNEBAGO	2027929	1363146	2301882	273953
18	JASPER		2548923	272772	272772
19	LOGAN	8335	375011	272637	264302
20	HARDIN	2832	262294	262294	259462
21	ALEXANDER	724017	927474	934345	210328
22	STEPHENSON	265041	242319	470041	205000
23	LASALLE	3481949	2668473	3610362	128413
24	CHAMPAIGN	98681	197469	192745	94064
25	MARSHALL	394197	357621	484363	90166
26	JEFFERSON	60747	129196	144701	83954
27	PERRY	2646	46611	51691	49045
28	MCDONOUGH	62672	980201	107207	44535
29	LEE	75091	45256	96249	21158
30	CAIRO			20399	20399
31	QUINCY			10759	10759
32	MACOUPIN	0	0	10425	10425
33	FAYETTE	1515	19725	8006	6491
34	WARREN	43758	7141	48141	4383
35	PIKE	1614	230381	5640	4026
36	FORD	3397	1750	6996	3599
37	SALINE		6270	3562	3562
38	WABASH	1939	3005	4513	2574
39	STARK	1010	462	3543	2533
40	SHELBY		31224	999	999
41	MERCER	500	500	793	293
TOTAL INCREASE		23605385	89439463	80977291	57371906

Note: Some number differences may be due to database query methods and rounding

Table 31

		COUNTIES WITH CHANGE IN RELEASE & TRANSFERS (POUNDS)			
		1992	2000	2001	TRI01 92-01
1	DOUGLAS	24035483	861288	760435	-23275048
2	WHITESIDE	13481236	6206694	3032169	-10449067
3	COOK	32368198	22267092	27505863	-4862335
4	PUTNAM	2086500	256008	196402	-1890098
5	COLES	1603065	1253681	176514	-1426551
6	JODAVIESS	2567119	1346750	1147386	-1419733
7	MADISON	8619348	15194967	7390308	-1229040
8	LAKE	1705902	1239935	532165	-1173737
9	ST. CLAIR	4685680	3970765	3532594	-1153086
10	ROCK ISLAND	6220478	4044460	5094924	-1125554
11	KANE	1553691	476601	555259	-998432
12	GRUNDY	2381936	1073958	1549587	-832349
13	WASHINGTON	800045	64146	1997	-798048
14	FULTON	887955	0	257648	-630307
15	KANKAKEE	1586630	4130743	1015912	-570718
16	JACKSON	542992	305267	37877	-505115
17	BOONE	689175	162686	213606	-475569
18	KENDALL	391474	29667	44	-391430
19	DEWITT	384125	27613	27050	-357075
20	KNOX	560847	361669	274599	-286248
21	RICHLAND	274688	25969		-274688
22	WILLIAMSON	451668	665953	180306	-271362
23	FRANKLIN	538100	887382	268882	-269218
24	DUPAGE	1556802	2930517	1300839	-255963
25	MARION	976781	941329	740920	-235861
26	BUREAU	257394	76329	47465	-209929
27	MOULTRIE	300798	146955	92257	-208541
28	MCHENRY	1174816	722693	975603	-199213
29	DEKALB	274697	128586	116364	-158333
30	LAWRENCE	138465	0	25127	-113338
31	WOODFORD	103157	26075	277	-102880
32	CLARK	81541	17308	-15958	-97499
33	CUMBERLAND	96000			-96000
34	EFFINGHAM	202146	171722	119369	-82777
35	LIVINGSTON	136073	136122	75839	-60234
36	MASSAC	86568	616357	43244	-43324
37	CLINTON	68104	14293	25003	-43101
38	WAYNE	42699	28319	1	-42698
39	WHITE	36388	12293	2716	-33672
40	HENRY	32862	7387	7292	-25570
41	OGLE	1620309	1557217	1603420	-16889
42	EDGAR	72078	148226	59641	-12437
43	CARROLL	33750	5	25156	-8594
44	CLAY	86803	62294	83744	-3059
45	HANCOCK	3020	2570		-3020
46	BOND	25522	29411	23720	-1802
47	UNION	565	0		-565
48	PIATT	23055	20481	23046	-9
	TOTAL DECREASE	115846728	72649785	59126613	-56720115

ILLINOIS EPA REGULATORY PROGRAMS

The Illinois EPA operates a number of programs, which identify, limit, monitor or otherwise control releases of various chemicals including many toxic chemicals regulated under Section 313. The following is a brief summary of those programs.

BUREAU OF AIR

Pollutant Monitoring - A statewide system of air monitoring instruments provides information on various air pollutants either continuously or every two to six days depending on instrument operation.

Permitting - Permits are required for processes and machinery that emit air pollutants. Permit conditions are imposed, which are designed to ensure that state emission restrictions are met. Approximately 21,000 operating permits have been issued for 7,600 facilities in Illinois.

Chemical releases to the air can occur from point sources such as stacks and vents or from non-point (fugitive) sources such as emissions from open-top holding tanks, wastewater streams or ponds, or from production losses. If these releases are subsequently captured or destroyed, no exposure occurs and, therefore, no toxic response is possible.

For some permitted releases, permit requirements are written to control chemicals of toxicological importance to the extent possible such that any exposure would be at a level of insignificance to the general public. Certain releases not covered by permits can be monitored by the Agency's statewide air monitoring network.

Air Toxics Program - The Agency is delegated to implement and enforce the federal standards under Section 112 of the CAAA, which limit the air releases of Hazardous Air Pollutants (HAPs). Expanded air toxics regulation has been authorized by legislation, which added Section 9.5 to the Illinois Environmental Protection Act for the purpose of identifying and limiting releases of toxic air contaminants. Pursuant to Section 9.5, the Agency has evaluated a number of toxic air contaminants. As a result of this evaluation, a revised list of 343 chemicals and compounds has been adopted by the Illinois Pollution Control Board (IPCB) as the Illinois Toxic Air Contaminants List. The list consists of Illinois Toxic Air Contaminants, Hazardous Air Pollutants (HAPs) and Great Lakes and Great Waters pollutants.

Compliance/Enforcement - More than 3,000 facility inspections are conducted each year to verify compliance with regulations and permit conditions. Violations are referred to the Office of the Attorney General for prosecution.

BUREAU OF LAND

Pollutant Monitoring - Information on waste stream characteristics, groundwater quality, hydrological and geological parameters and soil contamination are collected by the Illinois EPA and in many instances are also supplied to the Illinois EPA by regulated facilities.

Permitting - Permits are required for persons who treat, store or dispose of certain wastes. Applicants have to demonstrate that landfills are properly designed and constructed so as to prevent or minimize any adverse impacts to human health or the environment. In addition, any special wastes, industrial process, pollution control residual or hazardous wastes, have to be properly identified and analyzed before they can be permitted to be land filled. In many cases, hazardous wastes have to be recycled, incinerated, treated to certain standards or rendered non-hazardous prior to land filling. Permits for land disposal facilities require the applicant to monitor groundwater and submit reports to the Agency. The groundwater monitoring programs thus identify whether there have been releases from regulated facilities, and the need for remedial action. Permits have been issued to approximately 530 (450 hazardous and 80 hazardous) public and private waste treatment, storage and disposal facilities.

Compliance/Enforcement - To ensure that treatment, storage and disposal facilities continue to meet interim or final operating, monitoring and reporting requirements, on-site investigations, sampling visits and records review are done to verify compliance with regulations and permit conditions. Through non-compliance letters, meeting with the facilities and appropriate referral of enforcement actions compliance is tracked and maintained.

Resource Conservation and Recovery Act (RCRA) - Subtitle C of RCRA provides the authority for the development and implementation of a comprehensive hazardous waste management program. The intent of the Act is to control hazardous wastes; to eliminate environmentally unsound disposal practices; to increase the opportunity for resource conservation and recovery; and to provide for the environmentally acceptable disposal of hazardous wastes.

The Hazardous and Solid Waste Amendments to RCRA in 1984 include, among other changes, the authority to make a facility take corrective action for any release. Subtitle D of RCRA establishes a voluntary program through which states receive federal technical support to develop and implement solid waste management plans. These plans are intended to promote waste reduction and recycling of solid wastes, and require the closing or upgrading of all environmentally unsound dumps. Additionally, minimum technical standards are in place for all solid waste landfills.

Approximately 200 facilities are subject to regulation under the provisions of RCRA.

BUREAU OF WATER – DIVISION OF WATER POLLUTION CONTROL

Pollutant Monitoring - A statewide network of 207 stream monitoring locations is routinely used to assess physical, chemical, biological and bacteriological properties of all surface water and also provides information on ambient conditions and water quality trends. This network is augmented by periodic intensive surveys of the 15 major river basins in the state as well as ongoing programs to measure pollutant levels in sediment and fish flesh.

Permitting - Specific pollutant concentration and mass limitations and monitoring/reporting requirements are incorporated into permits for discharge to surface waters for the approximately 2500 municipal, industrial and commercial dischargers in the state. Chemical releases to surface

waters may be permitted if it can be shown that the release will conform to state and federal requirements for technology-based treatment and will not cause or contribute to violations of water quality standards established by the IPCB to protect designated uses of these waters. Thus, it may be required that the chemical be treated, removed, broken down or otherwise controlled to a point where the remaining amount will not be harmful to humans, fish and other aquatic life and wildlife, depending on the designated use of the body of water. Revisions of the toxic provisions of the state's water quality standards currently before the IPCB are designed to increase the Agency's ability to protect these waters.

Compliance/Enforcement - Field staff inspect facilities to determine compliance with permit conditions. Sampling by field staff and subsequent analyses characterize the chemical and physical make-up of the discharge. Biomonitoring and facility-related stream surveys are also used to quantify this impact on aquatic life in the receiving stream. Self-monitoring reports submitted by facilities, as required by permits, are evaluated for compliance. Unresolved violations are referred to the Office of Attorney General for prosecution.

BUREAU OF WATER – DIVISION OF PUBLIC WATER SUPPLIES

Pollutant Monitoring - Monitoring is conducted through regular testing of samples of raw and treated water from each public water supply. Testing includes microbiological, inorganic and organic chemicals, and radiological parameters.

Permitting - Owners or official custodians of facilities that wish to install new equipment or water mains or to modify existing equipment or distribution systems are required to obtain a construction permit. Once construction has been completed, an operating permit must be obtained prior to start of operation before putting new construction into operation. Agency personnel review permit applications to ensure proper system design and compliance with applicable regulations. Approximately 1,930 community water supply systems throughout the state are subject to the construction and operating permit requirements of the Agency. Permits are also issued for algae control, for pesticide application upstream of public water supply intakes, and for the waste disposal permit requirements that apply to public water supply treatment wastes.

The Agency administers the minimum and maximum setback zone procedures, which provide for a buffer area between public water supply wells and sources of possible chemical contamination of those wells, and is responsible for the hazard certification program, which registers all sites posing minimum hazard and provides an exemption from setback requirements.

Compliance/Enforcement - Agency field personnel regularly inspect public water supply systems and also respond to complaints and requests for assistance. Technical assistance provided by the Agency has proven to be extremely cost effective in helping supplies maintain adequate operations. In addition, other aspects of the groundwater protection program are conducted by the Agency. In cases of violations of water supply standards, permit requirements or certification requirements, the Agency will initiate enforcement action through the Office of the Attorney General.

OFFICE OF EMERGENCY RESPONSE

Emergency Response - Regulations require immediate reporting of emergency releases of many chemicals to the State. The Illinois EPA works within the State response system to provide technical advice to spillers and responding governmental units during response, mitigation and cleanup of incidents involving chemical emergencies. Over 2,400 such incidents were handled by the Agency in 2000.

Emergency Preparedness - The Agency also administers certain provisions of the Illinois Chemical Safety Act (ICSA). The ICSA requires facility contingency planning for dealing with releases of chemical substances, and provides for review and recommendations for improvement of contingency plans by the Illinois EPA following significant releases of chemical substances. Approximately 2,300 facilities are regulated under the provisions of the ICSA.

Federal PCB Compliance - the federal government under the authority of the Toxic Substances Control Act regulates the use of certain toxic substances such as Polychlorinated Biphenyls. Pursuant to a cooperative agreement, Illinois EPA staff conduct compliance inspections of such substances for the U.S. EPA who initiate any subsequent enforcement actions. This is one of the few Agency programs that address the use aspect of chemicals in contrast to addressing them as a waste, release or residue.

Compliance/Enforcement - Spills reported as emergencies are evaluated to determine the need for prevention and remediation measures. Cooperation is achieved in most cases, but formal compliance actions or even referral for prosecution are sometimes necessary to obtain the desired relief.

OFFICE OF POLLUTION PREVENTION

The Illinois Pollution Prevention Act was passed in 1992. This act may lead to new approaches to preventing pollution in Illinois. The Toxic Pollution Prevention Act of 1989 provides that manufacturing industries in Illinois may elect to develop toxic pollution prevention innovation plans in order to reduce the releases of toxic substances by various manufacturing processes which operate in the state. The Illinois EPA is to concur in innovation plans which will be effective in preventing toxic pollution, provided the plan will achieve the level of toxic pollution prevention of other available processes, and provided the plan will not reasonably be expected to have any significant adverse effect on public health or the environment.

The Illinois Materials Exchange Service, operated by the Agency, identifies potential waste materials for which a facility is attempting to find a potential user so that the materials can be recycled instead of being discarded as a waste. The Illinois EPA also identifies potential waste materials, which are being sought by facilities for use in their process as a raw material. The Illinois EPA also operates an internship program in cooperation with several universities, in an effort to work with Illinois industries to identify opportunities to reduce the generation of waste through the manufacturing process.

UTILIZATION OF FORM R DATA

Data reported on Form R has been utilized in many ways. Some examples are as follows:

AIR PROGRAM

Form R data is being used in conjunction with seasonal emissions reports to help evaluate performance by participants in the Emissions Reduction Market System. The Bureau of Air also utilizes Form R data to identify facilities for regulation under delegated provisions of the federal Clean Air Act Amendments.

ILLINOIS CHEMICAL SAFETY ACT (ICSA)

Section 313 (Form R) data is utilized in the process of adding facilities for coverage under the ICSA. Form R data is also being reviewed to determine compliance with the ICSA by facilities reporting under Section 313.

STORM WATER PERMITS

Form R data is used to identify facilities for storm water permitting activities under the federal Clean Water Act Amendments.

HAZARDOUS WASTE SITE OPERATIONS

Form R information is used by the Illinois EPA's Bureau of Land to identify toxic chemicals present at hazardous waste sites for a number of programmatic reasons.

POLLUTION PREVENTION

Beginning with reporting year 1991, Form R data has been utilized as a tool for analyzing pollution prevention efforts.

NON-ROUTINE RELEASES

Beginning with reporting year 1991, Form R information is being utilized to verify that appropriate emergency notification has been given by facilities, which have experienced non-routine releases of toxic chemicals.

FREEDOM OF INFORMATION ACT

Various individuals and citizen groups have requested Form R data for a variety of purposes, including generation of a report to a citizen group's constituency. Many such requests are made to support site investigations related to property transfer.

ENVIRONMENTAL TOXICOLOGY ACT

The Illinois Department of Public Health may use Form R data as input to the health assessments mandated by this Act for Superfund and Clean Illinois sites.

HEALTH AND HAZARDOUS SUBSTANCES REGISTRY ACT

The Illinois Department of Public Health has requested and received Form R data to use as inputs to this Registry.

INFORMATION SUPPORT DURING CHEMICAL EMERGENCIES

The Illinois EPA has used Form R data to determine what chemicals might have been released during facility chemical emergencies involving fire or explosion.

LOCAL SAFETY ACTIVITIES

In addition to handling planning and response activities under the Illinois Chemical Safety Act, local governments have been actively developing and pursuing emergency response and preparedness capabilities under Title III. Local officials used Form R data as input to their emergency response plans.

CHEMICAL EXPOSURE SCREENING

Local public health departments and the U. S. Occupational Safety and Health Administration (OSHA) have requested identification of facilities in certain areas, which release specific chemicals for the purpose of targeting exposure screening for facility employees.

ENVIRONMENTAL PERFORMANCE

The Illinois EPA uses Form R data as indicators of environmental performance in its Annual Environmental Conditions Report.

OTHER USES

An industrial trade association has requested pollution prevention information from Form Rs for some of its member facilities.

Form R data from the Illinois Toxic Chemical Inventory has been provided to be used, along with other data, to analyze critical environmental trends in Illinois.

Utility companies in Illinois have requested Form R information for their customers to support them in release reduction.

The Illinois EPA used Form R information, along with EPCRA Section 312 information, to assess the Year 2000 preparedness of chemical facilities in Illinois.


CHANGES IN REPORTING REQUIREMENTS

The following changes have been made by USEPA for calendar year 2001:

- Starting with reporting year 2001, lead and lead compounds are classified as persistent, bioaccumulative and toxic (PBT) chemicals. The reporting thresholds for lead and lead compounds, except lead contained in stainless steel, brass or bronze alloys have been lowered to 100 pounds.
- The EPCRA section 313 Chemical Lists has been updated to reflect that the *de minimis* exemption is not applicable for lead and lead compounds, except for supplier notification purposes and except for lead when it is contained in stainless steel, brass or bronze alloys.
- The *de minimis* level for dimethylformamide and saccharin has been changed from 0.1% to 1.0%.
- The *de minimus* level for 1,2-butylene oxide, catechol, chloroprene, chlorthalonil, C.I. Solvent Yellow 3, dichlorobromomethane, ethylbenzene, alpha-hexachlorocyclohexane, and hexachloroethane has been changed from 1.0% to 0.1%.
- The qualifier for isopropyl alcohol has been changed to match the qualifier in the Code of Federal Regulations.
- Starting with reporting year 2000, new chemical activity threshold levels are set for persistent, bioaccumulative and toxic (PBT) chemicals and chemical categories.
- For PBT chemicals (except lead when it is contained in stainless steel, bras or bronze alloy) and chemical categories, the *de minimus* exemption, Form A, and range reporting are now allowed.
- The Alternate Threshold provides eligible facilities with the option of submitting a simplified Form A instead of the full Form R for the non-PBT chemicals and chemical categories.

APPENDIX A - FORM R

(Note: Due to the length of the instructions for completing Form R, only the form for RY2001 is included in Appendix A.)

 EPA United States Environmental Protection Agency	<h1 style="margin:0;">FORM R</h1>	TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM
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		

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center P.O. Box 3348 Merrifield, VA 22116-3348 ATTN: TOXIC CHEMICAL RELEASE INVENTORY	2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)	Enter "X" here if this is a revision
		For EPA use only

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 trade secret? <input type="checkbox"/> Yes (Answer question 2.2; Attach substantiation forms) <input type="checkbox"/> No (Do not answer 2.2; Go to Section 3)	2.2 Is this copy <input type="checkbox"/> Sanitized <input type="checkbox"/> 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
Street	Facility or Establishment Name or Mailing Address (if different from street address)
City/County/State/Zip Code	Mailing Address
	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)
-----------------------------------	--------------------------------------

4.4 Public Contact Name	Telephone Number (include area code)
--------------------------------	--------------------------------------

4.5 SIC Code (s) (4 digits)	Primary						
	a.	b.	c.	d.	e.	f.	

4.6 Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	4.8 EPA Identification Number (RCRA I.D. No.) (12 characters)	4.9 Facility NPDES Permit Number(s) (9 characters)	4.10 Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1 Name of Parent Company	NA <input type="checkbox"/>	
5.2 Parent Company's Dun & Bradstreet Number	NA <input type="checkbox"/>	

EPA 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 completed 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 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)
1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category. (If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.)	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	
NA <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

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

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

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	<input type="text"/> (Enter two-digit code from instruction package.)
-----	---

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA <input type="checkbox"/>			
5.2	Stack or point air emissions	NA <input type="checkbox"/>			
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
5.3.1	Stream or Water Body Name				
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. 01/2001) - 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.

EPA 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 ONSITE (Continued)			
	NA	A. Total Release (pounds/year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I Wells	<input type="checkbox"/>	
5.4.2	Underground Injection onsite to Class II-V Wells	<input type="checkbox"/>	
5.5	Disposal to land onsite		
5.5.1A	RCRA Subtitle C landfills	<input type="checkbox"/>	
5.5.1B	Other landfills	<input type="checkbox"/>	
5.5.2	Land treatment/application farming	<input type="checkbox"/>	
5.5.3	Surface Impoundment	<input type="checkbox"/>	
5.5.4	Other disposal	<input type="checkbox"/>	
SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS			
6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)			
6.1.A Total Quantity Transferred to POTWs and Basis of Estimate			
6.1.A.1. Total Transfers (pounds/year*) (enter range code** or estimate)		6.1.A.2 Basis of Estimate (enter code)	
6.1.B. <input type="text"/>		POTW Name <input type="text"/>	
POTW Address <input type="text"/>			
City <input type="text"/>	State <input type="text"/>	County <input type="text"/>	Zip <input type="text"/>
6.1.B. <input type="text"/>		POTW Name <input type="text"/>	
POTW Address <input type="text"/>			
City <input type="text"/>	State <input type="text"/>	County <input type="text"/>	Zip <input type="text"/>
If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box <input type="text"/> and indicate the Part II, Section 6.1 page number in this box <input type="text"/> (example: 1,2,3, etc.)			
SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS			
6.2. <input type="text"/> Off-Site EPA Identification Number (RCRA ID No.)			
Off-Site Location Name <input type="text"/>			
Off-Site Address <input type="text"/>			
City <input type="text"/>	State <input type="text"/>	County <input type="text"/>	Zip <input type="text"/> Country (Non-US) <input type="text"/>
Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No			

EPA FORM R						TRI Facility ID Number	
PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)						Toxic Chemical, Category or Generic Name	
SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (Continued)							
A. Total Transfers (pounds/year*) (enter 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		State		County		Zip	
Country (Non-US)							
Is location under control of reporting facility or parent company?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
A. Total Transfers (pounds/year*) (enter 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							
<input type="checkbox"/> Not Applicable (NA) - Check here if no on-site waste treatment 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-character code(s))				c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data ?
7A.1a	7A.1b	1	2	7A.1c	7A.1d	7A.1e	
	3	4	5		%	Yes No	
	6	7	8			<input type="checkbox"/> <input type="checkbox"/>	
7A.2a	7A.2b	1	2	7A.2c	7A.2d	7A.2e	
	3	4	5		%	Yes No	
	6	7	8			<input type="checkbox"/> <input type="checkbox"/>	
7A.3a	7A.3b	1	2	7A.3c	7A.3d	7A.3e	
	3	4	5		%	Yes No	
	6	7	8			<input type="checkbox"/> <input type="checkbox"/>	
7A.4a	7A.4b	1	2	7A.4c	7A.4d	7A.4e	
	3	4	5		%	Yes No	
	6	7	8			<input type="checkbox"/> <input type="checkbox"/>	
7A.5a	7A.5b	1	2	7A.5c	7A.5d	7A.5e	
	3	4	5		%	Yes No	
	6	7	8			<input type="checkbox"/> <input type="checkbox"/>	
If additional pages of Part II, Section 6.2/7A are attached, indicate the total number of pages in this box <input type="text"/> and indicate the Part II, Section 6.2/7A page number in this box : <input type="text"/> (example: 1,2,3, etc)							

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

EPA FORM R		TRI Facility ID Number		
PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)		Toxic Chemical, Category or Generic Name		
SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES				
<input type="checkbox"/> Not Applicable (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	<input type="text"/>	2	<input type="text"/>	
3	<input type="text"/>	4	<input type="text"/>	
SECTION 7C. ON-SITE RECYCLING PROCESSES				
<input type="checkbox"/> Not Applicable (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.	<input type="text"/>	2.	<input type="text"/>	
3.	<input type="text"/>	4.	<input type="text"/>	
5.	<input type="text"/>	6.	<input type="text"/>	
7.	<input type="text"/>	8.	<input type="text"/>	
9.	<input type="text"/>	10.	<input type="text"/>	
SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES				
	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	Quantity released ***			
8.2	Quantity used for energy recovery onsite			
8.3	Quantity used for energy recovery offsite			
8.4	Quantity recycled onsite			
8.5	Quantity recycled offsite			
8.6	Quantity treated onsite			
8.7	Quantity treated offsite			
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)			
8.9	Production ratio or activity index			
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.			
	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1	a.	b.	c.	
8.10.2	a.	b.	c.	
8.10.3	a.	b.	c.	
8.10.4	a.	b.	c.	
8.11	Is additional information on source reduction, recycling, or pollution control activities included with this report? (Check one box)			YES <input type="checkbox"/> NO <input type="checkbox"/>

EPA Form 9350-1 (Rev. 01/2001) - Previous editions are obsolete.

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

*** Report releases pursuant to EPCRA Section 329(b) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite.

APPENDIX B - TOXICOLOGY REFERENCES

General Public

Chemical Manufacturers Association, *Chemicals in the Community: Methods to Evaluate Airborne Chemical Levels*, May, 1988.

Kamrin, Michael A., *Toxicology for the Citizen*; Center for Environmental Toxicology, Michigan State University, 1985.

Ottoboni, M. Alice, *The Dose Makes the Poison: A Plain-language Guide to Toxicology*, Berkeley: Vincente Books, 1984.

Sittig, Marshall, *Handbook of Toxic and Hazardous Chemicals and Carcinogens*, Park Ridge, NJ: Noyes Publications, 1985.

Tox FAQs; Fact sheets available from U.S. Dept. of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry; <http://atsdr1.atsdr.cdc.gov:8080/toxfaq.html>.

Public Health Practitioners

Casarett, Louis J.; Doull, John, *Casarett & Doull's Toxicology*, Fourth Edition. New York: Macmillan Publishing Co., 1991.

Gosselin, Robert E.; Smith, Roger P.; Hodge, Harold C.; Braddock, Jeanett E., *Clinical Toxicology of Commercial Products*, Baltimore: Williams and Wilkins, 1984.

"Guidelines for Carcinogen Risk Assessment," Federal Register, Wednesday, September 24, 1987. Vol. 51, No. 185.

"Guidelines for the Health Risk Assessment of Chemical Mixtures," Ibid.

"Guidelines for Mutagenicity Risk Assessment," Ibid.

"Guidelines for the Health Assessment of Suspect Developmental Toxicants." Ibid.

"Guidelines for Estimating Exposures," Ibid.

Hays, Wayland J., Jr., *Pesticides Studied in Man*, Baltimore: Williams and Wilkins, 1982.

IRIS, Integrated Risk Information System; USEPA; <http://www.epa.gov/iris>.

Kamrin, Michael A., *Toxicology - A Primer on Toxicology Principles and Applications*; Chelsea, MI: Lewis Publishers, 1988.

APPENDIX C - CHEMICAL REFERENCES

The Condensed Chemical Dictionary, 14th Edition. New York: Van Nostrand Reinhold Company, 2001.

Farm Chemicals Handbook, Willoughby, OH: Meister Publishing Co., 1997.

Fire Protection Guide on Hazardous Materials, National Fire Protection Association, NFPA #HAZ-91,
1991.

Sax, N. Irving, *Dangerous Properties of Industrial Materials*, New York: Van Nostrand Reinhold Co.,
1984.

U.S. EPA Chemical Profiles

World Wide Web site <http://ww.epa.gov>