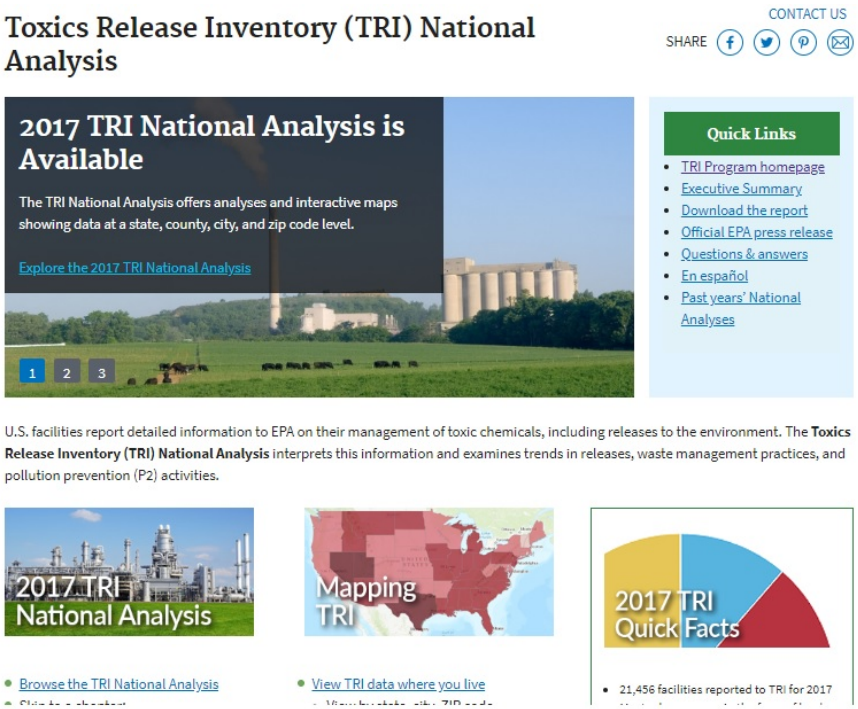
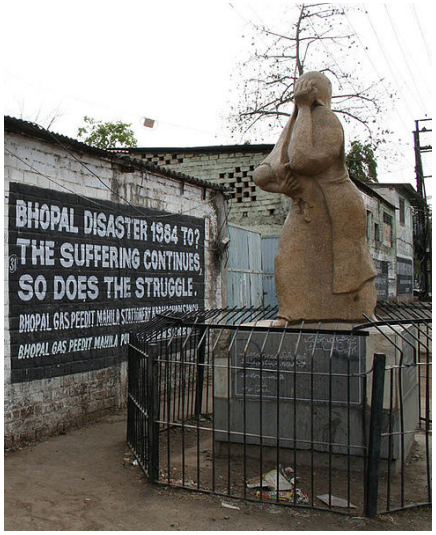
Introduction to the
Toxics Release Inventory and the 2017 TRI National Analysis Report



Overview

- Introduction to TRI
- Reporting Year 2017 TRI National Analysis
- Updated web-based report
- Custom data visualization
- Questions & Discussion

Why was the Toxics Release Inventory created?



Bhopal memorial for those killed and disabled by the 1984 toxic gas release

Bhopal, India **December 1984**

- Methyl isocyanate gas released at a Union Carbide chemical plant
- Thousands died the first night
- Thousands more have died due to long-term health effects
- Survivors continue to suffer with permanent disabilities

Institute, West Virginia **August 1985**

- Chemical release at a similar facility in the U.S.
- Over 100 people hospitalized

Increased concern in the U.S. about chemical accident preparedness and availability of information on toxic chemical releases from industrial facilities

What is the Toxics Release Inventory (TRI)?

- TRI tracks the waste management of certain chemicals that may pose a threat to human health and the environment.
- TRI includes information on:

Releases

Waste transfers

Recycling

Pollution prevention

And much more!

What is a “release”?

- A **"release"** refers to different ways that TRI chemicals from industrial facilities enter the:

Air

Water

Land

- The likelihood of residents coming into contact with TRI chemicals depends on the type of release and other factors

For more information, see “*Factors to Consider When Using TRI Data”* at: https://www.epa.gov/toxics-release-inventory-tri-program/factors-consider-when-using-toxics-release-inventory-data

What is a “release”?

- On-Site Release to **Air**
  - Includes both fugitive/non-point source emissions (e.g. leaks and evaporation) and stack/point-source emissions (e.g. releases from a duct or pipe)

- On-Site Release to **Water**
  - Discharges to surface water bodies such as streams, rivers, lakes, and oceans; also includes releases of TRI chemicals to surface water due to runoff, including stormwater runoff

- On-Site Release to **Land**
  - Eight categories of land releases or disposal reported to TRI. Examples include:
    - Placement of waste rock containing TRI chemicals into engineered piles or structures at metal mines
    - Disposal of chemical waste in landfills
    - Injection of liquid containing TRI chemicals into underground injection wells
    - Placement of waste materials into surface impoundments to volatize or settle
    - Application of certain waste products to farmlands as fertilizer

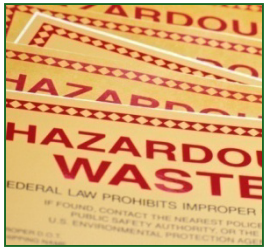
Which facilities must report to TRI?

1. Facility must be in a TRI-covered industry sector or category, including:

Manufacturing

Coal/Oil electricity generation

Certain Mining Facilities



Hazardous Waste Management

Federal Facilities

2. Facility must have the equivalent of at least 10 full-time employees
3. Facility must manufacture, process or use more than a certain amount of a TRI chemical per year

What information do facilities report to TRI?

- On-site releases of TRI chemicals to:
  - Air
  - Water
  - Land

- Transfers of chemical waste to off-site locations

- Other waste management:
  - Recycling
  - Treatment
  - Energy Recovery

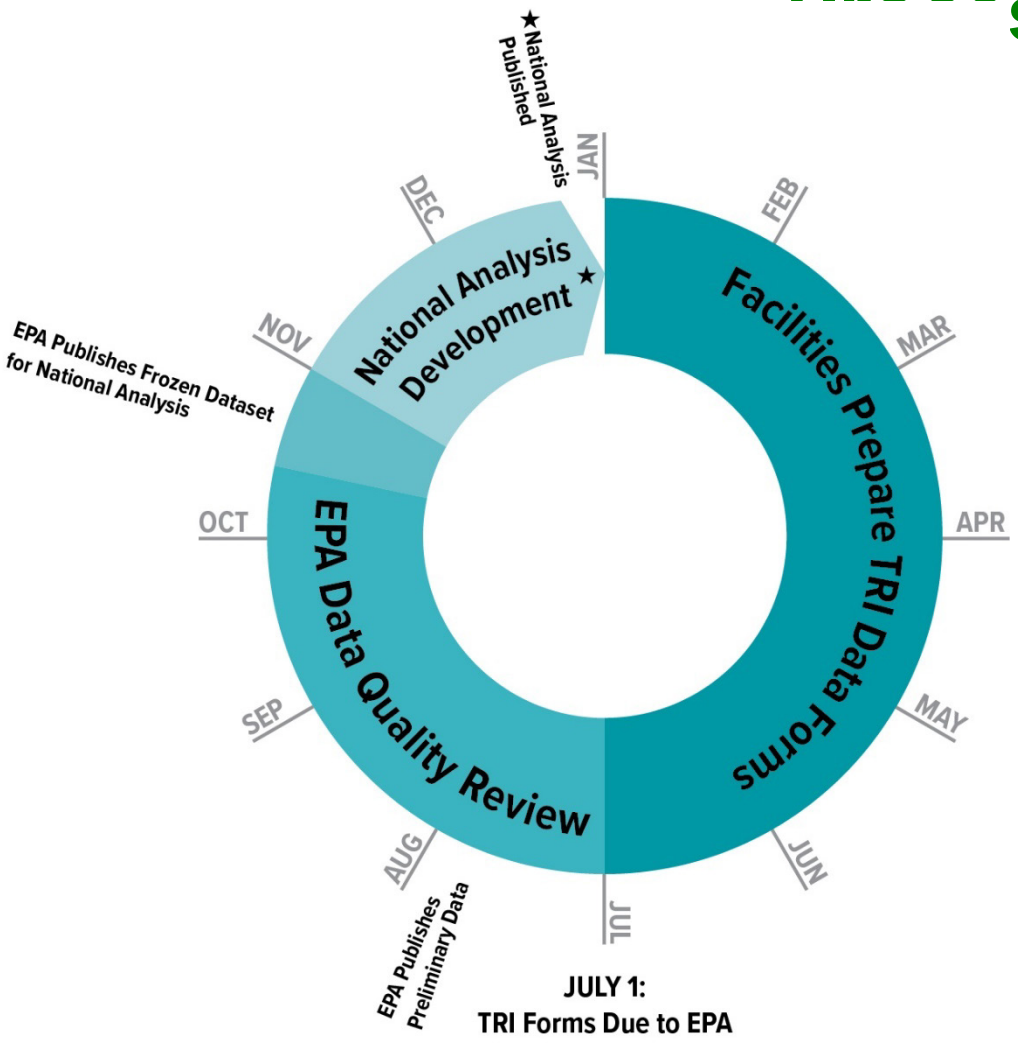
- Pollution prevention activities (www.epa.gov/tri/p2)

Considerations When Using TRI

- TRI doesn't include information about public exposure to chemicals
- TRI covers an important subset of chemicals managed at U.S. facilities, but doesn't cover all chemicals or facilities
- Data reflect annual totals and don't indicate the frequency or duration of a release
- Quantities reflect chemicals released into air and water and managed through recycling, energy recovery, treatment and disposal
- Toxicity level varies among the chemicals on the TRI list
- TRI facility operations and releases are regulated under other EPA programs with requirements designed to limit human and environmental harm

For more information, see *"Factors to Consider When Using TRI Data"* at:
https://www.epa.gov/toxics-release-inventory-tri-program/factors-consider-when-using-toxics-release-inventory-data

Annual TRI Cycle and Data Quality Process



- Facilities submit their TRI forms for each calendar year to EPA by July 1st of the following year
- The preliminary TRI dataset is released in July
- EPA conducts data quality checks and compliance assistance activities from July - October
- The TRI National Analysis (EPA's official annual TRI report) is published early the following year

2017 TRI National Analysis

Toxics Release Inventory (TRI) National Analysis

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2017 TRI National Analysis is Available

The TRI National Analysis offers analyses and interactive maps showing data at a state, county, city, and zip code level.

Explore the 2017 TRI National Analysis

1 2 3

Quick Links

- TRI Program homepage
- Executive Summary
- Download the report
- Official EPA press release
- Questions & answers
- En español
- Past years' National Analyses

U.S. facilities report detailed information to EPA on their management of toxic chemicals, including releases to the environment. The **Toxics Release Inventory (TRI) National Analysis** interprets this information and examines trends in releases, waste management practices, and pollution prevention (P2) activities.

2017 TRI National Analysis

Mapping TRI

2017 TRI Quick Facts

- Browse the TRI National Analysis
- View TRI data where you live
- 21,456 facilities reported to TRI for 2017

www.epa.gov/trinationalanalysis

Summary of the 2017 TRI National Analysis

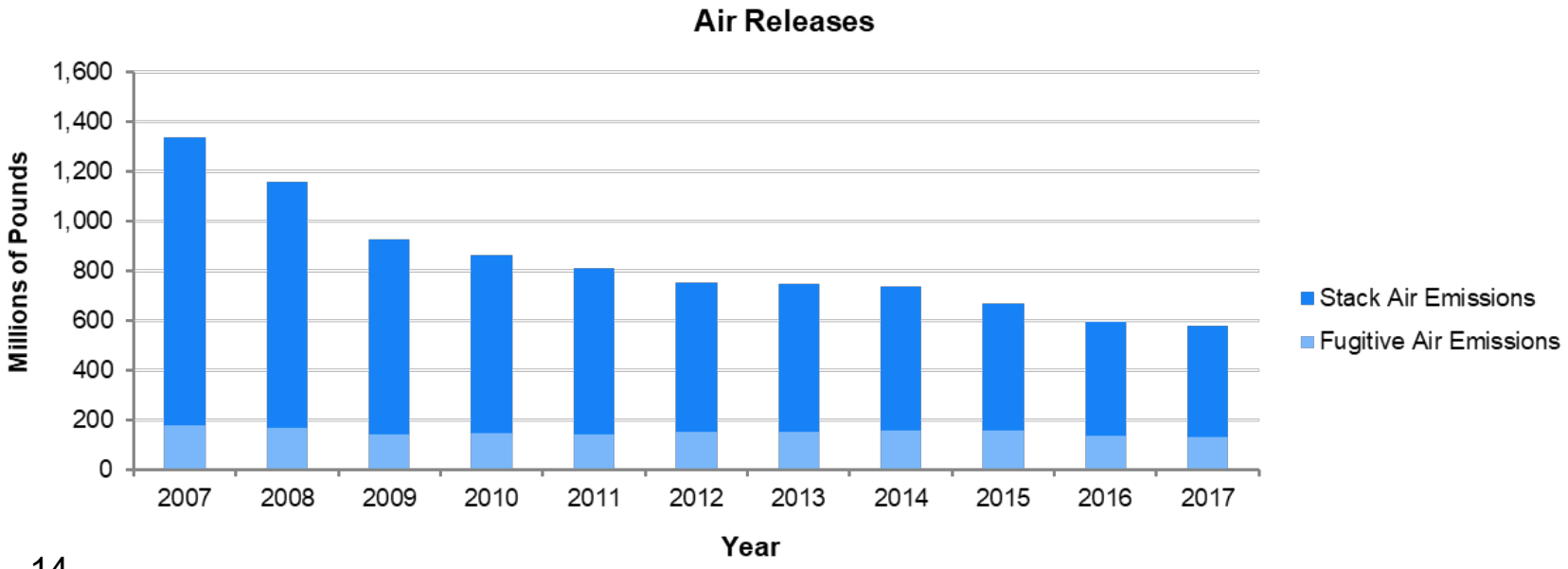
- TRI data demonstrate that economic growth and improved environmental performance can coexist
  - TRI facilities implemented almost 4,000 new pollution reduction activities in 2017
  - TRI releases from the manufacturing sector decreased 25% since 2007, while the US economy has grown over that time period
- Air releases continue to decline nationally
  - 2007-2017: Air releases decreased by 57% (-757 million pounds)
    - 2016-2017: Air releases decreased by 2% (-11 million pounds)
  - Electric utilities are responsible for the greatest reductions since 2007, but almost every sector has reduced their air releases
- State- and local-level analyses of TRI data may show trends that differ from national trends
- The National Analysis increases transparency and understanding of TRI information: www.epa.gov/trinationalanalysis
  - Interactive, embedded tools such as maps and data visualizations support access to and exploration of TRI data

Summary of the 2017 TRI National Analysis

- Recycling of production-related waste increased 20% from 2016-2017
  - Total production-related waste managed increased 10% from 2016-2017 to 30.6 billion lb (recycling, treatment, energy recovery, and releases)
  - Releases increased 13%, and there was little change in treatment or energy recovery
  - Of 30.6 billion pounds of waste managed, 26.6 billion pounds (87%) were not released due to preferred waste management practices such as recycling
- Disposal or other releases increased 13% from 2016-2017 to 3.9 billion lb
  - Land disposal increased – Metal mines
  - Little change in air and water releases
  - 2017: Of the 3.5 billion lb released on site, 2.7 billion lb (77%) were released to land, 601 million lb (17%) to air, and 191 million lb (5%) to water
- New this year:
  - A summary of Green Chemistry (GC) activities reported to TRI (based on 6 years of GC codes)
  - Expand the use of RSEI in the National Analysis
  - Expand the water section to include information on wastewater treatment
  - Highlight the paint and coatings sector

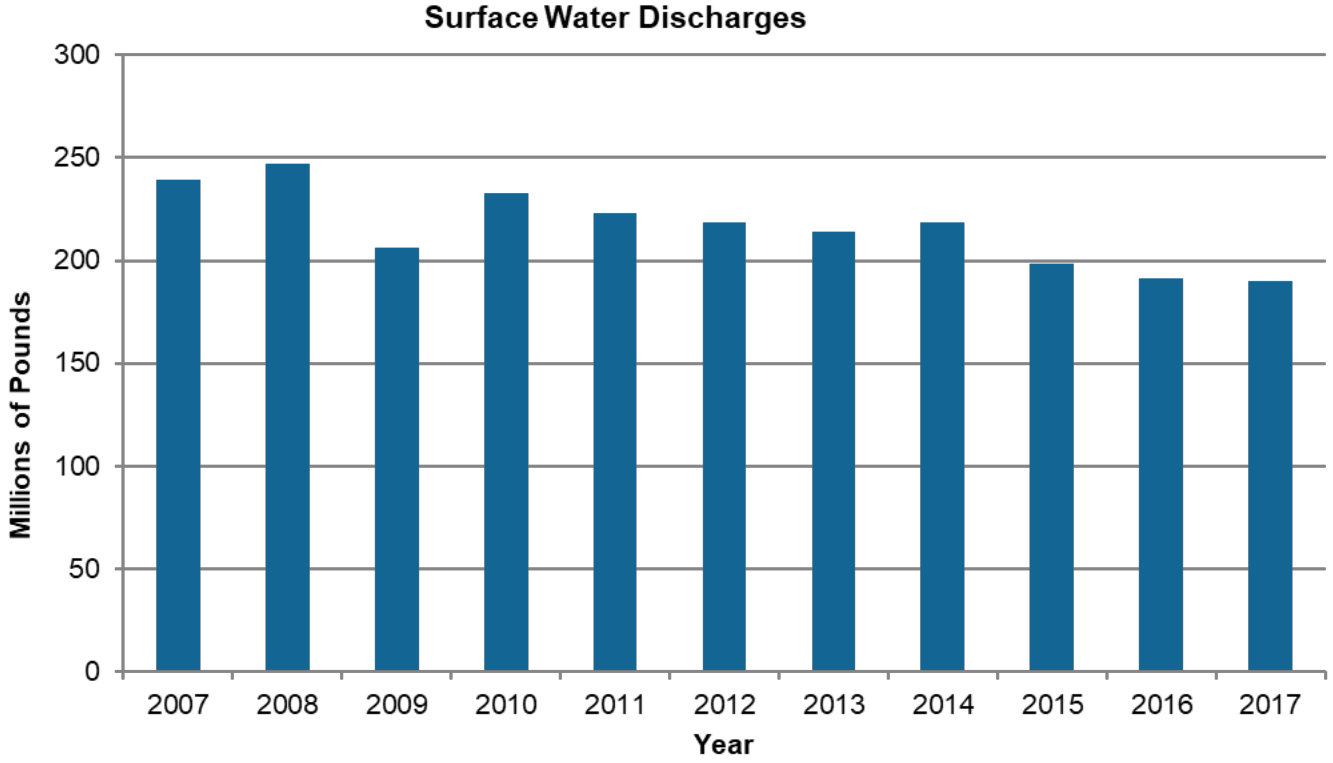
Trends – Air Releases

- 2007-2017: Air releases decreased by 57% (757 million pounds)
  - 2016-2017: Air releases decreased by 2% (11 million pounds)
  - Decreased from 2008-2009 largely due to economic recession
    - 2017 releases lower than 2009 despite economic recovery
      - 2009 GDP = $14.4 trillion; 2017 GDP = $19.4 trillion



Trends – Water Releases

- 2007-2017: Surface water discharges decreased by 20% (49 million pounds)
  - 2016-2017: Surface water discharges changed by <1% (-8 million pounds)
  - Decreased from 2008-2009 due to economic recession
    - 2017 releases are lower than 2009 releases despite economic recovery
      - 2009 GDP = $14.4 trillion; 2017 GDP = $19.4 trillion

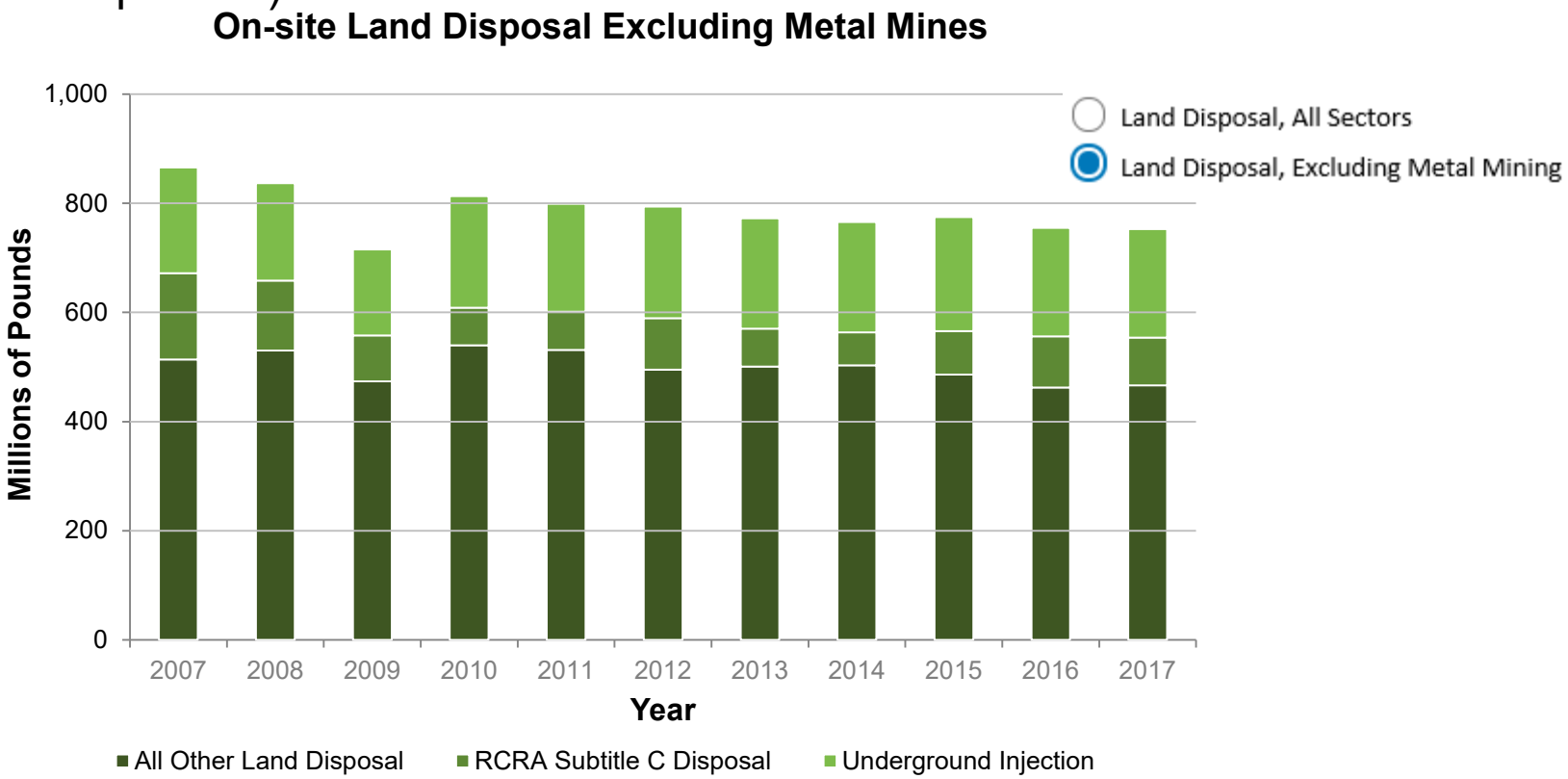


Trends – Land Releases (all sectors)

- 2007-2017: On-site land disposal increased by 35% (695 million pounds)
  - 2016-2017: On-site land disposal increased by 19% (433 million pounds)
    - Increase is driven by the metal mining sector, for which land disposal increased by 435 million pounds

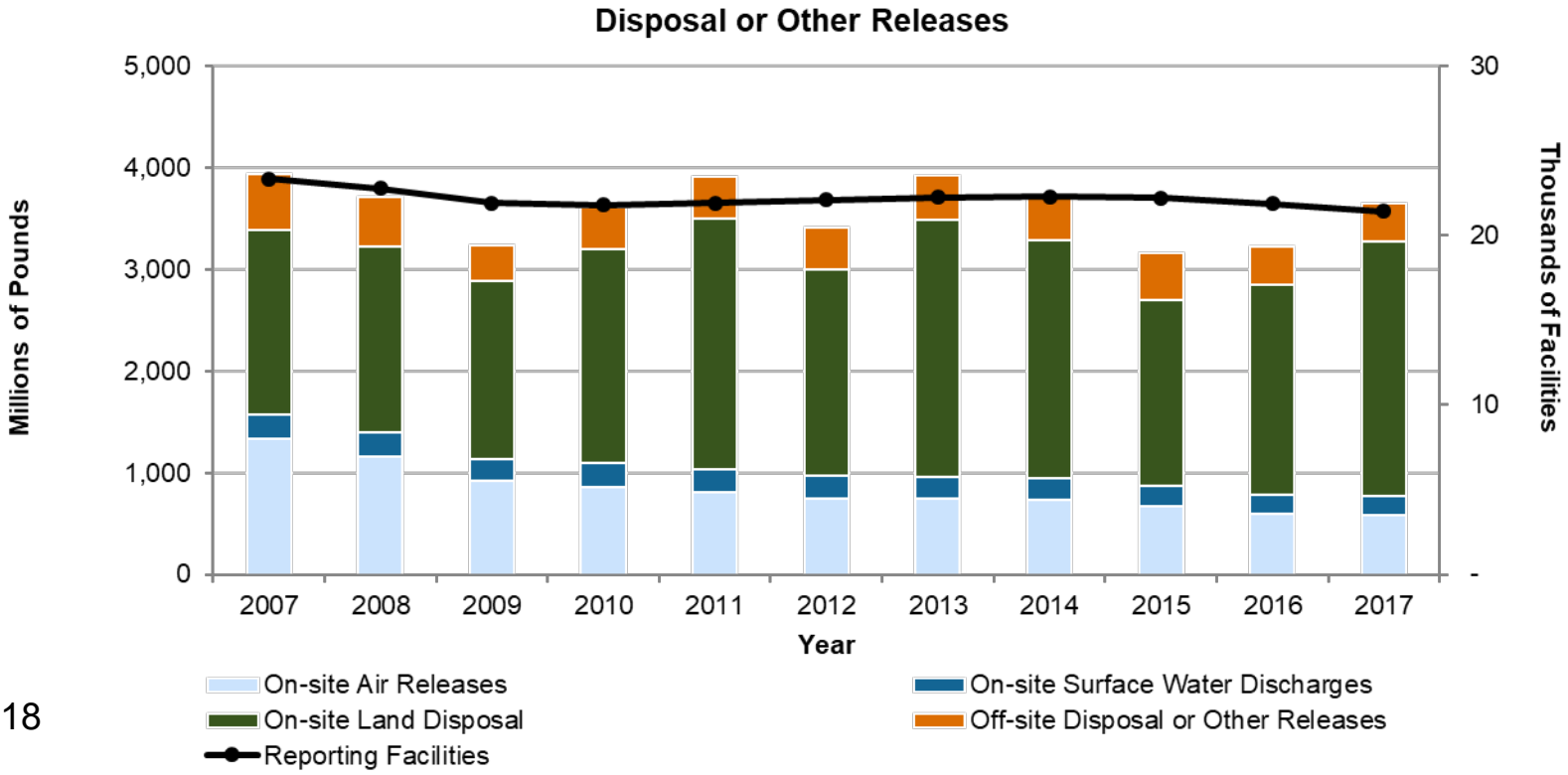
Trends – Land Releases (excluding metal mining)

- 2007-2017: Excluding metal mining, land disposal decreased 13% (113 million pounds)
  - 2016-2017: Excluding metal mining, land disposal showed little change (-2 million pounds)



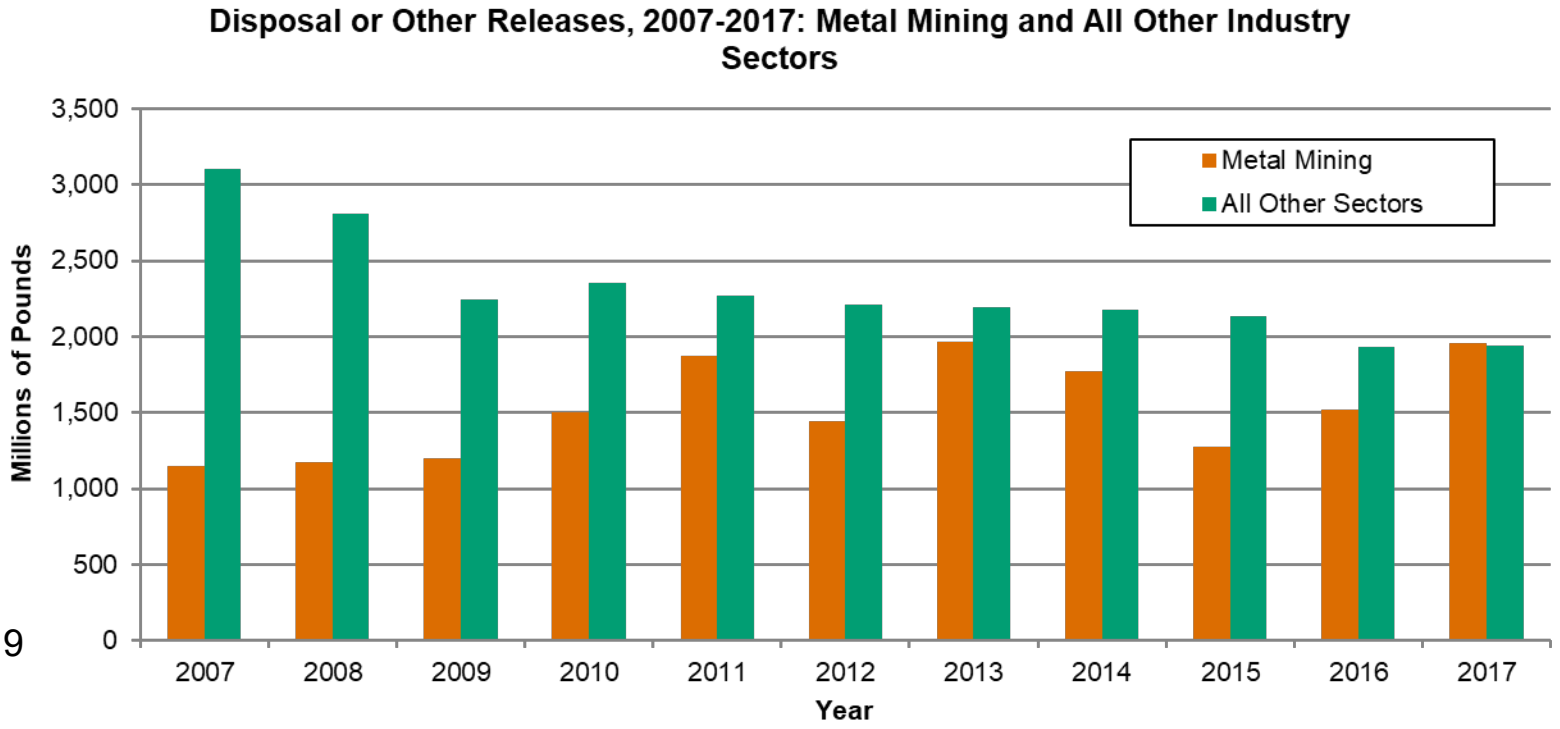
Chemical Release Trends in the 2017 National Analysis

- 2016-2017: Total releases increased by 13% (432 million pounds)
  - Metal mining on-site land disposal increased 434 million pounds
    - Disposal of waste rock is an integral part of mining operations
    - Metal mines employ 38,000 people nationwide; production value is $26 billion
- Excluding metal mining, releases changed by <0.1%



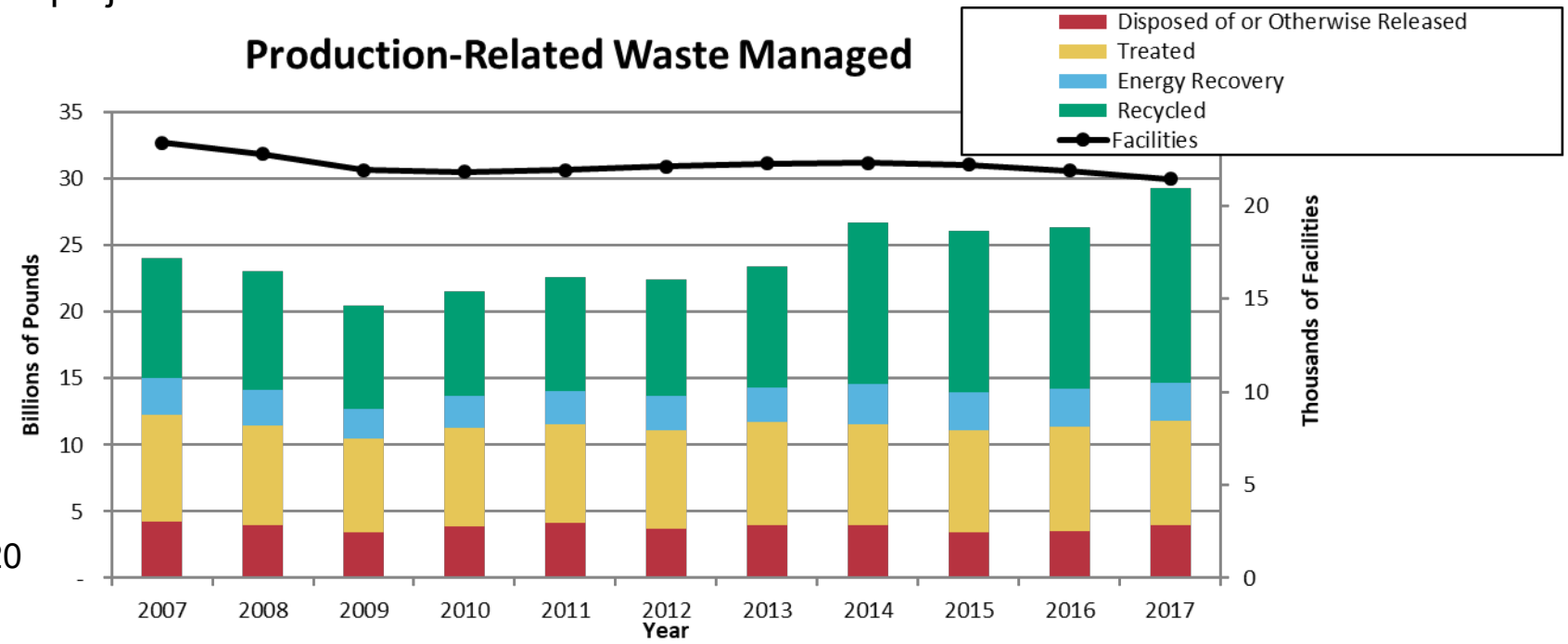
Trends – Metal Mining & Other Industry Sectors

- 2007-2017: Releases by metal mining fluctuated
- 2007-2017: Releases from all other industries decreased
  - Large decrease from 2008-2009 due to economic recession
  - 2017 releases are lower than 2009 despite economic recovery
    - 2009 GDP = $14.4 trillion; 2017 GDP = $19.4 trillion



Waste Management Trends in the 2017 National Analysis

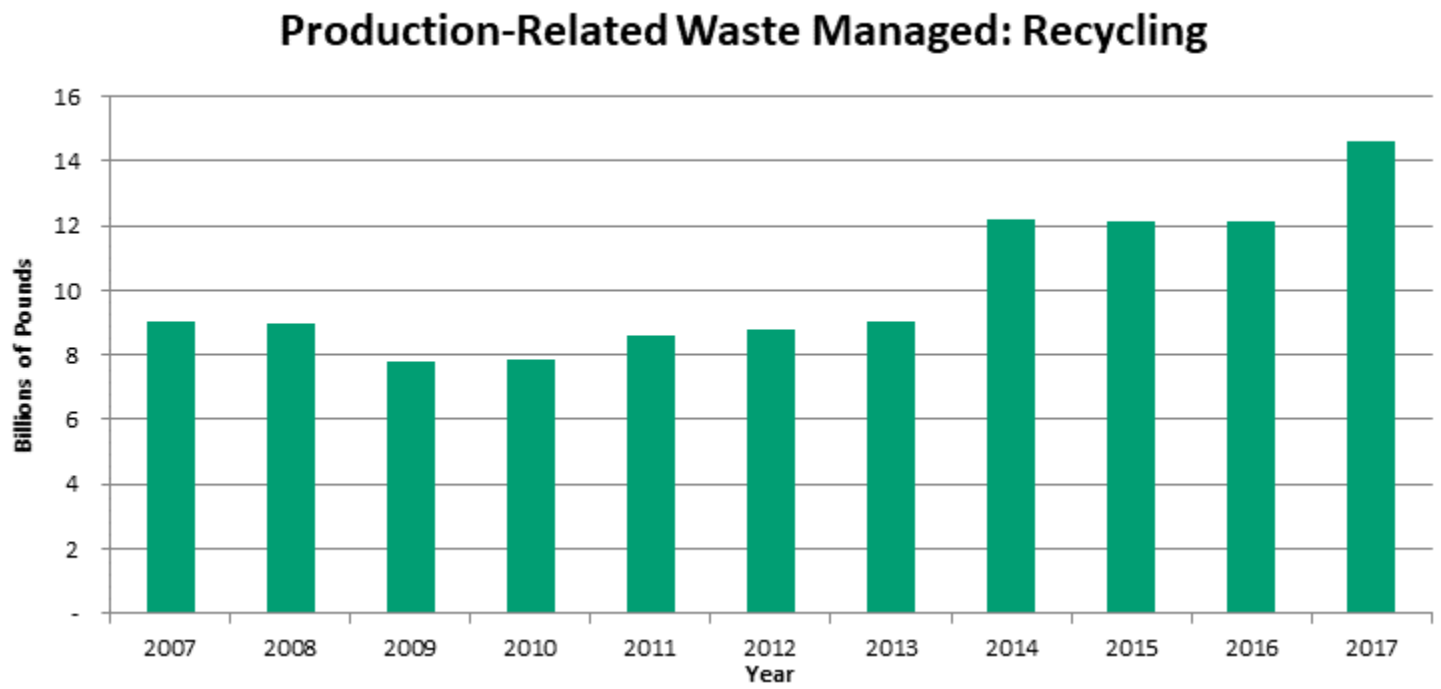
- 2007-2017: Total production-related waste managed increased by 22% (5.3 billion lb)
  - 2016-2017: Production-related waste managed increased by 10% (2.9 billion lb)
    - Recycling increased 20%, releases increased 13%, little change in treatment or energy recovery
- For 2017, 7% of facilities reported initiating nearly 4,000 new pollution reduction projects



Waste Management Trends in the 2017 National Analysis

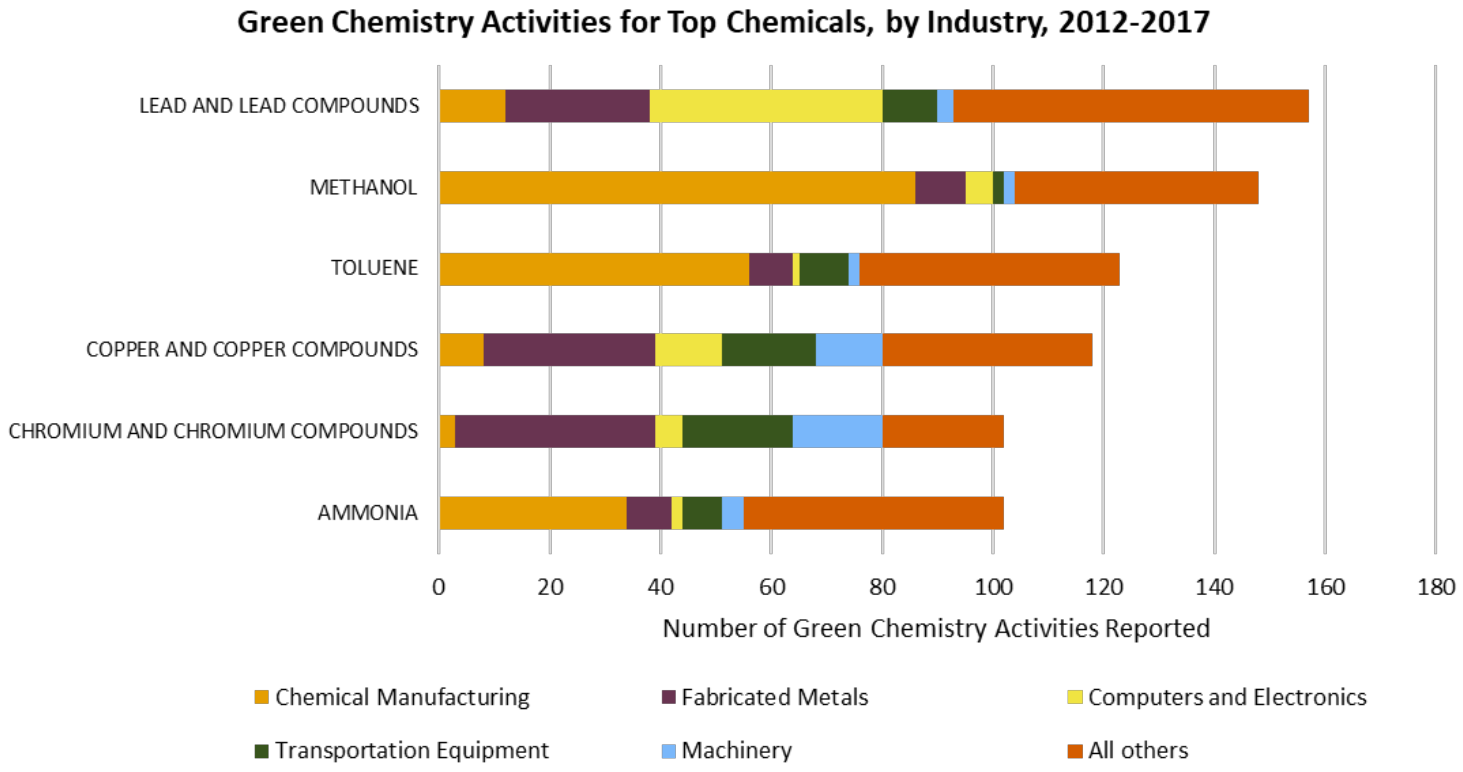
Recycling of production-related waste managed increased 20% from 2016-2017

- Top chemicals recycled by volume include dichloromethane, cumene, and toluene

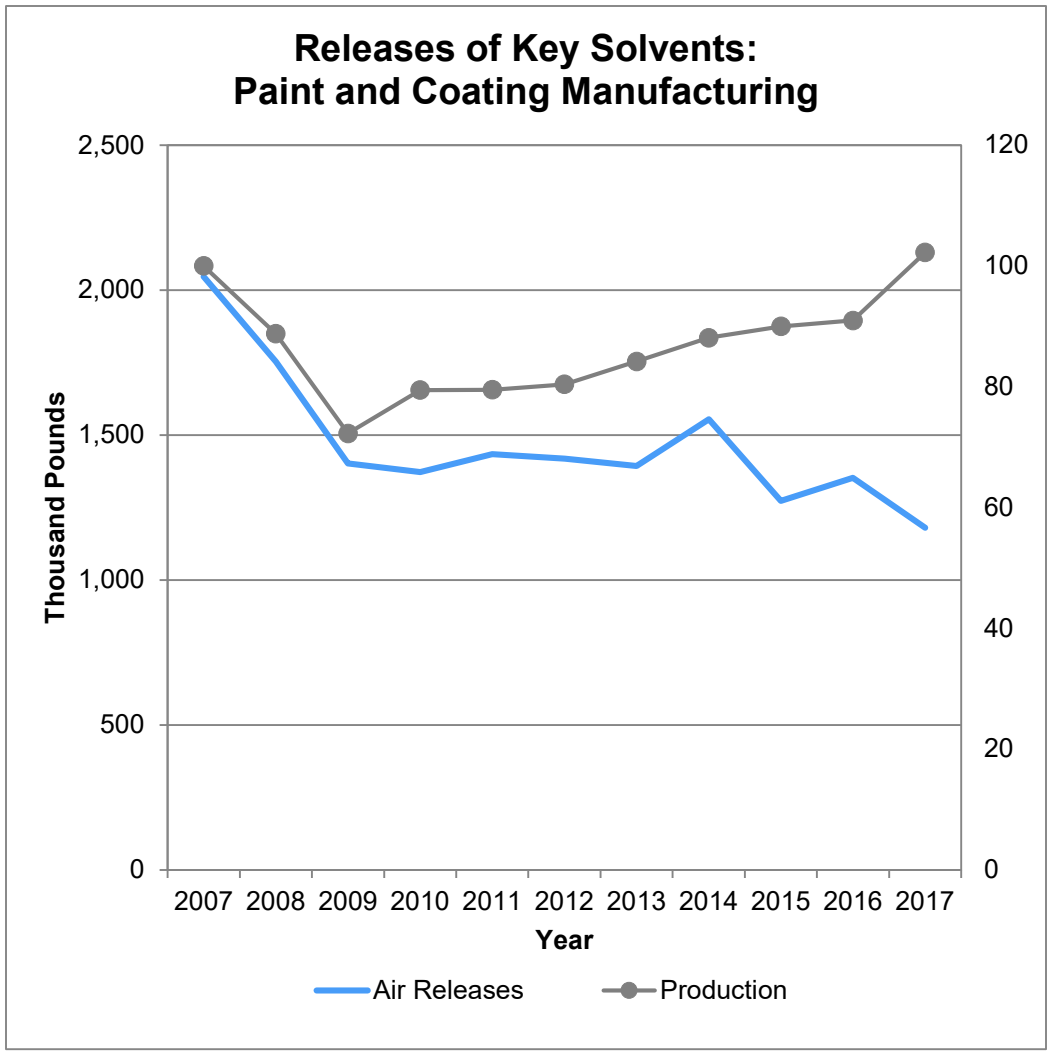


New Analysis – Green Chemistry Reporting

TRI facilities have reported implementing over 2,000 green chemistry activities since 2012



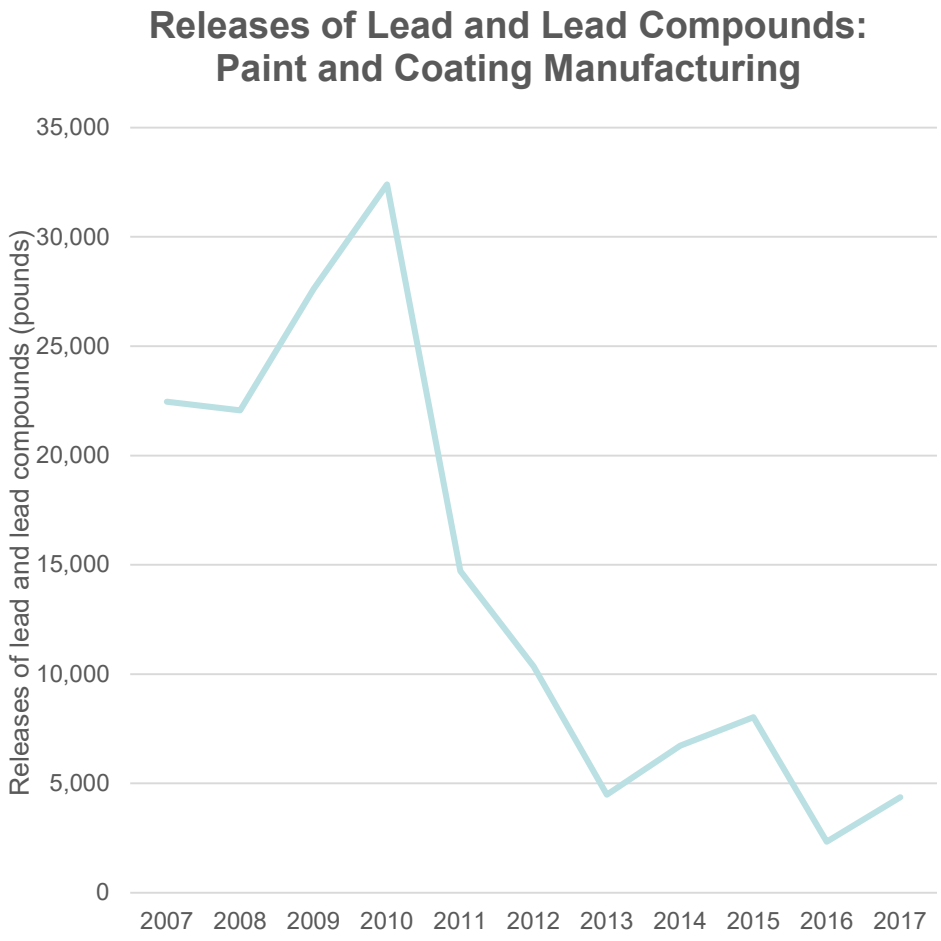
New Analysis – Paint & Coatings Manufacturing Sector Profile



- Total releases of the top 5 solvents from the paints industry have dropped by 842 thousand pounds (37%) since 2007
- Many facilities in this industry reported changing cleaning solvents or reformulating products to reduce their use of TRI-reportable solvents

New Analysis – Paint & Coatings Manufacturing Sector Profile

- Although lead is banned in consumer paints sold in the US, it may be present in industrial paints such as paints used on bridges or ships.
- Several paint companies have stopped reporting lead and others, including PPG (the current top releaser), have announced complete phase-outs.
- The paint sector is now a minor source of lead releases, but is important for worker exposure and serves as an example for other industries.



2017 National Analysis Website

www.epa.gov/trinationalanalysis

Using TRI Explorer

https://iaspub.epa.gov/triexplorer/tri_factsheet_search.searchfactsheet