Pennsylvania's Hazardous Waste Facilities Plan

September 2011

The Hazardous Waste Facilities Plan was approved by the Solid Waste Advisory Committee on September 15, 2011.

Commonwealth of Pennsylvania
Department of Environmental Protection
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Pennsylvania's Hazardous Waste Facilities Plan

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Pennsylvania Hazardous Waste Facilities Plan

Executive Summary

The Pennsylvania Department of Environmental Protection (DEP) prepared this update to the *Pennsylvania Hazardous Waste Facilities Plan* to satisfy the requirements of the state's Solid Waste Management Act. The Act directs DEP "to develop, prepare and modify the Pennsylvania Hazardous Waste Facilities Plan,"[1] and states that the plan ". . . shall address the present and future needs for the treatment and disposal of hazardous waste in this Commonwealth."

One of the primary purposes of the plan is to determine whether existing hazardous waste management options are adequate, and to issue a Certificate of Public Necessity to compel the siting of additional hazardous waste facilities, if necessary. **The conclusion of the Department is that existing hazardous waste management is adequate and does not require issuance of a Certificate of Public Necessity**.

The plan provides information about hazardous waste generation in Pennsylvania, existing facilities available for treatment and disposal, and a determination of future hazardous waste facility needs. It explains pollution prevention and the hazardous waste management hierarchy, and urges hazardous waste generators and owners of facilities to improve upon past technologies in a way that will eliminate or reduce hazardous waste generation and its associated risks.

The plan was developed by analyzing available data on hazardous waste generation as defined by DEP regulations. Data from 2001, 2003, 2005, 2007 and 2009 was taken from the U.S. Environmental Protection Agency's (EPA) Biennial Reporting System database.

Note – The plan includes the following data that EPA excluded from the National Biennial RCRA Hazardous Waste Reports:

- Hazardous waste received from off-site for storage/bulking and subsequently transferred off-site for treatment or disposal is excluded from generation quantities; and
- Hazardous waste that is stored, bulked, and/or transferred off-site with no prior treatment/recovery, fuel blending, or disposal at the site is excluded from management quantities.

The purpose of the plan is to ensure adequate capacity for the management of hazardous waste generated in Pennsylvania. The plan will be used for the establishment of new hazardous waste management facilities if a Certificate of Public Necessity (CPN) is requested. The Environmental Quality Board (EQB) is authorized by the Act to issue a CPN, which overrides local restrictions, including zoning. When considering an application for a CPN, the EQB must consider:

[1] Previous plans were developed in 1988, 1992, 1998, and 2004.

- The extent to which the facility is in compliance with this plan.
- The impact of the proposed facility on adjacent populated areas and areas through which the waste is transported.
- The impact on the municipality in which the facility will be located, including health, safety, cost, and consistency with local planning.
- The extent to which citizens have had an opportunity to participate in site selection, including the development of siting criteria, evaluation of alternate sites and technologies, and socioeconomic assessment.

Chapter One explains why the plan was developed, how it was developed and how it will be used.

Chapter Two presents data on hazardous waste generation in Pennsylvania.

- The quantity of hazardous waste generated in Pennsylvania from 2001 to 2009 decreased almost 27 percent from 415,484 in 2001 to 304,076 tons in 2009.

- The largest hazardous waste generating industries are chemical manufacturing and primary metal manufacturing.

- The primary sources of hazardous waste are product and by-product processing and air pollution control.

- The primary types of hazardous waste generated were organic liquids, inorganic solids, and inorganic liquids.

- On Oct. 7, 2008, the Environmental Protection Agency issued a new final rule that streamlines the regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources. By removing unnecessary regulatory controls, EPA expects to make it easier and more cost-effective to safely recycle hazardous secondary material. As of Aug. 9, 2011, 21 facilities have submitted notifications under this rule.

Chapter Three examines current hazardous waste practices within the commonwealth. This includes methods used by generators to manage their wastes, existing hazardous waste treatment and disposal facilities, and waste management methods used by commercial and captive management facilities.

- The amount of waste managed on-site by hazardous waste generators decreased from 100,443 tons in 2001 to 88,916 in 2009.

- Energy recovery, solvent recovery, incineration, stabilization, and phase separation accounted for most of the waste managed on-site.

- The amount of waste shipped off-site by hazardous waste generators decreased almost 33 percent from 313,677 tons in 2001 to 210,232 in 2009.

  - The majority of waste shipped off-site from 2001 to 2009 was sent for treatment prior to disposal, followed by reclamation and recovery, disposal and storage.
  - Metal recovery was the management method most frequently used followed by stabilization or chemical fixation prior to disposal, chemical precipitation and energy recovery.

- The amount of waste shipped out-of-state by hazardous waste generators decreased over 30 percent from 203,177 tons in 2001 to 141,258 in 2009.

  - Destruction/Treatment (chemical precipitation, biological, stabilization and thermal) was the management method most frequently used followed by recovery (fuel blending, solvents and energy) and disposal (landfill/surface impoundment).

- The amount of waste received by commercial facilities in Pennsylvania increased from 417,386 tons in 2001 to 442,485 in 2009.

  - Recovery (metals, energy, solvents and other) was the management method most frequently used, followed by disposal, then treatment.

Chapter Four presents DEP's programs to encourage source reduction and pollution prevention. DEP continues to support the use of the waste management hierarchy, but emphasizes the importance of striving for eliminating hazardous waste generation.

Chapter Five examines the existing commercial hazardous waste management facilities in the commonwealth and their methods of management, capacities and locations.

Chapter Six examines the overall trends in the amount of hazardous waste generated in Pennsylvania, sent to commercial facilities from generators in Pennsylvania, and received by commercial facilities in Pennsylvania.

- The amount of hazardous waste generated in Pennsylvania and sent to commercial facilities is expected to continue to decline.
- It is anticipated that generators in Pennsylvania will utilize commercial facilities to manage about 200,000 tons of hazardous waste in 2011 and 180,000 tons in 2012.

Chapter Seven explains the DEP's conclusions.

- Generators in Pennsylvania have adequate access to technology that reduces or eliminates the generation of hazardous waste.
- Generators in Pennsylvania have adequate commercial treatment and disposal capacity available.
- Because this plan places an emphasis on the elimination of hazardous waste streams, *additional* commercial recovery, treatment or disposal facilities are not viewed as vital to hazardous waste management in Pennsylvania.
- In 1995, the EPA made a determination that sufficient national capacity for hazardous waste treatment, storage and disposal facilities existed for years to come and no longer required states to make individual state capacity assurances. The EPA has assumed responsibility for the capacity assurance program on behalf of states. National capacity has continued to be available since that time to meet hazardous waste management needs across the country. In July 2009, the EPA re-confirmed that adequate national capacity exists through Dec. 31, 2034.

Given that adequate treatment and disposal capacity currently exists, it is DEP's position that the issuance of a CPN is not necessary to provide additional hazardous waste management options to generators in Pennsylvania.

Chapter One

Introduction

Requirements of the Solid Waste Management Act

The Pennsylvania Department of Environmental Protection (DEP) prepared this update to the *Pennsylvania Hazardous Waste Facilities Plan* to satisfy the requirements of the state's *Solid Waste Management Act*, which was signed into law on July 7, 1980, to provide for the planning and regulation of hazardous waste.

The Act directs DEP "to develop, prepare and modify the Pennsylvania Hazardous Waste Facilities Plan,"[1] and states that the plan ". . . shall address the present and future needs for the treatment and disposal of hazardous waste in this commonwealth." Specifically, the plan must address the following elements:

- Criteria and standards for **siting hazardous waste treatment and disposal facilities**. This requirement was met by the 1986 plan. These regulations can now be found at 25 PA Code Chapter 269a, "Siting."
- An inventory and evaluation of the **sources of hazardous waste concentration** within the commonwealth, including types and quantities of hazardous waste. This information can be found in Chapter Two of the current plan.
- An inventory and evaluation of **current hazardous waste practices** within the commonwealth, including existing hazardous waste treatment and disposal facilities. Chapter Three describes existing on-site and off-site hazardous waste management practices.
- A determination of **future hazardous waste facility needs** based on an evaluation of existing treatment and disposal facilities, including their location, capacities and capabilities, and the existing and projected generation of hazardous waste within the commonwealth and including where the department, within its discretion, finds such information to be available, the projected generation outside the commonwealth of hazardous wastes expected to be transported into the commonwealth for storage, treatment or disposal. Chapters Two, Three, Five, Six and Seven each present a portion of this information.
- An analysis of methods, incentives, or technologies for **source reduction**, detoxification, reuse, and recovery of hazardous wastes and a strategy for implementing such methods, incentives, and technologies. The analysis can be found in Chapter Four.
- Identification of such **additional hazardous waste treatment and disposal facilities and their locations** (in addition to existing facilities) as are necessary to provide for the proper management of hazardous waste generated within the commonwealth. This is discussed in Chapter Seven.

[1] Previous plans were developed in 1986, 1992, 1998, and 2004.

Objective of the Plan

The objective of this plan is to update the previous (2004) plan, as required by the Solid Waste Management Act, and determine what additional treatment and disposal capacity is necessary to properly manage hazardous waste generated in Pennsylvania.

How the Plan Was Developed

The plan was developed by analyzing available data on hazardous waste generation and management, as defined by DEP regulations and collected in the Biennial Report. The primary data source used for the current plan is the federal Biennial Reporting System database.

The Biennial Reporting System is a database maintained by the United States Environmental Protection Agency (EPA). It is derived from reports that must be completed every two years by facilities that receive hazardous waste or generate large quantities (usually over 2,200 pounds per month) of hazardous waste.

The Pennsylvania Solid Waste Advisory Committee (SWAC) served as the Pennsylvania Hazardous Waste Facilities Planning Advisory Committee for the 2011 plan, as it did for previous plans. DEP presented the preliminary information for the plan to SWAC in January 2011. At their Sept. 15, 2011 meeting, the Committee approved without any changes the final draft of this plan.

How the Plan Will Be Used

The plan provides information about hazardous waste generation in Pennsylvania, existing facilities available for treatment and disposal of waste, and the types of additional facilities needed for the proper management of waste. By clearly explaining the commonwealth's policies of pollution prevention and the hazardous waste management hierarchy, the plan urges hazardous waste generators and owners of facilities to improve upon past technologies in a way that will eliminate or reduce hazardous waste generation and its associated risks.

The plan will play a role in the establishment of new hazardous waste management facilities if a Certificate of Public Necessity (CPN) is required. The Solid Waste Management Act empowers the Environmental Quality Board (EQB) to issue CPN. Section 6018.105 details the "Powers and duties of the Environmental Quality Board." Section 6018.105(h) of the Act states that the issuance of such a certificate ". . . shall suspend and supersede any and all local laws which would preclude or prohibit the establishment of a hazardous waste treatment or disposal facility at said site, including zoning ordinances." The CPN regulations can be found at 25 PA Code Section 269a.101 through 269a.163.

The EQB considers several factors, including the plan, in a review of any application for a CPN. The factors can be found in 25 Pa. Code Section 269a.152 through 269a.155 and include:

- The extent to which the facility is in conformance with the Pennsylvania Hazardous Waste Facilities Plan.

- The impact of the proposed facility on adjacent populated areas and areas through which wastes are transported to the facility.
- The impact on the borough, township, town, home-rule municipality or city in which the facility is to be located, in terms of health, safety, cost, and consistency with local planning.
- The extent to which the proposed facility has been the subject of a public participation program in which citizens have had a meaningful opportunity to participate in the evaluation of alternate sites or technologies, the development of siting criteria, a socioeconomic assessment, and all other phases of the site selection process.

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Chapter Two

Hazardous Waste Generation within Pennsylvania

Chapter Two presents information on hazardous waste generation in Pennsylvania by industry, source and waste type.

Chapter Summary

- The quantity of hazardous waste generated in Pennsylvania from 2001 to 2009 decreased almost 27 percent from 415,484 in 2001 to 304,076 tons in 2009.
- The largest hazardous waste generating industries are chemical manufacturing and primary metal manufacturing.
- The primary sources of hazardous waste are product and by-product processing and air pollution control.
    - *Note – The previous plan separated recurrent waste generation from remediation waste. This plan uses total waste generation, since the percentage of remediation waste does not have a material impact on total waste generation and shipments.*
- The primary types of hazardous waste generated were organic liquids, inorganic solids, and inorganic liquids.

Methods Used to Categorize Waste Generation

This chapter uses several methods to classify hazardous waste generation: North American Industrial Classification System (NAICS) codes, source codes, and waste categories and type codes. The definitions provided below are intended to aid the reader in understanding this report, but they are not intended to substitute for, replace, or modify statutory or regulatory definitions.

North American Industry Classification System (NAICS) codes are used to classify the **type of generator**. While NAICS codes contain up to six digits, this plan utilizes only the first three digits. The first two digits represent an industry sector, such as mining (NAICS code 21), while a three-digit code represents an industry sub-sector, such as oil and gas extraction (NAICS code 211). NAICS codes were obtained from the Site ID form of the Biennial Report.

Source Codes are used to classify the **types of processes** that generated the waste. An example of a source code would be G06, waste generated from painting and coating. Wastes generated by different industrial classifications may use the same source code. Source codes were obtained

from the Waste Generation and Management (GM) Form of the Biennial Report, completed by generators of hazardous waste. Refer to Appendix 2-A for a complete listing of source codes.

Waste Categories are used to identify the **type of waste** generated. Each waste category contains several more specific *waste codes*. For instance, waste code W211 (paint thinner or petroleum distillates) belongs to the more general category, W2 (organic liquids). Waste categories and codes were obtained from the GM Form of the Biennial Report completed by generators of hazardous waste and from the Waste Received from Off-Site (WR) Form of facilities that received hazardous waste.

Hazardous Waste Generation in Pennsylvania

This part of the chapter examines hazardous waste generation in Pennsylvania. Generation data was obtained from the GM Form of the Biennial Report.

Table 2-1 provides information on the number of generators (greater than 1000 kg/month) that filed biennial reports, the number of waste types reported by these generators and the total tons reported.

Table 2-1

Summary of Hazardous Waste Generation

	2001	2003	2005	2007	2009
Number of Generators	868	889	747	821	740
Number of Waste Types	6,641	9,708	6,340	6,081	7,799
Tons Generated	415,484	401,919	371,173	390,722	304,076

Waste Generation by Industry

This section will examine the types of hazardous waste that are generated in Pennsylvania by three-digit NAICS codes.

Table 2-2 shows the three-digit NAICS codes that generated more than 5,000 tons of waste.

Table 2-2

Three-Digit NAICS Codes That Generated Over 5,000 tons of Hazardous Waste

NAICS Code	NAICS Description	2001	2003	2005	2007	2009
325	Chemical manufacturing	97,452	188,847	163,294	190,223	143,886
331	Primary metal manufacturing	87,416	115,218	119,377	121,688	78,985
NAICS	NAICS Description	2001	2003	2005	2007	2009

Code						
562	Waste management	20,667	30,390	16,060	6,075	21,446
324	Petroleum and coal products	15,713	10,054	12,842	9,756	13,280
335	Electrical equipment	13,174	2,187	10,613	12,492	10,916
332	Fabricated metal products	34,800	16,604	15,345	17,183	9,942
333	Machinery manufacturing	3,490	2,623	3,830	5,075	3,180
336	Transportation equipment	4,559	5,916	4,633	5,289	2,692
	All other NAICS codes combined	138,213	30,080	25,179	22,991	19,748
	***Total**	415,484	401,919	371,173	390,722	304,076

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: Biennial Reporting System, GM Form.

Table 2-3

Top 50 Generators of Hazardous Waste

EPA ID #	Generator Name	City	2009
PAD002312791	Sunoco Inc Frankford PLT	Philadelphia	31,617
PAD003043353	Cherokee Pharmaceuticals LLC	Riverside	31,609
PAD990753089	Exide Technologies	Reading	16,135
PAD980550412	LONZA Inc	Conshohocken	14,543
PAD004325254	AK Steel Corp Butler Works	Butler	13,370
PAD030069140	Albemarle Corp	Tyrone	12,142
PAD042259374	Sartomer USA LLC	West Chester	11,987
PAD048203822	Lord Corp - Saegertown Operation	Saegertown	11,311
PAD002330165	East Penn Mfg Co Inc	Lyon Station	10,341
PAD002326908	ArcelorMittal Plate LLC	Coatesville	9,952
PAD069778967	Air Products & Chemicals Inc ESM	Tamaqua	9,116
PAD003026531	ArcelorMittal Steelton LLC	Steelton	7,672
PAD087561015	Inmetco Inc	Ellwood City	5,695
PAD000429589	GROWS Landfill	Morrisville	4,929
PAD061106209	Standard Steel LLC	Burham	3,577
PAD004337465	Shenango Inc	Neville Island	3,371
PAD981109135	Ellwood Quality Steels Co	New Castle	3,244
PAD041399403	BASF Catalysts LLC	Erie	3,147
PAD049791098	Sunoco Inc (R&M)	Philadelphia	3,002
PAD002105179	United Refining Co	Warren	2,506
PAD000651752	IPSCO Koppel Tubulars Corp	Koppel	2,162
PAD014130439	OMG Americas Inc	Franklin	2,156
PAD045873197	ABB Inc Former CE Cast	Muse	1,878
PA6213820503	Letterkenny ARMY Depot	Chambersburg	1,728
PAD004376919	SMS Millcraft LLC	Oil City	1,493
PAD004322343	Jessop Steel LLC	Washington	1,425

EPA ID #	Generator Name	City	2009
PAD982577082	ArcelorMittal Monessen LLC	Monessen	1,340
PAR000015768	ConocoPhillips Co Trainer Refinery	Trainer	1,329
PAD987344249	Sunoco Inc Frankford PLT	Philadelphia	1,098
PAD004391421	Keystone Profiles Ltd	Beaver Falls	1,046
PAD002395887	Horsehead Corp	Palmerton	1,008
PAD086723285	Sanofi Pasteur	Swiftwater	983
PAD004336319	PPG Industries Inc	Springdale	958
PAD004393468	Latrobe Specialty Steel Co	Latrobe	942
PAD000650366	PPG Industries Inc	Springdale	932
PAR000509117	BASF Corp	Evans City	907
PAD981045107	Dominion Trans Inc Oakford Station	Greensburg	887
PAD990659559	Universal Stainless & Alloy Products	Bridgeville	839
PAD002344315	Carpenter Technology Corp	Reading	830
PAD980550594	Sunoco Inc Marcus Hook Refinery	Marcus Hook	816
PAD003023371	Mount Joy Wire Corp	Mount Joy	814
PAD000000554	SPS Technologies LLC	Jenkintown	814
PAD003044609	Global Tungsten & Powders Corp	Towanda	793
PA0000193409	Penn United Technologies Inc	Cabot	768
PAD010154045	Envirite of Pennsylvania Inc	York	766
PAR000036111	Boyertown Foundry Co	New Berlinville	764
PAD005000625	Westinghouse Electric Co SMP	Blairsville	755
PAD004334157	Neville Chemical Co	Pittsburgh	749
PAD063770440	Young Galvanizing Inc	Pulaski	732
PAD045291986	Electralloy	Oil City	727

Source: EPA 2009 National Biennial Report

Hazardous Waste Generation by Source

This part of the chapter examines sources of hazardous waste generation in Pennsylvania. Generation data was obtained from the GM Form of the Biennial Report.

Table 2-4 contains a listing of sources of hazardous waste greater than 10,000 tons. For a complete listing of all waste sources, see Appendix A.

Table 2-4
Generation of Hazardous Waste by Source (tons)

Source Code	Source Description	2001	2003	2005	2007	2009
G07	Product and by-product processing	62,309	102,816	92,620	115,939	105,249
G21	Air pollution control devices (baghouse dust, etc.)	70,072	85,767	86,632	94,468	54,728
G25	Hazardous waste management	36,588	12,340	30,742	30,397	23,825
G08	Removal of spent process liquids or catalysts	18,454	27,882	8,095	10,668	18,291
G23	Wastewater treatment (sludge, filter cake, etc.)	17,606	16,782	25,231	16,224	17,609
G61	Hazardous waste received from off site for storage/bulking and transfer off site for treatment or disposal	17,358	13,686	6,965	3,318	13,230
G14	Removal of tank sludge, sediments or slag	12,872	11,701	12,501	11,146	12,509
G13	Cleaning out process equipment	10,903	11,088	10,978	10,679	11,129
G05	Metal forming and treatment (pickling, heat-treating, etc.)	32,935	12,730	9,870	17,118	6,427
G62	Hazardous waste received from a foreign county	38,441	32,437	26,525	27,832	0
	All 24 Other Sources Combined	97,946	74,690	61,104	52,983	41,079
	***Total**	415,484	401,919	371,173	390,722	304,076

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: Biennial Reporting System, GM Form.

Hazardous Waste Generation by Category

This part of the chapter examines hazardous waste generation in Pennsylvania by waste category. Generation data was obtained from the GM Form of the Biennial Report.

Table 2-5 contains a listing of all waste categories.

Table 2-5
Waste Categories

Code	Name	Waste Description
W0	Mixed Media/Debris	Waste that is a mixture of organic and inorganic waste, liquid and solid wastes, or devices that are not easily categorizable
W1	Inorganic Liquids	Waste that is primarily inorganic and highly fluid, with low suspended inorganic solids and low organic content
W2	Organic Liquids	Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content
W3	Inorganic Solids	Waste that is primarily inorganic and solid
W4	Organic Solids	Waste that is primarily organic and solid, with low-to-moderate inorganic content and waste content; not pumpable
W5	Inorganic Sludges	Waste that is primarily inorganic, with moderate-to-high water content and low organic content, mostly pumpable
W6	Organic Sludges	Waste that is primarily organic with low-to-moderate inorganic solid content and waste content; pumpable
W8	Compressed Gases	Compressed gases

Hazardous waste generation by category is shown on Table 2-6.

Table 2-6
Generation of Hazardous Waste by Category (tons)

Waste Cat.	Category Description	2001	2003	2005	2007	2009
W0	Mixed media/debris	6,417	5,294	7,896	5,307	7,036
W1	Inorganic liquids	141,920	109,471	94,040	95,590	67,235
W2	Organic liquids	77,985	103,780	93,122	109,850	115,404
W3	Inorganic solids	142,660	143,202	138,767	145,271	81,567
W4	Organic solids	5,700	6,765	4,158	3,266	2,089
W5	Inorganic sludges	29,384	29,978	27,432	24,499	22,297
W6	Organic sludges	11,329	3,321	2,359	6,893	8,011
W8	Compressed gases	92	106	85	48	433
	***Total**	415,484	401,919	371,173	390,722	304,076

* All data rounded to the nearest ton. May not add up to total due to rounding...
Source: Biennial Reporting System, GM Form.

Waste Generation by Waste Type

This section will examine the types of hazardous waste that are generated in Pennsylvania by waste type code. Table 2-7 shows generation by waste category. Of the waste codes specified in the biennial report, 12 contained more than 10,000 tons of hazardous waste between 2001 and 2009. A complete listing of waste generated by waste code can be found in Appendix B.

Table 2-7

Waste Type Codes Containing Over 10,000 Tons of Hazardous Waste

Waste Code	Code Description	2001	2003	2005	2007	2009
W304	Slags, dross, and other thermal residues	46,210	37,471	47,358	57,770	42,046
W203	Concentrated non-halogenated solvent	32,918	27,681	22,080	43,684	41,764
W200	Still bottoms in liquid form	2,405	33,361	33,092	32,225	31,794
W319	Other inorganic solids	73,091	77,150	79,745	78,803	27,456
W219	Other organic liquid	16,921	18,445	9,940	18,086	23,265
W110	Caustic aqueous waste without cyanides	45,227	28,760	24,019	34,566	18,995
W103	Spent concentrated acid	46,907	25,672	23,902	21,973	16,354
W113	Other aqueous wastes or wastewaters	26,972	34,983	22,425	11,627	14,564
W501	Lime and/or metal hydroxide sludges and solids with no cyanides	12,906	11.326	10,504	10,858	12,110
W119	Other inorganic liquid	12,022	9,654	12,418	12,341	9,566
W504	Other sludges from wastewater treatment or air pollution control	12,222	15,837	14,331	11,474	7,135
W204	Concentrated halogenated/non-halogenated solvent mixture	10,889	10,175	12,643	2,651	6,589
	All 35 other waste types combined	76,794	71,404	58,716	54,664	52,438
	***Total**	415,484	401,919	371,173	390,722	304,076

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: Biennial Reporting System, GM Form.

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Chapter Three

Hazardous Waste Management

Chapter Three examines current hazardous waste management practices within the commonwealth. This includes methods used by generators to manage their wastes, captive management facilities, and commercial hazardous waste treatment, storage and disposal facilities.

Chapter Summary

- The amount of waste generated decreased almost 27 percent from 415,484 tons in 2001 to 304,076 tons in 2009.

- The amount of waste managed on-site by hazardous waste generators decreased from 100,443 tons in 2001 to 88,916 tons in 2009.

  - Energy recovery, solvent recovery, incineration, stabilization, and phase separation accounted for most of the waste managed on-site.

- The amount of waste shipped off-site by hazardous waste generators decreased almost 33 percent from 313,677 tons in 2001 to 210,232 in 2009.

  - The majority of waste shipped off-site from 2001 to 2009 was sent for treatment prior to disposal, followed by reclamation and recovery, disposal and storage.
  - Metal recovery was the highest specific management method followed by stabilization or chemical fixation prior to disposal, chemical precipitation and energy recovery.

- The amount of waste shipped out-of-state decreased over 30 percent from 203,177 tons in 2001 to 141,258 in 2009.

  - Destruction/Treatment (chemical precipitation, biological, stabilization and thermal) was the management method most frequently used followed by Recovery fuel blending, solvents and energy) and disposal (landfill/surface impoundment).

- The amount of waste received by commercial facilities in Pennsylvania increased from 417,386 tons in 2001 to 442,485 in 2009.

  - Metal recovery was the management method most frequently used followed by stabilization and disposal (delisted waste), storage, energy recovery, and stabilization or chemical fixation.

Terms Used in This Chapter

The definitions provided below are intended to aid the reader in understanding this report. They are not intended to substitute for, replace, or modify statutory or regulatory definitions.

Captive facilities manage only wastes generated on-site by the facility. The wastes can be treated *on-site* at the place of generation.

Commercial facilities manage wastes generated off-site and received from other companies.

Management codes are used to classify the specific methods and processes that captive and commercial facilities use to manage hazardous waste. Appendix C contains a complete listing of management categories and codes and a brief description of each code.

Management of Waste Generated in Pennsylvania

The source of numerical information in this chapter is the GM Form of the Hazardous Waste Report, unless otherwise noted.

Table 3-1 provides a summary of waste generated in Pennsylvania, and the quantities of these wastes managed on-site and off-site.

Table 3-1

Summary of Hazardous Waste Generation & Management

	2001	2003	2005	2007	2009
Number of Generators	868	889	747	821	740
Number of Waste Types	6,641	9,708	6,340	6,081	7,799
Tons Generated	415,484	401,919	371,173	390,722	304,076
Tons Managed On-Site	100,443	88,490	72,348	80,838	88,916
Tons Managed Off-Site	313,677	327,641	316,788	295,716	210,232

Source: GM Form of Biennial Report.

Note – Some wastes managed on-site are subsequently shipped off-site.

Waste Managed at Captive Facilities

Table 3-2 shows how waste was managed at captive facilities by generators located in Pennsylvania. Appendix C gives a complete listing of management codes. Please note that, for purposes of Table 3-2 and throughout the remainder of the body of this plan, the description of the management codes has been shortened.

Table 3-2

Captive Management of Hazardous Waste Generated in Pennsylvania

Mgmt Codes	Description	2001	2003	2005	2007	2009
H010	Metals recovery	36,105	27	36	930	1,059
H020	Solvent recovery	5,451	4,285	7,105	28,124	29,729
H039	Other recovery or reclamation (not energy)	7,626	46	405	226	2
H040	Incineration	12,618	19,811	11,512	2,164	12,806
H050	Energy recovery	8,831	41,388	31,609	31,000	30,476
H111	Stabilization or chemical fixation	12,060	7,049	2,655	1,731	7,504
H124	Phase separation	15,268	**13,478	**17,269	12,928	5,987
H129	Other treatment	2,434	2,258	1,734	3,314	1,142
	All Other Mgmt Codes	51	148	22	421	209
	***Total**	**100,443**	**88,490**	**72,348**	**80,838**	**88,916**

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: GM Form of Biennial Report.

Note – Some wastes managed on-site are subsequently shipped off-site.

Use of Commercial Facilities by Generators in Pennsylvania

Generators in Pennsylvania sent about 210,232 tons of hazardous waste to commercial facilities in 2009. Table 3-3 shows the top 50 shippers of hazardous waste.

Table 3-3

Top 50 Shippers of Hazardous Waste

EPA ID #	Generator Name	City	2009
PAD004325254	AK Steel Corp Butler Works	Butler	13,370
PAD030069140	Albemarle Corp	Tyrone	12,142
PAD048203822	Lord Corp - Saegertown Operation	Saegertown	11,311
PAD002326908	ArcelorMittal Plate LLC	Coatesville	9,952
PAD069778967	Air Products & Chemicals Inc ESM	Tamaqua	9,116
PAD990753089	Exide Technologies	Reading	9,051
PAD002330165	East Penn Mfg Co Inc	Lyon Station	8,742
PAD003026531	ArcelorMittal Steelton LLC	Steelton	7,672
PAD042259374	Sartomer USA LLC	West Chester	5,999
PAD067098822	Cycle Chem Inc	Lewisberry	5,812
PAD087561015	Inmetco Inc	Ellwood City	5,695
PAD085690592	Republic Environmental Systems	Hatfield	4,760
PAD003043353	Cherokee Pharmaceuticals LLC	Riverside	3,813
PAD061106209	Standard Steel LLC	Burham	3,577
PAD004337465	Shenango Inc	Neville Island	3,371

EPA ID #	Generator Name	City	2009
PAD981109135	Ellwood Quality Steels Co	New Castle	3,244
PAD041399403	BASF Catalysts LLC	Erie	3,147
PAD049791098	Sunoco Inc (R&M)	Philadelphia	3,002
PAD002105179	United Refining Co	Warren	2,506
PAD000651752	IPSCO Koppel Tubulars Corp	Koppel	2,162
PAD000429589	GROWS Landfill	Morrisville	2,100
PAD045873197	ABB Inc Former CE Cast	Muse	1,878
PAD980550412	LONZA Inc	Conshohocken	1,737
PAD004376919	SMS Millcraft LLC	Oil City	1,493
PAD004322343	Jessop Steel LLC	Washington	1,425
PAD982577082	ArcelorMittal Monessen LLC	Monessen	1,340
PAR000015768	ConocoPhillips Co Trainer Refinery	Trainer	1,328
PA6213820503	Letterkenny ARMY Depot	Chambersburg	1,270
PAD002312791	Sunoco Inc Frankford PLT	Philadelphia	1,141
PAD987344249	Moore & Morford Inc	Greensburg	1,098
PAD010154045	Envirite of Pennsylvania Inc	York	1,077
PAD004391421	Keystone Profiles Ltd	Beaver Falls	1,046
PAD086723285	Sanofi Pasteur	Swiftwater	983
PAD004336319	PPG Industries Inc	Springdale	958
PAD000650366	PPG Industries Inc	Springdale	932
PAD004393468	Latrobe Specialty Steel Co	Latrobe	922
PAD981045107	Dominion Trans Inc Oakford Station	Greensburg	887
PAD990659559	Universal Stainless & Alloy Products	Bridgeville	838
PAD002344315	Carpenter Technology Corp	Reading	830
PAD980550594	Sunoco Inc Marcus Hook Refinery	Marcus Hook	816
PAD003023371	Mount Joy Wire Corp	Mount Joy	814
PAD014130439	OMG Americas Inc	Franklin	799
PAD003044609	Global Tungsten & Powders Corp	Towanda	791
PA0000193409	Penn United Technologies Inc	Cabot	768
PAR000036111	Boyertown Foundry Co	New Berlinville	764
PAD005000625	Westinghouse Electric Co SMP	Blairsville	755
PAD004334157	Neville Chemical Co	Pittsburgh	749
PAD063770440	Young Galvanizing Inc	Pulaski	732
PAD045291986	Electralloy	Oil City	727
PAD004335154	Allegheny Ludlum - Brackenridge	Brackenridge	677

Source: EPA 2009 National Biennial Report

Table 3-4 shows how hazardous waste was managed at commercial facilities as reported by the generators.

Table 3-4

Tons of Hazardous Waste Sent for Commercial Management

Mgmt Codes	Description	2001	2003	2005	2007	2009
	RECLAMATION AND RECOVERY					
H010	Metals recovery	62,490	98,048	97,298	86,987	41,851
H020	Solvents recovery	13,791	9,384	8,466	8,594	10,396
H039	Other recovery	3,212	3,666	6,664	7,994	7,324
H050	Energy recovery–use as fuel	10,099	8,406	10,636	9,206	4,802
H061	Fuel blending	24,506	21,423	17,931	15,187	16,007
	***Subtotal**	**114,098**	**140,927**	**140,995**	**127,968**	**80,380**
	DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL					
H040	Thermal destruction other than use as a fuel	13,531	15,426	11,546	10,699	13,813
H071	Chemical reduction	10,523	6,299	4,432	10,477	1,608
H077	Other chemical precipitation	32,596	26,732	30,398	27,760	29,442
H081	Biological treatment	32,466	28,276	25,807	19,070	17,736
H111	Stabilization or chemical fixation prior to disposal	40,310	54,232	51,508	53,452	32,043
H121	Neutralization only	5,450	2,599	2,444	1,222	197
H129	Other treatment	17,700	22,787	14,130	11,929	4,265
	All Other Treatment Codes (H073, H075, H076, H082, H083, H101, H112 and H124)	3,722	890	1,139	3,837	177
	***Subtotal**	**156,298**	**157,241**	**141,404**	**138,446**	**99,281**
	DISPOSAL					
H131	Land treatment or application	0	5	0	0	19
H132	Landfill or surface impoundment	20,257	11,494	20,334	15,623	16,848
H134	Deepwell or underground injection	7,382	5,052	2,863	4,531	1,916
H135	Discharge to sewer/POTW or NPDES	321	142	0	1,229	1,363
	***Subtotal**	**27,960**	**16,693**	**23,197**	**21,383**	**20,146**
	STORAGE AND TRANSFER					
H141	Storage, bulking, and/or transfer off-site	15,321	12,761	14,811	10,231	10,425
	***Subtotal**	**15,321**	**12,761**	**14,811**	10,231	10,425
	***Total**	**313,677**	**327,623**	**320,407**	**298,029**	**210,232**

* All data rounded to the nearest ton. May not add up to subtotal or total due to rounding.
Source: GM Form of Biennial Report.

Note - Waste management codes reported by generators may not match the waste management codes reported by facilities receiving the waste.

Table 3-5 shows the percentage of waste that is commercially managed from generators in Pennsylvania.

Table 3-5

Percentage of Hazardous Waste Sent for Commercial Management

Mgmt Codes	Description	2001	2003	2005	2007	2009
	RECLAMATION AND RECOVERY					
H010	Metals recovery	19.9%	29.9%	30.4%	29.2%	19.9%
H020	Solvents recovery	4.4%	2.9%	2.6%	2.9%	4.9%
H039	Other recovery	1.0%	1.1%	2.1%	2.7%	3.5%
H050	Energy recovery–use as fuel	6.5%	5.3%	7.5%	6.6%	4.8%
H061	Fuel blending	7.8%	6.5%	5.6%	5.1%	7.6%
	***Subtotal**	36.4%	43.0%	44.0%	42.9%	38.2%
	DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL					
H040	Thermal destruction other than use as a fuel	4.3%	4.7%	3.6%	3.6%	6.6%
H071	Chemical reduction	3.4%	1.9%	1.4%	3.5%	0.8%
H077	Other chemical precipitation	10.4%	8.2%	9.5%	9.3%	14.0%
H081	Biological treatment	10.4%	8.6%	8.1%	6.4%	8.4%
H111	Stabilization or chemical fixation prior to disposal	12.9%	16.6%	16.1%	17.9%	15.2%
H121	Neutralization only	1.7%	0.8%	0.8%	0.4%	0.1%
H124	Phase separation	0.1%	0.2%	0.2%	1.1%	0.0%
H129	Other treatment	6.6%	7.0%	4.4%	4.0%	2.0%
	***Subtotal**	49.8%	48.0%	44.1%	46.5%	47.2%
	DISPOSAL					
H132	Landfill or surface impoundment	6.5%	3.5%	6.3%	5.2%	8.0%
H134	Deepwell or underground injection	2.4%	1.5%	0.9%	1.5%	0.9%
H135	Discharge to sewer/POTW or NPDES	0.1%	0.0%	0.0%	0.4%	0.6%
	***Subtotal**	8.9%	5.1%	7.2%	7.2%	9.6%
	STORAGE AND TRANSFER					
H141	Storage, bulking, and/or transfer off-site	4.9%	3.9%	4.6%	3.4%	5.0%
	***Subtotal**	4.9%	3.9%	4.6%	3.4%	5.0%

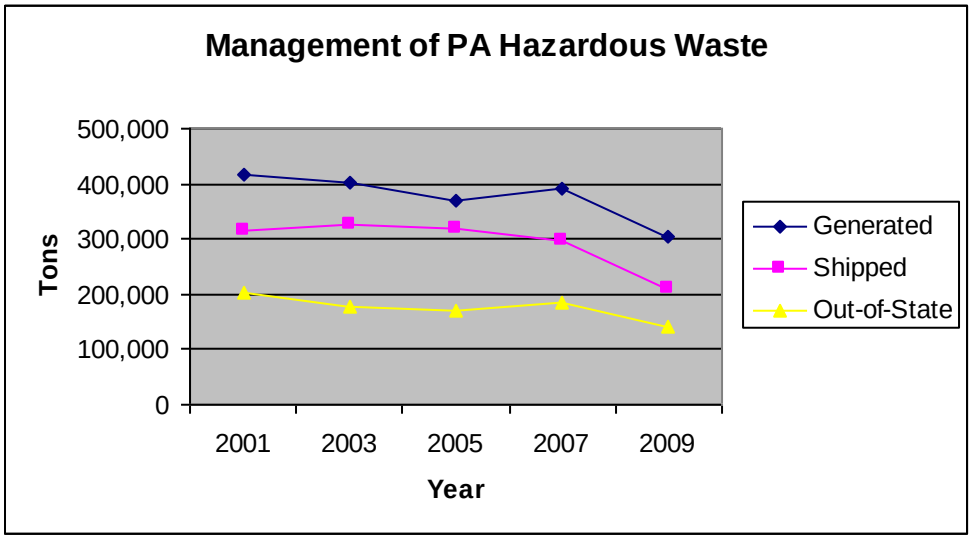
*Rounded to the nearest 0.1%. May not total 100.0 percent due to rounding.
Source: GM Form of Biennial Report.

Trends in Waste Management in Pennsylvania

Chart 3-1 shows the quantity of hazardous waste generated in Pennsylvania, shipped off-site, and shipped out-of-state.

Chart 3-1

Quantity of Hazardous Waste Requiring Commercial Management



Waste Shipped Out-of State from Generators in Pennsylvania

This section examines the flow of hazardous waste from Pennsylvania. The GM Form is the source of information on waste originating in Pennsylvania and sent outside the commonwealth.

The movement of hazardous waste across state boundaries for treatment, storage and disposal is a substantial industry. No state in the nation manages all the hazardous waste generated within its borders. Table 3-6 shows the quantity of waste shipped out-of-state from generators in Pennsylvania.

Table 3-6

Hazardous Waste Manifested Out-of-State From Pennsylvania

Mgmt Codes	Description	2001	2003	2005	2007	2009
RECLAMATION AND RECOVERY						
H010	Metals recovery	3,903	2,665	915	22,123	791
H020	Solvents recovery	13,096	8,790	8,305	8,305	10,361
H039	Other recovery	541	2,894	6,440	6,509	5,286
H050	Energy recovery–use as fuel	5,241	2,909	4,206	5,200	4,003

H061	Fuel blending	24,483	21,393	17,931	15,187	16,006
	***Subtotal**	**47,264**	**38,651**	**37,797**	**57,324**	**36,447**
DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL						
H040	Thermal destruction other than use as a fuel	13,531	15,426	11,546	10,699	13,813
H071	Chemical reduction	6,391	3,019	2,363	9,767	1,499
H077	Other chemical precipitation	23,355	23,614	27,591	21,156	24,579
H081	Biological treatment	32,466	28,256	25,807	19,020	17,729
H111	Stabilization or chemical fixation prior to disposal	21,361	19,582	15,880	22,890	15,014
H121	Neutralization only	3,600	2,180	2,057	838	149
H129	Other treatment	13,289	22,108	13,439	11,410	4,265
	All Other Treatment Codes (H073, H075, H076, H082, H083, H101, H112 and H124)	3,331	890	1,042	3,740	175
	***Subtotal**	**117,324**	**115,075**	**99,725**	**99,520**	**77,223**
DISPOSAL						
H131	Land treatment or application	0	5	0	0	19
H132	Landfill or surface impoundment	20,257	11,494	20,334	15,623	16,848
H134	Deepwell or underground injection	7,382	5,052	2,863	4,531	1,916
H135	Discharge to sewer/POTW or NPDES	221	142	0	1,229	1,362
	***Subtotal**	**27,860**	**16,693**	**23,197**	**21,383**	**20,145**
STORAGE AND TRANSFER						
H141	Storage, bulking, and/or transfer off-site	10,728	7,920	10,973	7,673	7,445
	***Subtotal**	**10,728**	**7,920**	**10,973**	**7,673**	**7,445**
	***Total**	**203,177**	**178,339**	**171,591**	**185,901**	**141,258**

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: GM Form of Biennial Report.

Total Amount of Waste Received By Commercial Facilities in Pennsylvania

The total amount of waste received by commercial hazardous waste management facilities located in Pennsylvania, including waste sent to commercial facilities from in-state and out-of-state generators, was determined by information on the WR Form of the Federal Biennial Report, completed by facilities that received hazardous waste.

Chart 3-2 shows the quantity of hazardous waste received by commercial facilities in Pennsylvania from in-state and out-of-state generators.

Chart 3-2

Origin of Hazardous Waste Received by Facilities in Pennsylvania

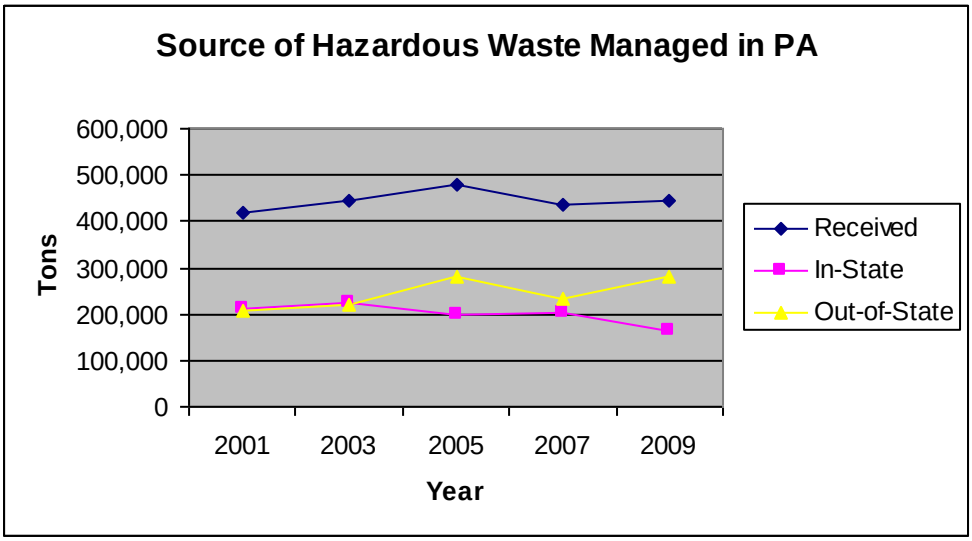


Table 3-7

Receivers of Hazardous Waste

EPA ID #	Generator Name	City	2009
PAD002395887	Horsehead Corp	Palmerton	198,372
PAD004835146	MAX Environmental	Yukon	64,474
PAD010154045	Envirite of Pennsylvania Inc	York	44,375
PAD087561015	INMETCO Inc	Ellwood City	33,940
PAD002389559	Keystone Cement Co	Bath	33,679
PAD085690592	Republic Environmental Systems	Hatfield	32,373
PAD990753089	Exide Technologies	Reading	9,616
PAD981038227	World Resources Co	Pottsville	7,136
PAD067098822	Cycle Chem Inc	Lewisberry	6,236
PAD000736942	Calgon Carbon Corp	Pittsburgh	5,252
PAD987270725	Siemens Water Technologies Corp	Darlington	3,714
PAD987283140	United Environmental Group	Sewickley	884
PAD987367216	AERC.COM, Inc	Allentown	401
PAD000738849	Safety-Kleen Systems Inc	West Chester	336
PAD000738823	Safety-Kleen Systems Inc	New Kingston	309
PAD982576258	Safety-Kleen Systems Inc	West Mifflin	276
PAD981736143	Safety-Kleen Systems Inc	Johnstown	243
PAD981737109	Safety-Kleen Systems Inc	Wilkes Barre	232
PAD987266715	Safety-Kleen Systems Inc	Fairless Hills	209
PAR000522763	CD&E Refining LLC	York	154

EPA ID #	Generator Name	City	2009
PAD086673407	Safety-Kleen Systems Inc	Erie	91
PA0000453084	Bethlehem Apparatus Co Inc	Bethlehem	89
PAD002390961	Bethlehem Apparatus Co Inc	Hellertown	56
PAD980830657	Cardone Industries PLT 11-14	Philadelphia	33
PAD002330165	East Penn Mfg Co Inc	Lyon Station	5

Source: EPA 2009 National Biennial Report

Table 3-8 shows the quantity of waste received by all facilities from in-state and out-of-state generators by management category. Appendix D shows the quantity of waste received by individual facilities in the state.

Table 3-8

Tons of Hazardous Waste Received by Facilities in Pennsylvania

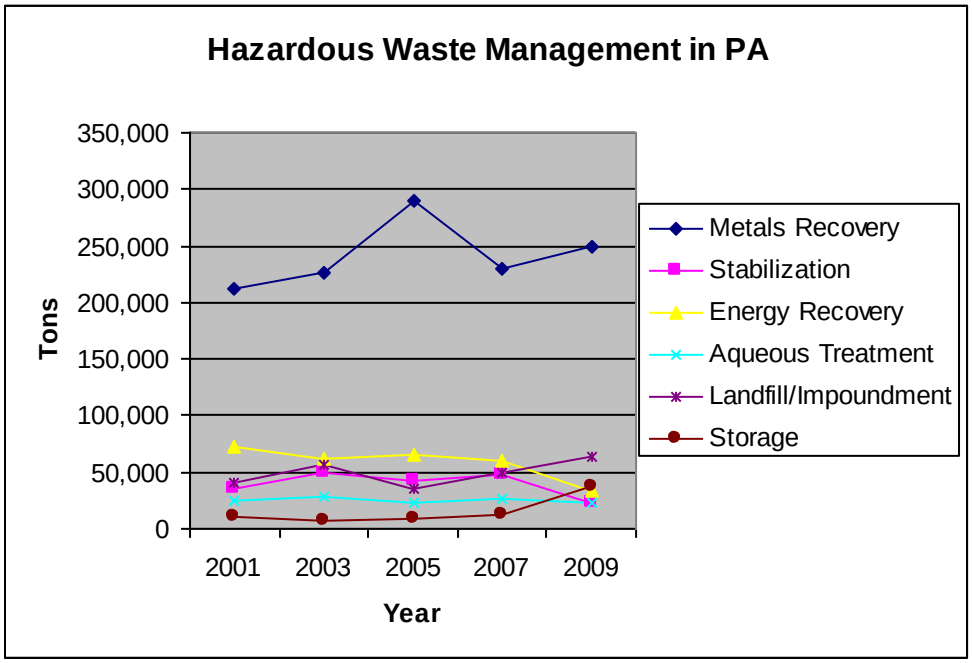
Mgmt Code	Category Description	2001	2003	2005	2007	2009
	RECLAMATION AND RECOVERY					
H010	Metals recovery	212,015	227,003	290,295	230,623	249,904
H020	Solvent Recovery	5,542	3,578	3,010	2,407	1,729
H039	Other recovery or reclamation (not energy)	12,375	7,014	8,503	8,493	8,966
H050	Energy recovery/Fuel Blending	72,103	62,079	65,449	59,802	33,679
	***Subtotal**	302,035	299,674	367,257	301,325	294,279
	DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL					
H071	Chemical reduction	8,643	15,238	14,886	84	0
H073	Cyanide destruction	382	510	1,208	0	0
H075	Chemical Oxidation	0	0	64	0	0
H077	Other Chemical precipitation	14,552	11,948	6,319	25,394	22,153
H081	Biological Treatment	1,495	736	699	434	799
H082	Adsorption	0	9	1	0	0
H101	Sludge treatment/dewatering	5	35	8	0	0
H111	Stabilization or chemical fixation	34,401	49,648	41,713	47,598	22,894
H112	Macro-encapsulation	17	38	32	67	33
H121	Neutralization	4,203	2,275	1,975	1,280	583
H129	Other treatment	589	0	0	0	0
	***Subtotal**	64,287	80,437	66,905	74,857	46,462
	DISPOSAL					
H132	Stabilization and Disposal (Delisted Waste – See Chapter 5)	40,136	57,104	36,228	49,227	64,487
	STORAGE AND TRANSFER					
H141	Storage, bulking or transfer	10,928	6,582	9,473	12,388	37,259
	***Total**	**417,386**	**443,798**	**479,866**	**437,799**	**442,485**

* All data rounded to the nearest ton. May not add up to total due to rounding.
Source: WR Form of Biennial Report.

Chart 3-3 shows how the hazardous waste received by commercial facilities in Pennsylvania was managed.

Chart 3-3

Quantity of Hazardous Waste Managed by Facilities in Pennsylvania



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Chapter Four

Pennsylvania's Hazardous Waste Minimization Strategy

Chapter Four presents DEP's programs to encourage Waste Minimization.

Chapter Summary

- DEP continues to support the use of the waste management hierarchy, but emphasizes the importance of striving to eliminate hazardous waste generation.
- The overall amount of hazardous waste generated and subsequently managed continues to decrease.
- DEP supports efforts to reduce the toxicity and quantity of hazardous waste, with emphasis on the most persistent, toxic and bio-accumulative chemical constituents in waste.

Waste Minimization

The definitions provided below are intended to aid the reader in understanding this report. They are not intended to substitute for, replace, or modify statutory or regulatory definitions.

Waste minimization includes: **source reduction** practices that reduce or eliminate waste generation at the source; and environmentally sound **recycling** practices, where source reduction is not economically practical.

Source reduction includes any practice that reduces the quantity and/or toxicity of pollutants entering a waste stream prior to recycling, treatment, or disposal. Examples include: equipment or technology modifications, reformulation or redesign of products, substitution of less toxic raw materials, improvements in work practices, maintenance, worker training, and better inventory control.

Recycling includes the use, reuse and/or reclamation of waste residuals that may be designated as a hazardous waste, or materials in a hazardous waste. A material is "used or reused" if it is used as an ingredient in an industrial process to make a product, or if it is used as an effective substitute for a commercial product. A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated. Examples of recycling include: reuse of air pollution control dust back into the manufacturing processes, reclamation of spent lead acid batteries at battery-making facilities, and reuse of glass cullet in glassmaking.

Treatment intended to destroy the waste, or solely to prepare it for disposal, is not waste minimization.

What are Generators in Pennsylvania Doing?

Businesses in Pennsylvania are becoming more environmentally conscious. As businesses have improved their environmental performance, they have realized that good environmental practices are also sound financial practices. Improved source-reduction practices have led to more efficient operations through decreased raw material costs, decreased waste management costs, reduced liability, and in some cases, improved product quality.

While individual manufacturers have done many things that are specific or unique to their product lines to decrease or eliminate the amount of hazardous waste they generate, accomplishments by generators tend to have certain things in common. Some of those are listed below:

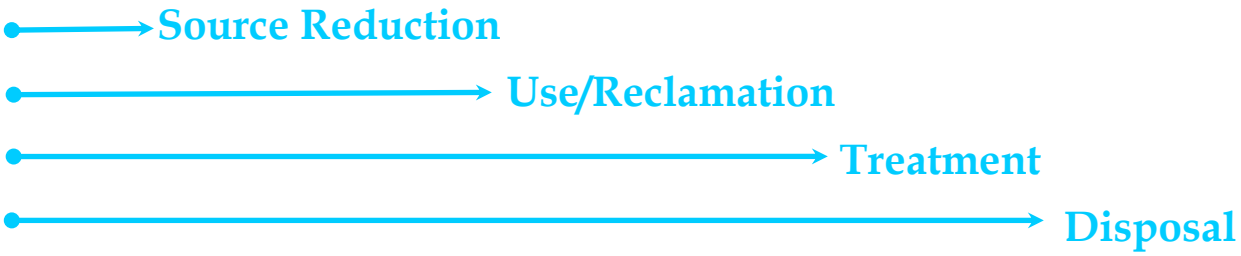
- Closed-loop recycling systems.
- Substituting nonhazardous materials for hazardous materials in the manufacturing process.
- Reformulating products to decrease toxicity and hazardous constituents.
- Recovering hazardous waste for reuse in the manufacturing process.
- Working in environmental teams to address problems that are too difficult for one individual to address.
- Working with others in the same industry to address common hazardous waste problems.
- Utilizing wastes as feedstocks into other industrial processes.
- Making more efficient use of hazardous materials in the manufacturing process so that less waste is generated.
- Redesigning industrial processes so that the necessary hazardous materials do not become waste.

DEP's Implementation Strategy

1. Waste Management Hierarchy

DEP continues to support the use of the waste management hierarchy. The waste management hierarchy integrates a variety of waste-handling methods in a sequence that prevents pollution, conserves natural resources and saves disposal capacity. The system directs waste through a series of steps, each of which is designed to reduce the amount of waste to be landfilled. This sequence, or hierarchy, of waste management methods is as follows:

WASTE MANAGEMENT HIERARCHY



Wastes directed through these steps are disposed only if there is not a preferred method to manage them. The amount of control exercised at the first level — source reduction — sets the direction for management at the other three levels. As more control is exercised at the first level, less waste passes to the second level — use or reclamation — and the third — treatment. In this way, less waste reaches the fourth level — disposal.

- **Source Reduction**. The ideal goal is to prevent generation in the first place. Wherever possible, the quantity or toxic level of a waste stream should be eliminated or at least reduced at the source.
- **Use or Reclamation**. Use is the direct and effective substitution of a waste material for a raw material used as an ingredient in an industrial process, or for a commercial chemical product. Use also includes the substitution of a hazardous waste for a fossil fuel in a boiler or industrial furnace. Reclamation is the treatment of a waste material to regenerate a usable product, recover a usable product, or recover distinct components as separate end products.
- **Treatment**. Waste treatment employs a variety of technologies, either proven or emerging, to destroy, detoxify, or neutralize wastes to less hazardous or nonhazardous substances.
- **Land Disposal**. The waste management method of last resort, land disposal, is reserved for residues from the three preceding waste management practices and for waste that cannot be handled by one of these preferred practices. Waste to be land disposed must first be stabilized and meet the treatment standards of the *Federal Resource Conservation and Recovery Act*.

DEP supports the use of the waste management hierarchy, but emphasizes the importance of striving for eliminating hazardous waste generation. While generators work towards the goal of eliminating hazardous waste generation, the hierarchy can be a bridge to help manage waste more effectively.

2. Source Reduction Strategy

The state hazardous waste regulations require generators of more than 1,000 kilograms of hazardous waste in any given month to prepare a source reduction strategy. The strategy is a written summary of how the generator proposes to reduce waste generation, based on the results of internal studies and evaluations of waste sources, equipment, costs and available technologies. For each type of waste generated, the strategy describes source reduction activities during the past five years and projected activities for the next five years. Generators update the strategy every five years unless DEP establishes, in writing, a different period for the individual generator.

There are economic as well as environmental benefits in having a source reduction strategy. Benefits include conservation of raw materials, reduced disposal costs, reduced environmental liability, and a reduced environmental compliance burden.

3. Hazardous Waste Transportation and Management Fees

The *Hazardous Sites Cleanup Act* of 1988 imposed hazardous waste transportation and management fees, which are paid into the Hazardous Sites Cleanup Fund (refer to Chapter 9 of the *Hazardous Sites Cleanup Act* for complete information). The fee system encourages conformance with the waste management hierarchy by charging higher fees when less desirable management options are utilized. The fees also provide economic incentives for implementing on-site source reduction. The Hazardous Sites Cleanup Fund is used for the following purposes:

- Response actions relating to the release or threatened release of hazardous substances.
- Emergency responses to clean up spills and other uncontrollable releases.
- Reimbursement for alternative or replacement water supplies made necessary by releases of hazardous substances.
- Rehabilitation, restoration or acquisition of natural resources to remedy injuries or losses.
- State matching funds required under the *Federal Superfund Act* for response at National Priority List sites.
- Other uses, specified in Chapter Nine of the Hazardous Sites Cleanup Act.

4. Website — http://www.depweb.state.pa.us

DEP uses every available, cost-effective means to share information and encourage public participation. Internet capabilities now make it possible for DEP to furnish the most up-to-date environmental information at any time to anyone with access capability. DEP's website encompasses all department program areas and includes current events, technical assistance,

grant aid, publications, legislation, regulations, awards programs, bureau contacts and advisory committees.

To access the **Bureau of Waste Management webpage**, select *DEP Programs A-Z*, then *Waste Management*.

5. Immunity from Discoveries Made During Self-Audits

Protection of the environment and public health and safety rests principally on the regulated community's voluntary compliance with environmental requirements. Voluntary compliance begins with an awareness of environmental problems, often achieved through regular environmental self-evaluations. To promote voluntary compliance, DEP encourages companies and individuals to establish compliance management systems and perform voluntary environmental compliance audits.

A major disincentive to undertaking environmental self-evaluations is the threat of civil and criminal sanctions. To remove this disincentive, under the compliance audit policy, DEP will not assess a civil penalty, except to collect any economic benefit due to noncompliance, or suspend or revoke a license, permit or other DEP authorization for violations of environmental requirements which are voluntarily discovered and disclosed following an environmental compliance audit or other self-assessment conducted pursuant to a Compliance Management System if:

- disclosure to DEP is made promptly after the information or knowledge concerning the violation is discovered;
- reasonable action is promptly initiated and diligently pursued to correct or eliminate the violation pursuant to a compliance schedule; and
- the person making the disclosure provides a full written description of the condition, including a compliance schedule to address the violation, and cooperates with DEP regarding the investigation of the disclosed condition.

Public confidence in DEP's administration of environmental programs is enhanced by prompt disclosure and correction of violations of environmental requirements. Prompt disclosure allows DEP to evaluate whether actions to correct the violations are reasonable and diligently pursued.

The policy does not apply when the discovery made was not voluntary, the violation was committed intentionally or knowingly, corrective action is not promptly initiated and diligently pursued, significant environmental harm or a significant public health effect was caused by the violation, repeated violations reveal a pattern of conduct or condition that should have been addressed earlier, and the violation or disclosure involved fraud.

The unabridged policy can be found on DEP's website at **www.depweb.state.pa.us** (document number 012-0840-001).

EPA's Implementation Strategy

Hazardous Secondary Materials

On Oct. 7, 2008, the EPA issued a new final rule that streamlines regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources. The rule excludes materials from the federal hazardous waste system that are:

- generated and legitimately reclaimed under the control of the generator;
- generated and transferred to another company for legitimate reclamation under specific conditions; or
- determined by EPA or an authorized state to be non-wastes on a case-by-case basis via a petition process.

By removing unnecessary regulatory controls, including manifesting and biennial reporting, EPA expects to make it easier and more cost-effective to safely recycle hazardous secondary material. As of Aug. 9, 2011, 21 facilities have submitted notifications under this rule.

Facility Type	# of facilities
Generator-controlled exclusion, reclaiming onsite	4
Generator-controlled exclusion, reclaiming within same company	1
Transfer-based exclusion, generator transferring offsite	14
Transfer-based exclusion, reclamation facility	2

Chapter 5

Commercial Facilities in Pennsylvania

This chapter examines the existing commercial hazardous waste management facilities available in the commonwealth, their capacities and locations, and the method(s) of management offered at the facilities.

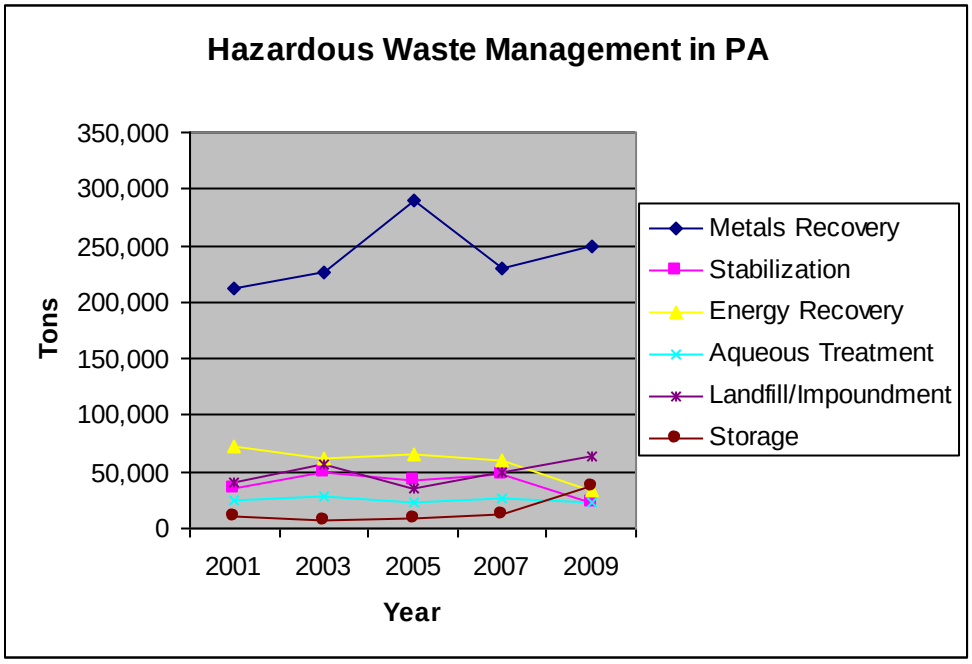
Chapter Summary

- There are currently 23 commercial hazardous waste management facilities located in Pennsylvania offering services in 11 management categories, not including storage, bulking and/or transfer facilities. This includes capacity in:
  - Metals recovery (H010)
  - Solvent recovery (H020)
  - Other recovery (H039)
  - Energy recovery (H050)
  - Other chemical precipitation (H077)
  - Biological treatment (H081)
  - Stabilization or chemical fixation (H111)
  - Macro-Encapsulation (H112)
  - Neutralization (H121)
  - Other treatment (H129)
  - Landfill or surface impoundment (Delisted Waste) (H132)
- There are no commercial management facilities in Pennsylvania that provide services in:
  - Thermal destruction other than use as fuel (H040)
  - Fuel Blending (H061)
  - Chemical reduction (H071)
  - Cyanide destruction (H073)
  - Chemical oxidation (H075)
  - Wet air oxidation (H076)
  - Adsorption (H082)
  - Air or stream stripping (H083)
  - Sludge treatment and/or dewatering (H101)
  - Absorption (H103)
  - Evaporation (H122)
  - Settling or clarification (H123)
  - Land treatment or application (H131)
  - Deepwell or underground injection (H134)
  - Discharge to sewer/POTW (H135)

Chart 5-1 shows how the hazardous waste received by commercial facilities in Pennsylvania was managed.

Chart 5-1

Quantity of Hazardous Waste Received by Facilities in Pennsylvania



Commercial Hazardous Waste Facilities in Pennsylvania

For classification purposes, the services provided by commercial management facilities may be broken into four broad groups: recovery; treatment; disposal; and storage, bulking and/or transfer facilities. The purpose of categorizing facilities is to better understand where they fit into the hierarchy of waste management and for future reference when this plan is required to be updated.

Recovery techniques remove wastes from hazardous materials to make a hazardous material suitable for its original purpose or usable as a substitute for a raw material in another process. Recovery includes the management categories of:

RECOVERY

Code	Description
H010	Metals recovery including retorting, smelting, chemicals, etc.
H020	Solvents recovery
H039	Other recovery or reclamation for reuse including acid regeneration, organics recovery, etc.
H050	Energy recovery – use as fuel (includes on-site fuel blending)
H061	Fuel blending prior to energy recovery at another site

Treatment is designed to change the physical, chemical or biological composition of waste to neutralize it, render it nonhazardous or less hazardous, make it safer to transport or dispose of, or make it amenable for recovery, storage, or volume reduction.

TREATMENT

Code	Description
H040	Incineration
H071	Chemical reduction with or without precipitation
H073	Cyanide destruction
H075	Chemical oxidation
H076	Wet air oxidation
H077	Other chemical precipitation with or without pre-treatment
H081	Biological treatment with or without precipitation
H082	Adsorption
H083	Air stripping
H101	Sludge treatment and/or dewatering
H103	Absorption
H111	Stabilization or chemical fixation prior to disposal
H112	Macro-encapsulation prior to disposal
H121	Neutralization
H122	Evaporation
H124	Phase separation
H129	Other treatment

Note – Two commercial treatment, storage and disposal facilities in Pennsylvania (Envirite and MAX Environmental) have received approval for the stabilization (H111) and delisting of specific hazardous wastes. The resulting stabilized wastes are disposed as residual wastes. See Appendix E for additional details.

Disposal is the discharge, deposit, injection, dumping, spilling, leaking or placing of a waste into land or water so the waste or part of the waste may enter into the environment. Disposal techniques include the management categories of:

DISPOSAL

Code	Description
H131	Land treatment or application (to include on-site treatment and/or stabilization)
H132	Landfill or surface impoundment that will be closed as landfill (to include on-site treatment and/or stabilization
H134	Deepwell or underground injection
H135	Discharge to sewer/POTW or NPDES (with prior storage – with or without treatment)

Storage, bulking and/or transfer facilities hold waste for a temporary period. At the end of the period the waste is treated, disposed, or stored elsewhere. Transfer and storage facilities include only one management category — storage, bulking and/or transfer (H141).

All of the services provided by commercial hazardous waste management services facilities located in Pennsylvania were placed into one or more of the four broad management groups listed above. Annual capacities were determined from the permits of the commercial facilities unless otherwise noted. Not all the facility capacities listed in the permits were in annual tons. Some were converted to estimated annual tons by department staff. The capacities for storage, bulking and/or transfer facilities are not in annual tons. Storage, bulking and/or transfer capacities reflect the amount of waste a facility is permitted to store at any given time.

Management codes assigned to a particular facility were obtained from the WR Form of the Biennial Reports submitted by each commercial facility. Management codes were then checked against the facility permits to determine the appropriateness of the code in comparison to their permit. Only management codes that appropriately reflect the process or processes conducted by a commercial facility are included in their respective facility description below.

It should be noted that Calgon Carbon Corporation and Siemens Water Technologies reported under the management category of "other recovery" (H039). For purposes of this Chapter, both were changed to "other treatment" (H129) because of an EPA ruling stating that carbon recovery facilities such as the two listed above should be permitted as thermal treatment units (*Federal Register*/Vol. 56, No. 35/Thursday, February 21, 1991/Rules and Regulations). Tons received by these commercial facilities shown in Chapter Three of this report reflect Calgon Carbon and Siemens as receiving waste under other recovery (H039) because that is how the facilities reported the material in their Biennial Report submission. Inclusion of these facilities in Chapter 3 under other recovery (H039) does not constitute DEP's concurrence with their decision to report under other recovery (H039).

Listing of Commercial Hazardous Waste Facilities in Pennsylvania

Name	**Advanced Environmental Recycling Corp.**				
EPA I.D. No.	PAD987367216				
Address	2591 Mitchell Ave. Allentown, PA 18103				
Description	Advanced Environmental Recycling Corp. accepts lamp tubes and other wastes containing mercury. Most of the wastes received are inorganic solids. Crushing, separating, retorting and distillation are used to recover the mercury.				
Classification	Recovery Storage, bulking and/or transfer				
Mgmt Codes & Capacities	Metals recovery (H010) .....2,800 tons Storage, bulking and/or transfer (H141) .....286 tons				
Year	2001	2003	2005	2007	2009
Metals Recovery	195	274	242	276	251
Other Chemical precipitation	0	0	0	0	13
Storage	94	19	104	5	138
Total (Tons)	289	293	346	282	401

Name	**Ashland Chemical Company**				
EPA I.D. No.	PAD000797548				
Address	150 West 4th Ave. Freedom, PA 15042				
Description	Ashland Chemical Company is permitted for only storage, bulking and or transfer.				
Classification	Storage, bulking and or transfer				
Mgmt Codes & Capacities	Storage, bulking and/or transfer (H141) .....110 tons				
Year	2001	2003	2005	2007	2009
Storage (Tons)	267	832	Closed	Closed	Closed

Name	**Bethlehem Apparatus Co. Inc.** — two locations				
EPA I.D. No.	PAD002390961		PAD0000453084		
Address	890 Front St. Hellertown, PA 18055		935 Bethlehem Drive Bethlehem, PA 18017		
Description	Bethlehem Apparatus Co. Inc. accepts wastes containing mercury, including fluorescent lights, manufactured articles containing mercury and elemental mercury. Most of the wastes received are inorganic solids. The waste is accepted in steel flasks and drums. The mercury is recovered through retorting.				
Classification	Recovery				
Mgmt Codes & Capacities	Bethlehem .....Metals recovery (H010)..... 3,000 tons* Hellertown .....Metals recovery (H010)..... 1,000 tons* **Normal operating capacity*				
Year	2001	2003	2005	2007	2009
Bethlehem (Tons)	93	63	20	17	89
Hellerton (Tons)	186	65	69	40	56

Name	**Calgon Carbon Corporation**				
EPA I.D. No.	PAD000736942				
Address	200 Neville Rd. Pittsburgh, PA 15225				
Description	Calgon Carbon Corporation is involved in the regeneration and recycling of spent activated carbon from various industrial and municipal sources. Activated carbon is used in absorption processes that include applications such as municipal waterworks, solution purification, air conditioning, odor control and industrial control vapors. The spent carbon is regenerated through thermal treatment.				
Classification	Recovery/Treatment				
Mgmt Codes & Capacities	Other Recovery/Treatment (H039/H129).....17,520 tons				
Year	2001	2003	2005	2007	2009
Other Recovery	6,012	2,647	4,310	3,389	5,252

Name	**Cardone Industries**
EPA I.D. No.	PAD980830657
Address	Philadelphia, PA 19124
Description	

Classification	Recovery				
Mgmt Codes & Capacities	Solvent Recovery (H020) .....277 tons				
Year	2001	2003	2005	2007	2009
Solvent Recovery (Tons)	599	594	261	202	33

Name	**Cycle Chem, Inc.**				
EPA I.D. No.	PAD067098822				
Address	550 Industrial Drive Lewisberry, PA 17339				
Description	Cycle Chem is permitted for storage, bulking and transfer. The site also has a permit to treat hazardous waste through neutralization (H121) and stabilization/chemical fixation (H111).				
Classification	Storage, bulking and or transfer				
Mgmt Codes & Capacities	Storage, bulking and or transfer (H141) .....632 tons Treatment (H111 and 121) .....108,000 tons				
Year	2001	2003	2005	2007	2009
Storage (Tons)	4,870	2,462	6,526	7,856	6,236

Name	**Envirite Corporation**				
EPA I.D. No.	PAD010154045				
Address	1600 Pennsylvania Ave. Lot #11 York, PA 17404				
Description	Envirite Corporation accepts bulk loads or drums of liquid, semi-solid and solid industrial inorganic wastes. Pretreatment processes depend on specific waste characteristics and can include chromium reduction and/or cyanide oxidation. After pretreatment, wastes undergo neutralization, metals precipitation and vacuum filtration. Treated wastewater is discharged to the local POTW, while the de-listed solid residues are transported offsite to a residual (nonhazardous) waste land disposal site designed for and limited to acceptance of the residue. Wastes accepted include chromic and pickling acids, caustics, cyanides, nonmetallic and metallic inorganics, metallic organics, pumpable metal hydroxide sludges and corrosive wastes.				
Classification	Treatment				
Mgmt Codes & Capacities	Chemical reduction with or without precipitation (H071) ..... Other chemical precipitation with or without pre-treatment (H077) ..... Stabilization or chemical fixation prior to disposal (H111) ..... **Capacities could not be separated. Maximum operating capacity.*				52,000 tons per year combined*
Proposal to Add Capacity	In addition to the management codes listed above, Envirite has also proposed, as part of their permit renewal, to add capacity under the management codes listed below. - Biological treatment with or without precipitation (H081) - Sludge treatment and/or dewatering (H101). - Other treatment (H129).				
Year	2001	2003	2005	2007	2009
Metal Recovery	0	0	76	30	30

Chemical reduction	8,242	15,018	14,781	Included with Other Chemical Precipitation	Included with Other Chemical Precipitation
Cyanide destruction	382	510	1,208	Included with Other Chemical Precipitation	Included with Other Chemical Precipitation
Chemical oxidation	0	0	64	Included with Other Chemical Precipitation	Included with Other Chemical Precipitation
Other chemical precipitation	10,624	8,154	4,330	18,843	21,390
Stabilization	21,816	26,602	22,817	27,966	21,859
Other treatment	589				
Storage	1,239	1,110	460	887	1,096
Total (Tons)	42,892	51,394	43,736	47,726	44,375

Name	**Exide**				
EPA I.D. No.	PAD990753089				
Address	Spring Valley Rd and Nolan St. Reading, PA 19605				
Description	Exide accepts waste inorganic solids containing lead. Wastes handled include lead-acid batteries, lead scraps, and residues containing lead. The waste is generally received in bulk loads. The lead is recovered through secondary smelting.				
Classification	Recovery				
Mgmt Codes & Capacities	Metals recovery (H010) .....108,000 tons				
Year	2001	2003	2005	2007	2009
Metals Recovery	1,661	699	11,634	9,832	9,616

Name	**Horsehead Resource Development Co. Inc.**				
EPA I.D. No.	PAD002395887				
Address	East of Route 248, Waelzing Palmerton, PA 18071				
Description	Horsehead Resource Development Co. Inc. accepts zinc-containing inorganic solids and baghouse dust. The wastes generally are received in bulk loads. Zinc contained in the wastes is recovered through high temperature metal recovery. In August 2002, Horsehead filed for protection under Chapter 11 of the U.S. bankruptcy code.				
Classification	Recovery				
Mgmt Codes & Capacities	Metals recovery (H010) .....262,080 tons				
Year	2001	2003	2005	2007	2009
Metals Recovery	161,164	170,671	224,632	176,561	198,372

Name	**Inmetco**
EPA I.D. No.	PAD087561015
Address	US Steel Industrial Pk. Rt 488 Ellwood City, PA 16117
Description	Inmetco accepts acids, caustics, sludges and dusts containing nickel, chromium and iron in bulk or containerized form. The metals are recovered through secondary metal reclamation.
Classification	Recovery

Mgmt Codes & Capacities	Metals recovery (H010) .....54,080 tons				
Year	2001	2003	2005	2007	2009
Metals Recovery	29,538	41,211	40,759	31,539	33,940

Name	**Keystone Cement Company**				
EPA I.D. No.	PAD002389559				
Address	Route 329 Bath, PA 18014				
Description	The facility uses spent cleaning solvents as fuel for two rotary cement kilns. Ash created from burning combines with burnt limestone. Slurry is created by mixing limestone with water.				
Classification	Recovery				
Mgmt Codes & Capacities	Energy recovery – use as fuel (H050) .....87,250 tons				
Year	2001	2003	2005	2007	2009
Energy Recovery	71,880	62,059	65,449	59,802	33,679

Name	**MAX Environmental**				
EPA I.D. No.	PAD004835146				
Address	R. D. #1 Box 135A Yukon, PA 15698				
Description	MAX Environmental accepts nonhazardous and hazardous inorganic wastes that can be treated to delist them (make them nonhazardous) for disposal in a permitted on-site residual waste surface impoundment. Wastes are treated through neutralization, precipitation, and chromium reduction. Wastes accepted include corrosive liquid wastes, spent pickle liquor, acids including chromic acid, emission sludges, air pollution control dusts and brine waters from oil and gas operations.				
Classification	Treatment				
Mgmt Codes & Capacities	Chemical reduction with or without precipitation (H071) ..... 946,080 tons Other chemical precipitation with or without pre-treatment (H077) ..... per year Neutralization (H121) ..... combined* Stabilization or chemical fixation prior to disposal (H111) .....305,870 tons per year **Capacities could not be separated.*				
Year	2001	2003	2005	2007	2009
Stabilization	40,136	57,068	36,139	787	764
Landfill - Delisted		38	0	48,441	63,710
Total (Tons)	40,136	57,104	36,139	49,227	64,474

Name	**Republic Environmental Systems**
EPA I.D. No.	PAD085690592
Address	2869 Sandstone Drive Hatfield, PA 19440
Description	Republic Environmental Systems accepts bulk loads, drums and containers of hazardous organic and inorganic wastes. Aqueous wastes undergo batch treatment processes such as neutralization, chemical precipitation, cyanide destruction, carbon absorption, and stabilization/chemical fixation. Treated wastewater is discharged to the local POTW. Wastes accepted include spent acid with and without metals, aqueous waste with low toxic organics, caustic solutions, soil contaminated with inorganics, metal salts/chemicals and other hazardous wastes.

Classification	Treatment Storage, bulking and/or transfer				
Mgmt Codes & Capacities	Chemical reduction with or without precipitation (H071) ..... Other chemical precipitation with or without pre-treatment (H077) ..... Stabilization or chemical fixation prior to disposal (H111) ..... Neutralization only (H121) ..... Phase separation (H124) ..... Other treatment (H129)				152,296 tons per year combined*
	Sludge treatment and/or dewatering (H101) .....153,300 tons per year Storage, bulking and/or transfer (H141) .....305 tons **Capacities could not be separated.*				
Year	2001	2003	2005	2007	2009
Metal Recovery	36	248	184	698	255
Thermal destruction (not valid)	307	11	0	0	0
Fuel blending		10	0	0	0
Chemical reduction	94	209	105	84	0
Other chemical precipitation	3,928	3,794	1,989	6,551	750
Biological treatment	87	35	51	44	6
Adsorption		9	1	0	0
Sludge treatment and/or dewatering	5	35	8	0	0
Stabilization	12,585	23,046	18,896	19,632	1,035
Macro-encapsulation prior to disposal at another site	17	38	32	67	33
Neutralization only	4,203	2,275	1,975	1,280	471
Landfill or surface impoundment	0	0	89	0	13
Storage	4,458	2,162	2,360	3,594	29,810
Total (Tons)	25,720	31,873	25,691	31,950	32,373

Name	**Safety-Kleen Corporation** — nine locations		
EPA I.D. No.	PAD980552020	PAD987266673	PAD086673407
Address	5540 Memorial Blvd. Allentown, PA 181004	Industrial Park Road Athens, PA 18810	1600 Pittsburgh Ave. Erie, PA 15050
EPA I.D. No.	PAD987266715	PAD981736143	PAD000738823
Address	77 Canal Road Fairless Hills, PA 19030	150 Allenbill Drive Johnstown, PA 15904	10 Eleanor Drive New Kingston, PA 17072
EPA I.D. No.	PAD982576258	PAD000738849	PAD981737109
Address	650 Noble Drive West Mifflin, PA 15122	1140-1142 Greenhill Road Westchester, PA 19380	600 Stewart Road Wilkes-Barre, PA 18706

Description	Safety-Kleen operates nine storage, bulking and transfer (H141) facilities located throughout the Commonwealth. Safety-Kleen entered into Chapter 11 bankruptcy protection in June 2000.				
Classification	Storage, bulking and/or transfer (H141)				
Mgmt Codes & Capacities	Allentown.....Storage, bulking and/or transfer (H141) .....129 tons Athens.....Storage, bulking and/or transfer (H141) .....154 tons Erie.....Storage, bulking and/or transfer (H141) ..... 84 tons Fairless Hills.....Storage, bulking and/or transfer (H141) .....188 tons Johnstown.....Storage, bulking and/or transfer (H141) .....165 tons New Kingston.....Storage, bulking and/or transfer (H141) .....231 tons West Mifflin .....Storage, bulking and/or transfer (H141) .....587 tons West Chester .....Storage, bulking and/or transfer (H141) .....144 tons Wilkes-Barre .....Storage, bulking and/or transfer (H141) .....179 tons				
Year	2001	2003	2005	2007	2009
Allentown (Tons)	386	160	Closed	Closed	Closed
Athens (Tons)	187	39	Closed	Closed	Closed
Erie (Tons)	346	236	177	140	91
Fairless Hills	518	363	341	296	209
Johnstown	521	355	337	282	243
New Kingston	736	608	595	411	309
West Mifflin	1,215	814	566	443	336
West Chester	609	409	370	356	276
Wilkes-Barre	330	0	363	277	232

Name	**Siemens Water Technologies** (formerly Envirotrol Inc.)				
EPA I.D. No.	PAD980707087		PAD987270725		
Address	24th St. and 31st St. Beaver Falls, PA 15010		118 Park Rd. Darlington, PA 16115		
Description	Siemens is involved in the regeneration and recycling of spent activated carbon from various industrial and municipal sources. The activated carbon is used to remove undesirable chemicals from groundwater, air and wastewater sources. The spent carbon is regenerated through thermal treatment.				
Classification	Other Recovery/Treatment				
Mgmt Codes & Capacities	Beaver Falls .....Other treatment (H129)..... Closed 11/13/2008 Darlington.....Other treatment (H129).....106,872 tons				
Year	2001	2003	2005	2007	2009
Beaver Falls	closed	closed	closed	closed	closed
Darlington (Tons)	6,363	4,367	4,193	5,104	3,714

Name	**United Environmental Group Inc.**
EPA I.D. No.	PAD987283140
Address	237--241 McAller Rd. Sewickley, PA 15143
Description	United Environmental Group Inc. accepts water contaminated with petroleum products. The company provides for recovery of petroleum phases and treatment of water from recovery operations.
Classification	Recovery Treatment

Mgmt Codes & Capacities	Other recovery or reclamation for reuse, including acid regeneration, organics recovery, etc. (H039) ..... Biological treatment with or without precipitation (H081)				73,365 tons per year combined*
	Storage, bulking and/or transfer (H141) ..... 55 tons **Capacities could not be separated.*				
Year	2001	2003	2005	2007	2009
Other Recovery	1,408	0	0	0	0
Biological Treatment	0	701	648	390	793
Storage	0	6	22	46	91
Total (Tons)	1,408	707	671	436	884

Name	**World Resources Company**				
EPA I.D. No.	PAD981038227				
Address	Walnut Lane Pottsville, PA 17901				
Description	World Resources accepts F006 metal-bearing sludges. The sludges are processed through formulating, compounding, and thermal concentrating operations to produce metal-concentrate products that are sold to smelters for recovery.				
Classification	Treatment				
Mgmt Codes & Capacities	Other Treatment (H129) .....48,521 tons				
Year	2001	2003	2005	2007	2009
Metals Recovery (Tons)	19,134	13,760	12,679	11,628	7,136

Changes Since Previous Plan

Since the completion of the previous version of this plan, some facilities have changed ownership. Their previous names are noted in the facility descriptions in this Chapter.

Plans to Commercialize Captive Capacity

Captive facilities may only manage waste generated on-site. Their capacity is not available to other generators. DEP is not aware of any facilities that plan to make their capacity commercially available in the foreseeable future.

New Facilities Expected

There are currently no applications for new facilities pending.

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Chapter Six

Projections

This chapter examines the overall trends in the amount of hazardous waste generated in Pennsylvania, sent to commercial facilities from generators in Pennsylvania, and received by commercial facilities in Pennsylvania.

Chapter Summary

- The amount of hazardous waste generated in Pennsylvania and sent to commercial facilities is expected to continue to decline.
- It is anticipated that generators in Pennsylvania will utilize commercial facilities to manage about 200,000 tons of hazardous waste in 2011 and 180,000 tons in 2012.

Pennsylvania Trends in Waste Generation and Off-Site Management

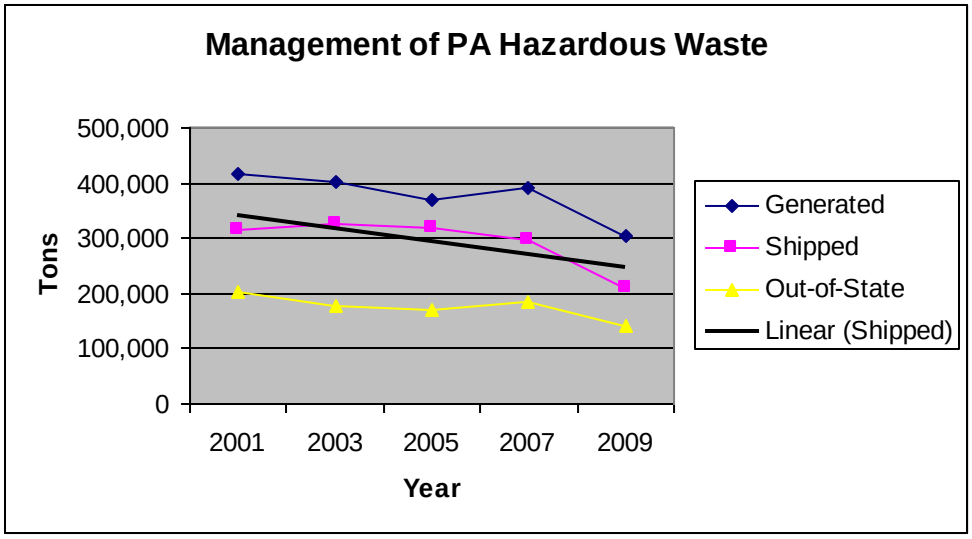
Biennial Hazardous Waste Report data was used to identify trends in the overall amount of hazardous waste generated and shipped off-site in Pennsylvania. As outlined in Chapter Three of the Plan:

- The amount of waste generated decreased almost 27 percent from 415,484 tons in 2001 to 304,076 tons in 2009.
- The amount of waste managed on-site decreased from 100,443 tons in 2001 to 88,916 tons in 2009.
- The amount of waste shipped off-site decreased almost 33 percent from 313,677 tons in 2001 to 210,232 in 2009.

As can be seen from Chart 6-1, the overall trends in hazardous waste generation and off-site management are declining.

Chart 6-1

Quantity of Hazardous Waste Requiring Commercial Management

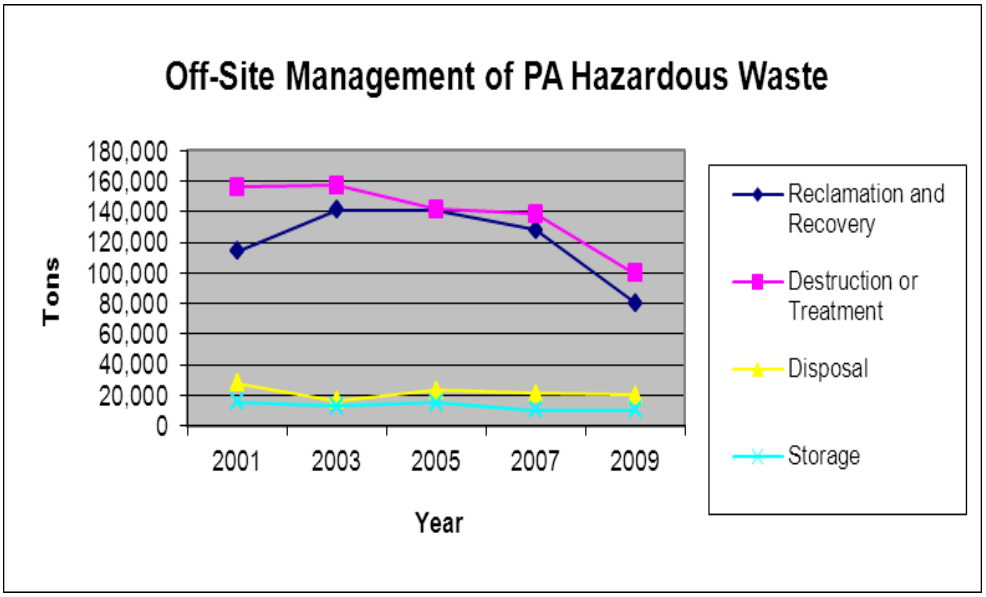


Using the linear trend line for total hazardous waste shipped by generators, it is anticipated that generators in Pennsylvania will utilize commercial facilities to manage about 200,000 tons of hazardous waste in 2011 and 180,000 tons in 2012.

As can be seen from Chart 6-2, the overall trends in the off-site management of hazardous wastes generated in PA are declining or flat.

Chart 6-2

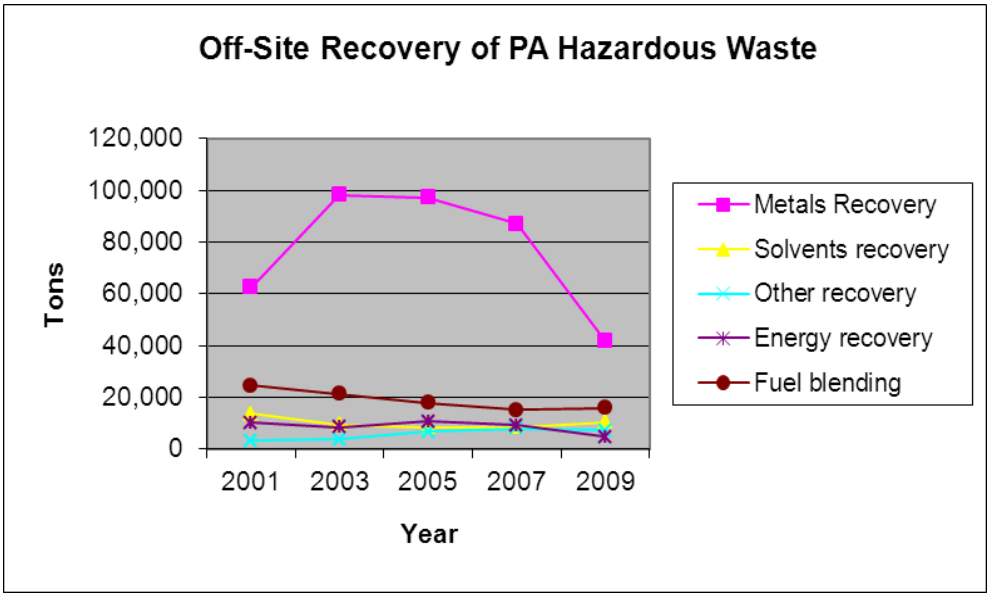
Off-Site Management of Hazardous Waste Generated in PA



As can be seen from Chart 6-3, the overall trends in off-site recovery of hazardous wastes generated in PA are declining or flat. The decline in metals recovery in 2009 reflects the downturn in primary metal manufacturing (NAICS Code 331).

Chart 6-3

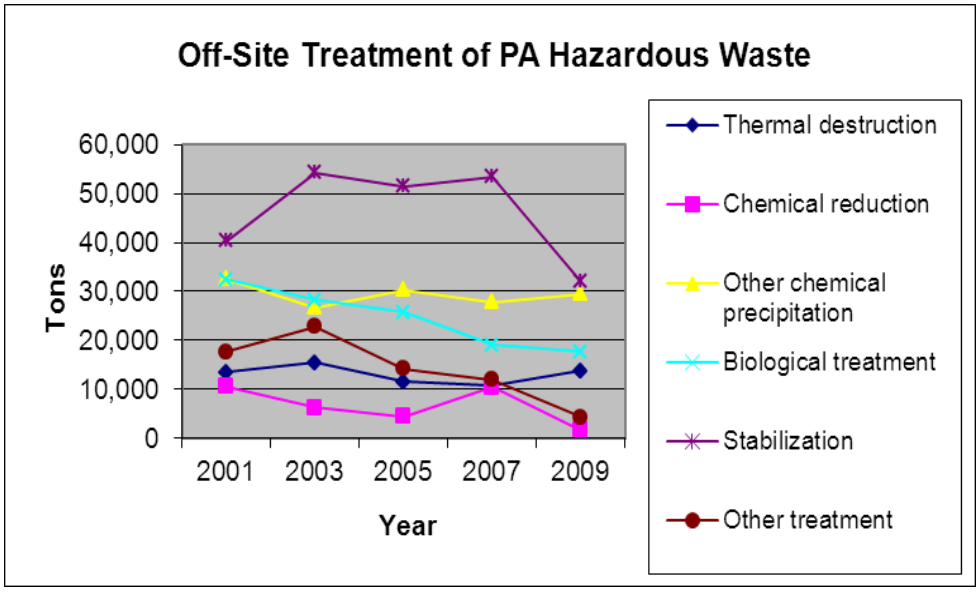
Off-Site Recovery of Hazardous Waste Generated in PA



As can be seen from Chart 6-4, the overall trends in off-site treatment of hazardous wastes generated in PA are declining or flat. The decline in stabilization in 2009 reflects the downturn in primary metal manufacturing (NAICS Code 331).

Chart 6-4

Off-Site Treatment of Hazardous Waste Generated in PA



Reasons for Decline in Hazardous Waste Sent to Commercial Facilities

The amount of hazardous waste generated in Pennsylvania and sent to commercial facilities for management has declined since 2001. There are several major factors that are likely to have contributed to this decline.

Source Reduction Factors

- Cost savings — As generators have decreased the amount of hazardous waste generated, they have realized increases in the efficiency of their operations. Less waste generation means avoided off-site shipping costs, as well as avoided management and disposal costs. In addition, greater manufacturing efficiencies are realized through decreases in feedstock and improvements in technology. In some cases, the elimination of waste streams has also led to improvements in product quality.

- Reduced liability — One of the major reasons to reduce hazardous waste generation is the lowering of potential future liability. If a waste is not generated, it does not have an associated liability cost with it, thereby improving future earning outlooks and lowering insurance costs.

- Avoided regulation — Decreased levels of hazardous waste generation can remove regulatory requirements associated with the waste. This leads to a cost saving and allows the generator to re-employ its resources in a more productive manner.

- A growing commitment to the environment — More frequently generators are making a commitment to the environment because it is the right thing to do. As more employees become increasingly environmentally conscious, generators of hazardous waste are looking for methods to cut down or eliminate hazardous waste generation within their companies. The benefits to this are improved employee job satisfaction as well as improved public image. As a result, companies benefit from lower employee turnover and higher employee job satisfaction as well as better public relations.

- Economic Factors - A decrease in specific segments of manufacturing activity in the state appear to have contributed to the decrease in the amount of hazardous waste generated in Pennsylvania and sent to commercial facilities for management in 2009. Several major hazardous waste generating industries, including chemical manufacturing and primary metals saw a material decline in hazardous waste generation in 2009 compared to 2005 and 2007.

Other Considerations

The original plan was required to project the nature and quantity of hazardous waste that will be generated within the commonwealth in the next 20 years or will be disposed within this commonwealth. This requirement was fulfilled with the original plan.

Regulatory Changes

Changes in regulations can impact whether or not wastes are considered hazardous. A regulatory change can either increase or decrease the amount of waste that can be expected to be sent to commercial management facilities.

On May 1, 1999, DEP adopted the federal hazardous waste regulations by reference. It is possible the EPA could make changes to the regulations that would be adopted by reference in Pennsylvania. In November 2001, DEP also adopted new land recycling regulations that impacted the amount of hazardous remediation waste sent to commercial facilities.

On Oct. 7, 2008, the EPA issued a new final rule that streamlines regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources. By removing unnecessary regulatory controls, including manifesting and biennial reporting, EPA expects to make it easier and more cost-effective to safely recycle hazardous secondary material. As of Aug. 9, 2011, 21 facilities have submitted notifications under this rule.

On July 22, 2011, the EPA proposed revisions to the Definition of Solid Waste (DSW) rule that was issued on Oct. 7, 2008. The main areas being addressed through the proposed regulatory changes are:

1) Replacing the 2008 exclusion for hazardous secondary materials that are transferred from the generator to other persons for reclamation, with an alternative regulatory approach which will, for the most part, subject the material to hazardous waste regulation but allow generators to accumulate the material for a longer period of time (up to one year) prior to transfer;
2) Defining the term "contained" as it applies to hazardous secondary materials reclaimed under the control of the generator;
3) Revising the definition and conditions of "legitimate recycling" by making all of the legitimacy factors mandatory, including the factors that are now for consideration only; and
4) Applying the legitimate recycling provisions to all recycling activities under the hazardous waste regulations, not just the 2008 DSW activities.

Future regulatory changes made by DEP and EPA will be reviewed by the Department for their impact on this plan. If a regulatory change were to substantially impact the conclusions of this plan, DEP would, in consultation with SWAC, update this plan to take those changes into account.

Source Reduction

Continued implementation of source reduction strategies will allow the commonwealth to maintain a reduced quantity of hazardous waste managed in Pennsylvania.

Economic Growth Factor

As time passes, it can be expected that the economic activity in the commonwealth will increase. With this increase in economic activity, one would expect to see upward pressure on the quantity of hazardous waste that is commercially managed. It is not possible at this time to predict the extent to which this economic activity will impact the waste managed in the commonwealth.

Remediation Wastes

The previous plan separated recurrent waste generation from remediation waste. This plan uses total waste generation, since the quantity of remediation waste does not have a material impact on total waste generation and shipments.

The quantity of hazardous waste sent to commercial facilities as a result of remediation can vary significantly from year to year, depending on the sites being remediated and the wastes found at the sites. As indicated in Appendix 2-A, remediation waste declined from 12,537 tons in 2001 to 3,622 tons on 2009.

Chapter Seven

Conclusions

This section explains DEP's conclusions.

Chapter Summary

- Generators in Pennsylvania have adequate access to technology that reduces or eliminates the generation of hazardous waste.
- Generators in Pennsylvania have adequate commercial treatment and disposal capacity available.
- Since this plan places an emphasis on the elimination of hazardous waste streams, *additional* commercial recovery, treatment or disposal facilities are not viewed as vital to hazardous waste management in Pennsylvania.

It is therefore the DEP's position that the issuance of a CPN is not necessary to provide additional hazardous waste management options to generators in Pennsylvania.

Examination of the Need for New Facilities

The plan will continue to support the hierarchy of preferred waste management practices in order to promote more effective methods of hazardous waste management, but emphasizes the importance of striving for eliminating hazardous waste generation. The hierarchy describes a prioritized series of waste management steps with each step given maximum consideration before proceeding to a less preferred alternative. A complete explanation of the sequential steps is provided in Chapter Four. The sequence of events for the waste management hierarchy is:

- **Source Reduction**
- **Use or Reclamation**
- **Treatment**
- **Land Disposal**

Proper management of hazardous waste is important to all Pennsylvanians. Article I, Section 27 of the Commonwealth Constitution declares that the people of the Commonwealth have a right to clean air, pure water and the preservation of the natural, scenic, historic and esthetic values of the environment; that Pennsylvania's natural resources are the common property of all the people, including generations yet to come; and that the Commonwealth,

as trustee of these resources, shall conserve and maintain them for the benefit of all the people.

For purposes of this plan, proper management is defined by the following principles:

- Generators should give first priority to source reduction, *especially those technologies that completely eliminate hazardous waste generation.*
- Reclamation, especially through new and improved technologies, is preferable to treatment and/or disposal.
- Rely on the free market system and cooperative agreements between waste management facilities and local governments and municipalities for private companies to develop and operate new facilities that provide for the proper management of hazardous waste.
- Rely on the free market system, both in-state and out-of-state, to provide facilities that can adequately handle the demand for commercial hazardous waste treatment and disposal facilities created by generators located in Pennsylvania.

As stated in Chapter One, the plan will play a role in the establishment of a new hazardous waste management facility if a CPN is required. In reviewing an application for a CPN, the EQB is to consider several factors, including "the extent to which the facility is in conformance" with this plan. Conformance is to be determined by classifying the facility into one of three types — captive, commercial treatment and disposal facilities, and commercial recovery — and reviewing the plan's conclusion as to whether or not the proposed type of facility is necessary.

Overall, there has been a reduction in the number of large-quantity generators in Pennsylvania. In addition to fewer large-quantity generators, there are fewer commercial facilities to manage a shrinking hazardous waste stream. Most of this is likely the result of the factors outlined in the beginning of Chapter Six and indicates that there is a commercial over-capacity to manage hazardous waste that is generated in Pennsylvania.

1. Captive Facilities

Generators in Pennsylvania have adequate access to technology that reduces or eliminates the generation of hazardous waste. As a priority, generators should give first and utmost consideration to all economically feasible means to eliminate hazardous waste generation.

If waste elimination is not possible, this plan encourages proper source reduction techniques followed by captive management of hazardous waste.

Improved source reduction techniques that eliminate hazardous waste generation are necessary to continue the downward long-term trend in the demand for commercial facilities. Other than environmental benefits, elimination of hazardous waste generation has certain advantages: (1) it eliminates the risk associated with transporting wastes across public roadways, (2) it eliminates the liabilities and costs of captive waste management, (3) it

eliminates the liabilities and costs of commercial waste management, and (4) it often leads to better manufacturing efficiencies and more competitive businesses.

If generators cannot eliminate or reduce their generation of hazardous waste so that it can be managed at a captive facility, adequate commercial recovery, treatment or disposal facilities exist either in Pennsylvania or other states (see #2 and #3 below).

2. Commercial Treatment and Disposal Facilities

Generators in Pennsylvania have adequate commercial treatment and disposal capacity available. This finding is based on three interrelated factors.

First, and foremost, the quantity of hazardous waste sent to commercial facilities from generators in Pennsylvania continues to decline and DEP does not see any evidence of illegal disposal of hazardous waste due to the lack of commercial facilities.

Second, in 1995, the EPA made a determination that sufficient national capacity for hazardous waste treatment, storage and disposal facilities existed for years to come and no longer required states to make individual State capacity assurances. The EPA has assumed responsibility for the capacity assurance program on behalf of States. National capacity has continued to be available since that time to meet hazardous waste management needs across the country. In July 2009, the EPA re-confirmed that adequate national capacity exists through Dec. 31, 2034.

Third, commercial facilities located outside the commonwealth play an important part in the proper management of hazardous waste that is generated in Pennsylvania just as commercial facilities located in Pennsylvania play an important role in the proper management of hazardous waste that is generated outside the commonwealth. The interstate movement of hazardous waste for treatment and disposal is substantial. Because specific types of industry (and generators of hazardous waste) are not organized according to state boundaries but rather the availability of natural resources, labor, transportation, and market proximity, commercial hazardous waste management facilities must locate where they are best able to serve those that generate the waste managed at the commercial facility. As a result, no state in the nation manages or could economically manage all the hazardous waste generated within its borders.

As shown in Charts 3-1 and 3-2, a significant quantity of hazardous waste is shipped across state boundaries for management. Much of this movement is due to the widely variable nature of hazardous waste. Hazardous waste can take on many different forms and characteristics that require specialized treatment and disposal techniques. Many times, treatment technologies are specific to a given type of hazardous waste.

For example, in Pennsylvania, the prevalence of steel and its associated manufacturing activities have led to a commercial waste management industry in the state that is directed toward managing metal bearing inorganic wastes. These commercial facilities play an

important role in managing wastes from steel-making facilities in Pennsylvania and other states. In most cases, the facilities could not operate if they were limited to receiving waste from only in-state generators.

The hazardous waste management industry is also very integrated. In Pennsylvania, for example, there is no commercial capacity for fuel blending or solvent recovery. To be managed by one of these methods, organic wastes from generators in Pennsylvania must be sent to out-of-state facilities. A large portion of these wastes are managed in states adjacent to Pennsylvania. Some of the blended fuel is sent back to Pennsylvania to be burned for energy recovery in the cement-making process. Some businesses in Pennsylvania and other states reuse their own commercially recovered solvents. Other businesses may actually purchase recovered solvents from commercial recovery facilities rather than buy virgin solvents.

The integration of waste management is also seen in the metals recovery industry. A metals recovery facility may produce a residual that is high in a type of metal (other than what is being recovered) that another recovery facility may be interested in. The residual is then shipped to the other facility for further recovery. Additionally, the metals recovery facilities may generate wastes that need to be stabilized and/or landfilled.

Metals recovery facilities receive waste from generators in many states. The materials, residuals and wastes leaving the generators and recovery facilities often end up in a different state. Before the hazardous waste is ultimately managed, it may move across state lines several times.

As illustrated above, the commercial hazardous waste management industry is dynamic and market-driven. As a result, commercial facilities often play an important role in managing waste generated in other states.

3. Commercial Recovery Facilities

Because this plan places an emphasis on the elimination of hazardous waste streams, *additional* commercial recovery facilities are not viewed as vital to hazardous waste management in Pennsylvania. However, this plan promotes resource recovery over treatment and disposal. If a generator cannot eliminate a hazardous waste stream or manage it at a captive facility, this plan considers the recovery of waste at a commercial facility preferable to treatment or disposal.

For the same reason outlined in Section 2 above, the combination of existing in-state and out-of-state facilities is adequate to manage the decreasing amount of hazardous waste sent to these facilities.

This does not suggest that commercial recovery facilities are not necessary. In fact, these facilities play an important role in managing hazardous waste and are a necessary bridge to effectively manage hazardous waste until the waste is no longer generated. However, it is the

DEP's position that hazardous waste elimination and source reduction are both preferable to commercial recovery.

Conclusion

The amount of hazardous waste sent to commercial management facilities from generators in Pennsylvania has continued to steadily decline over the last decade. While DEP recognizes that captive and commercial hazardous waste management facilities serve an important function in Pennsylvania, DEP concludes that adequate technology exists to reduce or eliminate hazardous waste generation and that hazardous waste generators have adequate access to commercial recovery, treatment and disposal facilities.

By encouraging generators to eliminate hazardous waste generation, DEP believes that those businesses that succeed will obtain economic benefits that will make them more competitive in the marketplace while making the environment better for all Pennsylvanians.

It is therefore DEP's position that the issuance of a CPN is not necessary to provide additional hazardous waste management options to generators in Pennsylvania.

Appendix A - Waste Generation by Source Code

Source Code	Description	2001	2003	2005	2007	2009
	Waste from Ongoing Production and Service Processes					
G01	Dip, flush or spray rinsing	20,796	2,386	1,834	1,885	1,314
G02	Stripping and acid or caustic cleaning	9,703	8,396	6,653	6,730	4,511
G03	Plating and phosphating	5,686	4,217	5,870	4,888	2,567
G04	Etching	1,722	1,720	2,045	1,443	761
G05	Metal forming and treatment (pickling, heat treating, etc.)	32,935	12,730	9,870	17,118	6,427
G06	Painting and coating	9,476	9,759	10,640	7,646	5,966
G07	Product and by-product processing	62,309	102,816	92,620	115,939	105,249
G08	Removal of spent process liquids or catalysts	18,454	27,882	8,095	10,668	18,291
G09	Other production or service-related processes	14,063	11,813	11,955	9,355	7,526
	Subtotal	175,144	181,719	149,582	175,672	152,612
	Other Intermittent Events or Processes					
G11	Discarding off-specification or out-of-date chemicals or products	7,469	6,008	5,118	3,865	3,316
G12	Lagoon or sediment dragout and leachate collection	1,024	0	648	447	389
G13	Cleaning out process equipment	10,903	11,088	10,978	10,679	11,129
G14	Removal of tank sludge, sediments or slag	12,872	11,701	12,501	11,146	12,509
G15	Process equipment change-out or discontinuation of equipment use	2,445	2,523	1,860	2,091	1,121
G16	Oil changes and filter or battery replacement	469	270	148	98	91
G19	Other one-time or intermittent processes	4,436	4,601	3,901	4,453	2,600
	Subtotal	39,618	36,191	35,154	32,779	31,155
	Pollution Control and Waste Management Process Residuals					
G21	Air pollution control devises (baghouse dust, etc.)	70,072	85,767	86,632	94,468	54,728
G22	Laboratory analytical wastes (used chemicals)	2,638	2,169	2,564	2,732	2,444
G23	Wastewater treatment (sludge, filter cake, etc.)	17,606	16,782	25,231	16,224	17,609
G24	Solvent or product distillation or recovery	2,828	2,292	1,981	2,560	2,318
G25	Hazardous waste management	36,588	12,340	30,742	30,397	23,825
G26	Storage and disposal unit leachate collection	759	264	402	567	604
G27	Residual from management of Universal Waste	0	0	1	1	52
	Subtotal	130,491	119,614	147,553	146,949	101,580
	Spills and Accidental Releases					
G31	Accidental contamination of products, materials or containers	171	58	159	342	174
G32	Cleanup of spill residues	767	628	336	401	1,333
G33	Leak collection and floor sweepings	745	1,756	227	209	93
G39	Other cleanup of current contamination	486	315	24	239	273
	Subtotal	2,169	2,757	746	1,191	1,873
	Remediation of Past Contamination					
G41	Closure of hazardous waste management unit under RCRA	928	90	0	3	176
G42	Corrective action at a solid waste management unit under RCRA	771	15	192	265	332
G43	Remedial action or emergency response under Superfund	6,799	7,758	2,866	888	783
G44	State program or voluntary cleanup	2,288	7,626	173	1,626	2,010
G45	Underground storage tank cleanup	0	8	471	11	10
G49	Other remediation	1,751	446	946	188	311
	Subtotal	12,537	15,943	4,648	2,981	3,622
	Waste Not Physically Generated On Site					
G61	Hazardous waste received from off site for storage, bulking and transfer off site for treatment or disposal	17,358	13,686	6,965	3,318	13,230
G62	Hazardous waste received from a foreign county	38,441	32,437	26,525	27,832	0
	Total	**415,484**	**401,919**	**371,173**	**390,722**	**304,076**

Appendix B - Waste Generation by Type

Waste Code	Waste Type	2001	2003	2005	2007	2009
	Mixed Media/Debris					
W001	Lab Packs with no acute hazardous waste	1,189	768	384	402	602
W002	Contaminated debris: paper, clothing, rags, empty fiber or plastic containers, glass, piping, other solids	5,198	4,479	7,492	4,894	6,407
W004	Lab packs containing acute hazardous waste	30	47	20	11	27
	Subtotal	6,417	5,294	7,896	5,307	7,036
	Inorganic Liquids					
W101	Very diluted aqueous waste containing more than 99% water	4,347	3,756	3,691	2,179	2,592
W103	Spent concentrated acid	46,907	25,672	23,902	21,973	16,354
W105	Acidic aqueous waste, less than 5% acid	5,988	6,416	7,431	12,708	4,990
W107	Aqueous waste containing cyanides	444	194	91	158	150
W110	Caustic aqueous waste without cyanides	45,227	28,760	24,019	34,566	18,995
W113	Other aqueous waste or wastewater	26,972	34,983	22,425	11,627	14,564
W117	Waste liquid mercury	13	36	63	38	24
W119	Other inorganic liquid	12,022	9,654	12,418	12,341	9,566
	Subtotal	141,920	109,471	94,040	95,590	67,235
	Organic Liquids					
W200	Still bottoms in liquid form	2,405	33,361	33,092	32,225	31,794
W202	Concentrated halogenated (e.g., chlorinated) solvent	822	660	430	350	260
W203	Concentrated non-halogenated (e.g., non-chlorinated) solvent	32,918	27,681	22,080	43,684	41,764
W204	Concentrated halogenated /non-halogenated solvent mixture	10,889	10,175	12,643	2,651	6,589
W205	Oil-water emulsion or mixture	2,667	1,477	2,195	1,677	1,895
W206	Waste oil	588	434	205	183	169
W209	Paint, ink, lacquer, or varnish	5,036	5,595	5,514	4,638	4,469
W210	Reactive or polymerizable organic liquids and adhesives	949	1,138	1,390	917	838
W211	Paint thinner or petroleum distillates	4,790	4,814	5,623	5,439	4,361
W219	Other organic liquid	16,921	18,445	9,940	18,086	23,265
	Sutbotal	77,985	103,780	93,112	109,850	115,404
	Inorganic Solids					
W301	Contaminated soil	13,638	17,212	4,231	2,373	5,741
W303	Ash	2,197	3,890	1,854	838	450
W304	Slags, drosses, and other solid thermal residues	46,210	37,471	47,358	57,770	42,046
W307	Metal scale, filings and scrap (including metal drums)	823	1,469	922	965	873
W309	Batteries, battery parts, cores, casings	2,439	25	179	390	243
W310	Filters, solid absorbents, ion exchange resins and spent carbon	1,437	2,316	2,592	1,391	3,546
W312	Cyanide or metal cyanide-bearing solids, salts or chemicals	285	662	164	217	214
W316	Metal salts or chemicals not containing cyanides	2,455	2,614	1,686	2,517	933
W319	Other inorganic solids	73,091	77,510	79,745	78,803	27,456
W320	Electrical devices (lamps, thermostats, CRTs, etc.)	85	33	36	7	65
	Subtotal	142,660	143,202	138,767	145,271	81,567

Waste Code	Waste Type	2001	2003	2005	2007	2009
	Organic Solids					
W401	Pesticide solids	18	40	191	32	248
W403	Solid resins, plastics or polymerized organics	413	501	347	330	150
W405	Explosives or reactive organic solids	718	1,280	484	516	478
W409	Other organic solids	4,551	4,944	3,136	2,388	1,213
	Subtotal	5,700	6,765	4,158	3,266	2,089
	Inorganic Sludges					
W501	Lime and/or metal hydroxide sludges and solids with no cyanides	12,906	11,326	10,504	10,858	12,110
W503	Gypsum sludges from wastewater treatment or air pollution control	396	0	0	0	0
W504	Other sludges from wastewater treatment or air pollution control	12,222	15,837	14,331	11,474	7,135
W505	Metal bearing sludges (including plating sludge) not containing cyanides	985	993	821	1,073	1,847
W506	Cyanide-bearing sludges	347	227	227	249	210
W512	Sediment or lagoon dragout, drilling or other muds	370	13	101	55	266
W519	Other inorganic sludges	2,158	1,582	1,448	790	729
	Subtotal	29,384	29,978	27,432	24,499	22,297
	Organic Sludges					
W603	Oily sludge	7,328	1,576	4,056	5,689	6,284
W604	Paint or ink sludges, still bottoms in sludge form	2,746	1,053	858	743	504
W606	Resins, tars, polymer or tarry sludge	640	177	189	208	731
W609	Other organic sludges	615	515	581	253	492
	Subtotal	11,329	3,321	5,684	6,893	8,011
	Compressed Gases					
W801	Compressed gases	92	106	85	48	433
	Subtotal	92	106	85	48	433
	Total	**415,484**	**401,919**	**371,173**	**390,722**	**304,076**

Appendix C - Waste Management Codes

New Mgmt. Code	Description	Old Mgmt. Code(s)*
RECLAMATION AND RECOVERY		
H010	Metals Recovery, including retorting, smelting, chemical, etc.	M011-M019
H020	Solvents recovery	M021-M029, M104
H039	Other recovery or reclamation for reuse, including acid regeneration, organics recovery, etc.	M031-M039
H050**	Energy recovery–use as fuel (includes on-site fuel blending)	M051-M059
H061	Fuel blending prior to energy recovery at another site	M061
DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL		
H040	Thermal destruction other than use as a fuel	M041-M049
H071	Chemical reduction (with or without precipitation)	M071
H073	Cyanide destruction (with or without precipitation)	M073
H075	Chemical oxidation	M075
H076	Wet air oxidation	M076, M084, M093
H077	Other chemical precipitation (with or without pre-treatment)	M072, M074, M077
H081	Biological treatment (with or without precipitation)	M081, M091
H082	Adsorption	M82, M092, M103
H083	Air or steam stripping	M083
H101	Sludge treatment and/or dewatering	M101, M102, M109
H103	Absorption	M103
H111	Stabilization or chemical fixation prior to disposal	M111
H112	Macro-encapsulation prior to disposal at another site	M112, new
H121	Neutralization only	M121
H122	Evaporation	M122
H123	Settling or clarification	M123
H124	Phase separation	M124
H129	Other treatment	M078, M079, M085, M089, M094, M099, M119, M125, M129
DISPOSAL		
H131	Land treatment or application (to include on-site treatment and/or stabilization).	M131
H132	Landfill or surface impoundment that will be closed as landfill (to include on-site treatment and or stabilization	M132, M133
H134	Deepwell or underground injection (with or without treatment	M134
H135	Discharge to sewer/POTW or NPDES (with prior storage—with or without treatment).	M135, M136
STORAGE AND TRANSFER		
H141	Storage, bulking, and/or transfer off-site—no treatment/ recovery (H010-H129), fuel blending (H061), or disposal (H131-H135) at this site	M141

* Please see Appendix 3A of the July 1988 Hazardous Waste Facilities Plan.

** The 2001 Biennial Report described H050 incorrectly as only on site energy recovery. This management code also included off-site energy recovery.

Appendix D - Waste Received by PA Hazardous Waste Facilities

EPA ID	Facility Name	Management Description	2001	2003	2005	2007	2009
RECLAMATION AND RECOVERY							
PAD987367216	AERC	Metals Recovery	195	274	242	276	251
PA0000453084	Bethlehem App. - Bethlehem	Metals Recovery	93	63	20	17	89
PAD002390961	Bethlehem App. - Hellertown	Metals Recovery	186	65	69	40	56
PAR000522763	CD&E Refining	Metals Recovery	NA	NA	NA	NA	154
PAD002330165	East Penn Mfg	Metals Recovery	0	0	0	0	5
PAD010154045	Envirite	Metals Recovery	NA	NA	76	30	30
PAD990753089	Exide Tech	Metals Recovery	1,661	699	11,634	9,832	9,616
PAD002395887	Horsehead	Metals Recovery	161,164	170,671	224,632	176,561	198,372
PAD087561015	INMETCO	Metals Recovery	29,538	41,211	40,759	31,539	33,940
PAR000511188	Materials Recovery Tech.	Metals Recovery	NA	NA	NA	2	NA
PAD980554570	OSRAM Sylvania	Metals Recovery	8	12	Closed	Closed	Closed
PAD085690592	Republic Env. Systems	Metals Recovery	36	248	184	698	255
PAD981038227	World Resources	Treatment and Metals Recovery	19,134	13,760	12,679	11,628	7,136
		Metal Recovery Subtotal	212,015	227,003	290,295	230,623	249,904
PAD980830657	Cardone Industries	Solvents Recovery	599	594	261	202	33
PAD987367216	Safety-Kleen Allentown	Storage/Solvents Recovery	386	160	Closed	Closed	Closed
PAD987266673	Safety-Kleen Athens	Storage/Solvents Recovery	187	39	Closed	Closed	Closed
PAD086673407	Safety-Kleen Erie	Storage/Solvents Recovery	346	236	177	140	91
PAD987266715	Safety-Kleen Fairless Hills	Storage/Solvents Recovery	518	363	341	296	209
PAD981736143	Safety-Kleen Johnstown	Storage/Solvents Recovery	521	355	337	282	243
PAD000738823	Safety-Kleen New Kingston	Storage/Solvents Recovery	736	608	595	411	309
PAD000738849	Safety-Kleen West Chester	Storage/Solvents Recovery	1,215	814	566	443	336
PAD982576258	Safety-Kleen West Mifflin	Storage/Solvents Recovery	609	409	370	356	276
PAD981737109	Safety-Kleen Wilkes Barre	Storage/Solvents Recovery	330	0	363	277	232
PAD981044704	Silberline	Solvent Recovery	63	Closed	Closed	Closed	Closed
PAD014989503	Valspar Coatings	Solvent Recovery	32	Closed	Closed	Closed	Closed
		Solvent Recovery Subtotal	5,542	3,578	3,010	2,407	1,729
PAD000736942	Calgon Carbon	Other Recovery	6,012	2,647	4,310	3,389	5,252
PAD987270725	Siemens Water Tech.	Other Recovery	6,363	4,367	4,193	5,104	3,714
		Other Recovery Subtotal	12,375	7,014	8,503	8,493	8,966
PAD000606285	Eastman Chemical	Energy Recovery	45	10	Exempt	Exempt	Exempt
PAD002389559	Keystone Cement	Energy Recovery	71,880	62,059	65,449	59,802	33,679
PAD002279008	Lawrence McFadden	Fuel Blending	43	Closed	Closed	Closed	Closed
PAD085690592	Republic Env. Systems	Fuel Blending	0	10	0	0	0
PAD002313791	Sunoco - Frankford Plant	Fuel Blending	135	0	0	0	0

		Energy Recovery Subtotal	72,103	62,079	65,449	59,802	33,679
		Recovery Subtotal	302,035	299,674	367,257	301,325	294,279
DESTRUCTION OR TREATMENT PRIOR TO DISPOSAL							
PAD010154045	Envirite	Chemical reduction (H071)	8,242	15,018	14,781	0	0
PAD085690592	Republic Env. Systems	Chemical reduction (H071)	401	220	105	84	0
		Chemical Reduction Subtotal	8,643	15,238	14,886	84	0
PAD010154045	Envirite	Cyanide destruction (H073)	382	510	1,208	0	0
PAD010154045	Envirite	Chemical oxidation (H075)	0	0	64	0	0
PAD987367216	AERC	Other chemical precipitation (H077)	0	0	0	0	13
PAD010154045	Envirite	Other chemical precipitation (H077)	10,624	8,154	4,330	18,843	21,390
PAD085690592	Republic Env. Systems	Other chemical precipitation (H077)	3,928	3,794	1,989	6,551	750
		Chemical Precipitation Subtotal	14,552	11,948	6,319	25,394	22,153
PAD085690592	Republic Env. Systems	Biological treatment (H081)	87	35	51	44	6
PAD987283140	United Env. Group	Biological treatment (H081)	1,408	701	648	390	793
		Biological Treatment Subtotal	1,495	736	699	434	799
PAD085690592	Republic Env. Systems	Adsorption (H82)	0	9	1	0	0
PAD085690592	Republic Env. Systems	Sludge treatment and/or dewatering (H101)	5	35	8	0	0
PAD010154045	Envirite	Stabilization (H111)	21,816	26,602	22,817	27,966	21,859
PAD085690592	Republic Env. Systems	Stabilization (H111)	12,585	23,046	18,896	19,632	1,035
		Stabilization Subtotal	34,401	49,648	41,713	47,598	22,894
PAD085690592	Republic Env. Systems	Macro-encapsulation (H112)	17	47	32	67	33
PAD067098822	Cycle Chem	Neutralization only (H121)		0	0	0	112
PAD085690592	Republic Env. Systems	Neutralization only (H121)	4,203	2,275	1,975	1,280	471
		Neutralization Subtotal	4,203	2,275	1,975	1,280	583
PAD010154045	Envirite	Other Treatment (H129)	589	0	0	0	0
		Other Treatment Subtotal	589	0	0	0	0
		Treatment Subtotal	64,287	80,437	66,905	74,857	46,462
DISPOSAL							
PAD085690592	Republic Env. Systems	Landfill	0	0	89	0	13
PAD004835146	Max Environmental	Stabilization and Disposal	40,136	57,104	36,139	49,227	64,474
		Disposal Subtotal	40,136	57,104	36,228	49,227	64,487
STORAGE AND TRANSFER							
PAD987367216	AERC	Storage	94	19	104	5	138
PAD000797548	Ashland Dist.	Storage	267	832	Closed	Closed	Closed
PAD067098822	Cycle Chem	Storage	4,870	2,453	6,526	7,856	6,124
PAD010154045	Envirite	Storage	1,239	1,110	460	887	1,096
PAD085690592	Republic Env. Systems	Storage	4,458	2,162	2,360	3,594	29,810
PAD987283140	United Env. Group	Storage	0	6	23	46	91
		Storage Subtotal	10,928	6,582	9,473	12,388	37,259
Total			**417,386**	**443,807**	**479,866**	**437,799**	**442,485**

Appendix E – Delisted Wastes

Source - Appendix IX to Part 261—Wastes Excluded Under §§260.20 and 260.22

Company	Location	Delisted Waste
Bethlehem Steel Corp.	Johnstown, PA	Uncured and cured chemically stabilized electric arc furnace dust/sludge (CSEAFD) treatment residue (K061) generated from the primary production of steel after May 22, 1989.
Bethlehem Steel Corp.	Steelton, PA	Uncured and cured chemically stabilized electric arc furnace dust/sludge (CSEAFD) treatment residue (K061) generated from the primary production of steel after May 22, 1989.
Envirite of Pennsylvania (formerly Envirite Corporation)	York, Pennsylvania	Dewatered wastewater sludges (EPA Hazardous Waste No .F006) generated from electroplating operations; spent cyanide plating solutions (EPA Hazardous Waste No. F007) generated from electroplating operations; plating bath residues from the bottom of plating baths (EPA Hazardous Waste No. F008) generated from electroplating operations where cyanides are used in the process; spent stripping and cleaning bath solutions (EPA Hazardous Waste No. F009) generated from electroplating operations where cyanides are used in the process; spent cyanide solutions from salt bath pot cleaning (EPA Hazardous Waste No. F011) generated from metal heat treating operations; quenching wastewater treatment sludges (EPA Hazardous Waste No. F012) generated from metal heat treating where cyanides are used in the process; wastewater treatment sludges (EPA Hazardous Waste No. F019) generated from the chemical conversion coating of aluminum after November 14, 1986.
Envirite of Pennsylvania (formerly Envirite Corporation)	York, Pennsylvania	Spent pickle liquor (EPA Hazardous Waste No. K062) generated from steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332); wastewater treatment sludge (EPA Hazardous Waste No. K002) generated from the production of chrome yellow and orange pigments; wastewater treatment sludge (EPA Hazardous Waste No. K003) generated from the production of molybdate orange pigments; wastewater treatment sludge (EPA Hazardous Waste No. K004) generated from the production of zinc yellow pigments; wastewater treatment sludge (EPA Hazardous Waste K005) generated from the production of chrome green pigments; wastewater treatment sludge (EPA Hazardous Waste No. K006) generated from the production of chrome oxide green pigments (anhydrous and hydrated); wastewater treatment sludge (EPA Hazardous Waste No. K007) generated from the production of iron blue pigments; oven residues (EPA Hazardous Waste No. K008) generated from the production of chrome oxide green pigments after November 14, 1986.
Max Environmental Technologies, Inc.	233 Max Lane Yukon, PA 15698	Electric arc furnace dust (EAFD) that has been treated on site by MAX Environmental Technologies, Inc. (MAX) at a maximum annual rate of 300,000 cubic yards per year and disposed of in a Permitted Resource Conservation and Recovery Act Subtitle D/ Pennsylvania Class 1 residual waste landfill that has groundwater monitoring.
Perox, Incorporated	Sharon, Pennsylvania	Iron oxide (EPA Hazardous Waste No. K062) generated (at a maximum annual rate of 4800 cubic yards) from a spent hydrochloric acid pickle liquor regeneration plant for spent pickle liquor generated from steel finishing operations. This exclusion was published on November 13, 1990.