



2014 TRI National Analysis



Key Messages

- Total production-related waste increased 2% from 2013-2014
 - All waste management activities except Energy Recovery decreased
 - Energy Recovery increased 21%: primary increases in releases from Petroleum, Chemical Manufacturing, and Cement sectors
 - 2014: Of 25 billion pounds of waste managed, 22 billion pounds (84%) were not released due to preferred waste management practices like recycling.
- Total disposal or other releases decreased 6% from 2013-2014
 - Land disposal decreased – Metal mines
 - Air releases decreased – Electric utilities and chemical manufacturing
 - Some industries, including petroleum and stone/clay/glass manufacturing, increased
 - 2014: Of the 3.9 billion lbs released, 2.5 billion lbs (65%) were released to land, 738 million lbs (19%) were released to air, and 216 million lbs (6%) were released to water
- New this year:
 - “TRI Facilities and You” demographic information Story Map
 - Highlight federal facilities and zero releasers
 - Information from new field for Estimated Annual Reductions
 - Web update: TRI NA hosted on its own microsite

- New for 2014: the TRI NA is hosted on its own microsite
 - Provides more control and functionality on the development end
 - Easier reading and more logical flow on the reader's end
 - Increases visibility in search results
 - Incorporates discussion forum to increase engagement with data users

2014 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.

What is the TRI National Analysis?
Toxics Release Inventory National Analysis

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.

2014 TRI National Analysis Quick Facts

- 21,873 facilities reported to TRI
- Most releases were to land, primarily from metal mining operations

From 2013 to 2014:

- Waste managed increased by 2% since 2013
- Releases decreased by 6% since 2013

Production-Related Waste Managed, 2014
25.45 billion pounds

Category	Percentage
Treated	34%
Energy Recovery	14%
Disposed of or Otherwise Released	15%
Recycled	37%

We Want to Hear From You!

- How are you using the report?
- What else would you like to see?
- What do you think of the report?

Let us know! [Visit our discussion forum.](#)

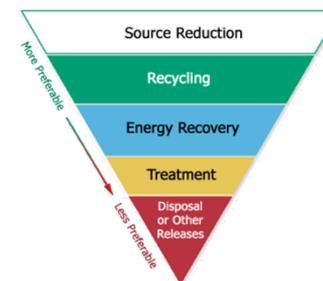
Quick Links

- [TRI home page](#)
- [Press release](#)
- [Executive Summary](#)
- [Download the report](#)
- [En español](#)
- [Past years' National Analyses](#)

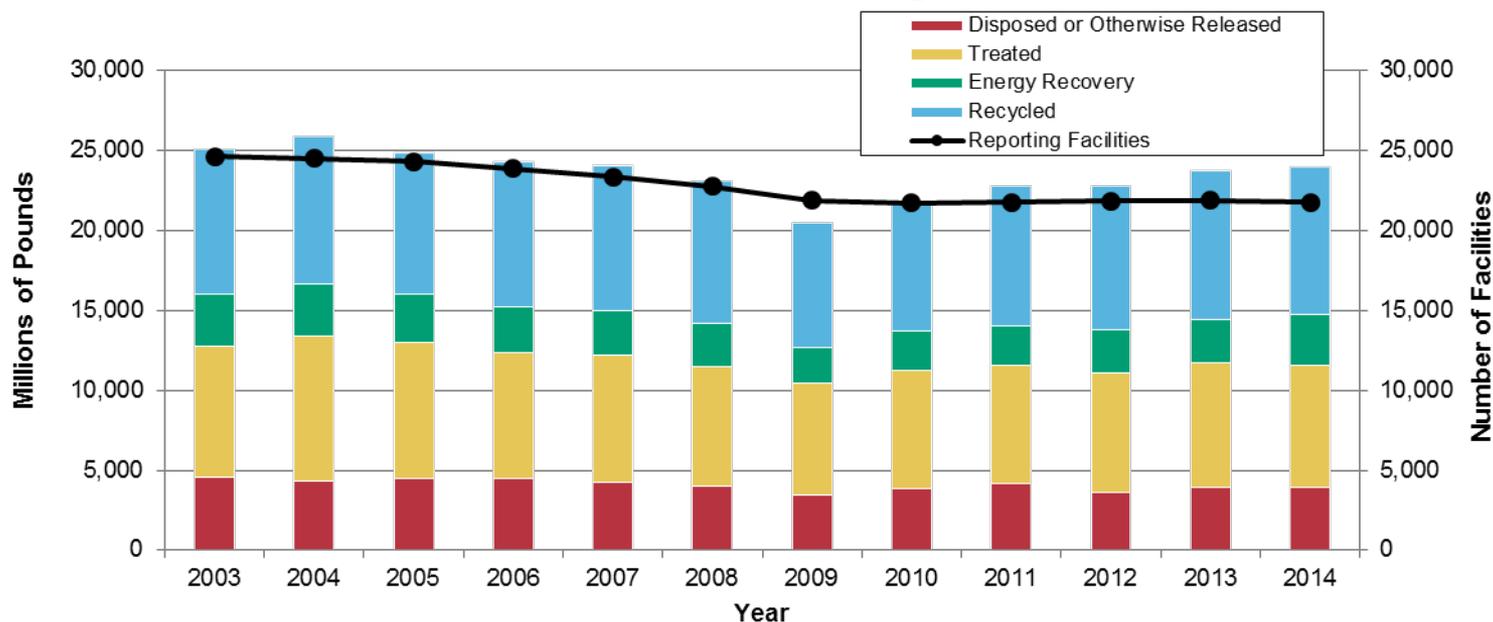


Trends – Total Waste Managed

- 2014: Total waste managed was 25.4 billion lbs
- 2003-2014: Waste managed decreased by 4% (1.09 billion lbs)
- 2013-2014: Waste managed increased by 2% (401 million lbs)
 - Recycling decreased 1% (47 million lbs)
 - Energy Recovery increased 21% (597 million lbs)
 - Treatment decreased 1% (108 million lbs)
 - Releases decreased 1% (40 million lbs)
- In 2014, a total of 2,732 facilities (13% of all TRI facilities) reported initiating 8,388 source reduction activities, compared to 3,386 facilities (16%) in 2013



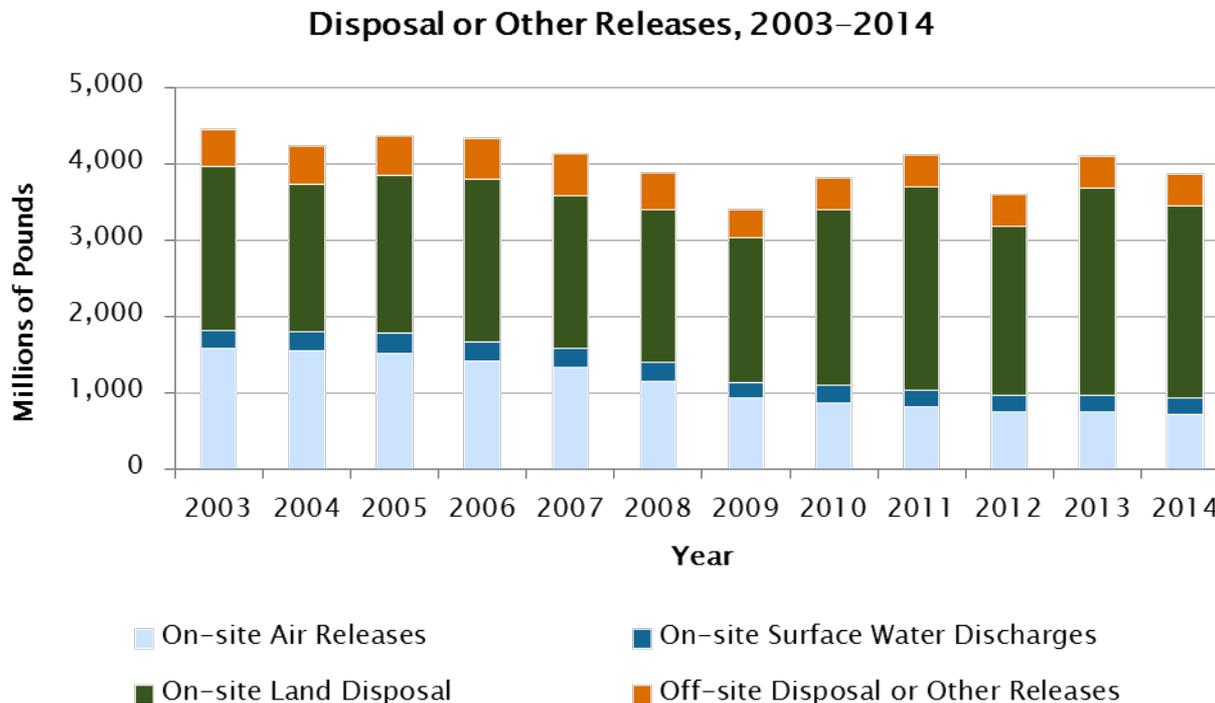
Production-Related Waste Managed, 2003-2014





Trends – Total Releases

- 2014: Total releases was 3.9 billion pounds
- 2013-2014: Total releases decreased by 6% (234 million lbs)
 - Driver: On-site releases decreasing by 6% due primarily to metal mining
 - Total releases decreased by only 2% if you exclude metal mining

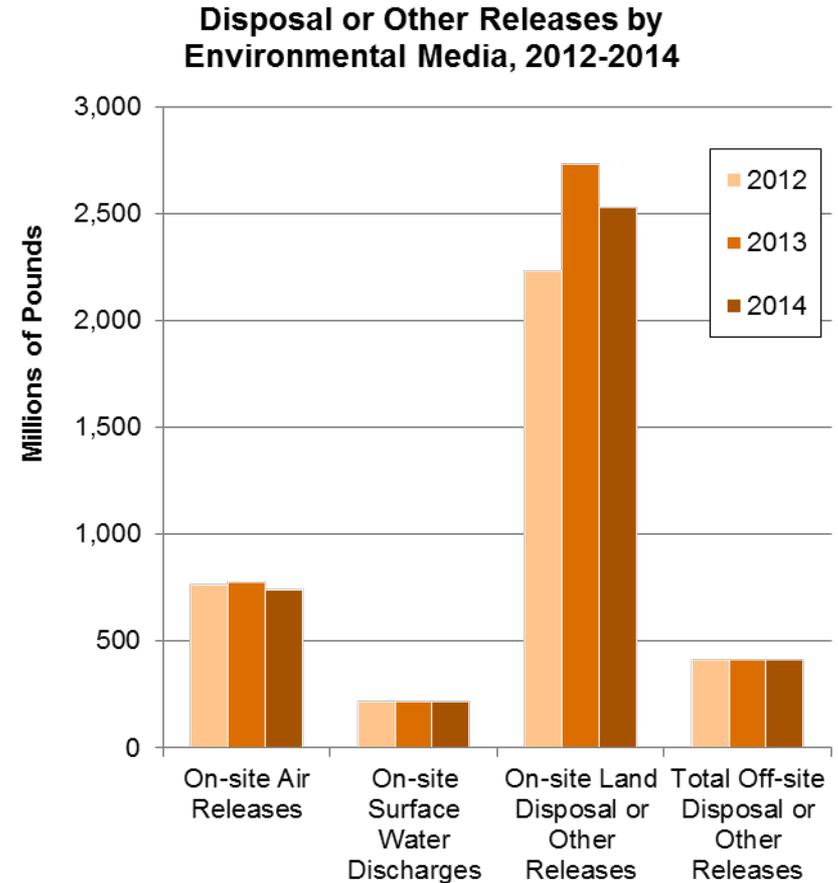




Releases by Environmental Media

Changes from 2013:

- Total on-site releases decreased 6% (237 million lbs)
 - On-site air releases decreased 4% (34 million lbs)
 - On-site land disposal decreased 8% (205 million lbs)
 - On-site surface water discharges increased 1% (2 million lbs)
- Off-site releases increased 1% (3 million lbs)

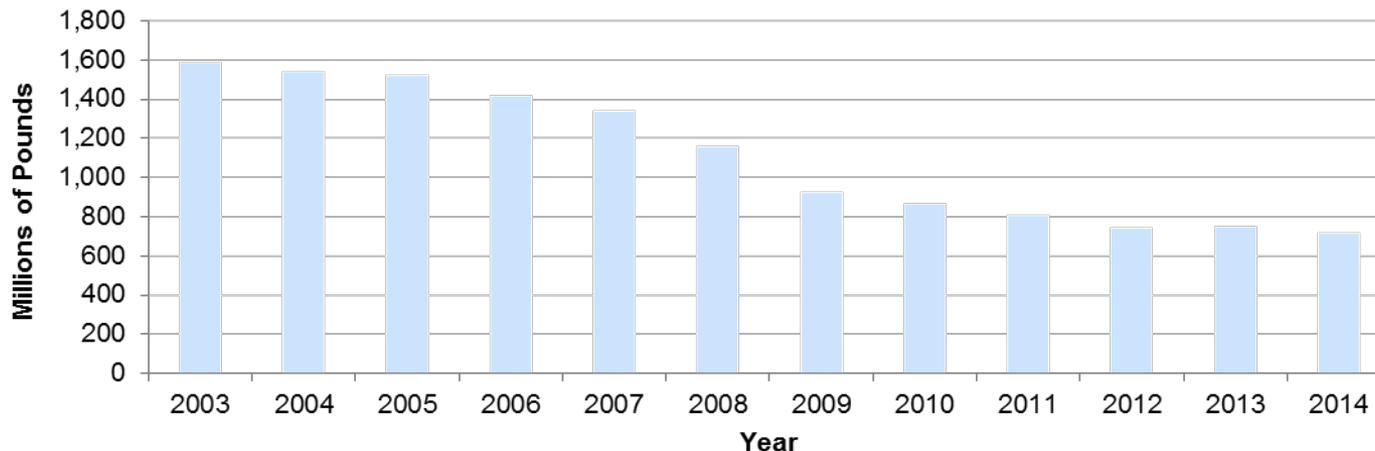




Trends – Air releases

- 2013-2014: Air releases decreased by 4% (34 million lbs)
 - Chemical manufacturing air releases decreased by 12% (21.8 million lbs)
 - Electric utilities air releases decreased by 8% (15.9 million lbs)
- 2003-2014: Air releases decreased by 55% (870 million lbs)
- Long term decline primarily due to:
 - Decreases in HAP emissions such as hydrochloric acid at electric utilities
 - Shift from coal to other fuel sources (starting in 2008)
 - Implementation of CAIR* regulations from 2005-2010 and state regulations
 - Installation of control technologies at coal-fired power plants

On-site Air Releases, 2003-2014



*CAIR is the Clean Air Interstate Rule



Persistent Bioaccumulative Toxic Chemicals (PBTs)

From 2013 – 2014:

Lead & Lead Compounds

- Total releases decreased 11% (92 million lbs)
- Air releases of lead and lead compounds decreased 45% (347,572 lbs)
 - 79% of decrease due to Doe Run Herculaneum Smelter (MO – Region 7): 274,255 lbs in 2013 to 1,080 lbs in 2014

Mercury & Mercury Compounds

- Total releases increased 5% (277,335 lbs)
- Air releases decreased 2% (1,746 lbs)

Dioxin & Dioxin-like Compounds

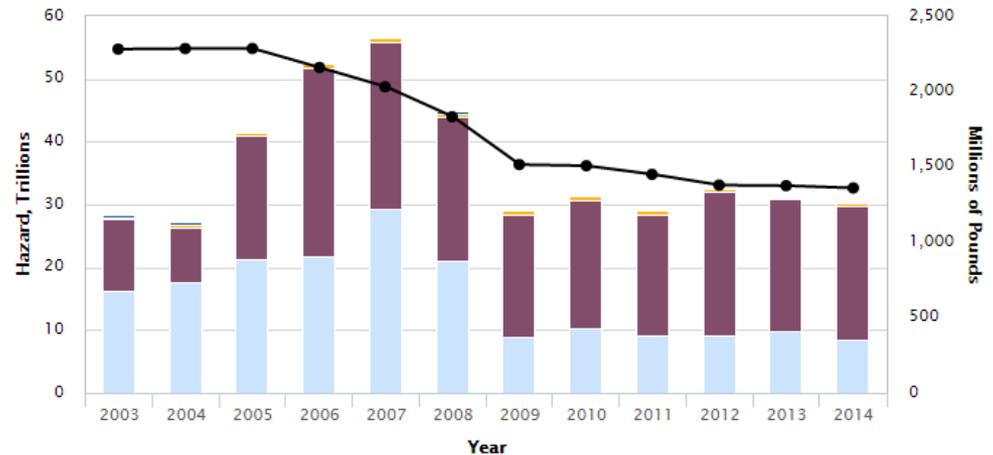
- Total releases increased by 14% (11,054 grams)
 - US Magnesium LLC (UT – Region 8) reported a 10,823 gram increase in on-site land disposal
- Air releases decreased by 16% (352 grams)
- Off-site disposal increased by 6% (3,367 grams)



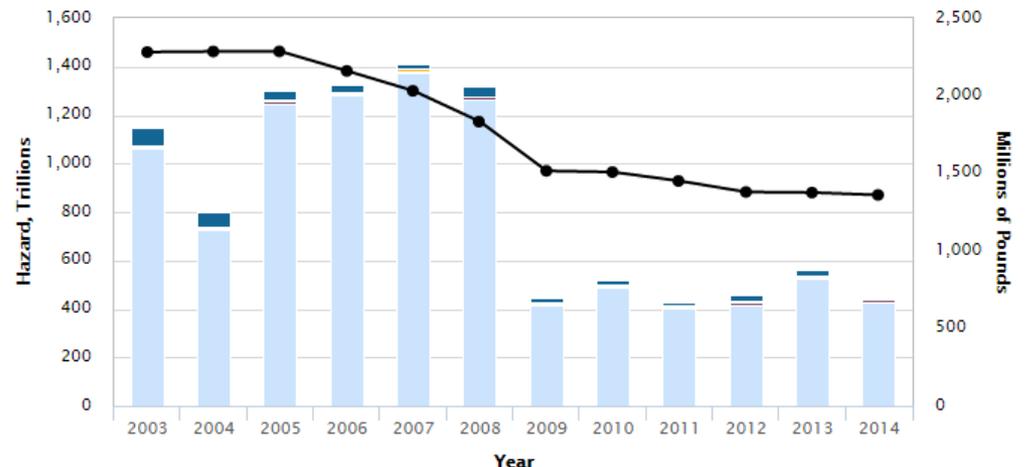
Hazard and Risk of TRI Chemicals: RSEI

- RSEI-modeled pounds released have decreased by 40% from 2003-2014
- RSEI Hazard increased by 7%
 - TRI reporters may be releasing chemicals with relatively higher toxicities in recent years
- RSEI Score decreased by 60%
 - RSEI Score is likely decreasing due to reduced exposure, such as shift in where or how the chemical waste is released

RSEI Hazard and Corresponding Releases, 2003–2014



RSEI Score and Corresponding Releases, 2003–2014



Click on legend items below to customize items displayed in the chart

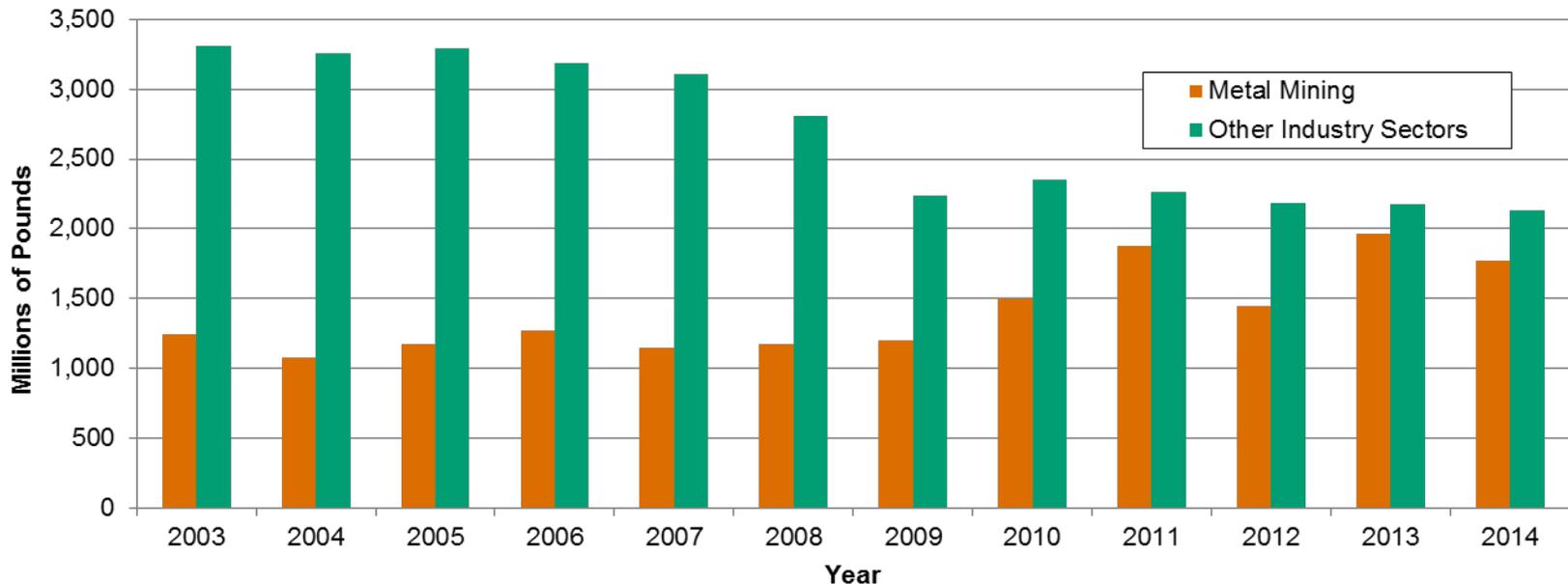
- Direct Water Releases
- Transfers to POTWs
- Off-site Incineration
- Air Releases
- Total Pounds Released



Trends - Metal Mining & Other Industry Sectors

- Releases by metal mining have increased from 2003-2014
 - Metal mining comprises almost half of aggregate total releases
- All other industries show net decrease from 2003-2014
 - Electric Utilities (NAICS 2211) – Releases decreased 50%
 - Manufacturing (NAICS 31-33) – Releases decreased 26%
 - Chemical Manufacturing (NAICS 325) – Releases decreased 14%

Disposal or Other Releases, 2003-2014: Metal Mining and All Other Industry Sectors





Facilities with Largest Changes in Total Releases

- Metal Mining:
 - Red Dog Lead/Zinc Mine (AK - R10)
 - 2014 releases: 1.1 billion pounds
 - Increase from 2013: 199 million pounds
 - 62% of all metal mining releases (28% of all releases)
 - Kennecott Barneys Canyon Gold Mine (UT - R8)
 - 2014 releases: 0 pounds
 - Decrease from 2013: 193 million pounds
 - Kennecott Utah Copper Mine (UT - R8)
 - 2014 releases: 162 million pounds
 - Decrease from 2013: 128 million pounds
- Red Dog and Kennecott Copper make up 72% of all metal mining releases (32% of all releases)
- All Other Sectors:
 - Basin Electric (ND – R8)
 - 2014 releases: 16.7 million pounds
 - Decrease from 2013: 14.0 million pounds
 - Horsehead Corp Monaca Smelter (PA – R3)
 - 2014 releases: 6.4 million pounds
 - Decrease from 2013: 12.6 million pounds
 - Asarco LLC Ray Complex / Hayden Smelter and Concentrator (AZ – R9)
 - 2014 releases: 27.5 million pounds
 - Decrease from 2013: 7.6 million pounds



New Analyses – Demographics

- Story Map feature from ArcGIS Online
- Provides demographic information from Census in context of proximity to TRI facilities (i.e., “Who Lives near a TRI Facility?”)

TRI Facilities and You
Exploring demographic information within the 2014 TRI National Analysis

Visit EPA's TRI Homepage

Demographic Layer Swipe and TRI Facilities

Esri World Geocoder

Select the layer you want to swipe
Percent Below Poverty Level from 2009-2010 ACS

Legend

1 2014 TRI National Analysis

2 Who Lives near a TRI Facility?

3 Who Lives near a TRI Facility in Your County?

4 TRI Facilities in Your Neighborhood

You may live near one or more TRI facilities. Use the map at the right to view your neighborhood and see where nearby facilities are located. You can use the search bar or locator tool in the upper left to help you find your neighborhood.

The map also shows the percent of the population that is of minority status or that lives below the poverty line. Use the Swipe widget to switch between these two layers. You can also select which layers to view by using the Layer List widget and toggling a layer on or off.

Visit the [Where You Live](#) section of the TRI National Analysis to learn more about the chemical releases in your neighborhood.

5 Next Steps

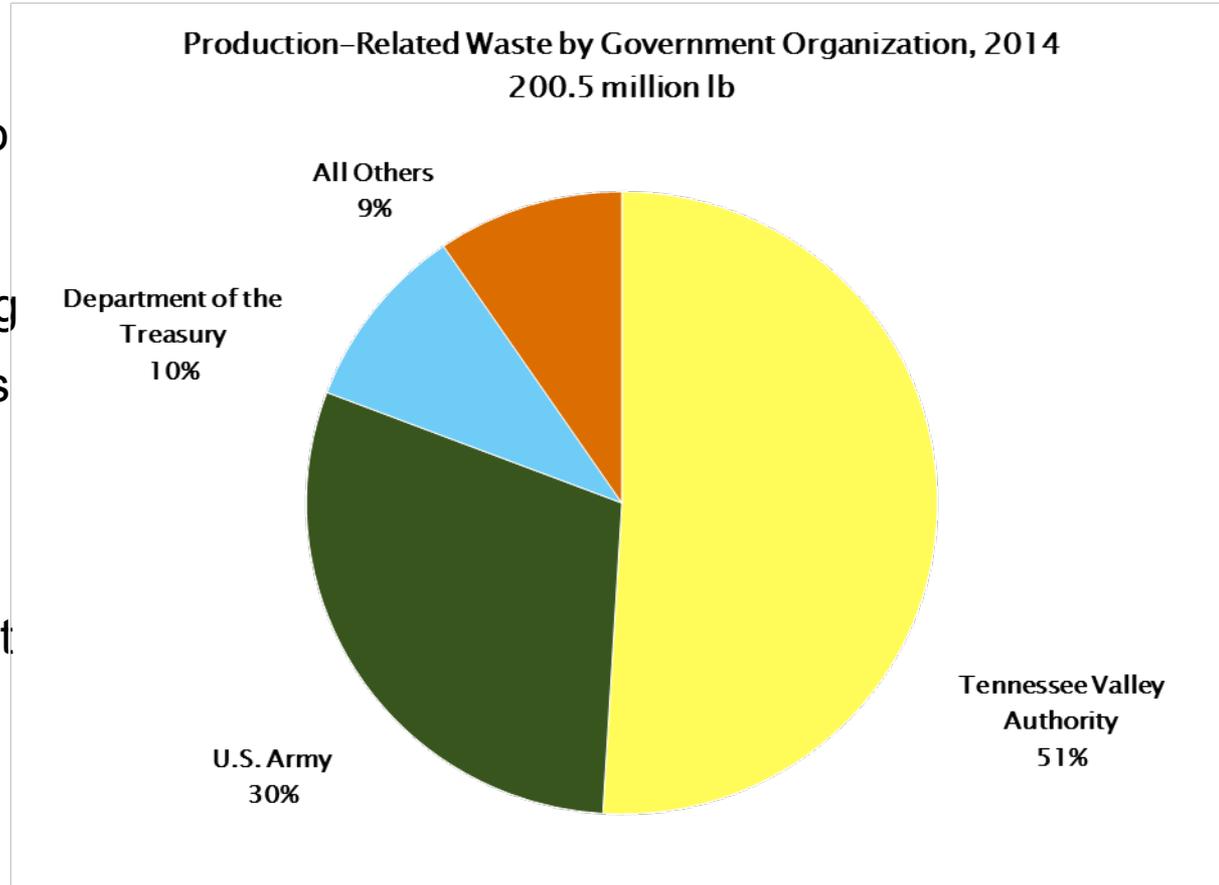
4mi

POWERED BY



New Analyses – Federal Facilities

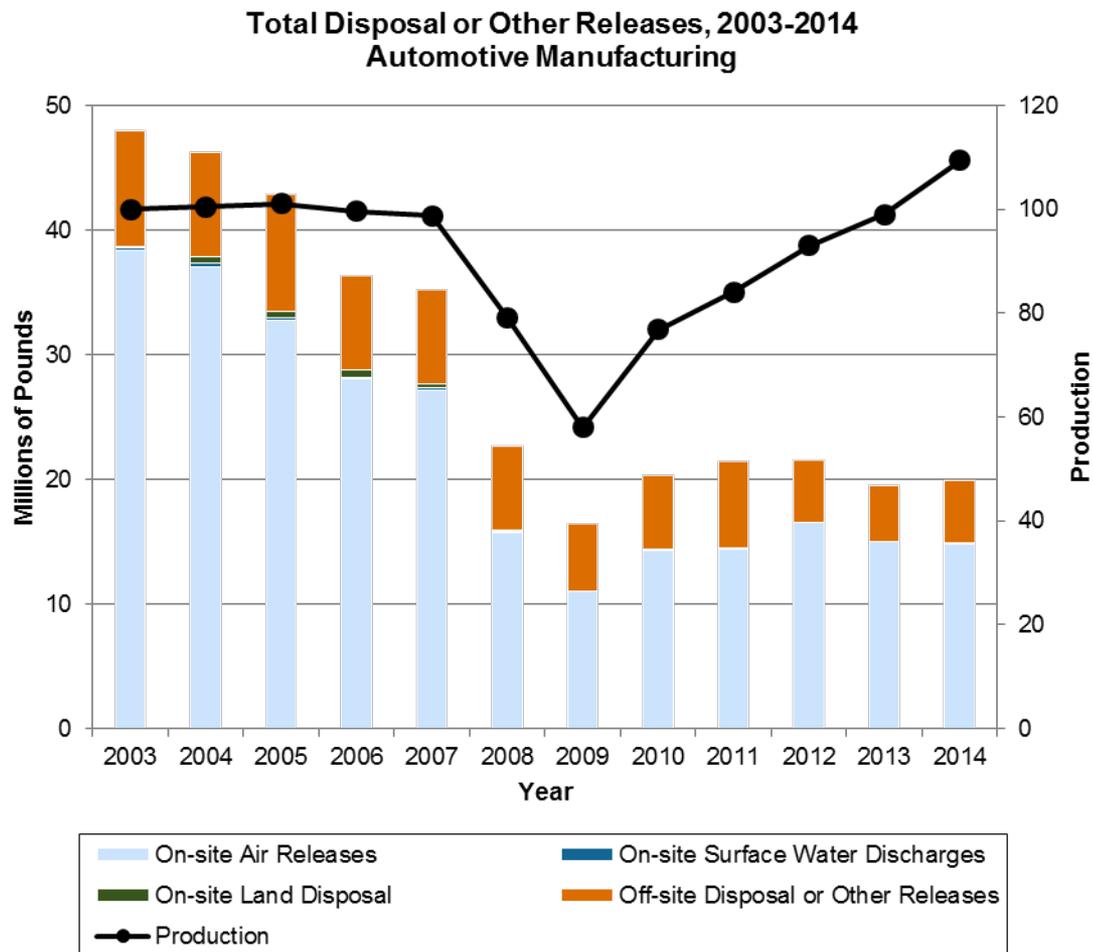
- Highlight reports from federal facilities, similar to the Industry Profiles
- Include distribution among government organizations and sectors
- Case study showing source reduction efforts at a federal facility





New Analyses – Automotive Manufacturing Sector

- Highlight Automotive Manufacturing in Industry Sectors (in addition to three main industries)
- Releases have remained relatively constant since 2009 while production has increased

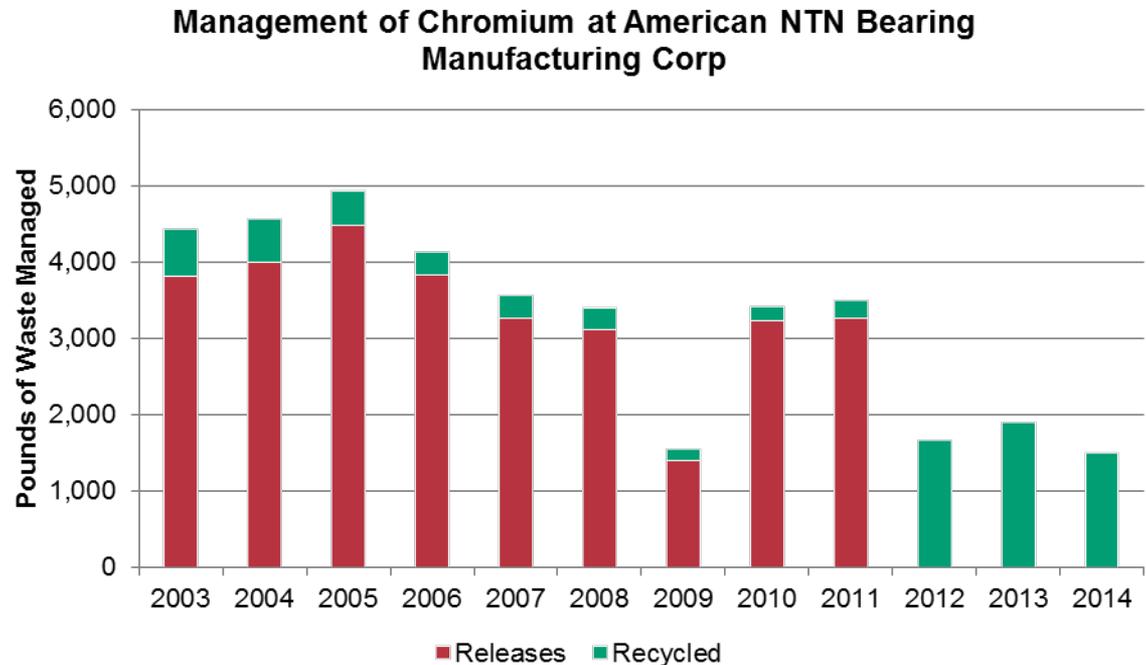




New Analyses – Zero-Releasers

- 3,065 facilities managed waste but reported zero releases of TRI chemicals in RY2014
- Highlight case studies of facilities which recently became zero releasers due to SR activities

American NTN Bearing Manufacturing Corp. (owned by NTN USA Corp.) manufactures ball and roller bearings in Cook County, IL. In 2012, they implemented a recycling process for the chips and debris generated as part of the metal grinding process. By 2013, releases of chromium had been reduced to zero and all other chromium waste was recycled.

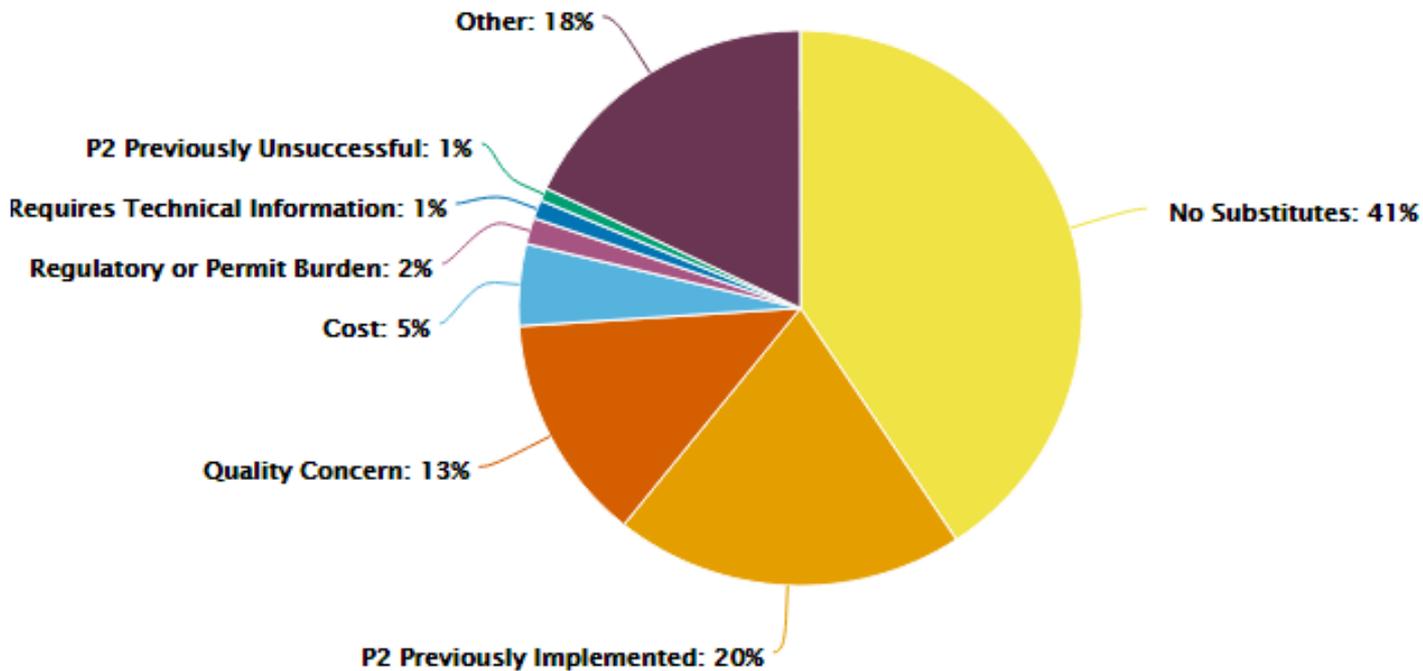




New Analyses – Barriers to P2

- Highlight Section 8.11 reports on barriers to source reduction activities

Reported Barriers to Source Reduction, 2014

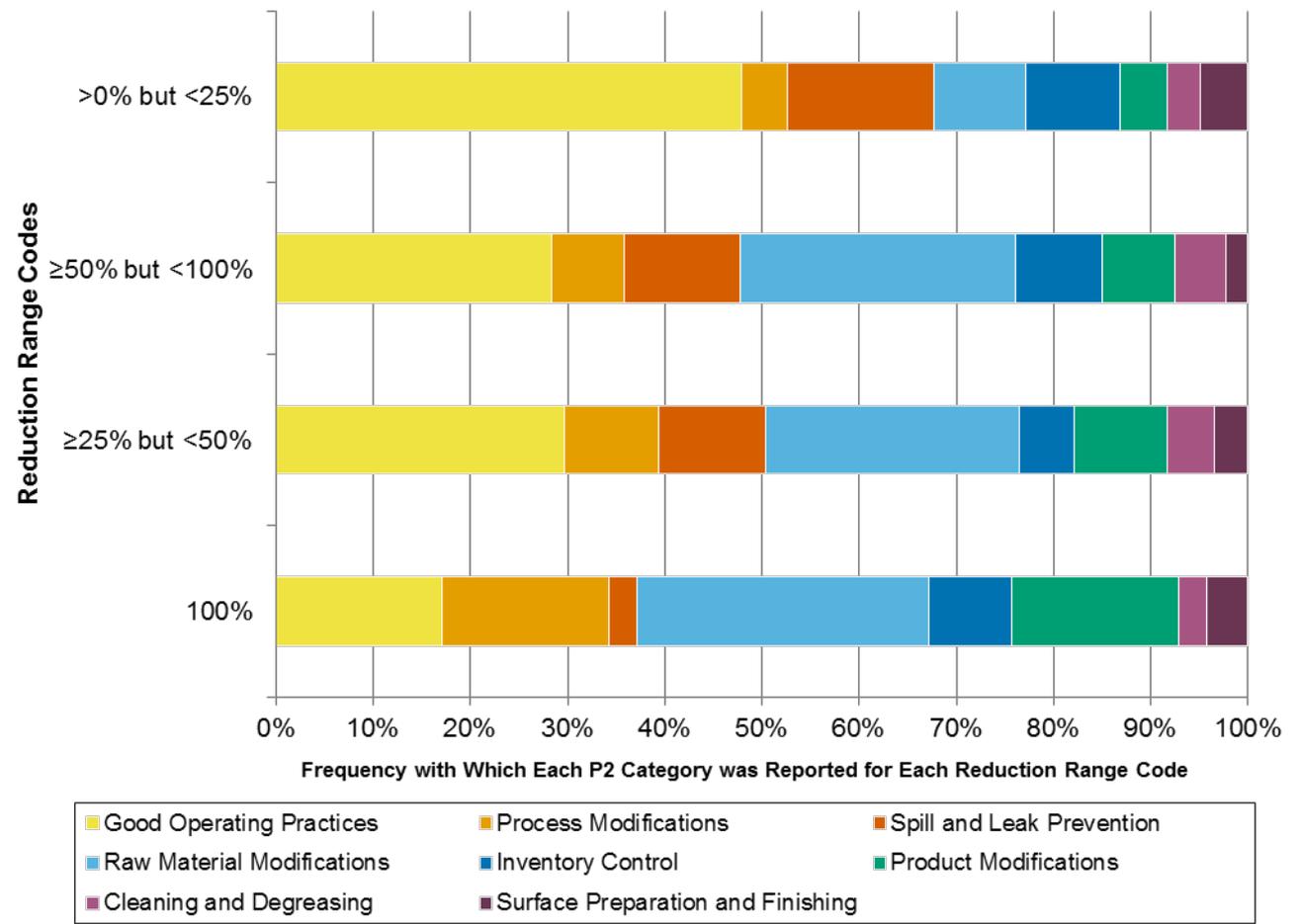




New Analyses – Estimated Annual Reduction for SR

- New field illustrating estimated source reduction from facilities by measures implemented in RY2014
- Categorized by type of activity and expected % annual reduction

Source Reduction Activities and Reported Reduction Codes, RY2014





Appendix 1: Industry Trends

Factors other than production play a role in TRI releases (e.g. composition of ore for metal mining, source reduction, control technologies)

2003 – 2014:

- Manufacturing
 - Releases decreased 26% while production decreased 4%
- Chemical Manufacturing
 - Releases decreased 14% while production decreased 2%
- Metal Mining
 - Releases increased 43% while production increased 1%
- Electric Utilities
 - Releases decreased 50% while net generation decreased 23%
- Automotive Manufacturing
 - Releases decreased 58% while production increased 9%

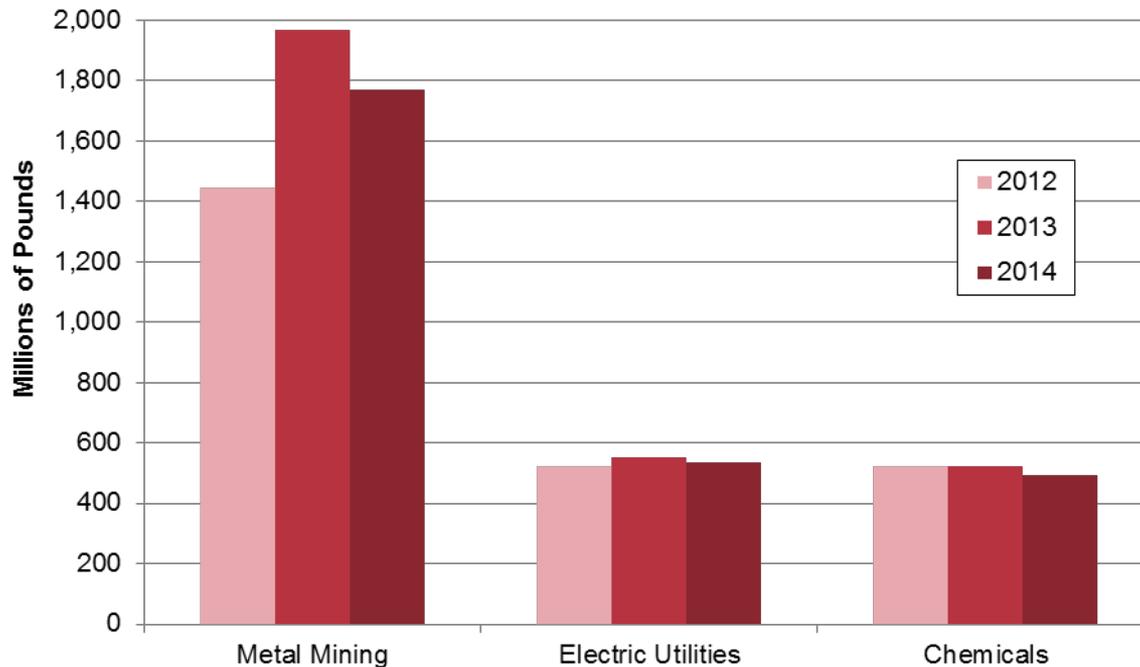


Appendix 2: Total Releases by Industry Sectors

2013 to 2014:

- Metal mines decreased by 195 million lbs (10%)
- Electric utilities decreased by 18 million lbs (3%)
- Chemical manufacturing decreased by 29 million lbs (5%)

Total Disposal or Other Releases, 2012-2014



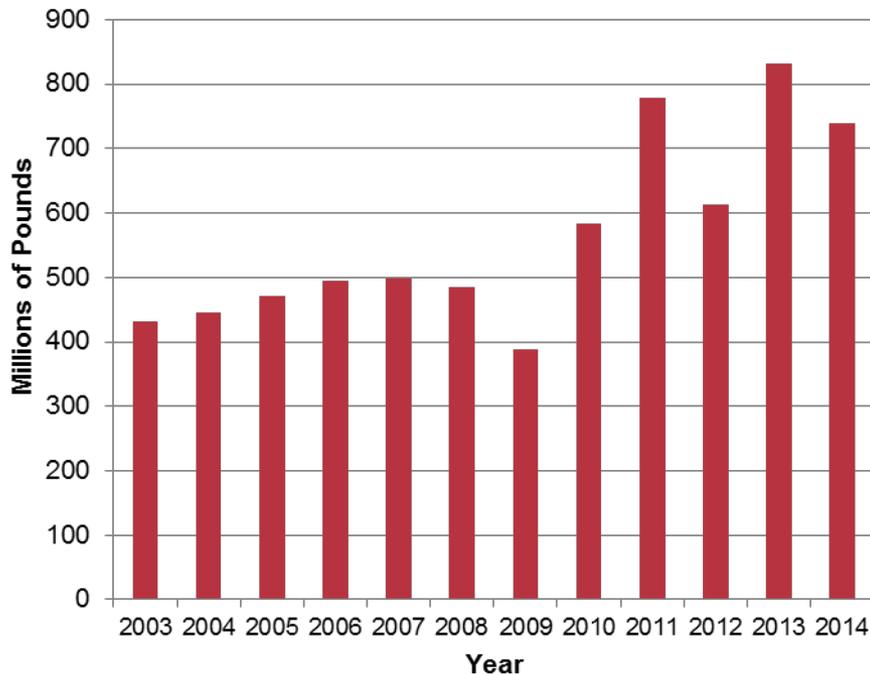


Appendix 3: Releases of PBTs – Lead and Lead Compounds

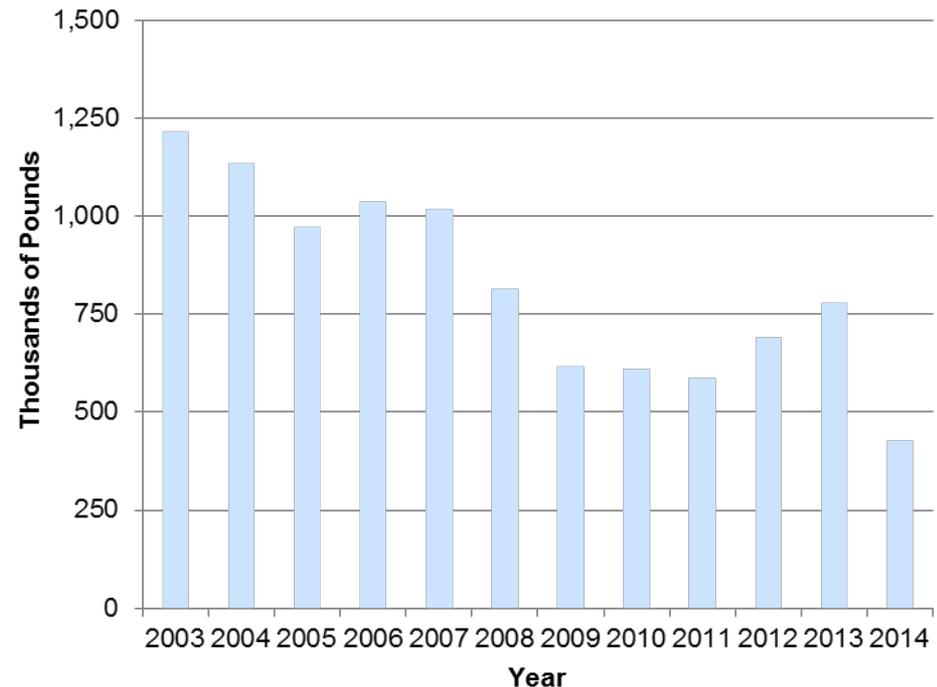
Changes from 2013:

- Total releases of Lead and Lead Compounds decreased 11% (92 million lbs)
- Air releases of Lead and Lead compounds decreased 45% (347,572 lbs)

Total Disposal or Other Releases of Lead and Lead Compounds, 2003-2014



On-site Air Releases of Lead and Lead Compounds, 2003-2014



■ On-site Air Releases ■ All Other On- and Off-site Releases

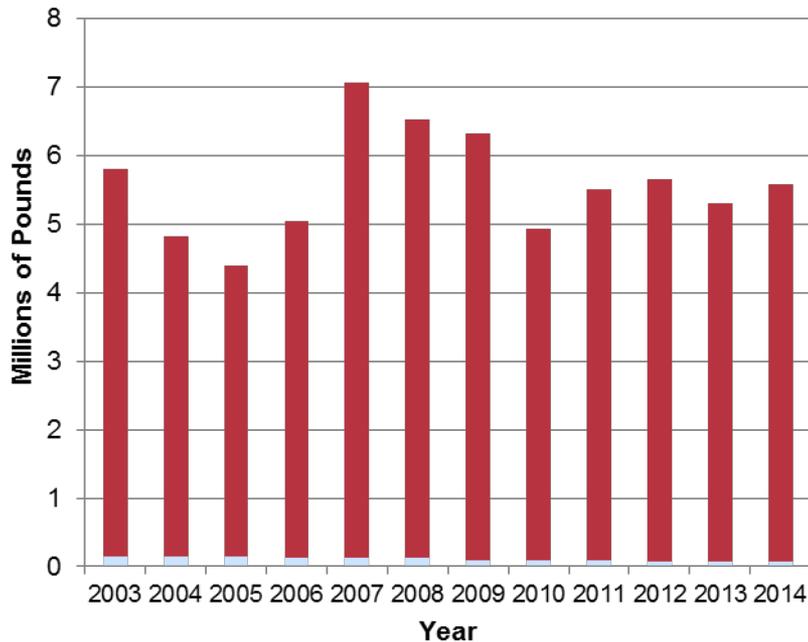


Appendix 4: Releases of PBTs – Mercury and Mercury Compounds

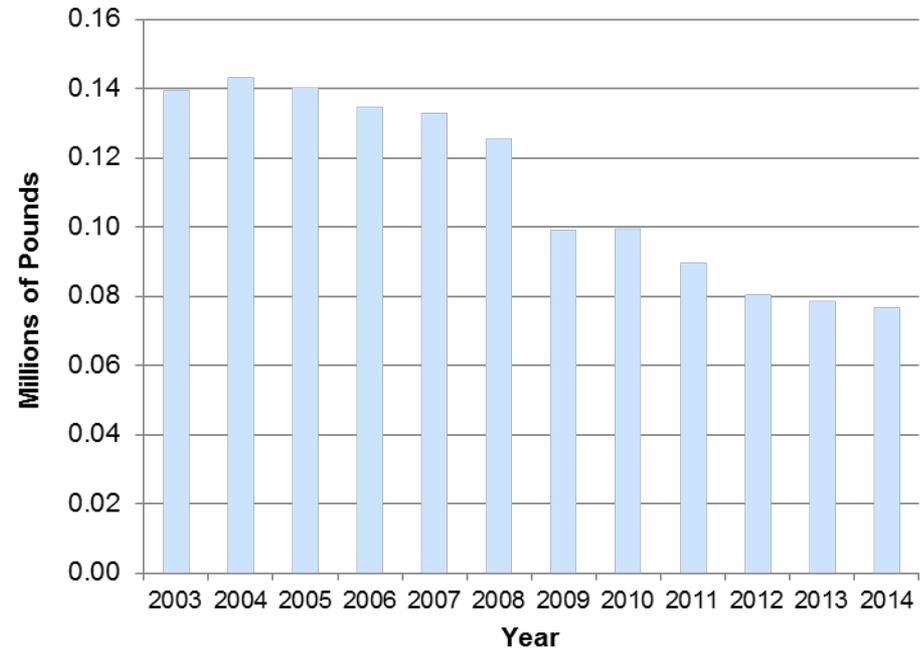
Changes from 2013:

- Total releases of Mercury and Mercury Compounds increased 5% (277,335 lbs)
- Air releases of Mercury and Mercury compounds decreased 2% (1,746 lbs)

Total Disposal or Other Releases of Mercury and Mercury Compounds, 2003-2014



On-site Air Releases of Mercury and Mercury Compounds, 2003-2014

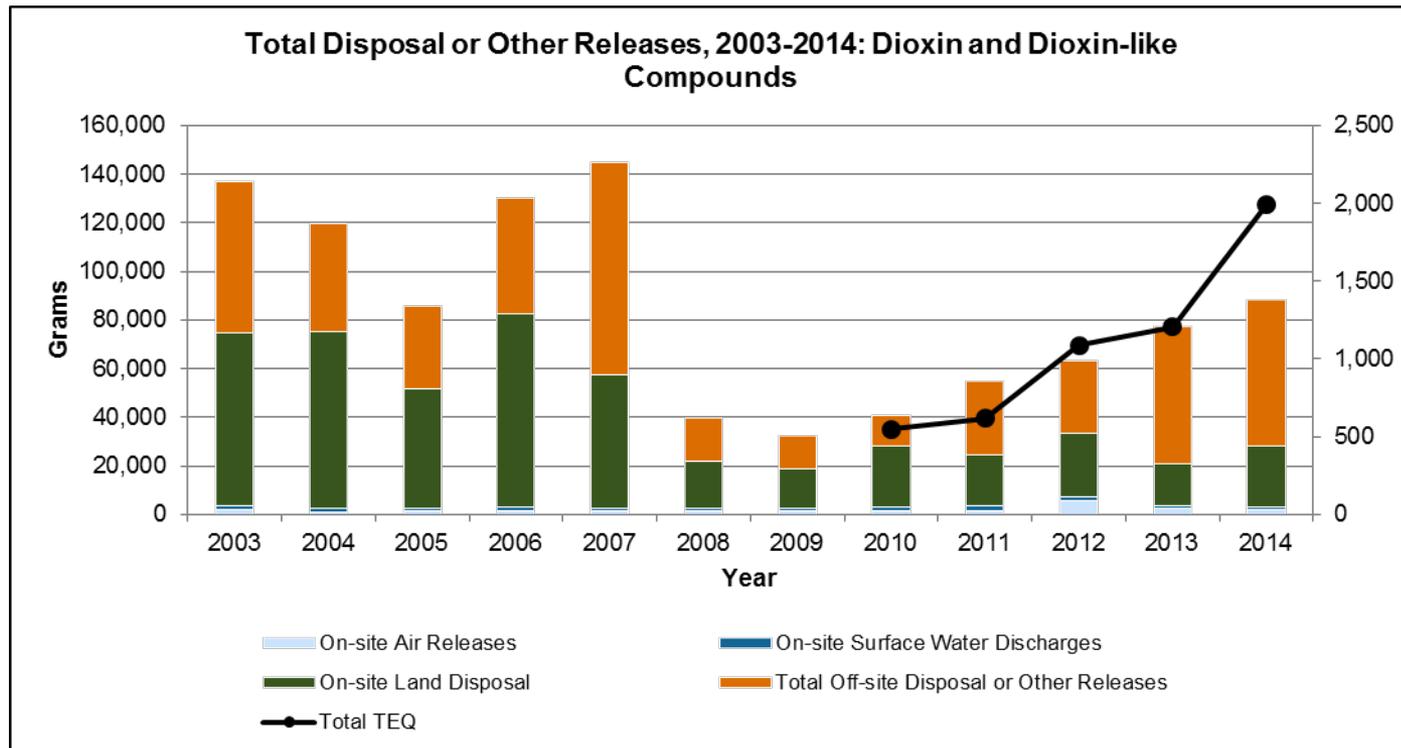


■ On-site Air Releases ■ All Other On- and Off-site Releases



Appendix 5: Releases of PBTs – Dioxins and Dioxin-Like Compounds

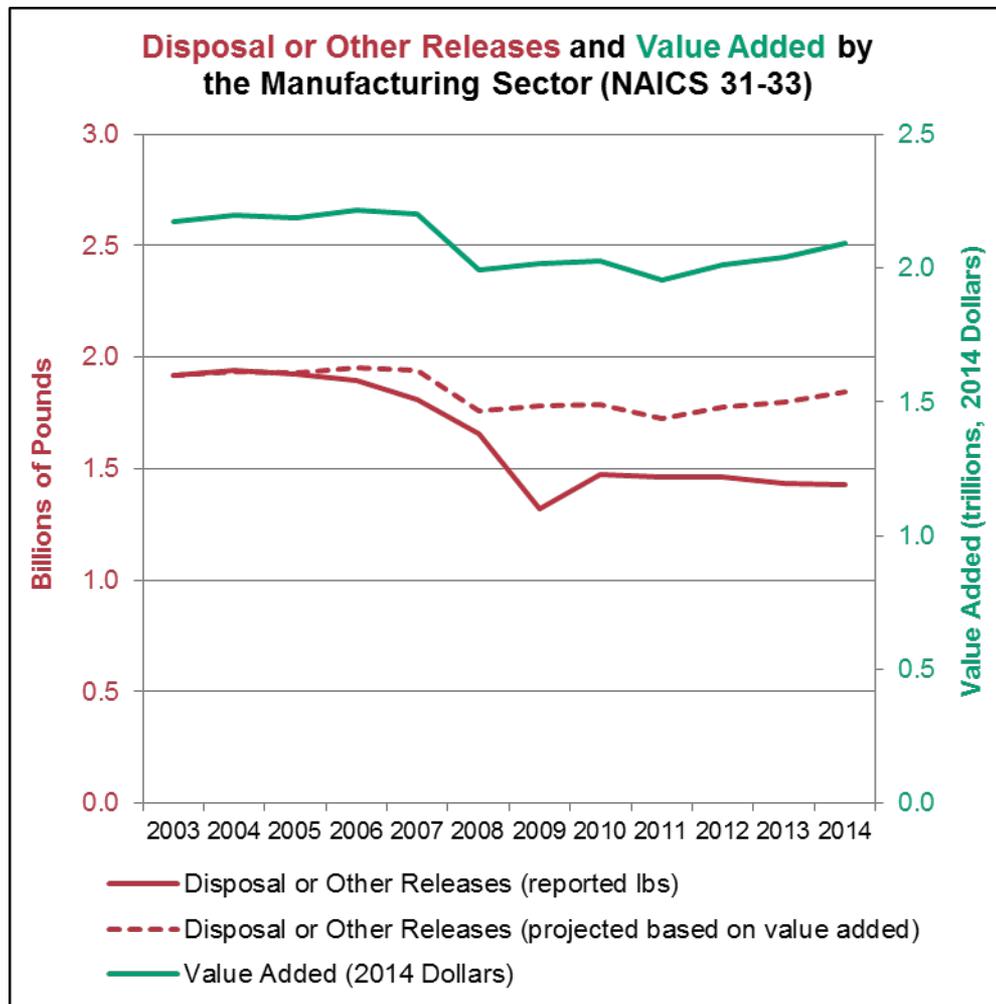
- 2013-2014: Dioxin releases increased by 14% (11,054 grams)
 - On-site land disposal increased by 48% (8,273 grams)
 - US Magnesium LLC (UT – Region 8) contributed 59% of total dioxin on-site land disposal
 - Air releases decreased by 16% (352 grams)
- 2010-2014: Grams-TEQ increased more than dioxin grams (264% compared to 118%)
 - Toxic Equivalence (TEQ) is the product of the concentration of an individual dioxin-like compound in an environmental mixture and its corresponding Toxic Equivalence Factor for that compound





Appendix 6: Manufacturing Production

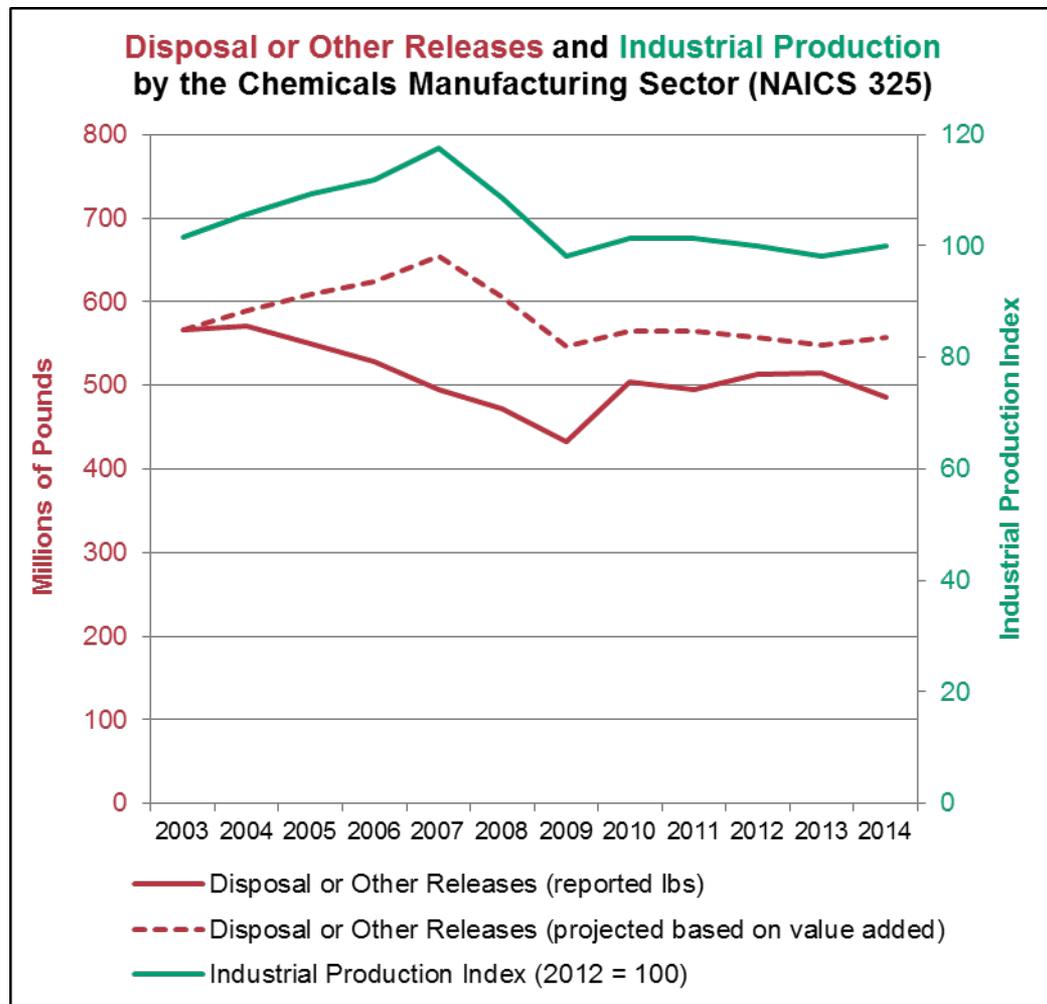
- Disposal or other releases decreased 26% since 2003
- Value added decreased 4% since 2003
- Dotted line shows projected releases if releases per \$ value added were constant since 2003 (i.e., releases expected based only on production changes)
 - Difference between solid and dotted lines suggests factors other than the economy play a role in reducing TRI releases
- Possible factors: source reduction; shift to other management methods; shift to non-TRI chemicals; outsourcing outside the U.S.; raw material changes.





Appendix 7: Chemical Production

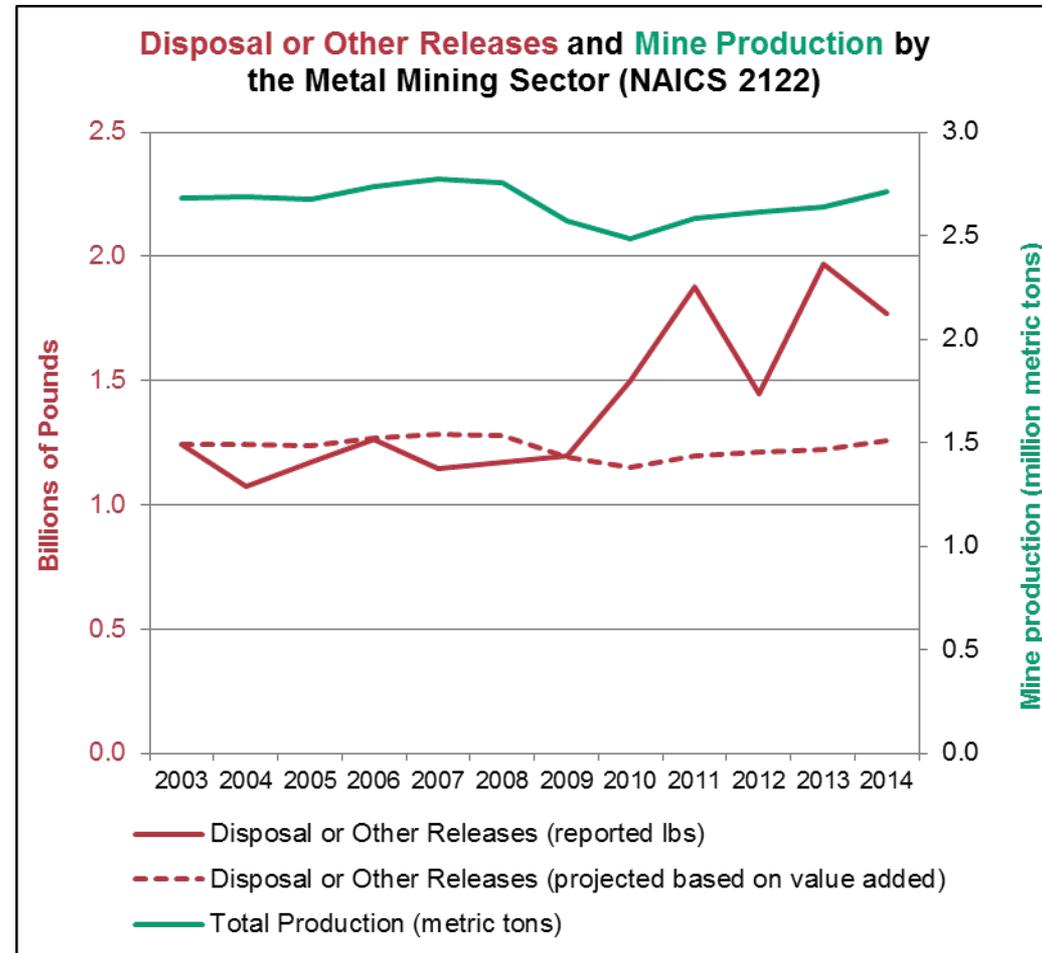
- Disposal or other releases decreased 14% since 2003
- Industrial production index decreased 2% since 2003
- Dotted line shows projected releases if releases per unit of production were constant since 2003 (i.e., releases expected based only on production changes)
 - Difference between solid and dotted lines suggests factors other than the economy play a role in reducing TRI releases





Appendix 8: Metal Mining Production

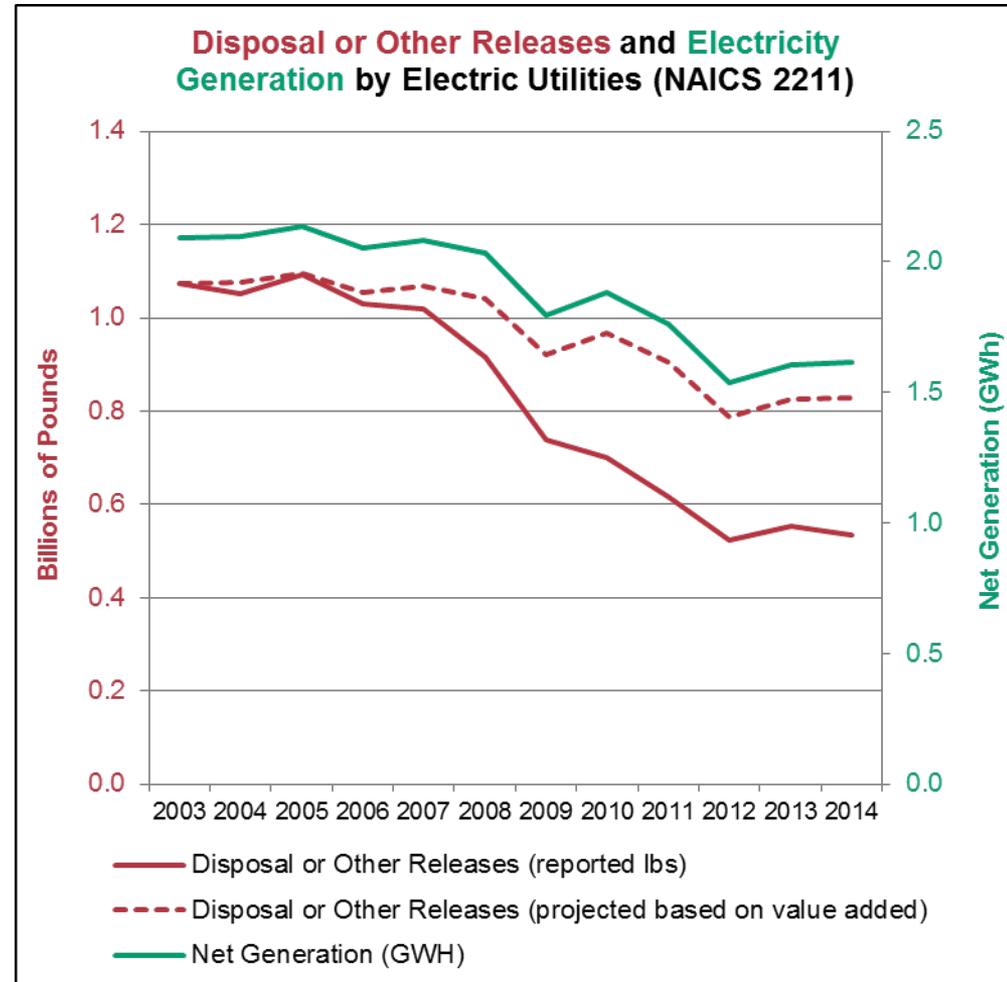
- Disposal or other releases increased 43% since 2003
- Mine production has increased 1% since 2003
- Dotted line shows projected releases if releases per ton of mine production were constant since 2003 (i.e., releases expected based only on production changes)
 - Releases and production remained relatively flat until 2009
 - Difference between the dotted and solid lines after 2009 indicates factors other than production drove the increase in releases (e.g., changes in composition of ore and waste rock)





Appendix 9: Electric Utilities Production

- Disposal or other releases decreased 50% since 2003
- Net generation decreased 23% since 2003
- Dotted line shows projected releases if releases per GWh were constant since 2003 (i.e., releases expected based only on production changes)
 - The difference between the solid and dotted lines suggests factors other than the production played an increasing role in reducing TRI releases





Appendix 10: Automotive Production

- Disposal or other releases decreased 58% since 2003
- Industrial production index increased 9% since 2003
- Dotted line shows projected releases if releases per GWh were constant since 2003 (i.e., releases expected based only on production changes)
 - The difference between the solid and dotted lines suggests factors other than the production played an increasing role in reducing TRI releases
 - Since 2009, releases have increased 21% compared to an 89% increase in production

