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National Priority Chemicals Trends Report (2005-2007)

Executive Summary

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EXECUTIVE SUMMARY

Progress Toward Our GPRA* Goal of Reducing 4 Million Pounds of Priority Chemicals by 2011

From fiscal year (FY) 2007 through FY 2010, the 140-plus partners in the National Partnership for Environmental Priorities (NPEP) program reduced approximately 16 million pounds of Priority Chemicals (PCs) and have standing commitments to reduce an additional 2.9 million pounds of 14 PCs by 2011. As such, the U.S. Environmental Protection Agency (EPA) has met its goal: *By 2011, reduce 4 million pounds of priority chemicals from waste streams as measured by National Partnership for Environmental Priorities contributions, Supplemental Environmental Projects (SEPs), and other tools used by EPA to achieve priority chemical reductions.* EPA has set an additional goal to reduce 3 million pounds of priority chemicals in FY 2012. See Section 2 of this Report for additional details about this goal.

Summary of Priority Chemical Quantities Derived From the Toxics Release Inventory (TRI) and the Hazardous Waste Biennial Report (BR)

Historical Progress: For 2007, industrial and Federal facilities reported approximately 85 million pounds of PCs, representing an increase of approximately 964,000 pounds, or 1.0 percent, compared to the approximately 84 million pounds generated** in 2006. This increased quantity, based on reports submitted by facilities to the Toxics Release Inventory (TRI), follows a decrease of approximately 7.7 million pounds from 2005 to 2006. Our ability to determine the reasons for these year-to-year changes is limited, but we know, for example, that changes in the economy affect production and thus, the quantity of PCs generated. Closing facilities also affects the quantity of PCs generated. When these facilities clean their tanks and pipes, they often produce large one-time waste volumes. Likewise, facilities that periodically clean their product and waste storage facilities generate more than their normal quantities of PCs. We also have increasingly observed that facilities are installing more sensitive flow measuring equipment and/or using improved laboratory analyses that more accurately detect and measure the concentration of chemicals in industrial streams. This increased detection capability can significantly affect the quantities of PCs generated.

TRI Reporting Year	2005	2006	2007
Total Quantity of PCs (pounds)	92,502,375	83,870,410	84,834,153
Number of TRI Facilities Reporting PC Quantity	5,508	5,360	5,186

Analyses of Chemical Quantities

- Four PCs accounted for 79 percent of the total quantity of PCs generated in 2007:

Largest Quantity PCs in 2007	Lead and lead compounds (Lead)	Naphthalene	Hexachloro-1,3-butadiene	Polycyclic aromatic compounds (PACs)	Total of these four PCs
Pounds	34,467,769	12,071,587	10,312,897	10,211,230	67,063,484
Percentage of National Total PC Quantity	40.6%	14.2%	12.2%	12.0%	79.1%

- Largest Increases in Quantities (2006–2007):

Polycyclic aromatic compounds (PACS)	Hexachlorobenzene	Hexachloroethane
2.2 million pounds	2.0 million pounds	1.3 million pounds

- Largest Decreases in Quantities (2006–2007):

Naphthalene	Lead and lead compounds	Phenanthrene
(2.1 million pounds)	(2.1 million pounds)	(361,000 pounds)

*The Government Performance and Results Act of 1993 (GPRA) directs Federal departments and agencies to create strategic plans and goals. For more information see Section 2 in this Report, and see Goal 5 in the 2006–2011 EPA Strategic Plan at http://www.epa.gov/ocfo/plan/plan.htm.

**In this Report, "generated" means that a facility, as a result of manufacturing, processing, or otherwise using a Priority Chemical, produced a waste containing one or more Priority Chemicals, and managed that waste using disposal, energy recovery, or treatment methods.

2007 PC Management Methods[***]:

- Total non-recycled PC quantity: approximately 84.8 million pounds
- Disposal: approximately 37.2 million pounds or 44 percent of total non-recycled quantity of PCs generated.
- Energy recovery: approximately 10.5 million pounds or 12 percent of total non-recycled quantity of PCs generated.
- Treatment: approximately 37.2 million pounds or 44 percent of total non-recycled quantity of PCs generated.

2007 PCs in States:

- Facilities in five states accounted for approximately 60 percent of the total non-recycled quantity of PCs generated:
  - Louisiana: 31.7 percent
  - Texas: 10.7 percent
  - Indiana: 7.4 percent
  - Alabama: 5.4 percent
  - Kentucky: 5.0 percent

2007 PCs in Industry Sectors:

- Facilities in approximately 340 different North American Industry Classification System (NAICS) codes reported generating PCs.
- Facilities in 18 NAICS codes accounted for approximately 90 percent of the total non-recycled quantity of PCs generated; facilities in four NAICS codes accounted for approximately 50 percent of the total quantity of PCs:
  - NAICS code 325181 (Alkalies and Chlorine Manufacturing): 14.5 percent
  - NAICS code 331492 (Secondary Smelting, Refining, and Alloying of Nonferrous Metal Except Copper and Aluminum): 14.3 percent
  - NAICS code 331111 (Iron and Steel Mills): 11.7 percent
  - NAICS code 325199 (All Other Basic Organic Chemical Manufacturing): 9.2 percent

2007 PCs in Federal Facilities:

- 260 Federal facilities reported approximately 4.5 million pounds of five PCs (lead/lead compounds, naphthalene, mercury/mercury compounds, polychlorinated biphenyls, and polycyclic aromatic compounds). Thirteen Federal facilities accounted for 50 percent of the total quantity of PCs reported by all Federal facilities.
- Department of Defense (DOD) and Department of Energy (DOE) facilities accounted for the vast majority of PCs reported by Federal facilities, including approximately 92 percent in 2007; lead and lead compounds reported by these facilities accounted for approximately 92 percent of the total quantity of all PCs reported by Federal facilities.

Data derived from the 2007 Hazardous Waste Biennial Reports (BR):

- BR hazardous wastes contained approximately 95 million pounds of PCs. Lead accounted for approximately 80 million pounds or 84 percent of the total quantity; mercury accounted for approximately 4 million pounds or 4 percent.
- Three industries accounted for approximately 78 million pounds or 82 percent of the PCs estimated to be contained in hazardous wastes: NAICS code 331110 (Iron and Steel Mills and Ferroalloy Manufacturing), NAICS code 325199 (All Other Basic Organic Chemical Manufacturing), and NAICS code 331210 (Iron and Steel Pipe and Tube Manufacturing from Purchased Steel).
- Looking at the primary methods of managing hazardous waste containing PCs -- approximately 30 percent of the PCs estimated to be contained in hazardous wastes was recovered via metal recovery; approximately 25 percent was disposed of in landfills or surface impoundments, while 16 percent was stabilized or chemically fixated prior to disposal at another site.
- Most of the analyses presented in this Report are based on the TRI data. We present the BR data in order to provide another perspective on hazardous wastes that might contain PCs. Differences in reporting, among other reasons, can cause significant variation in the number of reporting facilities and quantities of chemicals reported. Therefore, we caution the reader against making casual one-to-one comparisons of PC quantities derived from the TRI and BR data. We are continuing to evaluate if and how the TRI and BR quantities of PCs can be correlated.

***For 2007, approximately 604 million pounds of PCs were recycled, other than by burning for energy recovery. In this Report, we primarily focus on non-recycled quantities of PCs that are managed using disposal, energy recovery, or treatment. See Exhibit C.3 in Appendix C for additional information about the recycling of PCs.