Corporate Sustainability and TRI:
Exploring P2 Information for Facilities and Parent Companies

Daniel Teitelbaum
February 2015
Many companies have embraced sustainability

**Why?**
- A sense of corporate responsibility
- Clients expect it
- Internationalization
- Shareholder pressure

But most of all...it is the right thing to do
- *Triple bottom line* advances profit, environment and communities simultaneously

EPA encourages green thinking and processes
• TRI tracks the management of certain toxic chemicals. U.S. facilities in different industry sectors must report annually how much of each chemical is released to the environment and/or managed as waste.

• TRI includes data about approximately 20,000 facilities across the country and covers more than 675 toxic chemicals.
Parent Companies and TRI

• All TRI data are reported at the facility level, but parent company is a required TRI data field
  – Highest-level U.S. parent of the facility
  – Single company with the largest stake if multiple owners
  – Name of joint venture if ownership is 50/50

• Field is available in TRI database, but TRI tools had not offered standard reports at parent company level

• Complications with roll-up of TRI data to corporate level are now addressed by standardization process
Parent Co. Standardization Process

• Apply standardization rules to ensure that a single distinct name is used for each parent company
  
  – E.g., “Bestchem Corporation”, “Bestchem Corp” and “Bestchem Corp.” all become Bestchem Corp

• Identify use of subsidiary names and contact facility

• Pre-populate reporting tool with standardized names

• Load standardized names into Envirofacts database for use in EPA analyses and analytical tools
Waste Management Hierarchy

Source Reduction

Recycling

Energy Recovery

Treatment

Disposal or Other Releases

The Pollution Prevention Prevention Act

- Sets out hierarchy of preferred waste management techniques

- Tracks each TRI facility’s progress up the hierarchy, with fields for:
  - Source reduction codes
  - Optional P2 descriptions
  - Waste management quantities

- Provides opportunity to publicly highlight any steps a facility takes to reduce toxic chemical releases to the environment
• **Process Modifications**
  - A rubber product manufacturer installed three natural gas boilers and decommissioned two #6 fuel oil boilers in an effort to reduce emissions. The change was made in September 2013 and resulted in a 36% reduction in benzo(g,h,i)perylene emissions from the previous year. The facility expects they will not have any benzo(g,h,i)perylene emissions in 2014.

• **Raw Material Modifications**
  - An ophthalmic goods manufacturer worked with vendor and internal resources to develop a new formulation for its coating line. Substitution of a non-TRI chemical (SDC ethanol) resulted in a 99% reduction in the use of methanol at the facility.

• **Surface Preparation and Finishing**
  - By changing to an immersion acid process instead of using spray acid equipment, a semiconductor manufacturer reduced emissions of aerosolized hydrochloric acid.
P2 Reporting Trends

• Facilities have reported more P2 information since EPA increased emphasis on this part of the TRI reporting form

P2 Reporting Summary, 2010-2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Forms with P2 Activity Codes</th>
<th>Forms with Optional P2 Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>2011</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>2012</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>2013</td>
<td>10%</td>
<td>11%</td>
</tr>
</tbody>
</table>
P2 in the 2013 TRI National Analysis

Newly Implemented Source Reduction Practices, 2013

Facilities Reporting to TRI

- Facilities Without Source Reduction: 84%
- Facilities With Source Reduction: 16%

Source Reduction Activities Reported*

- Good Operating Practices: 37%
- Process Modifications: 10%
- Spill and Leak Prevention: 12%
- Raw Material Modifications: 5%
- Inventory Control: 4%
- Cleaning andDegreasing: 3%
- Product Modifications: 8%

*Activities comprising each category are listed in the TRI Reporting Forms and Instructions.
Sectors with Significant P2 Progress

Percent Change in Production-Related Waste Managed & Releases for Industries with Largest Decreases in Releases, 2003-2012

Source: 2012 TRI National Analysis
Top Industry Decreases Since 2010

Percentage Change in Production-Related Waste Managed and Releases for Sectors with Greatest Decreases in Releases, 2010–2013

Source: 2013 TRI National Analysis
P2 Practices by Industry

Number of Newly Implemented Source Reduction Activities for Top Sectors by Percentage Decrease in Releases, 2010–2013

- Good Operating Practices
- Process Modifications
- Spill and Leak Prevention
- Raw Material Modifications
- Inventory Control
- Product Modifications
- Cleaning and Degreasing
- Surface Preparation and Finishing

Number of Source Reduction Activities Reported

% Decrease in Releases 2010–2013:
- Printing and Publishing: -39%
- Electrical Equipment: -33%
- Misc. Mfg. (e.g., Medical Equipment): -25%
- Electric Utilities: -22%
- Chemical Wholesalers: -18%

Source: 2013 TRI National Analysis
TRI Reporting by Parent Company

Production-Related Waste Managed by Top 10 TRI Parent Companies 2012–2013

- Teck American, Inc
  - 2013 (1)
  - 2012 (1)

- Clean Harbors Inc
  - 2013 (109)
  - 2012 (104)

- Koch Industries Inc
  - 2013 (127)
  - 2012 (124)

- The Dow Chemical Co
  - 2013 (46)
  - 2012 (46)

- Syngenta Corp
  - 2013 (3)
  - 2012 (3)

- Honeywell International Inc
  - 2013 (59)
  - 2012 (58)

- PBF Energy
  - 2013 (3)
  - 2012 (3)

- BASF Corp
  - 2013 (59)
  - 2012 (58)

- The Renco Group Inc
  - 2013 (11)
  - 2012 (11)

- E I Du Pont Nemours & Co
  - 2013 (56)
  - 2012 (56)

Source: 2013 TRI National Analysis

Waste Management Hierarchy:
- Source Reduction
- Recycling
- Energy Recovery
- Treatment
- Disposal or Other Releases

Note: The chart illustrates the waste management hierarchy with different levels of waste management strategies.
Source Reduction by Parent Co.

Top Parent Companies Based on Newly Implemented Source Reduction Activities, 2012–2013

- Koch Industries Inc:
  - 2013: 38 (1,277)
  - 2012: 30 (1,24)

- The Valspar Corp:
  - 2013: 14 (24)
  - 2012: 15 (24)

- 3M Co:
  - 2013: 25 (49)
  - 2012: 18 (48)

- Shell Oil Co:
  - 2013: 1 (15)
  - 2012: 1 (15)

- Silgan Holdings Inc:
  - 2013: 15 (19)
  - 2012: 18 (19)

- Nucor Corp:
  - 2013: 6 (51)
  - 2012: 7 (48)

- Global Partners LP:
  - 2013: 10 (11)
  - 2012: 10 (11)

- Illinois Tool Works Inc:
  - 2013: 20 (68)
  - 2012: 14 (63)

- Salt River Project:
  - 2013: 2 (2)
  - 2012: 2 (2)

- BASF Corp:
  - 2013: 11 (59)
  - 2012: 17 (58)

- Chemplex Advanced Materials LLC:
  - 2013: 4 (4)
  - 2012: 4 (4)

Source: 2013 TRI National Analysis
To access the TRI P2 Tool, visit [www.epa.gov/tri/p2](http://www.epa.gov/tri/p2).

TRI P2 TOOL DEMO WITH NEW PARENT COMPANY REPORTS
What Can the TRI P2 Tool Do?

• Features previously available at the facility level:
  – Display summary of P2 information for a facility
  – Provide P2 details for a single chemical at a facility
  – List P2 activities for industries, chemicals, or states sorted by “biggest reducer”
  – Compare P2 progress among facilities in an industry
  – Overlay TRI data with GHG emissions to provide a more holistic P2 picture

*All of these features are now available at the parent company level as well*
Enhanced TRI P2 Search Page

Use the TRI Pollution Prevention Search to learn how facilities have reduced releases of toxic chemicals to the environment and compare how different facilities have managed their toxic chemical waste. You can run two types of searches:

1. Click "Show P2 Activities" to view reported P2 activities and associated reductions in toxic chemical quantities.
2. Click "Display Facility Comparison Report" to visually compare facilities’ waste management practices and trends.

After clicking a search button and viewing results, you can also get P2 Details for any individual facility that matches your search criteria. If you already have a specific facility in mind, you can access P2 information for that facility directly using the TRI Search button.

To learn more about P2 and the preferred methods for managing chemical waste, visit the Pollution Prevention Overview.

Search Criteria

- Show P2 info for facilities
- Show P2 info for parent companies

Select one or more Industry Sector(s):
- All Industry Sectors

Select one or more Chemical(s) or Chemical Group(s):
- All Chemicals

Select one or more Year(s):
- 2005-2013

Select one or more Parent Companies:
- All Parent Companies

Select one or more State(s):
- All States
Parent Company Comparison for Benzene Reported to TRI and GHG Emissions Reported to the GHGRP by NAICS 324 - Petroleum (2013, Top 30)

Click on parent company name to view P2 Details for the selected chemical(s) and year. Green links indicate the company reported P2 activities for the selected chemical(s) and year; orange links indicate the company reported barriers to P2. Use Chart Options to add data to the chart (e.g., # of facilities, GHG emissions).
Comparison for a Specific Chemical

Methanol Managed by KOCH INDUSTRIES INC Facilities (2013, Top 30)

Click on facility name to view P2 Details for the selected chemical and year. Green links indicate the facility reported P2 activities for the selected chemical and year, orange links indicate the facility reported barriers to P2. Use Chart Options to add data to the chart waste trends, GHG emissions).
Get P2 Details for a Facility

Production Related Waste Management for Selected Chemical

For more on the Waste Management Hierarchy, see the Pollution Prevention Overview page

Waste Management Comparison – Select Year: 2013

Management of Methanol at Facility GEORGIA–PACIFIC BREWTON LLC

Section 8.10: Newly Implemented Source Reduction Activity
W58: Other process modifications

Section 8.11: Optional Pollution Prevention Information
W58: The mill has increased the efficiency of our methanol treatment in our aerated stabilization basin with the aid of bioaugmentation.

Chart Options:
- Display waste quantities only
- Display production index
- Normalize waste quantities relative to production
- Display waste quantities as a percentage of total waste
- Display GHG Emissions Reported to GHGRP

Find more P2 activities for this industry and chemical
Display facility comparison report for this industry and chemical
Comparison to Similar Facilities

Click on facility name to view P2 Details for the selected chemical and year. Green links indicate the facility reported P2 activities for the selected chemical and year; orange links indicate the facility reported barriers to P2. Use Chart Options to add data to the chart (e.g., waste trends, GHG emissions).
### List P2 Activities for a Company

#### List of Facilities in TRI submitting Pollution Prevention Information for Selected Criteria:

**Year:** between 2005 and 2013  
**Parent Company:** KOCH INDUSTRIES INC

#### Additional Filters:
- Exclude facilities that reported activity codes but no text descriptions
- Value for Year-to-Year Comparison: Total Waste (displayed currently)

#### Pollutant Prevention Information (Activity Codes/Text):

<table>
<thead>
<tr>
<th>FACILITY NAME</th>
<th>ADDRESS</th>
<th>CHEMICAL</th>
<th>INDUSTRY</th>
<th>YEAR</th>
<th>PRIOR YEAR WASTE</th>
<th>CURRENT YEAR WASTE</th>
<th>PERCENT CHANGE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEORGIA-PACIFIC GYPSUM LLC</td>
<td>11401 US HWY 91, NORTH LAS VEGAS, NV 89036</td>
<td>Mercury Compounds</td>
<td>Gypsum Product Manufacturing</td>
<td>2012</td>
<td>1.20</td>
<td>0</td>
<td>-100%</td>
<td><em>W13: Improved maintenance scheduling, recordkeeping, or procedures</em> - Procedures have been implemented throughout year to improve production efficiency (i.e., percent perfects) and reduce usage of SARA 313 chemicals. Method(s) to Identify P2 Activities: T04 (Participative Team Management) – OPEX Team meets weekly with common goal to improve percent perfects. Procedures have been implemented throughout year to improve production efficiency (i.e., percent perfects) and reduce usage of SARA 313 chemicals. OPEX Team meets weekly with common goal to improve percent perfects.</td>
</tr>
<tr>
<td>GEORGIA-PACIFIC CROSSCOTT</td>
<td>100 MILL SUPPLY RD, CROSSCOTT, AR 71635</td>
<td>Lead Compounds</td>
<td>Pulp Mills</td>
<td>2012</td>
<td>10,370.00</td>
<td>2,194.00</td>
<td>-78.84%</td>
<td><em>W19: Other changes in operating practices</em> – Mill wide effort to reduce process water use. Mill wide effort to reduce process water use.</td>
</tr>
</tbody>
</table>
| FLINT HILLS RESOURCES CORPUS CHRISTI LLC FORT WORTH TERMINAL | 12550 TRINITY BLVD, EULESS, TX 76040 | Lead Compounds             | Petroleum Bulk Stations and Terminals | 2013 | 49.00            | 13.00             | -73.47%         | *W13: Improved maintenance scheduling, recordkeeping, or procedures*  
  *W32: Improved procedures for loading, unloading, and transfer operations*  
  *W42: Substituted raw materials*  
  *W64: Improved draining procedures*  
  8.10.1 Cont.W71 Other Cleaning and Degreasing Modifications T11 Other |
P2 Tool Recap

- Reports available from the P2 Search page
  - Show P2 activities and associated chemical reductions for selected industry(s), chemical(s), company(s), state(s) or year(s)
  - Display facility comparison for selected criteria
  - Display parent company comparison for selected criteria
  - Compare facilities for selected parent company

- Drill-downs available from initial reports
  - Display P2 report for an individual facility
  - Display report with all P2 and waste management information for a selected facility and chemical
P2 Reporting Changes for 2014

• New optional field for estimating the effectiveness of source reduction activities using percentage ranges

• Optional checkboxes to indicate why source reduction activities were not implemented (barriers)

• Optional checkboxes to categorize submitted P2 descriptions and provide info on different topics
Additional TRI Resources

• Daniel Teitelbaum, **TRI P2 Staff Lead:**
  Teitelbaum.Daniel@epa.gov.

• Visit the **TRI Program’s website:** www.epa.gov/tri.
  – TRI P2 webpage: www.epa.gov/tri/p2
  – 2013 TRI National Analysis: www.epa.gov/tri/nationalanalysis

• Check out the **TRI Pollution Prevention (P2) Search Tool:**
  www.epa.gov/enviro/facts/tri/p2.html