

## U.S. EPA P2 and Toxic Release Inventory



## Past P2 Activities for TRI Program

- Quickly go over TRI and latest available data
- P2 activities using TRI
  - Green Engineering/Chemistry in the Pharmaceutical Sector
  - National Partnership for Environmental Priorities (NPEP)
  - Other –
    - Region 2 Priority Targeting Effort

## Toxic Release Inventory Who Has to Report?

### Since 1987

- Manufacturers

### Since 1995

- Federal Facilities

### Starting July 1, 1999

- Electric Generating Facilities, Coal Mining and Metal Mining, Solvent Recyclers, Hazardous Waste Treatment Facilities, Chemical Distributors, Petroleum Distributors

### With More Than 10 Employees

Exceed Thresholds of Any of Over 600  
Chemicals and Chemical Categories

## Toxic Release Inventory What are the thresholds?

- **Manufacturing or Processing**
  - 25,000 pounds per chemical/year
- **Otherwise Using the chemical**
  - Does not become part of the final product
  - 10,000 pounds per chemical/year
- **Lowered thresholds in 2000 and 2001 for Persistent Bioaccumulative Toxins**
  - 100 pounds, 10 pounds or 0.1 gram for dioxin

## Toxic Release Inventory What are the lowered thresholds?

### Persistent Bioaccumulative Toxins

100 lbs/yr -	Aldrin Methoxychlor Pendimethalin <b>Lead</b>	<b>PAC's</b> Tetrabromobisphenol A Trifluralin <b>Lead Compounds</b>
10 lbs/yr -	Chlordane Heptachlor <b>Mercury</b> Toxaphene Isodrin <b>PCBs</b>	Benzo(g,h,i)perylene Hexachlorobenzene <b>Mercury compounds</b> Octachlorostyrene Pentachlorobenzene
0.1 g/yr -	<b>Dioxin and dioxin-like compounds</b>	

\* PBT's most widely reported

## Toxic Release Inventory What is Reported?

### Multi-media

Air, Water, Land, Transfers Off-site

### Transfers Off-site for Further Waste Management

### On-site Waste Management

### Environmental Permit Information

# Toxic Release Inventory

## TRI 2008 National Data

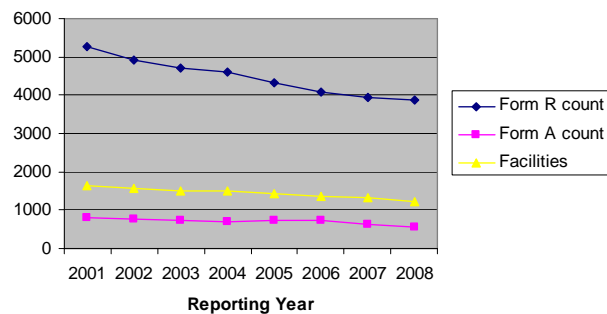
- Regionally –
  - 8.7% decrease on on-site and offsite from 2007

State	2007 Total Releases	2008 Total Releases	2007-2008 Change	2007-2008 % Change
Virgin Islands	769,966	817,826	47,861	6.22
Puerto Rico	5,243,876	5,204,834	-39,042	-0.74
<b>New Jersey</b>	<b>20,576,252</b>	<b>17,974,449</b>	<b>-2,601,803</b>	<b>-12.64</b>
<b>New York</b>	<b>35,343,367</b>	<b>32,522,910</b>	<b>-2,820,458</b>	<b>-7.98</b>

# Toxic Release Inventory

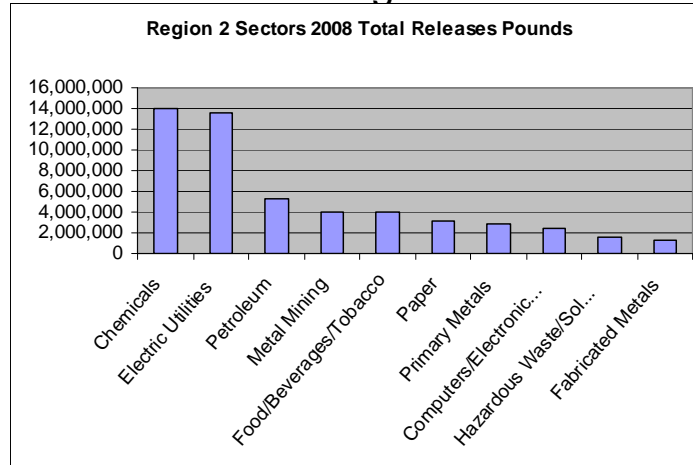
## TRI 2008 Data

Number of Facilities, Forms R, Forms A



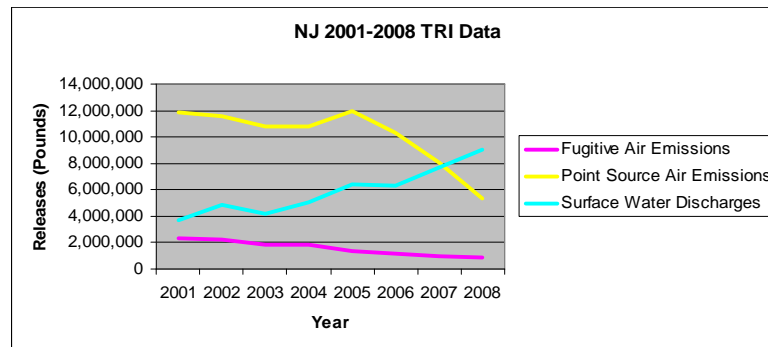
- From 2007 – 2008
  - number of facilities reporting drop by 6%; Nationally there is a 5% drop
    - Data are from 2008, so much of the effect of the economic downturn may not be visible this year
  - Number of Forms R dropped by 2%
  - Number of Forms A dropped by 15%

## Toxic Release Inventory “TRI 2008 Regional Data



- Total pounds (on and off-site ) is around 55 million pounds
- Chemical Manufacturing and Electric Utilities are the Sectors that have the largest on and off-site releases: approx. 14 million each

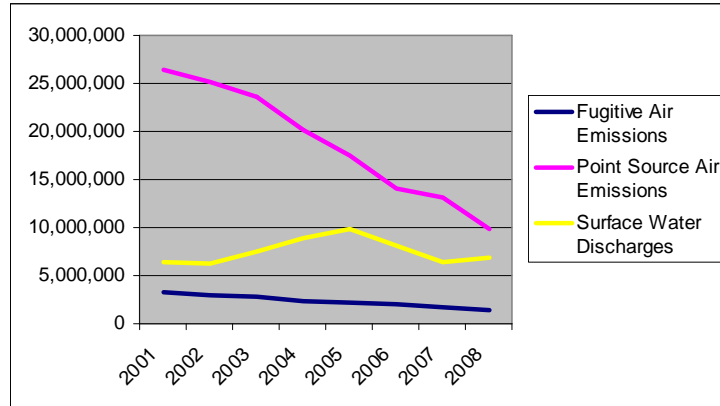
## Toxic Release Inventory TRI 2008 Data



- From 2007 to 2008 there was a 33% decrease in air point source releases (~3 million pounds) however;
- Surface water release increased 18% from 2007
  - Mainly due to Dupont Deepwater and Conoco Philips Bayway

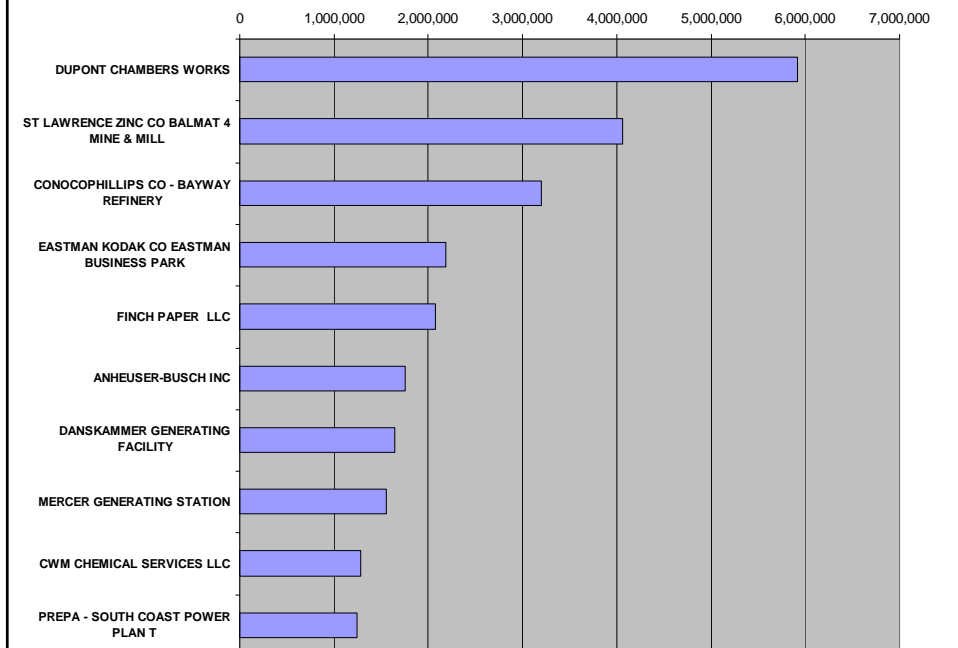
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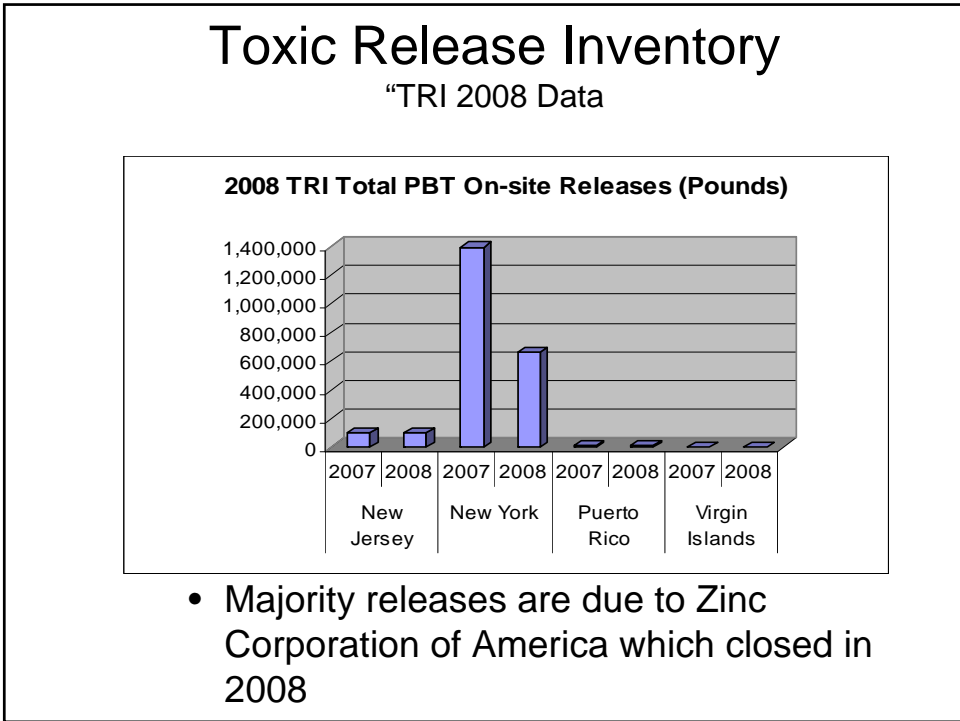
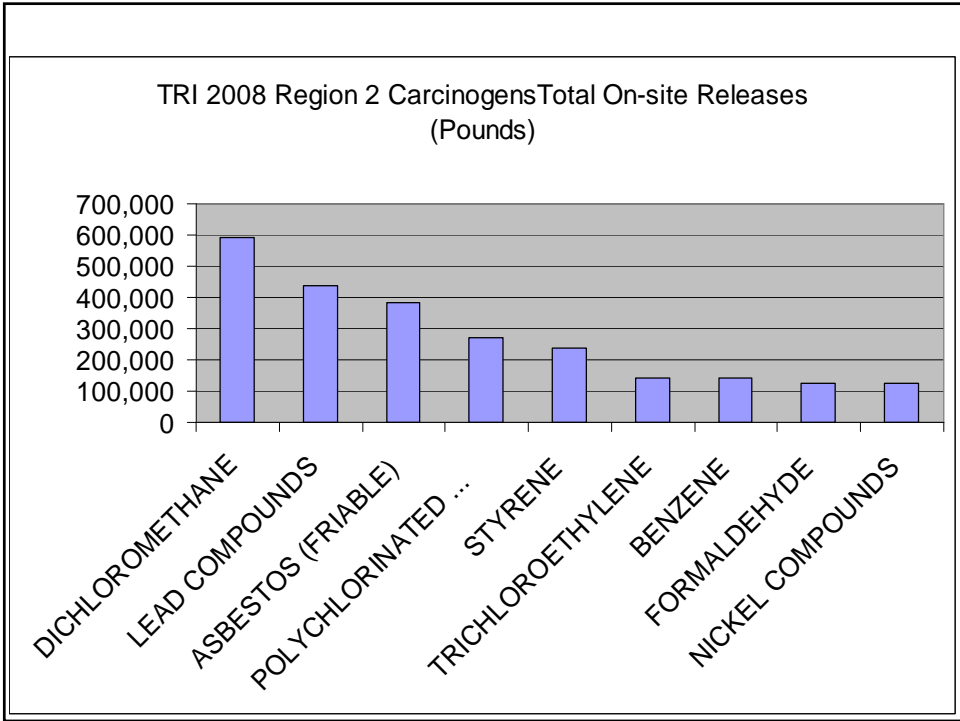
TRI Trend NY 2001-2008



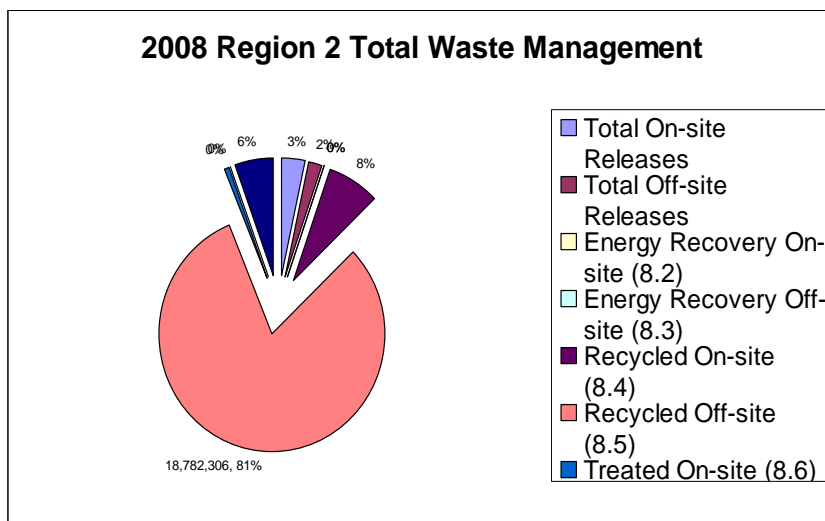
- Point source reduction
  - 25% from 2007-2008
    - Mostly due to Russell Station, Mirant Lovet and Eastman Kodak in Kodak Park
  - 63% reduction from 2001-2008

TRI 2008 Region 2 Total On-site Releases





## So where does everything go in TRI 2008 Region 2?



## Region 2 and Pollution Prevention

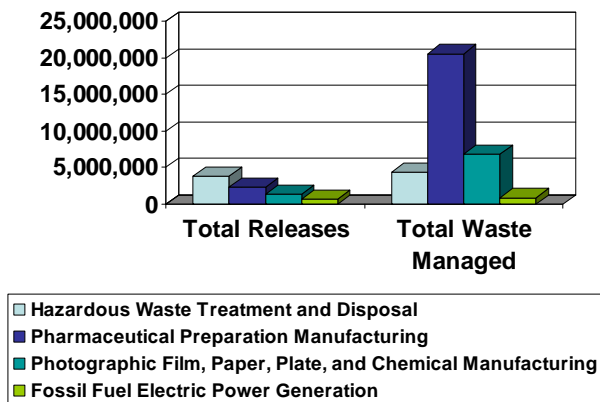
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  - Green Engineering/Chemistry in the Pharmaceutical Sector
  - National Partnership for Environmental Priorities (NPEP)
  - Other –
    - Region 2 Priority Targeting Effort

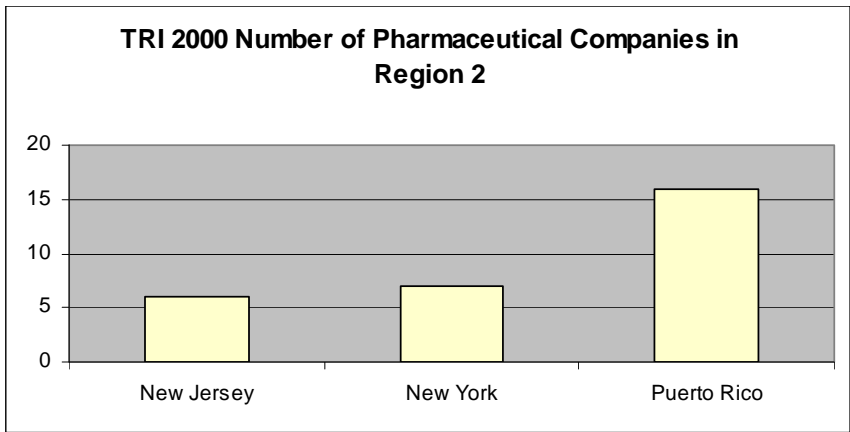
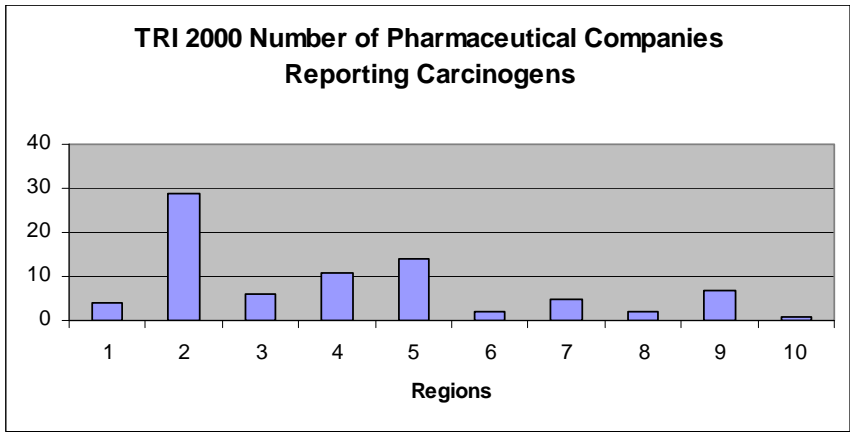


## Pharmaceutical Sector

- Region 2 looked at the sectors that emitted carcinogens in the Region
  - Pharmaceutical sector emitted most of the carcinogens
    - In 1988 it was over 20 million pounds on site releases
  - Region 2 has the highest number of pharmaceutical companies in the nation
    - 33% of pharmaceutical sector
    - 21% of the medicinal and botanical manufacturing

TRI 2000 Carcinogens Released by Sector Region2

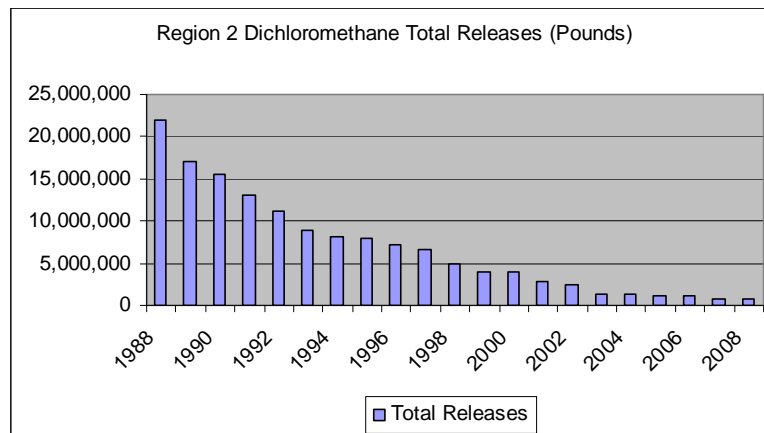




## Pharmaceutical Sector

- Green Engineering/Chemistry P2 grant awarded to address this sector starting in 2005
  - Rowan University
    - “Green engineering” application to phase I and II production of a Bristol-Myers Squibb pharmaceutical.
    - Extended partnerships with Novartis and Pfizer
      - These corporations have around 15 facilities in Region 2

## Trends - Dichloromethane in R2



## National Partnership for Environmental Priorities (NPEP)

- National Partnership for Environmental Priorities (NPEP)
  - RCRA partnership program focused on reducing the use of potentially hazardous chemicals from products and processes.
  - Chemicals focused in Region 2
    - Naphthalene
    - Mercury
    - Lead

## National Partnership for Environmental Priorities (NPEP)

- Reductions achieved:
  - Lead : 1.7million pounds
  - Mercury: 1,163 pounds
- Reductions committed:
  - Naphthalene: 116, 454 lbs

## Region 2 Priority Targeting Effort

- Identify candidates for Clean Water Act sampling inspections and/or non-sampling P2 inspections to be conducted by:
  - Division of Environmental Science & Assessment
  - Division on Environmental Planning & Protection

## Region 2 Priority Targeting Effort

- Monitoring and Assessment Branch
  - Conducts monitoring inspections
    - sampling and non-sampling work in various media
  - Prepares reports documenting
    - Inspection and findings (including analytical sampling results)
  - Conducts P2 inspections
- RSEI Water Analysis was shared
  - Interest in having P2 inspections and water sampling at greater risk facilities emerged

## 2003 RSEI Region 2 Water

Facility Name	Location	RSEI score
CWM Chemical Services, LLC	Model City, Niagara County, NY	96672.33
Gulf Oil L P Linden Terminal	Linden, Union County, NJ	16363.37
Kennedy Valve	Elmira, Chemung County, NY	9876.81
Vineland Municipal Electric Utility – H. M. Down Station	Vineland, Cumberland County, NJ	5647.56
GE Noryl LLC	Selkirk, Albany County, NY	3277.38
Sybron Chemicals Inc	Birmingham, Burlington County, NJ	2115.42
Delphi Thermal & Interior Lockport	Lockport, Niagara County, NY	2085.88

## Region 2 Priority Targeting Effort

- First inspection with a sampling component looking to identify TRI issues was:
  - Gulf Oil LP Linden Terminal, Linden NJ
  - Petroleum bulk terminal that discharges to the Rahway River in NJ
  - Reported 420 pounds water emissions
  - 2003 RSEI ranked it the 2<sup>nd</sup> facility that contributes to the overall water risk in the Region



## Region 2 Priority Targeting Effort

- Chemicals emitted by the facility to water are chemical components of gasoline
- Facility has a Stormwater NPDES permit to emit to Rahway River
- Close to the EPA Region 2 Edison Facility
- Served as test of priority setting exercise
- CWA inspection with monitoring and P2 inspection was conducted

## What we learned !

- NPDES Permit is for Oil& Grease and suspended solids
  - No specific TRI chemical was targeted
- Facility used amount of oil and grease to calculate TRI Releases; speciation based on gasoline components

## What we learned !

- Releases reported to TRI in 2003
  - (420 pounds) based on yearly stormwater quantity instead of gallons emitted when the sampling was conducted, as per state instructions
  - Possible over estimation of releases
- Many petroleum bulks stations in the area discharge to same water body
  - NJDEP could modify permits to include monitoring of specific TRI chemicals in discharges to the river



## What we learned !

- Future inspections under the priority targeting effort now include sampling for TRI chemical contributing to RSEI water risk
- Petroleum bulk stations in the area have changed business operations and might not be covered by TRI
- Approach has started the dialog with the Water Program that could provide further direction in the Region