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Once More unto the Breach

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ONCE MORE UNTO THE BREACH

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I. INTRODUCTION

ONE of the most pressing concerns facing industry and environmental regulators in the United States is the management of the enormous amount of hazardous waste generated each year.¹ The extent to which the Environmental Protection Agency (EPA) should regulate the recycling of hazardous waste under the Resource Conservation and Recovery Act (RCRA)² is an important aspect of this problem.³ EPA's struggle to craft a regulatory approach

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1. In 1989, over 197 million tons of hazardous wastes were generated by approximately 20,000 industrial facilities in this country. U.S. EPA NATIONAL BIENNIAL RCRA HAZARDOUS WASTE REPORT at 2-1 (1993) (Based on 1989 Data) [hereinafter 1989 BIENNIAL REPORT]. (The 1989 BIENNIAL REPORT is a summary and analysis of data collected by EPA and state regulators regarding the generation and management of hazardous wastes. It is based primarily on reports submitted by hazardous waste generators and by hazardous waste treatment, storage or disposal facilities pursuant to 40 C.F.R. §§ 262.41, 264.75, 265.75 (1994). 1989 BIENNIAL REPORT at 1-3 to 1-7.) The combined annual cost to the federal government, state governments, and industry of implementing the federal hazardous waste program is expected to be 9.2 billion dollars in 1995. That annual cost may reach 12 billion dollars by the year 2000. U.S. EPA ENVIRONMENTAL INVESTMENTS: THE COST OF A CLEAN ENVIRONMENT at 5-3 (1990).

2. Resource Conservation and Recovery Act of 1976 (RCRA) §§ 3001-5006, Pub. L. No. 94-580, 90 Stat. 2795 (1976) (codified as amended at 42 U.S.C. §§ 6901-87 (1988 & Supp. V 1993)). RCRA was added as an amendment to the Solid Waste Disposal Act of 1965 (SWDA), 42 U.S.C. §§ 6901-92k (1988 & Supp. V 1993). SWDA has been known as RCRA, and will be referred to as such in this article.

3. In 1989, more than 3 million tons of hazardous waste were recycled in this country. 1989 BIENNIAL REPORT, *supra* note 1, at 2-43 to 2-44 (Exh. 2-29). (The 1989 BIENNIAL REPORT, which states that 2.1 million tons of hazardous waste were

to hazardous waste recycling began before 1980, when the Agency issued the original hazardous waste management regulations under RCRA.⁴ Its efforts have spawned persistent controversy and litigation.⁵ Recently, after determining that a reassessment of its hazardous waste regulation was necessary, the Agency conducted a number of evaluations of current recycling regulations.⁶ One of the critical issues in the ongoing debate over recycling is whether hazardous waste recycling operations should be subject to RCRA permitting requirements.⁷

recycled in 1989, failed to include the approximately 864,000 tons of wastes used as fuels in energy recovery operations.). Three million tons represents almost 15% of all hazardous waste managed in processes other than aqueous treatment and underground injection, the two leading hazardous waste treatment processes. *Id.* at 2-40.

4. EPA first issued proposed regulations addressing the issue of hazardous waste regulation on December 18, 1978. 43 Fed. Reg. 58,946 (1978). In 1980, EPA promulgated final regulations establishing a regulatory regime for hazardous waste recycling. 40 C.F.R. § 261.6 (1994). The regulations contained a definition which deemed recyclable materials "solid wastes" regulated under RCRA. *Id.* The regulations also imposed a narrow band of recyclable hazardous waste management requirements regarding storage and transportation. *Id.*

On April 4, 1983, EPA proposed amendments to the 1980 recycling regulations. 48 Fed. Reg. 14,472 (1983). The current regulations addressing hazardous waste recycling were promulgated in 1985. *See* 50 Fed. Reg. 614 (1985) (codified in scattered provisions of 40 C.F.R. pts. 260, 261, 266). Section II of this article contains a discussion of the substance of the current regulations.

5. *See* Shell Oil Corp. v. EPA, 950 F.2d 741 (D.C. Cir. 1991); American Mining Congress v. EPA, 907 F.2d 1179 (D.C. Cir. 1990); API v. EPA, 906 F.2d 729 (D.C. Cir. 1990); American Mining Congress v. EPA, 824 F.2d 1177 (D.C. Cir. 1987).

6. As part of a study completed in 1990, EPA concluded that a reevaluation of its regulation of hazardous waste regulations was necessary. U.S. EPA THE NATION'S HAZARDOUS WASTE MANAGEMENT PROGRAM AT A CROSSROADS - THE RCRA IMPLEMENTATION STUDY 38 (1990) [hereinafter RIS]. In its "RCRA IMPLEMENTATION STUDY UPDATE: THE DEFINITION OF SOLID WASTE," published in 1992, the Agency analyzed potential regulatory impediments to hazardous waste recycling and presented potential solutions. U.S. EPA RCRA IMPLEMENTATION STUDY UPDATE (1992) [hereinafter RISU]. The Agency responded to the study by establishing, in October 1992, an internal Definition of Solid Waste Task Force ("Task Force"). U.S. EPA, REENGINEERING RCRA FOR RECYCLING I-1 (1994) [hereinafter RECYCLING REPORT]. The Task Force generated a report in September of 1994 setting forth a series of recommendations intended to improve the way the Agency regulates hazardous waste recycling. *Id.*

After reviewing the RECYCLING REPORT, the Assistant Administrator for the Office of Solid Waste and Emergency Response directed the Office of Solid Waste ("OSW") to work with interested states in developing a new approach to the regulation of hazardous waste recycling that built upon the RECYCLING REPORT. OSW developed a program plan for meeting that charge, which sets forth various goals and calls for the proposal of regulations in the Summer of 1996. U.S. EPA REVISING THE DEFINITION OF SOLID WASTE: PROGRAM PLAN (undated).

7. *See, e.g.,* RISU, *supra* note 6, at 21-22 (identifying permitting requirements to be one of the major potential obstacles to increased recycling).

For the last fifteen years, EPA has generally deferred from imposing RCRA permitting requirements on most types of hazardous waste recycling; however, it has consistently imposed such requirements on storage of hazardous wastes prior to recycling.⁸ An increasing chorus of voices has urged EPA to permanently exclude recycling (including storage prior to recycling) from RCRA permitting requirements on the ground that permitting is a significant obstacle to the growth of the hazardous waste recycling industry.⁹ The underlying argument, which is intuitively attractive, posits that recycling of hazardous wastes is an environmental good which should be encouraged by eliminating unnecessary regulatory barriers.¹⁰ Evaluation of available empirical data regarding the impact of permitting on recycling rates, however, suggests that permitting obligations do not significantly impede the expansion of the recycling industry. Moreover, even if permitting does have some marginal negative effect on the growth of the recycling industry, that negative effect is amply counterbalanced by the environmental and human health protection gained by the use of a permitting system.

Section II describes hazardous waste recycling, and sets forth a description of the types of materials recycled as well as typical recycling processes. Section III provides an overview of RCRA, including the current regulatory provisions affecting recycling of

8. For a discussion of current regulations regarding hazardous waste recycling operations, see *infra* notes 99-114 and accompanying text.

9. RISU, *supra* note 6, at 21-22; RECYCLING REPORT, *supra* note 6, at 3-2 (noting that industry finds the permitting process to be costly, time-consuming, and uncertain"); *id.* at 5-25 (recommending that recyclers be allowed to store hazardous secondary materials for up to 18 months without a permit); *id.* at 5-34 (recommending that no permitting be required for recycling activities); U.S. EPA METAL RECOVERY, ENVIRONMENTAL REGULATION & HAZARDOUS WASTES - AN ANALYSIS OF FEDERAL RCRA SUBTITLE C REGULATIONS AFFECTING METAL RECOVERY FROM HAZARDOUS WASTES (June 1994) 43-54 [hereinafter METAL RECOVERY REPORT] (presenting perspective of trade associations on the need for permitting).

10. Indeed, "properly conducted recycling" is one of RCRA's goals. RCRA § 6902, 42 U.S.C. § 1003(a)(6). Congress again encouraged recycling when it passed the Pollution Prevention Act, 42 U.S.C. §§ 13,101-09 (Supp. V. 1993) (PPA). Section 6602(b) of the PPA, 42 U.S.C. § 13,101(b), sets forth the following hierarchy of pollution management techniques:

[T]he national policy of the United States [is] that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

Id.

hazardous "secondary materials."¹¹ Section IV examines the purposes of RCRA's permitting process, and evaluates existing information regarding the impact of permitting on the recycling industry. Section V presents permitting proposals intended to meld the desire to encourage proper recycling with the need for meaningful protection of human health and the environment. Finally, section VI sets forth the justifications supporting the implementation of recycling in the RCRA permitting process.

II. RECYCLING — THE CURRENT COMMERCIAL ENVIRONMENT

After a hazardous waste is produced or generated,¹² it is generally managed through treatment, storage, or disposal.¹³ Disposal, which encompasses landfilling, underground injection, ocean dumping, and other activities,¹⁴ is often perceived as the principal evil at which RCRA was directed. Most hazardous wastes are treated in some manner prior to disposal. Those treatment operations may carry with them significant environmental and health risks. Treatment of hazardous waste is defined to include any number of diverse processes designed to render the waste "nonhazardous, safer for transport, amendable [sic] for recovery, amenable for storage, or reduced in volume" by altering the physical, chemical, or biological nature of the waste.¹⁵ Treatment, which includes stabilization, incineration, chemical precipitation, and many other processes, is extensively regulated by EPA under RCRA. One prominent exception to this comprehensive regulation is recycling, a form of treatment that is currently subject to reduced regulatory requirements, described in more detail in Section III.¹⁶

While recycling can take many forms, the most common are: (i) recovering metals or other components from a waste, (ii) regenerating contaminated solvents or other spent materials, and (iii) re-

11. As used in this article, the term "secondary materials" means materials destined for recycling. Under RCRA regulations, secondary materials include spent materials, sludges, by-products, scrap metal, and commercial chemical products. 50 Fed. Reg. 616, n. 4 (1985).

12. RCRA regulations refer to the act of creating hazardous waste as "generation." See 40 C.F.R. § 260.10 (defining "generator" as act or process which produces a hazardous waste).

13. See RCRA § 3004, 42 U.S.C. § 6924 (establishing standards for owners and operators of hazardous waste treatment, storage, and disposal facilities).

14. See 40 C.F.R. § 260.10 (defining disposal).

15. RCRA § 1004(34), 42 U.S.C. § 6903.

16. See *infra* notes 37-114 and accompanying text.

covering energy from flammable wastes through use as a fuel.¹⁷ In 1989, approximately 2.8 million tons of hazardous waste were recycled using these three methods.¹⁸ Metal recovery was the most prevalent of the three, in terms of total volume of materials recycled. Of the 1.3 million tons of materials recycled through various metal recovery technologies, 800,000 tons of hazardous waste were used as fuel, while close to 500,000 tons of waste solvents were regenerated.¹⁹

There is a wide variety of metal-bearing hazardous wastes, including dusts collected by air pollution control equipment, sludges generated from wastewater treatment processes associated with electroplating operations, and spent materials (such as contaminated solvents previously used in degreasing operations and spent batteries).²⁰ The two general categories of technologies used to recover metals from these wastes are pyrometallurgical processes and hydrometallurgical processes.²¹ Pyrometallurgical processes, which include drying, calcining, and roasting, use heat to partition the targeted metals from other contaminants.²² These processes typically take place in kilns, cupolas, or other industrial furnaces.²³ Hydrometallurgical technologies, which include leaching, chemical precipitation, and solvent extraction, use chemical processes to extract metals from the materials while they are in aqueous or organic solutions.²⁴ Because they involve the use of liquids, these processes generally take place in tanks.²⁵

17. See 1989 BIENNIAL REPORT, *supra* note 1, at 2-41; RECYCLING REPORT, *supra* note 6, at D-6 to D-8. Recycling may also include the direct use of residual materials generated in a manufacturing process as ingredients in the same or another process, or the use of residual materials as substitutes for commercially available, virgin products. See RISU, *supra* note 6, at 14-15. Wastes recycled in this manner are generally exempt from RCRA regulation, since the 1989 BIENNIAL REPORT does not contain data regarding the types and volumes of the waste recycled in this fashion.

18. 1989 BIENNIAL REPORT, *supra* note 1, at 2-41 (Exh. 2-27).

19. *Id.* at 2-49 (Exh. 2-33). Approximately 300,000 tons of hazardous wastes were recycled by various miscellaneous forms of recycling. *Id.*

20. METAL RECOVERY REPORT, *supra* note 9, at 3.

21. *Id.* at 8.

22. *Id.* at 8. Drying, also known as dewatering, is used to remove water from wet materials. *Id.* at 9. Calcining uses heat to oxidize metals in the material, while roasting heats the materials in the presence of a gas to cause a reaction that removes impurities from the material. *Id.*

23. See 40 C.F.R. § 260.10 (defining "industrial furnace").

24. METAL RECOVERY REPORT, *supra* note 9, at 9-10.

25. *Id.* Leaching involves dissolving the metals in a solution using an acidic or caustic solvent. In chemical precipitation, the chemicals are added to aqueous wastes to cause the metals in solution to separate out into a sediment. Solvent extraction uses an aqueous organic solvent to extract metals from the material. *Id.*

Spent solvents are generated in numerous industries, including those involving pharmaceuticals, paint, automobiles, plastics, organic chemicals, and furniture.²⁶ In their original form, the solvents are used for a variety of purposes, most notably surface cleaning (for example, degreasing of metal parts used in production processes) and equipment cleaning.²⁷ After use, the solvents can be recycled through distillation, which is broadly defined as the separation of the more volatile solvents from the less volatile contaminants by a process of vaporization and condensation.²⁸ In distillation processes, heat is applied to the liquid waste to vaporize the more volatile components of the waste. After the heat is removed, the vapors condense to form a distillate containing the cleaned solvent.²⁹

Energy recovery is typically conducted by burning liquid hazardous wastes in boilers or industrial furnaces as a substitute for fuel.³⁰ Wastes recycled for energy recovery, which include industrial waste solvents, refinery wastes, and waste oils, may be used directly or may be blended with other fuels prior to use.³¹ Industrial furnaces include kilns, coke ovens, blast furnaces, and smelting, melting, and refining furnaces.³² Industrial boilers are units that use fuel to produce steam for process and plant use.³³

Hazardous waste may be recycled at the facility where the waste is generated (on-site recycling), or may be shipped to another facility for off-site recycling.³⁴ Although most hazardous waste recycling occurs on-site, the split between on-site and off-site recycling differs depending upon the type of recycling involved. More than eighty percent of the hazardous waste metal recovery processes occur on-site, while approximately one-third of the solvent recovery activities and approximately one-half of the energy recovery activities occur

26. See U.S. EPA BEST DEMONSTRATED AVAILABLE TECHNOLOGY (BDAT) BACKGROUND DOCUMENT FOR F001-F005 SPENT SOLVENTS 2-3 to 2-8 (1986) [hereinafter BDAT FOR SPENT SOLVENTS].

27. *Id.* at 2-10 to 2-12.

28. *Id.* at 4-14 to 4-15. The four general types of distillation processes are steam stripping, batch distillation, thin film evaporation, and fractionation. For a description of each of the four processes, see 51 Fed. Reg. 40,607-08 (1986).

29. BDAT FOR SPENT SOLVENTS, *supra* note 26, at 4-14 to 4-15.

30. U.S. EPA TREATMENT TECHNOLOGIES 6-1 (Government Institutes, Inc. 1990) [hereinafter TREATMENT TECHNOLOGIES].

31. *Id.*

32. 40 C.F.R. § 260.10.

33. TREATMENT TECHNOLOGIES, *supra* note 30, at 6-1, 6-4 to 6-7.

34. 1989 BIENNIAL REPORT, *supra* note 1, at 3-21.

on-site.³⁵ The off-site facility may be an independent commercial recycler, or may be an establishment owned by the generator or a party related to the generator.³⁶

III. RCRA — THE CURRENT REGULATORY ENVIRONMENT

RCRA³⁷ defines national standards and guidelines for the management of numerous types of solid wastes, including municipal, industrial, hazardous, and medical wastes.³⁸ With respect to hazardous wastes, RCRA created a “cradle to grave” approach which regulates such wastes from the point of creation, or generation, until the point of final disposal. RCRA requires that management standards be promulgated for each stage of the journey, and imposes permitting requirements on storage, treatment, and disposal activities.³⁹ EPA was charged with the responsibility for developing the regulations necessary to implement that system. Beginning in 1980, the EPA promulgated a series of regulations defining the types of wastes considered “hazardous,” and established management standards applicable to generators and transporters of hazardous waste. EPA also issued regulations setting forth substantive technical standards, as well as permitting requirements, for facilities that store, treat, or dispose of hazardous wastes.⁴⁰ Since the appli-

35. These figures were calculated by comparing the total amount of hazardous waste managed by each method in 1989 to the amount of hazardous wastes managed by each method in 1989 at off-site facilities. See 1989 BIENNIAL REPORT, *supra* note 1, at 2-41 (Exh. 2-27) and 2-45 (Exh. 2-30). Nearly two-thirds of new recycling activities in 1989 occurred at off-site facilities. *Id.* at 3-21.

36. RECYCLING REPORT, *supra* note 6, at D-2. Businesses with a number of facilities sometimes determine that the collection of hazardous wastes generated at those various facilities for recycling at one central “captive” recycling location is the most efficient means of handling the wastes. *Id.*

37. RCRA §§ 3001-5006, 42 U.S.C. §§ 6901-87. For a discussion of the legislative evolution of RCRA, see 1 SUSAN COOKE, THE LAW OF HAZARDOUS WASTE § 1.02 (1991).

38. Subchapter III of RCRA sets forth the standards for hazardous waste management. RCRA §§ 3001-3023, 42 U.S.C. §§ 6921-6939e. Subchapter IV provides for the development, approval, and implementation of state solid waste management plans covering the management of solid wastes generally. RCRA §§ 4001-4010, 42 U.S.C. §§ 6941-6949a. Subchapter X establishes a demonstration medical waste tracking program. RCRA §§ 11,001-11,012, 42 U.S.C. §§ 6992-6992k. Underground storage tanks containing hazardous substances not otherwise managed as hazardous wastes are regulated under RCRA Subchapter IX. RCRA §§ 9001-9010, 42 U.S.C. §§ 6991-6991i.

39. 45 Fed. Reg. 33,066 (1980). For an excellent summary of the RCRA regulatory regime, see Randolph L. Hill, *An Overview of RCRA: The “Mind-Numbing” Provisions of the Most Complicated Environmental Statute*, 21 ENVTL. L. REP. 10,254 (1991).

40. Generally, a solid waste is deemed “hazardous” if it is listed in 40 C.F.R. pt. 261(D) (a “listed” hazardous waste), or if it exhibits one of the four physical or

cation of these measures to facilities engaged in recycling activities is the crux of the recycling debate, a general understanding of them is essential to any consideration of the regulatory status of recycling.

A. Management Standards Applicable to Hazardous Waste Treatment, Storage, and Disposal Facilities⁴¹

Section 3004 of RCRA requires EPA to establish national standards applicable to owners and operators of hazardous waste treatment, storage, and disposal (TSD) facilities.⁴² In developing the required regulations, EPA identified various types of hazardous waste management units typically found at TSD facilities.⁴³ The regulations promulgated by EPA include specific standards applicable to different types of management units and general technical standards applicable to all TSD facilities.

1. Unit-Specific Standards

The unit-specific management standards cover the design, operation, and ultimate retirement of twelve different types of units,

chemical characteristics described in 40 C.F.R. pt. 261(C) (a "characteristic" hazardous waste). Subpart D sets forth various hazardous waste lists containing narrative descriptions of generic wastes generated by specific industries (*e.g.*, emission control dust from electric arc furnaces in the primary steel industry) or by specific types of operations (*e.g.*, wastewater treatment sludge from electroplating operations in any industrial process). 40 C.F.R. §§ 261.31-33. Subpart C identifies four characteristics — ignitability, corrosivity, reactivity, and toxicity — which, if exhibited by a waste, cause that waste to be classified as hazardous. 40 C.F.R. §§ 261.20-24.

41. All discussions of RCRA regulatory requirements in this article are based on the federal RCRA program set forth in Title 40 of the Code of Federal Regulations. Under § 3006 of RCRA, 42 U.S.C. § 6926, states may obtain authorization from EPA to implement a state hazardous waste program in lieu of the federal program if, among other things, the state program is equivalent to the federal program. Most states have obtained authorization under that section. *See* 40 C.F.R. pt. 272 (identifying authorized state programs). For a discussion of the relationship between an authorized state program and the federal program, see 4 WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW - HAZARDOUS WASTES AND SUBSTANCES § 7.22 (1992).

42. RCRA § 3004, 42 U.S.C. § 6924.

43. *See* 40 C.F.R. § 260.10 (where definition of "hazardous waste management unit" states that examples of hazardous waste management units include surface impoundments, waste piles, landfills, incinerators, tank systems, and container storage areas).

including tank systems,⁴⁴ containers,⁴⁵ containment buildings,⁴⁶ and other units.⁴⁷ For example, the tank standards set forth design requirements, and provide for a secondary containment system intended to capture any wastes that may leak from the tank.⁴⁸ In addition, the tank standards describe operating standards, spill prevention measures, as well as, monitoring, inspection, and recordkeeping obligations.⁴⁹ Moreover, tank standards set forth "closure" requirements to be followed at the end of the unit's active life to ensure either that (1) all waste and waste residues are removed from the unit and surrounding environment; or (2) if waste or residuals are left in place, adequate measures are taken to prevent those materials from adversely affecting human health or the environment.⁵⁰

In some instances, the unit-specific standards include general performance standards as well as, or instead of, more detailed, objective design specifications. For example, the containment building standards require a secondary containment system with a "leak detection and liquid collection system capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time."⁵¹ During the permitting process, the permit writer, in conjunction with the facility, must ensure that the facility as constructed and operated will meet the management standards applicable to the units at the applicant's facility, regardless of

44. 40 C.F.R. pt. 264(J). A tank is defined as "a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (for example, wood, concrete, steel, plastic) which provide structural support." 40 C.F.R. § 260.10.

45. 40 C.F.R. pt. 264(I). A container is defined as "any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled." 40 C.F.R. § 260.10. The most common container is the 55 gallon steel drum.

46. 40 C.F.R. pt. 264(DD). A containment building is a completely enclosed, self-supporting structure that is constructed of man-made materials and designed to contain the hazardous wastes stored or treated in it. 40 C.F.R. § 264.1100. Subpart DD sets forth a series of design and performance standards for containment buildings.

47. See, e.g., 40 C.F.R. pt. 264(L) (waste piles); *id.* at 264(N) (landfills); *id.* at 264(O) (incinerators); *id.* at 266(H) (boilers and industrial furnaces).

48. 40 C.F.R. §§ 264.192 to 264.193.

49. 40 C.F.R. §§ 264.194 to 264.195.

50. 40 C.F.R. § 264.197. Where waste residuals are left in the soil, the "post-closure" care required usually involves placement of an impermeable cap over the area and ground water monitoring for at least 30 years. 40 C.F.R. §§ 264.197(b), 264.310.

51. 40 C.F.R. § 264.1100(c)(3). A secondary containment system is only required if the unit is used to manage liquids. *Id.*

whether those standards are in the form of general performance standards or in the form of design criteria.⁵²

EPA recognized that some hazardous waste management units may not fit neatly within the categories established in the regulations.⁵³ In 1987, EPA promulgated standards applicable to "miscellaneous units" that require such units to be located, designed, constructed, operated, maintained, and closed in a manner that ensures protection of human health and the environment.⁵⁴ For these purposes, the regulations specifically consider, as an integral part of the protection of human health and the environment, the prevention of any releases to the air, groundwater, surface water, or soil that may have an adverse effect on human health or the environment.⁵⁵ Effective implementation of these vague standards requires that a permit be issued.⁵⁶

2. General Facility Standards

The general facility standards are applicable to all hazardous waste TSD facilities,⁵⁷ and are required to be incorporated into the permit by the permit writer.⁵⁸ The general standards include recordkeeping and reporting obligations,⁵⁹ implementation of preparedness and prevention measures,⁶⁰ regular inspections,⁶¹ and personnel training.⁶² They also require the preparation of a contingency plan⁶³ and the development of a waste analysis plan⁶⁴ for the facility. Contingency plans are extremely important as preventive measures, and should set forth procedures to be followed in the event of fires, explosions, or any unplanned release of hazard-

52. 40 C.F.R. § 270.1(a)(3).

53. See 40 C.F.R. § 260.10 (defining "miscellaneous unit" to mean a unit other than the units identified in the TSD regulations).

54. 40 C.F.R. § 264.601.

55. 40 C.F.R. § 264.601(a), (b), (c).

56. 40 C.F.R. § 264.601.

57. 40 C.F.R. § 264.10(a).

58. 40 C.F.R. § 270.1(a)(3).

59. 40 C.F.R. §§ 264.11 (requiring facility identification number); *id.* at 264.71-.77 (manifesting, operating record, biennial report, and other reports be maintained).

60. 40 C.F.R. pt. 264(C). These measures, which are intended to minimize the possibility of a fire, explosion, or unplanned release of hazardous waste or hazardous waste constituents, include installation of an internal communications or alarm system, availability of fire control equipment, and familiarization of local emergency response personnel with the facility. *Id.*

61. 40 C.F.R. § 264.15.

62. 40 C.F.R. § 264.16.

63. 40 C.F.R. pt. 264(D).

64. 40 C.F.R. § 264.13.

ous waste or hazardous waste constituents into the environment.⁶⁵ A waste analysis plan, on the other hand, must identify the manner in which the facility will verify the physical and chemical nature of the hazardous waste that it manages.⁶⁶ Development of the waste analysis plan, which can be a very time-consuming endeavor,⁶⁷ is necessary to ensure that the facility only accepts the waste it is designed to manage and does not handle incompatible waste.⁶⁸

The general facility standards also require that a facility be "closed" at the completion of its active life in a manner that minimizes the need for further maintenance and controls, and minimizes or eliminates post-closure escape into the environment of hazardous wastes and contaminants from wastes.⁶⁹ Facilities must prepare and maintain a closure plan identifying the steps necessary to close the facility, including a schedule for closure of each unit at the facility, and a schedule for final closure of the entire facility.⁷⁰ The regulations assume that closure of storage units, such as waste piles or container areas, will result in the removal of all hazardous wastes from the units. With respect to units at which hazardous wastes will remain after closure (for example, a landfill that has been closed by placing a cap over the wastes disposed of in the landfill), the facility must also provide for post-closure care.⁷¹ Closure is thus a preventive measure, essentially requiring a facility to clean up after itself.

The general facility standards also provide two remedial mechanisms to address releases of contaminants that occur during operations under the permit. One mechanism is contained in the

65. 40 C.F.R. § 264.51(a).

66. 40 C.F.R. § 264.13.

67. Miriam Feder, *The Permit Application Process Under RCRA - A Lament*, 18 ENVTL. L. 671, 677 (1988).

68. See RICHARD FORTUNA AND DAVID LENNETT, *HAZARDOUS WASTE REGULATION - THE NEW ERA* 158 (1987).

69. 40 C.F.R. § 264.111. The unit-specific standards also include provisions setting forth more detailed, substantive closure requirements. See 40 C.F.R. §§ 264.197 (tanks), 264.228 (surface impoundments), 264.258 (waste piles), 264.280 (land treatment units), 264.310 (landfills), 264.351 (incinerators), 264.603 (miscellaneous units).

70. 40 C.F.R. § 264.112.

71. 40 C.F.R. § 264.110(b). Post-closure care generally lasts for 30 years and consists of groundwater monitoring, as well as maintenance and monitoring of the waste containment system, used in closing the unit. 40 C.F.R. § 264.117(a). Post-closure requirements can also apply to storage units. In the event that closure of a storage unit such as a waste pile or surface impoundment does not result in removal of all contaminated materials from the unit and surrounding soils, the owner or operator of the unit is required to stabilize the unit and implement post-closure care. 40 C.F.R. §§ 264.110(a), 264.228, 264.258.

groundwater monitoring provisions⁷² which establish a three part program for the detection, assessment, and abatement of groundwater contamination caused by releases of hazardous waste from regulated units⁷³ at the facility.⁷⁴ Also, the statute reaches remediation of contamination attributable to solid waste management units⁷⁵ at the facility through the corrective action program.⁷⁶

The corrective action program may be viewed as the leaner RCRA equivalent to the "remedial actions" taken by the Agency under its Superfund authorities.⁷⁷ The extremely broad reach of

72. 40 C.F.R. §§ 264.90-100.

73. With certain exceptions, the term "regulated unit" is defined to include surface impoundments, waste piles, land treatment units, or landfills that received hazardous wastes after July 26, 1982. 40 C.F.R. § 264.90(a)(2).

74. The three phases of action that these provisions establish are detection monitoring, compliance monitoring, and corrective action. Detection monitoring includes placement and monitoring of wells upgradient and downgradient of the facility. The facility is required to establish background concentrations for constituents identified in its permit. If a statistically significant increase for a relevant constituent is detected in the groundwater, the facility must modify its permit to include a compliance monitoring program designed to identify the source and extent of the contamination. If compliance monitoring indicates that a contaminant released from a regulated unit is present above acceptable levels, the facility must again modify its permit to include corrective action necessary to abate the problem. 40 C.F.R. §§ 264.98-100. For a useful description of the groundwater monitoring requirements, see FORTUNA & LENNETT, *supra* note 68, at 274-85.

75. The term "solid waste management unit" is much broader than "regulated unit." A solid waste management unit is interpreted by the Agency to include "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste." 55 Fed. Reg. 30,874 (1990) (to be codified at 40 C.F.R. § 264.501) (proposed July 27, 1990). Further, "[s]uch units include any area at a facility at which solid wastes have been routinely and systematically released." *Id.* This proposed definition includes typical hazardous waste management units (such as landfills, surface impoundments, and tanks) as well as any area at a facility where solid waste routinely drips or spills onto the ground over an extended period of time. 55 Fed. Reg. 30,808.

76. RCRA § 3004(v), 42 U.S.C. § 6924(v). In 1990, EPA issued a proposed corrective action rule providing a more extensive statement of how the corrective action program would be implemented. See 40 C.F.R. pts. 264, 265, 270, 271. Until a final rule is promulgated, EPA is implementing the corrective action program in accordance with previous policy and guidance statements. See 55 Fed. Reg. 30,800-30,802 (1990) and the documents cited therein.

77. See generally Richard G. Stoll, *The New RCRA Cleanup Regime: Comparison and Contrasts with CERCLA*, 44 Sw. L.J. 1299 (1991) (comparing the two programs and finding that (1) as a practical matter, jurisdictional differences between the two programs have been blurred by EPA's broad reading of its corrective action jurisdiction, and that (2) although RCRA corrective action follows investigatory and remedy selection procedures similar to those in CERCLA, EPA has indicated that RCRA corrective action will be implemented with less complex studies and less costly remedies).

"Superfund" is the common name for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9601-9675 (1988 & Supp. V 1993). CERCLA generally authorizes EPA to

the program goes well beyond the limited scope of remediation addressed by the groundwater monitoring and contingency plan/preparedness requirements already discussed. Corrective action is required, to a greater or lesser extent, at approximately 4,218 TSD facilities.⁷⁸

B. Permitting Requirements Applicable to TSD Facilities

Section 3005 of RCRA, coupled with its implementing regulations, plays a vital role, providing that no facility may store, treat, or dispose of a hazardous waste without first obtaining a permit for such activity in accordance with regulations promulgated by EPA.⁷⁹ The permit is intended, in part, to ensure that hazardous waste activities at the permitted facility are conducted in accordance with the statute and the technical standards promulgated by EPA in accordance with section 3004 of RCRA.⁸⁰ Additionally, the permitting process is the vehicle by which the public, including members of the community in which the facility will be located, is able to provide comments and express concerns.⁸¹

The process for obtaining a RCRA permit can be expensive and time-consuming.⁸² The regulations describe in general terms the information and documents required for a complete permit application, including specific information required for various types of units.⁸³ Applicants, with the help of environmental consultants, engineers, attorneys, and others, must develop a narrative application. The application must contain the required information, and must include the facility's operations plan, waste analysis plan, contingency plan, and closure plan for review by EPA.⁸⁴ After submit-

remediate, or to require responsible parties to remediate, releases of hazardous substances from a facility. CERCLA §§ 104, 106, 42 U.S.C. §§ 9604, 9606. CERCLA also provides for judicial cost recovery actions by the United States and private parties to recover costs incurred in performing certain clean ups. CERCLA § 107(a), 42 U.S.C. § 9607(a).

78. U.S. EPA RCRA ENVIRONMENTAL INDICATORS - FY 1992 PROGRESS REPORT 6-2 (1993).

79. RCRA § 3005(a), 42 U.S.C. § 6925(a). Regulations establishing the RCRA permitting program are set forth at 40 C.F.R. pt. 124 (covering EPA's administrative procedures for reviewing permit applications and issuance of permits); 40 C.F.R. pt. 270 (covering the permit application contents, general permit conditions, and permit modification and termination).

80. COOKE, *supra* note 37, § 5.03. See RCRA § 3005(c)(1), 42 U.S.C. § 6925(c)(1) (providing for permit issuance only if applicant will be operating in compliance with technical standards of RCRA section 3004).

81. See 40 C.F.R. pt. 124.

82. See generally Feder, *supra* note 67.

83. 40 C.F.R. § 270.14.

84. Feder, *supra* note 67, at 676-78.

ting a RCRA permit application, the permit writer must review it for completeness. If the permit is incomplete, the permit writer will solicit the missing information by issuing a Notice of Deficiency to the facility.⁸⁵ This part of the process may take between two and three years.⁸⁶

A properly completed application next must be evaluated for its technical merit. As part of this evaluation, additional Notices of Deficiency are routinely issued, and the permit writer and the applicant often engage in extensive negotiations concerning the adequacy of the application.⁸⁷ Upon completion of the technical evaluation, and prior to issuance of the final decision, the permit writer must issue, for a minimum forty-five day public comment period, either a draft permit or a notice of intent to deny the application.⁸⁸ Issuance of the proposed permit decision is, in most cases, the first formal opportunity for public involvement in the permitting process. At the close of the public comment period, the Agency issues a final permit decision granting or denying the application.⁸⁹

The permit sets forth RCRA management standards applicable to the facility. It also acts as a shield against any enforcement action by the regulatory agency or the public, which seeks to impose requirements in addition to, or more stringent than, the permit requirements.⁹⁰ Thus, a facility can look to the permit as the single comprehensive document that sets forth the rights and obligations of the facility under RCRA. The permit is limited to a term of ten years,⁹¹ and it can be modified during its term either at the request of the facility or upon the initiative of the regulatory agency.⁹²

In 1980, when the hazardous waste regulations were promulgated, there were approximately five thousand TSD facilities subject to the permitting requirement.⁹³ With an average processing time of between three and four years, less than one thousand permits had been issued by 1990.⁹⁴ Many of the five thousand facilities sub-

85. Feder, *supra* note 67, at 677. See also 40 C.F.R. § 270.10(a),(c) & (d).

86. RIS, *supra* note 6, at 50.

87. 4 RODGERS, *supra* note 41, at 115; Feder, *supra* note 67, at 677-78.

88. 40 C.F.R. § 124.10.

89. 40 C.F.R. § 124.15(a).

90. 40 C.F.R. § 270.4(a). There are limited exceptions to the permit shield, most notably requirements imposed by statute. *Id.*

91. 40 C.F.R. § 270.50(a).

92. 40 C.F.R. § 270.41-42.

93. RIS, *supra* note 6, at 42.

94. *Id.* at 42-44.

ject to permitting chose to close rather than attempt to meet the permitting standards. It should follow that these closings would have put a substantial dent in EPA's backlog; however, due to continued rulemaking by EPA since 1980 a reduction in the backlog has not occurred. This rulemaking has brought additional wastes and activities within the scope of RCRA, thereby offsetting the potentially reduced permitting burden resulting from closed facilities.⁹⁵

Recognizing that it would take a considerable amount of time for EPA to process permits for the many TSD facilities already existing at the time RCRA became effective, Congress provided for an "interim status."⁹⁶ Under this concept, a facility existing at the time the TSD regulations became effective was deemed to have a RCRA permit while its permit application was pending, provided the facility met certain administrative and notification requirements.⁹⁷ Facilities having interim status were also required to comply with technical standards analogous to those applicable to permitted facilities.⁹⁸

C. Standards Applicable to Recycling of Secondary Materials

The current regulations addressing secondary materials recycling are generally less stringent than those applicable to other forms of hazardous waste treatment. This reduced regulatory control results from two factors. First, some secondary materials, when recycled in certain ways, are outside the scope of RCRA because they are completely excluded from the definition of solid waste (or hazardous waste).⁹⁹ Second, as described below, the recycling of secondary materials that do fall within the regulatory definition of

95. *Id.*

96. 45 Fed. Reg. 33,158 (1980).

97. RCRA § 3005(e), 42 U.S.C. § 6925(e). Interim status was available for facilities in existence prior to November 19, 1980, the effective date of EPA's initial hazardous waste management regulations. In addition, where regulations promulgated after November 19, 1980, subject a facility to RCRA jurisdiction for the first time, that facility may obtain interim status if it complies with the applicable administrative requirements. *Id.* For a discussion of the requirements for, and the effect of, interim status, see FORTUNA & LENNETT, *supra* note 68, at 136-142.

98. See 40 C.F.R. pt. 265 (1994) (setting forth minimum standards that owners/operators of interim status facilities must meet).

99. For example, characteristic sludges and by-products being reclaimed are so excluded. 40 C.F.R. § 261.2(c)(3). Likewise, any secondary materials being used or reused as substitutes for raw materials or commercial products in accordance with certain conditions are beyond the current scope of the RCRA regulations. 40 C.F.R. § 261.2(e). However, the increasing list of exclusions and exemptions in the current regulations leaves a multitude of hazardous secondary materials within the definitions of solid and hazardous waste. See 40 C.F.R. §§ 261.2(e), 261.3.

“hazardous waste” is subject to less regulatory oversight than the recycling of similar wastes treated with non-recycling technologies. These hazardous secondary materials are known as “recyclable materials.”¹⁰⁰

A recycling operation can be divided into two stages: (1) management before recycling (such as transportation to the facility and storage at the facility prior to recycling), and (2) the act of recycling. The current regulations treat these stages differently for regulatory purposes. For the most part, operations prior to introduction of the wastes into the recycling unit are subject to full RCRA regulation;¹⁰¹ moreover, permitting requirements fall within this regulation.¹⁰² The actual recycling process, on the other hand, is generally not subject to regulation.¹⁰³

To illustrate, a facility that stores listed hazardous sludges in tanks prior to recycling in a kiln must meet the unit-specific technical standards applicable to tanks, obtain a permit for the storage activities, and if necessary, implement corrective action with respect to the tank and any other solid waste management units at the facil-

100. 40 C.F.R. § 261.6(a)(1). EPA reluctantly adopted the term “recyclable materials” to avoid any stigma associated with the term hazardous waste that might attach to the materials being recycled. *See* 50 Fed. Reg. 646 (1985); 48 Fed. Reg. 14,493 (1983).

101. 40 C.F.R. § 261.6(b) (relating to generators and transporters of recyclable materials); *id.* at § 261.6(c) (relating to storage facilities). However, § 261.6(a)(3) exempts a small number of recyclable materials (such as used batteries returned to the manufacturer for regeneration and scrap metal management) from all RCRA regulation. Section 261.6(a)(2) carves out a limited number of activities (including use of recyclable materials in a manner constituting disposal, burning of hazardous wastes in boilers and industrial furnaces for energy recovery, precious metals recovery, and lead-acid battery reclamation) from the management standards discussed above, and subjects those activities to various special management standards set forth at 40 C.F.R. pt. 266. *Id.* Except for the burning hazardous waste in boilers and industrial furnaces for energy recovery, and using certain materials in a manner constituting disposal, these activities are generally subject to reduced regulatory requirements under 40 C.F.R. pt. 266.

102. Of course, if the facility otherwise meets an exception to the permitting requirements, no permit is required. For example, hazardous waste generated at a facility may be accumulated at that facility for up to 90 days without a permit if the waste is stored in tanks, containers, or containment buildings, and if the generator complies with other specified recordkeeping and management standards. 40 C.F.R. § 262.34(a). A generator storing its recyclable materials prior to on-site recycling operations may take advantage of this permitting exception. *Id.*

103. 40 C.F.R. § 261.6(c)(1). If the recycling facility has other hazardous waste management units subject to RCRA permitting, the recycling unit is subject to corrective action and the provisions of 40 C.F.R. pts. 264(AA) & 264(BB), relating to air emissions from process vents and equipment leaks. 40 C.F.R. § 261.6(c)(2)(iii), 261.6(d). In addition, energy recovery from hazardous wastes burned or processed in boilers and industrial furnaces is, with a few exceptions, subject to RCRA permitting requirements. 40 C.F.R. § 266.100.

ity (including the recycling unit). On the other hand, if the sludges were introduced into the recycling unit without prior storage at the facility, no RCRA permit or corrective action for the facility would be required.¹⁰⁴ The facility would need only to notify the Agency of its activities, and comply with certain manifesting requirements regarding shipments of hazardous wastes received at the facility.¹⁰⁵

The exclusion of recycling was not based on a determination that regulating recycling was beyond EPA's statutory authority, or that the environmental and human health risks associated with recycling do not justify the imposition of management and permitting requirements, or that reduced regulatory control was necessary to encourage recycling. On the contrary, since its earliest rulemaking efforts, EPA has consistently asserted that RCRA was intended to regulate hazardous waste recycling.¹⁰⁶ Further, EPA has recognized that recycling operations can cause the same environmental and health problems as other forms of hazardous waste management.¹⁰⁷ Finally, EPA has historically viewed protecting human health and the environment as RCRA's primary objective, to which the secondary goal of encouraging recycling must give way when a conflict exists.¹⁰⁸ EPA's justification for excluding recycling processes from regulation was its inability to develop appropriate management standards in a timely manner. Due to the need to resolve other more pressing issues, EPA "deferred" the Subtitle C regulation of recycling activities.¹⁰⁹

EPA can no longer avoid this difficult issue by asserting a lack of information. The Agency's knowledge of the recycling industry, including waste stream compositions and recycling technologies, has increased dramatically. For example, as part of a series of rulemakings implementing the land disposal restriction program required by section 3004(d)-(k) of RCRA, EPA conducted an extensive review of numerous treatment technologies, including re-

104. 40 C.F.R. § 261.6(c)(2).

105. 40 C.F.R. § 261.6(c)(2)(i)-(ii).

106. See 45 Fed. Reg. 33,090-92 (1980); 50 Fed. Reg. 616-17 (1985) (asserting that RCRA provides EPA with the authority to regulate recycled secondary materials, but suggesting that the authority does not reach certain recycling activities shown to be very similar to normal product processes or normal uses of commercial products); 49 Fed. Reg. 29,527 (1984) (expressing EPA's intent to subject off-site recycling facilities to permitting in the future); *RECYCLING REPORT*, *supra* note 6, at A-1 to A-4.

107. 45 Fed. Reg. 33,091 (1980).

108. 50 Fed. Reg. 618 (1985); 48 Fed. Reg. 14,474 (1983).

109. 45 Fed. Reg. 33,093 (1980).

cycling processes.¹¹⁰ The information collected as part of that effort is set forth in various background documents supporting the land disposal restriction (LDR) regulations.¹¹¹ In addition, EPA now recognizes that many recycling operations occur in tanks or other units similar to those for which RCRA management standards already exist.¹¹² For recycling operations that take place in units for which no management standards currently exist, EPA certainly has the expertise to develop management standards.¹¹³ While development of standards may take some time, permitting need not be delayed. Until any necessary new management standards are promulgated, the units in question could be permitted using the "miscellaneous unit" standards discussed above.¹¹⁴

Lack of information no longer provides viable support for temporarily deferring permitting; thus, the Agency must now face two critical issues. First, whether, as a jurisdictional matter, RCRA provides the Agency with the authority to require permitting of recycling activities. Second, whether, as a matter of policy, permitting of recycling operations provides an appropriate balance between the statutory goals of encouraging recycling and protecting human health and the environment. These questions are addressed in the next section of this article.

110. RCRA § 3004(d)-(k), 42 U.S.C § 6924(d)-(k). The land disposal restriction (LDR) program, added to RCRA as part of the Hazardous and Solid Waste Amendments of 1984 (HSWA), Pub. L. No. 98-616, 98 Stat. 3221 (1984), *reprinted in* 1984 U.S.C.C.A.N. 5649, reflected a desire to minimize the nation's dependence on land disposal as a means of managing hazardous wastes. *See* H.R. CONF. REP. No. 1133, 98th Cong., 2d Sess. 80 (1984), *reprinted in* 1984 U.S.C.C.A.N. 5649. The LDR provisions prohibit the land disposal of any hazardous wastes unless they meet treatment standards established by EPA for each waste, or unless it is demonstrated that there will be no migration of hazardous constituents from the disposal unit for as long as the wastes remain hazardous. HSWA established a schedule for phased promulgation of treatment standards and phased implementation of the prohibition. For a discussion of the history and implementation of the LDR program, *see* FORTUNA & LENNETT, *supra* note 68, at 199-236.

111. *See e.g.*, U.S. EPA BACKGROUND DOCUMENT FOR SOLVENTS TO SUPPORT 40 CFR PART 268 LAND DISPOSAL RESTRICTIONS (1986); U.S. EPA BEST DEMONSTRATED AVAILABLE TECHNOLOGY (BDAT) BACKGROUND DOCUMENT FOR K061 (1988).

112. RECYCLING REPORT, *supra* note 6, at 5-16 to 5-19.

113. The Agency demonstrated its abilities in this regard through its development of permitting requirements for boilers and industrial furnaces. *See* 40 C.F.R. pt. 266(H); U.S. EPA BACKGROUND INFORMATION DOCUMENT FOR THE DEVELOPMENT OF REGULATIONS TO CONTROL THE BURNING OF HAZARDOUS WASTES IN BOILERS AND INDUSTRIAL FURNACES (1987).

114. *See supra* notes 53-56 and accompanying text.

IV. STRIKING THE BALANCE — THE BENEFITS AND BURDENS OF PERMITTING

A. Permitting: The Jurisdictional Basis

The scope of the Agency's authority to regulate recycling has been vigorously debated over the last fifteen years, with the courts entering the fray in earnest less than a decade ago. Beginning in 1987 with its decision in *American Mining Congress v. EPA (AMC I)*,¹¹⁵ the United States Court of Appeals for the District of Columbia Circuit reviewed the Agency's efforts to regulate various aspects of hazardous waste recycling.¹¹⁶ The other three decisions that will be discussed below are *American Mining Congress v. EPA (AMC II)*,¹¹⁷ *American Petroleum Inst. v. EPA (API)*,¹¹⁸ and *Shell Oil Co. v. EPA*.¹¹⁹ Together, these four decisions provide a solid jurisdictional basis upon which a permitting system for hazardous waste recycling may be based.

The first major judicial decision regarding EPA's regulation of hazardous waste recycling arose in *AMC I*. The American Mining Congress (AMC) and the American Petroleum Institute (API) sought review of EPA's 1985 regulations amending the definition of solid waste.¹²⁰ The issue was whether EPA's assertion of authority over the recycling of "in-process secondary materials" exceeded EPA's jurisdiction under RCRA.¹²¹ The petitioners argued that be-

115. 824 F.2d 1177 (D.C. Cir. 1987).

116. Judicial review of any regulation promulgated by EPA under RCRA may only be sought in the Court of Appeals for the District of Columbia, pursuant to RCRA § 7006(a)(1), 42 U.S.C. § 6976(a)(1) (1988).

117. 907 F.2d 1179 (D.C. Cir. 1990).

118. 906 F.2d 729 (D.C. Cir. 1990).

119. 950 F.2d 741 (D.C. Cir. 1991).

120. *AMC I*, 824 F.2d at 1177. The regulations, promulgated at 50 Fed. Reg. 614 (1985), were intended "to clarify the extent of EPA's jurisdiction over hazardous waste recycling activities and to set forth the regulatory regime for recycling activities subject to the agency's jurisdiction." 50 Fed. Reg. 614 (1985). These regulations comprise the core of EPA's regulatory definition of solid waste, although numerous amendments have been made since 1985. See 40 C.F.R. pt. 261. In *United States Brewers Ass'n, Inc. v. EPA*, 600 F.2d 974 (D.C. Cir. 1979), a case decided prior to *AMC I*, the D.C. Circuit addressed a challenge to EPA's authority under RCRA to regulate the recycling of non-hazardous solid wastes. *Id.*

121. *AMC I*, 824 F.2d at 1180. API challenged EPA's authority to regulate certain hydrocarbon materials generated during the refining of crude oil. *Id.* at 1180-81. The materials (which were either unusable in, or escaped from, the particular processing step in which they generated) were collected by the refinery and reintroduced into the refining process, usually after processing in an oil recovery system. *Id.* at 1181. AMC's challenge related to certain metal-bearing materials (such as emission control dusts or partially processed ores) generated during metal production activities and reintroduced into the same or different production processes. *AMC I*, 824 F.2d at 1180-81; see generally 53 Fed. Reg. 520 (1988) (to

cause the statutory definition of "solid waste" limited EPA's jurisdiction to those materials that are "discarded or intended for discard," EPA could not regulate materials destined for reuse in an industry's ongoing production processes.¹²² Purportedly applying the standard established in *Chevron U.S.A., Inc. v. NRDC*,¹²³ the court considered the language, structure, and objectives of RCRA, and concluded that the term "solid waste" was limited to materials that are "truly discarded, disposed of, thrown away, or abandoned" in the ordinary, everyday meaning of those terms.¹²⁴ Therefore, EPA's attempt to regulate in-process secondary materials was improper, in the majority's collective mind, because such materials have not been thrown out by the generating facility.

The holding of *AMC I* is actually quite limited. The opinion repeatedly defined the issue as whether materials "no longer useful in their original capacity though destined for *immediate* reuse in another phase of the industry's ongoing production process" can be

be codified at 40 C.F.R. pt. 261) (proposed Jan. 8, 1988) (proposing amendments to the RCRA regulations in light of the *AMC I* decision).

122. *AMC I*, 824 F.2d at 1180, 1183.

123. 467 U.S. 837, 842-43 (1984). In *Chevron*, the United States Supreme Court established a general framework for the analysis of a federal agency's interpretation of statutes. *Id.* at 842-43. The reviewing court must first determine whether Congress "has directly spoken to the precise question at issue." *Id.* at 842. If the reviewing court determines that the statute is silent or ambiguous with respect to the precise issue, the court must then determine whether the agency's interpretation "is based on a permissible construction of the statute." *Id.* at 843.

124. *AMC I*, 824 F.2d at 1182-93. In determining the scope of the term "solid waste," the majority relied primarily on Webster's Third New International Dictionary, G. & C. Merriam Co. (1981). *AMC I*, 824 F.2d. at 1184 n.7. Its analysis of RCRA's structure and legislative history convinced the court that Congress intended "solid waste" to be read in the everyday sense, despite the fact that RCRA § 3004(r), 42 U.S.C. § 6924(r), creates a limited exemption from certain labelling requirements for fuels produced from materials generated and reinjected onsite into the refining process. *Id.* at 1187-89. The dissent stated that exemption would be unnecessary if Congress intended that in-process secondary materials not be considered solid wastes. *Id.* at 1194-95.

The majority further stated that it was "constrained to conclude that . . . Congress clearly and unambiguously expressed its intent that 'solid waste' (and therefore EPA's regulatory authority) be limited to materials that are 'discarded' by virtue of being disposed of, abandoned, or *thrown away*." *Id.* at 1192 (emphasis added). Moreover, the majority rejected clear statements in the legislative history of HSWA indicating that the relevant Congressional committees believed that EPA had existing authority under RCRA to regulate materials being used, reused, recycled, or reclaimed as solid and hazardous wastes. *Id.* at 1191-92. The dissent responded, however, that HSWA's legislative history states that recycled materials can be considered solid wastes when "they present the dangers to human health and the environment that RCRA is designed to control". *Id.* at 1195. See also H.R. REP. NO. 198, 98th Cong., 2d Sess. 46 (1984), reprinted in 1984 U.S.C.C.A.N. 5636 (report by Committee on Energy and Commerce regarding bill that ultimately became HSWA); see also H.R. CONF. REP. NO. 1133, 98th Cong., 2d Sess. 82 (1984), reprinted in 1984 U.S.C.C.A.N. 5649 (by HSWA Conference Committee).

solid wastes.¹²⁵ Strictly read, therefore, the court's decision merely prevented EPA from regulating a narrow band of secondary materials—residual materials generated in a production process that were immediately reused in that process without prior storage.

EPA responded to *AMC I* by proposing amendments to the RCRA regulations. In the notice proposing these amendments, EPA stated the following:

The court's decision does not affect the Agency's authority to regulate as hazardous wastes those secondary materials recycled in ways where the recycling activity itself is characterized by discarding as defined by the court. That is, manufacturing processes (or other types of recycling) involving an element of discard which do not involve secondary materials passing through a continuous, on-going manufacturing process remain within the Agency's jurisdiction.¹²⁶

EPA identified a number of circumstances in which the "element of discard" would be present, including situations where: (1) the material is recycled in a process that is ancillary to or different than the production process in which it was generated, thus breaking the continuity of the manufacturing process; (2) the material is stored on the land or in some other manner tantamount to land disposal; and (3) the "recycled" material contains high concentrations of a contaminant that is not recovered during subsequent recycling.¹²⁷

125. *AMC I*, 824 F.2d at 1185 (emphasis added). EPA was granted power to regulate "solid waste," or "discarded material" as defined by Congress. *Id.* at 1183. EPA further defined "discarded material" to include "materials destined for reuse in an industry's ongoing production process." *Id.* (emphasis added). In order to fulfill the purposes of RCRA, the court noted that "EPA need not regulate 'spent' materials that are recycled and reused in an ongoing manufacturing or industrial process," for these materials "destined for beneficial reuse or recycling in a continuous process by the generating industry itself." *Id.* at 1186 (emphasis added). Further, the court noted that EPA authority did not open up "reach of an entirely new category of materials, i.e., materials neither disposed of nor abandoned, but passing in a continuous stream or flow from one production process to another." *Id.* at 1190 (footnote omitted).

126. 53 Fed. Reg. 520 (1988).

127. *Id.* at 521. In light of *AMC I*, EPA proposed limited amendments to the regulations to do the following: (1) exclude from the definition of solid waste certain oil-bearing secondary materials from petroleum refining recycled in the refining process or used to produce petroleum coke at a refinery; (2) clarify and codify the factors for EPA to use to determine whether to list sludges or by-products being reclaimed as hazardous wastes; and (3) expand upon an existing exclusion set forth at 40 C.F.R. § 261.4(a)(8). 53 Fed. Reg. 529 (1988). On July 28, 1994, EPA promulgated a final rule adopting a revised version of the proposed exclusions relating to secondary materials used in petroleum refining. EPA did

The language of the decision, however, had a more ominous tone than the court's narrow holding. In various places, the court stressed that the term "solid waste" is limited to materials that have been "truly" thrown away.¹²⁸ The District of Columbia Circuit's focus on the ordinary meaning of "discard," moreover, suggested that the intent of the generator of the waste would be a factor in determining whether a material has been discarded,¹²⁹ and that the scope of RCRA jurisdiction may be limited to those instances where a material is actually entombed in a landfill or otherwise committed to final disposal.¹³⁰ As one commentator noted:

In the short run, the decision ties the definition of "solid waste" to the hidden intentions of the depositor and shrinks the regulatory domain to the hardcore stuff that is to be thrown away under anybody's definition. The mid-range effect of *American Mining Congress* is to place a halo of legal doubt around any attempts by EPA to use RCRA to regulate materials that linger on the scene in anticipation of some remote if implausible future use.¹³¹

The predictions of doom for EPA's efforts in the area of recycling soon proved inaccurate, however, as subsequent opinions by other panels of the District of Columbia Circuit, discussed below, acknowledged the Agency's authority to regulate various aspects of recycling.

In 1990, the District of Columbia Circuit was again faced with the issue of the scope of EPA's authority to regulate recycling. In *American Petroleum Inst. v. EPA (API)*,¹³² EPA argued for a restrictive reading of its authority. The case involved, in pertinent part, a challenge by the Natural Resource Defense Council (NRDC) and others to regulations implementing the land disposal restriction (LDR)

not act further on the proposals relating to non-petroleum materials. 59 Fed. Reg. 38,536-38 (1994) (codified at 40 C.F.R. §§ 261.3(c)(2)(ii)(B), 261.4(a)(12), 261.6(a)(3)(iv), 261.6(a)(3)(vi)).

128. *AMC I*, 824 F.2d at 1185, 1192-93.

129. *AMC I*, 824 F.2d at 1196 (Mikva, dissenting) (stating that "[w]hether the manufacturer subjectively intends to put the material to additional use is irrelevant . . . because the manufacturer's state of mind bears no necessary relation to the hazards of the industrial processes he employs.").

130. *Id.* at 1192. See Jeffrey Gaba, *Solid Waste and Recycled Materials under RCRA: Separating Chaff from Wheat*, 16 *ECOLOGY L. Q.* 623, 653-54 (1989) (noting that majority in *AMC I* stated that "'solid wastes' were limited to materials that were 'truly' discarded.").

131. 4 *RODGERS*, *supra* note 41, at 44 (footnote omitted).

132. 906 F.2d 729.

program required by section 3004(d)-(k) of RCRA.¹³³ As part of that program, EPA is required to establish waste-specific treatment standards that must be met before a waste can be “land disposed,” whether in a hazardous waste landfill or otherwise.¹³⁴

In one of many rulemakings implementing the LDR program, EPA established treatment standards applicable to emission control dust from primary production of steel in electric furnaces (“EAF Dust”).¹³⁵ Ordinarily, those treatment standards extend to any waste generated from the treatment of EAF Dust by operation of the “derived-from” rule.¹³⁶ Under the derived-from rule, subject to particular exceptions, any solid waste generated from the treatment of a hazardous waste is considered to be hazardous waste.¹³⁷ EPA declined to extend the K061 treatment standards to slag generated from the reclamation of EAF Dust, arguing that the slag was not a hazardous waste.¹³⁸

EPA’s argument was premised on the so-called “indigenous rule,” a regulatory concept that has never been codified via formal rulemaking.¹³⁹ The “indigenous rule” provided that where a hazardous waste recycling process was functionally equivalent to a primary production process, a waste could no longer be deemed “discarded” when it was introduced into that recycling process.¹⁴⁰ EPA contended that regulation of the recycled material in such circumstances was tantamount to regulation of a production process and thus beyond the scope of RCRA regulation. Since EPA believed that reclamation of EAF Dust in high temperature metal recovery units such as industrial furnaces was very much like the

133. RCRA § 3004(d)-(k), 42 U.S.C § 6924(d)-(k).

134. *Id.*

135. 40 C.F.R. § 268.33(a). Emission control dust from primary production of steel in electric furnaces (EAF Dust) is a listed hazardous waste bearing the EPA hazardous waste number K061. 40 C.F.R. § 261.32.

136. *See API*, 906 F.2d at 738.

137. 40 C.F.R. § 261.3(c)(2)(i). For a discussion of the later invalidation of the derived-from rule on procedural grounds, see *Shell Oil*, 950 F.2d at 746-52.

138. 53 Fed. Reg. 11,753 (1988) (to be codified at 40 C.F.R. pt. 268) (proposed Apr. 4, 1988); *see also API*, 906 F.2d at 738. EPA believed that RCRA prevented the Agency from treating K061 as “solid waste” once it reached a metals reclamation facility because by that point it is no longer considered “discarded material.” *API*, 906 F.2d at 740.

139. Although it was never formally codified, the “indigenous rule” was discussed in various regulatory preambles. *See* 52 Fed. Reg. 16,989-90 (1987); 50 Fed. Reg. 49,164, 49,167 (1985); 50 Fed. Reg. 630-31 (1980). A situation in which the “indigenous rule” would apply is “where the secondary material would contain the same types and concentrations of constituents . . . as the raw materials normally burned in the industrial furnace.” 50 Fed. Reg. 49,167 (1985).

140. *Id.*

primary processing of ore concentrates in the same types of furnaces, it concluded that EAF Dust ceased to be a solid waste upon entry into the furnace.¹⁴¹ According to EPA, since the EAF Dust being reclaimed was no longer a hazardous waste, the derived-from rule could not apply to slag generated as a result of that reclamation.¹⁴²

The court rejected EPA's argument, holding that neither RCRA nor the prior holding in *AMC I* required the recharacterization of the EAF Dust upon introduction in the furnace.¹⁴³ The court focused on the fact that the EAF Dust was no longer used by the steel generating industry, but had been sent to a commercial recycling facility for metal recovery.¹⁴⁴ Therefore, the material had "become part of the waste disposal problem," and EPA was authorized under RCRA to regulate it.¹⁴⁵ Further, the court found nothing in RCRA to support EPA's recharacterization of the EAF Dust upon its arrival at the recycling facility.¹⁴⁶ The court remanded the case to EPA for further consideration of the need to promulgate treatment standards for the slag.¹⁴⁷

Like *AMC I*, the significance of *API* extends much further than its specific holding. In the course of its opinion, the *API* court commented on several fundamental issues relating to the recycling de-

141. *API*, 906 F.2d at 740. The D.C. Circuit noted that "[a]n equally plausible" interpretation of RCRA would be that "K061 remains 'discarded' throughout the 'waste treatment' process." *Id.* EPA argued that "[r]egulating furnaces used to recover metals from hazardous waste as a form of waste treatment . . . would be like directly regulating the industrial production of zinc from ore." *Id.*

142. 53 Fed. Reg. 11,753 (1988). The K061 waste would cease to be a hazardous waste "at the moment of burning." *Id.*

143. *API*, 906 F.2d at 740-41. The District of Columbia Circuit stated that "*AMC I* [I] is by no means dispositive of EPA's authority to regulate K061 slag." *Id.* at 741.

144. *Id.*

145. *Id.*

146. *Id.* at 740. The D.C. Circuit also found nothing in *AMC I* to support EPA's rationale to cease treating K061 as "solid waste" once it reached the recycling facility. *Id.* at 741.

147. *Id.* at 741-42. The District of Columbia Circuit noted that "[b]ecause the EPA mistakenly concluded that our case law left it no discretion to interpret the relevant statutory provisions, we are constrained to remand." *Id.* at 740.

In a subsequent rulemaking, EPA repudiated the indigenous rule and determined that treatment standards must be established for the slag derived from EAF Dust reclamation. 56 Fed. Reg. 41,165-66 (1991). Industry members challenged that determination in *Steel Mfrs. Ass'n v. EPA*, 27 F.3d 642 (D.C. Cir. 1994) (per curiam). In *Steel Mfrs.*, the D.C. Circuit upheld EPA's action, concluding that the Agency's decision was "a natural consequence of [the D.C. Circuit's] decision in *API*." *Id.* at 647. The D.C. Circuit noted that EPA had not abandoned the idea that those "materials used in ongoing production processes are not subject to RCRA." *Id.*

bate. First, the court confirmed that the holding in *AMC I* was limited to instances where material is recycled as part of an ongoing manufacturing process by the generating industry, and therefore *AMC I* did not impede EPA's authority to regulate materials destined for recycling at a commercial recycling facility.¹⁴⁸ Second, although the court acknowledged that RCRA was not intended to reach production processes, it rejected the concept that regulation of metal recovery operations was the same as regulation of the industrial production of metal, noting that the "two forms of regulation might be 'like' each other, but they are by no means one and the same."¹⁴⁹ Finally, the court confirmed the fact that although recyclable materials may have value (due to the potential recovery of materials or energy from them), their value does not protect them from being considered solid wastes for purposes of RCRA regulation.¹⁵⁰

Following *API*, the District of Columbia Circuit dealt with recycling issues again in *American Mining Congress v. EPA (AMC II)*.¹⁵¹ In *AMC II*, the petitioners challenged EPA's determination that three types of sludges generated by smelting operations and typically stored in surface impoundments¹⁵² must be listed as hazard-

148. *API*, 906 F.2d at 741. The D.C. Circuit held in *AMC I* that under RCRA, EPA "need not" regulate solid wastes that are "recycled and reused in an ongoing manufacturing or industrial process." *AMC I*, 824 F.2d at 1186.

149. *API*, 906 F.2d at 740-41, n.15. In fact, the D.C. Circuit's later decision in *Horsehead Resource Dev. Co. v. Browner*, 16 F.3d 1246 (D.C. Cir. 1994) (per curiam), suggests that EPA may impose technical management standards and permitting requirements on recycling units that process both raw materials and secondary materials. The RCRA regulations applicable to boilers and industrial furnaces burning hazardous waste as fuel require the owners or operators of such units to meet certain air emission standards, even when the hazardous waste fuel is burned in conjunction with raw fuels. *Id.* at 1262; see also 40 C.F.R. pt. 266(H). Industry members challenged the imposition of emissions standards on the grounds that RCRA does not permit EPA to regulate the burning of non-hazardous wastes. *Horsehead Resource*, 16 F.3d at 1262-63. The Court rejected the challenge, noting that RCRA § 3004(a) allows EPA to regulate facilities that treat hazardous wastes, even if those wastes are commingled with non-waste materials. *Id.* at 1262; RCRA § 3004(a), 42 U.S.C. § 6924(a).

150. *API*, 906 F.2d at 741 n.16. The D.C. Circuit stated that "it is . . . immaterial under *AMC I* that the method of waste treatment prescribed by the agency results in the production of something of value." *Id.*

151. 907 F.2d 1179 (D.C. Cir. 1990). Petitioners sought review of a regulation by which EPA "relist[ed] as 'hazardous' six wastes generated from metal smelting operations." *Id.* at 1181; see 40 C.F.R. pts. 261, 302.

152. 40 C.F.R. § 260.10. A surface impoundment is defined as "a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials . . . , which is designed to hold an accumulation of liquid wastes or wastes containing free liquids." *Id.*

ous wastes.¹⁵³ Relying on *AMC I*, the petitioners in *AMC II* argued that sludges which are stored in a surface impoundment and which may be reclaimed in the future are not “discarded materials,” and therefore could not be “solid wastes.”¹⁵⁴ The court found that the petitioners’ reliance on *AMC I* was erroneous, explaining once again that *AMC I* is limited to those instances in which a material is retained for immediate reuse in an ongoing production process. The court considered the surface impoundments to be part of a waste treatment system rather than part of the production process.¹⁵⁵

By rejecting the petitioners’ argument that potential reuse of a material precludes its characterization as a solid waste, the court also implicitly rejected the concept that the subjective intent of the material’s generator to recycle the material controls that characterization. Instead, the court embraced a functional approach to determining whether a material is “discarded” by questioning whether the manner in which the sludges were managed caused them to become “part of the waste disposal problem” addressed by RCRA.¹⁵⁶ The District of Columbia Circuit in *AMC II* concluded that the sludges were indeed “part of the waste disposal problem,” deferring to the Agency’s determination that management of the sludges in surface impoundments created a substantial risk to human health and the environment due to the potential for leaching of contaminants into the ground. The District of Columbia Circuit found that the Agency’s conclusion was supported by the essential role that regulation of surface impoundments plays in

153. The three types of sludges were generated from treating large volumes of wastewaters produced in primary smelting operations in the copper, lead, and zinc industries. 40 C.F.R. § 261.32. The wastewaters were typically stored and treated in surface impoundments, where the sludges precipitated out of the wastewater and settled to the bottom of the impoundment. *AMC II*, 907 F.2d at 1185-86.

154. *AMC II*, 907 F.2d at 1186. Petitioners argued that three of the six wastes, K064, K065, and K066, were not “discarded wastes” within RCRA’s parameters because they are “beneficially reused in mineral processing operations.” *Id.* at 1185 (quoting Final Br. of Consolidated Pet’rs at 12).

155. *Id.* at 1186. The D.C. Circuit also considered the wastewater treatment systems as “part of the waste disposal problem.” *Id.*

156. *Id.* at 1186-87. Such a functional approach was endorsed in the dissenting opinion in *AMC I*, but rejected by the majority based on the “care and precision” used by Congress in its choice of language, giving specific content to the term “solid waste.” *AMC I*, 824 F.2d at 1190 n.18. Notably, in adopting the functional approach, the panel in *AMC II* relied on the ambiguity inherent in the term “discarded.” *AMC II*, 907 F.2d at 1186. The D.C. Circuit Court stated that “[t]he Agency, . . . exercising its expert judgment, has concluded that . . . these sludges are the product of wastewater and are stored in impoundments that threaten harm to the health and environs of those living nearby.” *Id.*

RCRA, and by the legislative history expressing concern over management of materials in surface impoundments.¹⁵⁷

The D.C. Circuit finally addressed the fundamental issue of whether EPA can regulate the recycling process in *Shell Oil Co. v. EPA*.¹⁵⁸ In *Shell Oil*, the American Mining Congress, the American Iron and Steel Institute, and the American Petroleum Institute argued that EPA exceeded its statutory authority by including resource recovery in the definition of treatment.¹⁵⁹ While the definition of "treatment" in RCRA does not include recycling activities,¹⁶⁰ EPA specifically covered resource recovery operations in the

157. *AMC II*, 907 F.2d at 1186-87. The District of Columbia Circuit noted that "Congress made it clear in the legislative history of RCRA its concern to regulate hazardous materials in surface impoundments." *Id.* at 1186. See, e.g., H.R. REP. NO. 1491, 94th Cong., 2d Sess. 2-3 (1976), reprinted in 1976 U.S.C.C.A.N. 6238; S. REP. NO. 284, 98th Cong., 1st Sess. 13-16 (1983).

158. 950 F.2d 741 (D.C. Cir. 1991). In *Shell Oil*, the D.C. Circuit also vacated the "derived-from" rule (40 C.F.R. § 261.3(c)(2)) and the "mixture" rule (40 C.F.R. § 261.3(a)(2)(ii)) because EPA failed to comply with the notice and comment provisions of the Administrative Procedure Act ("APA"), 5 U.S.C. § 553(b) (1988). *Id.* at 752. On March 3, 1992, EPA reinstated those rules in an interim final rule issued without prior notice and comment under the APA's "good cause" exception of § 553(b)(3)(B). 57 Fed. Reg. 7628, 7628-29 (1992) (codified at 40 C.F.R. § 261.3(a)(2)(iv), (c)(2)(i)). The interim final rule was set to automatically expire on April 28, 1993, by which time EPA intended to promulgate comprehensive changes to the regulatory definition of solid waste. *Id.* at 7630. Congress subsequently enacted an amendment to an appropriations bill overriding the sunset provision of the interim final rule, and requiring promulgation of revisions to the mixture and derived-from rules by October 1, 1994. Pub. L. No. 102-389, 106 Stat. 1571, 1602-03 (1992). The interim final rule was, in most respects, upheld by the District of Columbia Circuit, based on Congress' ratification of the rule. *Mobil Oil Corp. v. EPA*, No. 92-1211, slip op. at 11-15, 1993 WL 411447 (D.C. Cir. September 23, 1994).

In October of 1994, a number of parties sued EPA seeking to enforce the October 1, 1994 deadline for issuance of revised mixture and derived-from rules. *Environmental Technology Council v. Browner*, No. 94-2119, 1995 WL 238328 at *2 (D.D.C. Mar. 8, 1995). In accordance with a Consent Decree entered in that case, and later amended, EPA is required to issue a proposed Hazardous Waste Identification Rule on November 13, 1995. *Motion Gives EPA Another 90 Days to Propose Rule on Process Waste*, 26 ENVT. REP. (BNA) 773 (Aug. 18, 1995).

159. 950 F.2d at 752-53. Petitioners also argued that EPA failed to follow the notice and comment requirements of the Administrative Procedure Act in promulgating the definition. *Id.* at 753.

160. RCRA § 1004(34), 42 U.S.C. § 6903(34), provides:

The term "treatment", when used in connection with hazardous waste, means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amendable [sic] for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

Id.

regulatory definition of “treatment,” which includes the following description:

[A]ny method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, *or so as to recover energy or material resources from the waste*, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amendable [sic] for recovery, amenable for storage, or reduced in volume.¹⁶¹

The District of Columbia Circuit rejected the challenge to EPA’s authority, holding that “Subtitle C provides broad authority for regulating the management of hazardous waste and does not prohibit the regulation of resource recovery from hazardous wastes.”¹⁶² Acknowledging that the statutory definition of treatment does not establish explicit authority for EPA to regulate recycling,¹⁶³ the court determined that the authority granted to EPA to fashion regulations for appropriate management of hazardous wastes was broad enough to include the authority to regulate recycling of hazardous wastes. This conclusion was based largely on EPA’s argument that removal of recyclable hazardous wastes from the “cradle-to-grave” regulatory system would create the following unacceptable paradox:

Such wastes would be subject to manifesting requirements and transportation restrictions, and could be subject to permitting requirements if sent to a treatment, disposal or storage facility, but would not be subject to regulatory safeguards if sent to a resource recovery facility. Yet, resource recovery and recycling activities pose the same kind of dangers that storage and treatment do.¹⁶⁴

161. 40 C.F.R. § 260.10 (emphasis added).

162. *Shell Oil*, 950 F.2d at 755. The D.C. Circuit further noted that excluding resource recovery from Subtitle C hazardous wastes would render EPA’s regulatory program “largely unworkable and create a major regulatory loophole not intended by [RCRA].” *Id.*

163. *Id.* at 754; see 40 C.F.R. § 260.10. The D.C. Circuit has repeatedly determined in its interpretation of RCRA that the key phrases are the definitions of “hazardous waste” and “solid waste.” *Shell Oil*, 950 F.2d at 754. The court pointed to its earlier decision in *API*, stating that “[o]nce a waste is listed or identified as hazardous, its subsequent management is regulated.” *API*, 906 F.2d at 733.

164. *Shell Oil*, 950 F.2d at 755 (citation omitted).

By according EPA the deference required by the Supreme Court under *Chevron*,¹⁶⁵ the D.C. Circuit Court concluded that EPA's regulation of hazardous waste recycling under RCRA was based on a permissible interpretation of the statute.¹⁶⁶

Following *Shell Oil*, there can be little doubt that EPA has the authority under RCRA to regulate hazardous waste recycling activities. Subject to the limitation articulated in *AMC I*, regarding materials directly reused in a continuous production process, the caselaw sets forth EPA's authority to regulate recycling as merely another form of treatment. In *Shell Oil*, EPA argued that RCRA does not permit other recyclable materials to be exempt from the comprehensive management system in Subtitle C of RCRA.¹⁶⁷ Rather, after materials are discarded, "it becomes . . . EPA's responsibility, through regulation, to manage them in the public interest."¹⁶⁸ The District of Columbia Circuit agreed with EPA's interpretation of RCRA and recognized the Agency's authority and responsibility to regulate hazardous waste recycling. After *Shell Oil*, the question left for the Agency is how that responsibility is to be discharged.

B. Permitting: Balancing Protection and Promotion

EPA has long recognized that any determination regarding the appropriate scope of regulatory control over hazardous waste recycling will require a balancing of two potentially conflicting statutory goals.¹⁶⁹ RCRA was intended to ensure that "hazardous waste management practices are conducted in a manner which protects human health and the environment,"¹⁷⁰ while also encouraging "properly conducted recycling."¹⁷¹ Thus, any permitting system for hazardous waste recycling must strike a balance between these two

165. 467 U.S. 837 (1984). For a discussion of the *Chevron* holding, see *supra* note 123 and accompanying text.

166. *Shell Oil*, 950 F.2d at 756. The court also rejected the procedural attack on the definition, concluding that the inclusion of resource recovery in the definition of treatment was a logical outgrowth of statements made by EPA in the proposed rule and certain background documents. *Id.* at 755. The D.C. Circuit "[found] the Agency's regulation of resource recovery from hazardous wastes to be permissible under RCRA," and "believe[d] the EPA acted reasonably in incorporating resource recovery within the regulatory definition of treatment." *Id.* at 755-56.

167. *Id.* at 754-56.

168. *Id.* at 755.

169. See, e.g., 45 Fed. Reg. 33,066, 33,092 (1980) (recognizing that "it may be possible to achieve a workable balance between Subtitle C's mandate that hazardous wastes be handled in an environmentally sound manner and RCRA's overall objective of encouraging th[e] reuse and reclamation of wastes").

170. RCRA § 1003(a)(4), 42 U.S.C. § 6902(a)(4).

171. RCRA § 1003(a)(6), 42 U.S.C. § 6902(a)(6).

goals. Proponents of a "permit-free" system argue that this balance can be met by the imposition of self-implementing, generic management standards,¹⁷² which would ostensibly protect human health and the environment without the cost and delay associated with permitting.¹⁷³

This section examines the benefits of permitting, and presents the empirical information bearing on the question of whether permitting is an obstacle to "properly conducted" recycling. This review demonstrates that proponents of the permit-free approach accord too little weight to the role that the permitting process plays in the development, implementation, and enforcement of site-specific management standards, as they overstate the negative impact that permitting has on the growth of the recycling industry.

1. *The Role of the Permit*

The permitting paradigm is employed in virtually every major environmental statute.¹⁷⁴ This approach to environmental regulation is generally employed "(1) as a means of promulgating regulatory requirements in the first place, (2) as a means of translating broad requirements into terms applicable to individual pollution sources, or (3) as an enforcement device that makes it simpler to achieve compliance with regulatory requirements."¹⁷⁵ The valuable role that the permitting process serves in environmental protection should not be lost due to EPA's continuing indecisiveness.

Permitting of hazardous waste facilities under RCRA serves each of these purposes. EPA noted in its 1990 RCRA Implementation Study:

The permits serve as a continuing reference to plant personnel responsible for their work, and can also provide the agency field inspectors and enforcement staff with a reference for evaluating the performance of the facility. They form the basis for any enforcement action that may be necessary. They also represent the application of the many statutory and regulatory requirements of RCRA to the specific conditions present at the plant. Permits

172. See RECYCLING REPORT, *supra* note 6, at 5-7 to 5-35.

173. *Id.*

174. See 40 C.F.R. pts. 121 to 122 (Clean Water Act's National Pollutant Discharge Elimination System); 40 C.F.R. pt. 70 (Clean Air Act's operating permit program); 40 C.F.R. pt. 270 (RCRA's permitting program).

175. 2 WILLIAM RODGERS, ENVIRONMENTAL LAW: AIR AND WATER 374 n.18 (1986) (quoting J.E. BONNIE & T.O. MCGARTY, CASES ON THE LAW OF ENVIRONMENTAL PROTECTION 514 (1984)).

clearly appear to be the best mechanism for providing all of these types of benefits.¹⁷⁶

Permitting of recycling operations also enhances the public involvement in the siting and oversight of recycling operations.

a. Permitting as rulemaking: the omnibus authority

Although Congress required the promulgation of regulations establishing management standards for TSD facilities, it recognized that, given the range of operations at such facilities, the regulations could not contemplate every condition requiring regulatory control. Accordingly, Congress authorized the Agency to include in any permit "such terms and conditions as the Administrator . . . determines necessary to protect human health and the environment."¹⁷⁷ EPA can use its "omnibus" authority to impose permit requirements beyond those mandated by the regulations to address special cases or unique circumstances.¹⁷⁸ With respect to areas already addressed by the regulations, EPA may also employ this authority to incorporate new technologies or other requirements that it intends to include in subsequently promulgated regulations.¹⁷⁹

The omnibus authority thus gives the RCRA permit writer the flexibility to "promulgate" (and responsibility for "promulgating") regulatory requirements based on specific conditions at the facility in question. For example, EPA has stated that it will use the omnibus authority in appropriate circumstances to deal with air emissions from certain units at TSD facilities.¹⁸⁰ The omnibus authority may also be used to address issues such as the adequacy of local emergency planning, or the appropriate traffic routes for ship-

176. RIS, *supra* note 6, at 43. See also METAL RECOVERY REPORT, *supra* note 9, at 41 (noting that Agency oversight is one of the major benefits provided by permitting process).

177. RCRA § 3005(c), 42 U.S.C. § 6925(c). The authority is currently codified at 40 C.F.R. Section 270.32(b)(2). As part of the rulemaking procedure that originally codified the authority, EPA noted that the omnibus authority includes the authority to deny a permit application under certain circumstances. 50 Fed. Reg. 28,722-23 (1985).

178. S. REP. NO. 284, 98th Cong., 1st Sess. 31 (1983); 52 Fed. Reg. 45,794 (1987).

179. S. REP. NO. 284, 98th Cong., 1st Sess. 31 (1983).

180. See 55 Fed. Reg. 25,492 (1990) (directing permit writers to use omnibus authority to impose air emissions controls to reduce residual risks that may remain after implementation of regulatory standards for organic air emissions from process vents and equipment leaks); 56 Fed. Reg. 33,537 (1991) (to be codified at 40 C.F.R. pt. 264(CC) and pt. 265(CC)) (proposed July 22, 1991) (concerning air emissions from tanks and containers at certain TSD facilities).

ments of hazardous wastes to a facility.¹⁸¹ Of course, the omnibus authority does not grant the permit writer *carte blanche* to impose unnecessary restrictions on a facility's operations. The administrative record associated with the permit decision must support the conditions established under the omnibus authority.¹⁸²

The omnibus authority highlights the importance of the RCRA permit. The permit acts as both the jurisdictional trigger for the omnibus authority and the vehicle for its implementation. Under a "permit-free" approach to regulating recycling operations, the omnibus authority would be lost. Regulation of the wide array of recycling facilities would be restricted to the promulgation of general management standards, with no mechanism for addressing unique circumstances at a facility.¹⁸³ In light of EPA's express recognition that recycling operations often pose the same risks as other treatment operations, there seems to be no basis for rejecting the omnibus authority for recycling, while retaining it for the other forms of treatment.

b. Permitting as implementation: application of general management standards

In the RCRA context, EPA has long recognized that the permitting process is intended to transform the generic management standards in the regulations into facility-specific standards that take into account actual conditions at the permitted facility.¹⁸⁴ When EPA issued the first set of management standards for permitted and interim status facilities in 1980, it stressed the importance of the permitting process.¹⁸⁵ Specifically, EPA noted that "decisions regarding certain [management] standards . . . should be made in the

181. Caroline Wehling, *RCRA Permitting*, 2 NAT. RESOURCES & ENV'T 27, 30 (1987).

182. See 40 C.F.R. § 270.10(k) (authorizing regulatory agency to require that additional information be submitted in permit application to establish conditions pursuant to omnibus authority).

183. After operations at a facility begin, EPA may be able to challenge certain aspects of the operations by bringing an action under its "imminent hazard" authority. RCRA § 7003(a), 42 U.S.C. § 6973(a). If EPA can establish, *inter alia*, that the operations may present an "imminent and substantial endangerment" to health or the environment, it can obtain a federal court order (or issue an administrative order) restricting the facility's operations. *Id.*

184. See 40 C.F.R. § 270.32(b)(1) (requiring permit writer to include such conditions as are necessary to comply with RCRA and applicable requirements of 40 C.F.R. pts. 264, 266-68); 4 RODGERS, *supra* note 41, at 115 and authorities cited therein (noting the "famous" give and take that occurs between RCRA permit writer and permit applicant); COOKE, *supra* note 37, at 5-51 (describing role of permit writer).

185. 45 Fed. Reg. 33,158 (1980).

permit issuance process where there is full opportunity for public participation and interaction between the Agency and the permit applicant."¹⁸⁶

Without a permitting process, there is no mechanism for EPA involvement, short of inspections and enforcement actions, in the implementation of the management standards at the recycling facility. EPA involvement is especially important with respect to standards intended to prevent or minimize releases of hazardous wastes to the environment, such as waste analysis requirements and contingency plans.

Agency involvement through the quasi-cooperative vehicle of permitting is valuable because it can produce the same type of tailored regulation sought by proponents of reduced regulation. The permitting process helps the Agency and the permittee to identify which of the myriad statutory and regulatory requirements apply to the facility. Moreover, the permitting process gives the applicant and EPA the ability to take a seemingly rigid performance standard from the regulations and mold it to fit the circumstances at the facility. Further, the permit can establish a compliance schedule for a facility that needs additional time to meet a particular standard.¹⁸⁷

The permitting process enables the Agency to assume an early, significant role in ensuring that the facility is adequately implementing facility-specific measures necessary to comply with RCRA and its regulations. Similarly, EPA's previous experience with interim status facilities indicated that this type of early involvement is necessary to achieve compliance.¹⁸⁸ For example, in reviewing compliance with groundwater monitoring requirements at interim status facilities (*i.e.*, those facilities with permit applications pending), the Agency discovered widespread noncompliance with technical standards.¹⁸⁹

The permitting process also provides an excellent vehicle for proper implementation of management standards. In some instances, the permitting requirement imposes necessary discipline

186. *Id.*

187. 40 C.F.R. § 270.33.

188. See RIS, *supra* note 6, at 35-36 (noting that despite self-implementing nature of many RCRA regulations, intense, protracted permitting, or enforcement effort is often necessary to bring the regulated community into compliance); 4 RODGERS, *supra* note 41, at 174 and n.71 (observing that self-implementing groundwater monitoring regulations result in "poor design, consistent error, unusable data, and regulatory stalemate").

189. See RIS, *supra* note 6, at 35-36.

on members of the regulated community who might otherwise attempt to avoid full compliance with the management standards. The permitting process forces such members to comply with the requirements and the regulated agency early in the life of the facility. In other instances, facility owners or operators are unable to understand and implement the standards, despite good faith efforts. Such operators will receive guidance from the regulatory agency in identifying and implementing those standards through the permitting process. Thus, the permitting process is critical to the proper implementation of regulatory standards.

c. Permitting as enforcement: permit conditions and permit shield

By setting forth RCRA requirements for facilities, the permit can provide certainty to the Agency, the regulated entity, and the public. As discussed above, the permit takes generic management standards and applies them to a facility's specific conditions. For example, an operations plan included in the permit application and incorporated into the permit will describe in detail how the facility will handle hazardous wastes, while the waste analysis plan will specify the manner in which the facility will confirm the nature of the waste received or generated at the facility.¹⁹⁰

The certainty provided by a permit benefits the regulatory agency. To determine the facility's compliance status, an agency inspector need only compare the specific requirements of the permit with the conditions he or she observed at the facility. Issues regarding which requirements of RCRA apply to the facility, as well as how those requirements must be implemented, will have already been resolved as part of the permitting process.

Certainty also benefits facilities. A facility has, for the most part, the same ability of an agency investigator to evaluate its compliance by looking to the permit as the single document setting forth its obligations.¹⁹¹ As long as the facility complies with the terms and conditions of the permit, it is protected against government and citizen enforcement actions for RCRA violations.¹⁹²

190. See 40 C.F.R. § 270.14 (setting forth required contents of permit application).

191. See RIS, *supra* note 6, at 41.

192. See 40 C.F.R. § 270.4(a).

2. *The Role of the Public*

The concept of public participation in implementing the RCRA program is grounded in the statute, and is augmented by various EPA regulations and policies. Section 7004(b) of RCRA provides, in relevant part, that “[p]ublic participation in the development, revision, implementation, and enforcement of any regulation, guideline, information or program under [RCRA] shall be provided for, encouraged, and assisted by the Administrator [of EPA].”¹⁹³ Pursuant to this broad mandate, EPA issued its Public Participation Policy, which established a uniform set of guidelines concerning public participation in all EPA programs.¹⁹⁴ This policy, which applies to the administration of permit programs, emphasized that “[a]gency officials will provide for, encourage, and assist participation of the public.”¹⁹⁵ The document further provided that, “[w]here appropriate, this will require [officials] to give extra encouragement and assistance to some sectors, such as minorities, that may have fewer opportunities or resources.”¹⁹⁶

Public participation requirements specific to the RCRA permitting process are also set forth in regulations relating to notice of proposed permit decisions, opportunity for public comment and a hearing, and issuance of the final permit decision with written responses to public comments.¹⁹⁷ EPA encourages public involvement beyond the formal requirements of the regulations in order to encourage a meaningful dialogue among the public, the Agency, and the regulated entity.¹⁹⁸

Public involvement in the permitting process serves a number of important purposes. First, it helps the regulatory agency and the regulated entity identify and address deficiencies in the permit application or draft permit.¹⁹⁹ Second, public involvement gives the regulatory agency the opportunity to enhance its credibility and reputation by providing the public with a meaningful opportunity to become involved in the permitting process. Meaningful public

193. RCRA § 7004(b), 42 U.S.C. § 6974(b).

194. Final EPA Policy on Public Participation, 46 Fed. Reg. 5736, 5740 (1981) [hereinafter EPA Final Policy].

195. *Id.*

196. *Id.* In promulgating the EPA Final Policy, then-Administrator Costle noted the frustration felt by many members of the public who tried working with the Agency, and observed that the public was still optimistic about participating in environmental protection issues. *Id.*

197. See 40 C.F.R. §§ 124.6-14.

198. RCRA PUBLIC INVOLVEMENT MANUAL 2-1 (1993) [hereinafter INVOLVEMENT MANUAL]; EPA Final Policy, *supra* note 194, at 5740.

199. INVOLVEMENT MANUAL, *supra* note 198, at 2-2.

participation may also decrease the risk that the agency decision will be delayed or even vacated by later litigation.²⁰⁰ Finally, and perhaps most importantly, providing community members with a role in deciding whether and how hazardous waste management activities should be conducted at a facility acknowledges that such operations can significantly impact the surrounding community.²⁰¹

In light of recognition by EPA and others that hazardous waste facilities may be disproportionately sited near minority and low-income communities, this last factor is particularly significant.²⁰² Minority and low-income communities are often faced with multiple sources of environmental risk (for example, from other industrial facilities located nearby or from conditions in or near their residences such as lead-based paint) due to sociological, economic, and other factors.²⁰³ Moreover, members of these communities may lack the financial, technical, and political resources necessary to ensure that their interests are adequately represented during the permitting process.²⁰⁴

Environmental justice concerns led, in part, to EPA's recent proposal to expand the public participation requirements in the RCRA permitting process.²⁰⁵ The proposed changes include initiating public participation procedures earlier in the permitting pro-

200. *Id.* at 2-2; EPA Final Policy, *supra* note 194, at 5740-41.

201. EPA Final Policy, *supra* note 194, at 5740 (noting that public participation is "the best tested recipe for citizens to influence the governmental decisions that affect their lives and pocketbooks"); INVOLVEMENT MANUAL, *supra* note 198, at 2-2.

202. See generally Vicki Been, *What's Fairness Got to Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001 (1993) and authorities cited therein; Audrey Wright, Note, *Unequal Protection Under the Environmental Laws: Reviewing the Evidence on Environmental Racism and the Inequities of Environmental Legislation*, 39 WAYNE L. REV. 1725 (1993); INVOLVEMENT MANUAL, *supra* note 198, at 2-3. This disproportionate distribution of environmental burdens is generally described as "environmental racism." See Wright, *supra* at 1726. The push for a more equitable redistribution of those burdens has been labeled the "environmental equity" movement. See Been, *supra* at 1005. Responding to growing concerns over environmental racism, President Clinton issued an Executive Order on February 11, 1994, on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994). The document directs agencies to make achieving environmental justice part of their respective missions, and establishes an inter-agency working group on environmental justice. *Id.*

203. INVOLVEMENT MANUAL, *supra* note 198, at 2-3; Gerald Torres, *Environmental Burdens and Democratic Justice*, 21 FORDHAM URB. L.J. 431, 435-36 (1994).

204. See Been, *supra* note 202, at 1002-03; Wright, *supra* note 202, at 1735-38.

205. 59 Fed. Reg. 28,680 (1994) (to be codified at 40 C.F.R. pts. 124 & 270) (proposed June 2, 1994). The proposal was also driven by the results of the RCRA IMPLEMENTATION STUDY, which concluded that the opportunity for public participation comes too late in the permitting process. RIS, *supra* note 6, at 52.

cess, providing direct contacts between the applicant and the public, and using reasonable measures (such as preparation of multilingual documents and use of interpreters at public meetings) to reach all segments of the community. These changes are designed to provide minority and low-income populations with a stronger voice in decision-making, as well as a greater opportunity to influence permit decisions early in the process.²⁰⁶ In addition, the Agency proposal invited comment on ways to address environmental justice concerns in the siting of hazardous waste facilities.²⁰⁷

The lack of a formal permitting process for most recycling activities severely restricts public involvement in decisions regarding the location and operation of these activities. In most cases, current regulations do not provide for formal public participation in decisions covering the placement and continued operation of a hazardous waste recycling facility in the community.²⁰⁸ By expanding the role for public participation in siting and operating decisions, a formal permitting process could provide for, encourage, or assist meaningful public participation in these decisions. Requiring a formal permitting process which accomplishes these ends would be consistent with the statute, as well as with the developing regulatory policy embraced by EPA regarding public participation in implementing the RCRA Subtitle C program.

The current regulations are deficient with respect to the three goals of public participation described above. The lack of public

206. 59 Fed. Reg. 28,686-87 (1994).

207. *Id.* The request for comments was based on recommendations contained in a draft report prepared by the Environmental Justice Task Force, which was established by the EPA Office of Solid Waste and Emergency Response. *Id.*

EPA solicited additional comments on the appropriate response it should take when faced with a challenge to a RCRA permit based on environmental justice concerns, including use of mediation among affected parties or the performance of risk and/or health assessments to determine if the community would be unacceptably affected by the operations. *Id.* EPA was faced with such a challenge in the recent appeal of a RCRA permit in *In re Chemical Waste Management of Indiana, Inc.*, No. IND 078 911 146, 1995 WL 395962 (E.P.A. June 29, 1995). For an analysis of EPA's Environmental Appeal Board decision in that case, see Michael W. Steinberg & Tim A. Pohle, *Environmental Justice and RCRA Permits: Nothing Is Quite What It Seems*, 26 ENV'T. REP. (BNA) 1025 (Oct. 10, 1995).

208. The RCRA public participation provisions only apply to permit proceedings, and then only relate to issues raised by the permit. See 40 C.F.R. §§ 124.11-.14. Thus, even where a recycling facility storing hazardous waste prior to recycling is required to obtain a permit, the public will only have a formal right to comment on the terms of the permit. Issues regarding the recycling operations themselves may in many cases be beyond the scope of public comment. The sole recourse for citizens who believe that the facility does not meet RCRA standards is an enforcement action under RCRA's citizen suit provision. See RCRA § 7002, 42 U.S.C. § 6972.

comment discourages public contribution to the Agency's knowledge of deficiencies in a facility's operations. Likewise, the current regulations do not provide for the kind of contact with the public regarding recycling facilities that would enhance the Agency's credibility as a regulator acting in the public interest. Finally, the current approach, which has no formal permitting process, ignores the effects of a hazardous waste facility on its surrounding community.

A message may be drawn from the current permitting regulations — the concerns of a community where a hazardous waste recycling operation might be located are not significant enough, in EPA's opinion, to warrant a formal permitting process by which the community can have a meaningful role in siting and operating decisions. This message is difficult to reconcile with the Agency's recognition of the environmental justice issues involved in siting of hazardous waste facilities, and its recent move to expand public participation generally.

3. *The Impact of Permitting*

The argument that the cost and time associated with permitting is an impediment to the growth of recycling is a common justification for rejecting permitting procedures for recycling operations.²⁰⁹ Cost and time purportedly affect recycling in at least two ways. First, because generators of hazardous wastes choose the lowest cost option between recycling and disposal/treatment, increased recycling costs due to permitting drive those generators to disposal or treatment options. Second, potential commercial recyclers are prevented from entering the industry because they face permitting burdens and costs that competitors using virgin or raw materials do not face. These considerations drive the argument that removing the permitting burden, as well as other regulatory impediments, will cause recycling activities to increase.²¹⁰ The most compelling empirical information regarding hazardous waste recycling in the United States, however, contradicts the assumption that permitting requirements are an obstacle to the development of

209. RECYCLING REPORT, *supra* note 6, at 5-3, 5-6; RISU, *supra* note 6, at 21-22; METAL RECOVERY REPORT, *supra* note 9, at 46 (summary of comments of American Iron and Steel Institute); *id.* at 53 (summary of comments from Metal Recycling Coalition).

210. RECYCLING REPORT, *supra* note 6, at 5-3; *see also* RISU, *supra* note 6, at 22-23; METAL RECOVERY REPORT, *supra* note 9, at 46 (summary of comments of American Iron and Steel Institute); *id.* at 53 (summary of comments from Metal Recycling Coalition).

recycling. This information is evaluated in three recent EPA documents.

EPA's 1989 BIENNIAL REPORT included the results of a survey of the nation's 20,000 hazardous waste generators and 3,000 TSD facilities.²¹¹ All generators of hazardous waste were asked to identify those factors which may have prevented them from initiating new off-site or on-site recycling activities during 1988 or 1989. Only seven percent of those responding identified permitting burdens as an impediment to initiation of recycling activities. The major factors restricting the growth of recycling were issues of economic feasibility (19%), lack of technical information (17%), and concerns that product quality would decline (15%).²¹²

The results of the 1989 Biennial Report were largely confirmed by a 1991 study of the economic impact of possible regulatory changes to the recycling regulations, including abolishing the requirement of a permit for storage prior to recycling.²¹³ That study, which was prepared by an EPA contractor, was designed to determine whether the regulatory changes would create additional incentive to recycle hazardous wastes.

Based on the premise that a generator would choose the cheaper alternative between recycling and treatment/disposal, the study analyzed the costs associated with each method under various scenarios. First, the study compared the costs of recycling eight different hazardous wastes under the existing regulatory scheme (which includes permitting for storage prior to recycling) to the baseline cost of treatment and/or disposal for each of those wastes. Next, the study compared the baseline treatment/disposal cost for each waste stream to the costs that would be associated with recycling absent any permitting requirement. The analysis for each waste stream included on-site recycling at a small facility, on-site recycling at an intermediate size facility, and off-site recycling at a large, commercial recycling facility.²¹⁴

While the results of the study varied by type of facility and type of hazardous waste, some general conclusions may be drawn. First, of the twenty-four scenarios analyzed, permitting burdens were identified as an economic disincentive to recycling in only three

211. 1989 BIENNIAL REPORT, *supra* note 1, at 1.

212. *Id.*

213. DPRA INCORPORATED, COMPARATIVE ANALYSIS OF RCRA TREATMENT AND DISPOSAL COSTS AND RECYCLING COSTS WITH AND WITHOUT REGULATORY MODIFICATIONS (1991) [hereinafter COMPARATIVE ANALYSIS].

214. *Id.* at 1-3.

instances.²¹⁵ In fact, even with permitting, the cost of recycling hazardous wastes at most facilities was significantly less than the cost of treating and/or disposing of the wastes.²¹⁶ Second, in each of the three instances in which recycling under the current regulations was an economic disincentive, cost savings derived from abolition of the permitting requirement failed to make recycling less expensive than disposal/treatment.²¹⁷ Third, while the removal of the permitting requirement resulted in reduced recycling costs in every case, significant reductions in costs were limited to smaller facilities engaging in on-site recycling, presumably because the permitting costs for smaller facilities was spread over a much smaller volume of waste.²¹⁸

From a purely economic standpoint, recycling should, in most cases, be the management method of choice for generators of hazardous waste, despite the permitting burden for storage prior to recycling that is imposed on the on-site or off-site recycler. Why, then, is only 3% of all hazardous waste generated in this country recycled? Consistent with the 1989 BIENNIAL REPORT, the 1991 COMPARATIVE ANALYSIS provides the following answer:

Given the fact that recycling under current regulatory conditions is economical, there must be other noneconomic factors influencing facility waste management decisions. Potential factors affecting waste management decisions include inertia, inadequate investment capital, recent technological advancements not widely known, unavailable or fluctuating markets for recycled materials, concerns about the quality of recycled materials, and issues of product specification. In addition, for facilities with sunk capital that are only incurring the cost of operation and maintenance, the economics of recycling may not be favorable due to the initial capital investment required for the recycling system.²¹⁹

In 1994, EPA affirmed the conclusions of the 1989 BIENNIAL REPORT and the 1991 study in the third recent significant study on

215. Those instances consisted of recycling certain spent solvents at a small on-site facility, recycling electroplating sludge at a large off-site facility, and recycling spent aluminum potliners at a large off-site facility. *Id.* at 14, 22 & 32.

216. *Id.* at 10, 14, 18, 22, 26, 27, 32 & 36.

217. COMPARATIVE ANALYSIS, *supra* note 213.

218. *Id.* at 38.

219. *Id.* at 42.

this issue, the METAL RECOVERY REPORT.²²⁰ The METAL RECOVERY REPORT examined whether RCRA regulations may be needlessly limiting metal recovery capacity in the United States. In preparing the METAL RECOVERY REPORT, EPA collected relevant data through searches of scientific and trade literature concerning the metal recovery of industrial waste, and through consultation with government experts and industry representatives.²²¹ EPA concluded that RCRA provides both incentives and disincentives to the metal recovery industry. Increasingly stringent RCRA regulation of hazardous waste landfill and treatment operations over the last fifteen years has significantly increased the costs of those operations. These increased costs played a major role in the growth of the metal recovery industry over the same period, since generators sought out recycling as a cheaper alternative to conventional treatment and disposal.²²²

Despite the favorable impact associated with RCRA regulation of disposal and treatment, EPA noted that the regulated community believes that several RCRA requirements, including permitting, may be limiting factors on the growth of the metal recycling industry in the United States.²²³ Based on the available information, the Agency made the following conclusion:

Finally, RCRA Subtitle C regulation may also constrain metal recovery of industrial wastes from reaching its potential. However, due to nonregulatory factors, EPA cannot predict whether reductions in Subtitle C compliance cost would significantly affect metal recovery rates of hazardous waste. And as mentioned above, any regulatory modifications must be evaluated carefully to ensure retention of environmentally protective management standards for metal recovery operations.²²⁴

220. METAL RECOVERY REPORT, *supra* note 9.

221. *Id.* at 14. EPA acknowledged that the report suffered from data limitations which prevented a quantitative analysis of the impacts of particular RCRA requirements on recycling rates. Nonetheless, the report attempted to identify such impacts in a qualitative sense. *Id.* at 15, 17.

222. *Id.* at 58-61. Other factors contributing to the recent growth of the metal recovery industry include: the decreasing capacity of hazardous waste landfills, and the perception among generators that their exposure to CERCLA and other liabilities is more limited where waste is recycled rather than treated and disposed of in a landfill. ICF INC., 1990 SURVEY OF SELECTED FIRMS IN THE HAZARDOUS WASTE MANAGEMENT INDUSTRY: FINAL REPORT 2-6 (1992).

223. METAL RECOVERY REPORT, *supra* note 9, at 74-75.

224. *Id.* at 75. Other nonregulatory factors identified in the Metal Recovery Report include the technical and economic feasibility of applying metal recovery technologies to hazardous wastes. *Id.* at 16.

Thus, the EPA studies of the condition of hazardous waste recycling indicate that the impact of permitting requirements on the potential growth of hazardous waste recycling is, at best, unclear. The premise that preferential regulatory provisions would increase recycling rates appears to be based primarily on intuitive judgment and anecdotal evidence presented by facilities that are already engaged in recycling operations. When balanced against the clear benefits flowing from the permitting process, such speculation cannot support a decision to exempt recycling operations (including storage prior to recycling) from permitting obligations.

V. AN ALTERNATIVE PROPOSAL

EPA has essentially allowed its initial deferral regarding regulation of hazardous waste recycling processes to become a *de facto* rule. This is troublesome, considering that the Agency has long recognized that hazardous wastes destined for recycling are often stored and recycled in units that are substantially similar to regulated hazardous waste management units at treatment facilities.²²⁵ Moreover, the Agency apparently has no information supporting the underlying assumption that the environmental and health risks at recycling facilities are any less than those existing at other types of treatment facilities. The Agency should address these risks through a permitting process, which would effectively implement management standards, and provide meaningful agency and public involvement. With certain exceptions, permitting requirements should be retained with respect to storage prior to recycling and extended to the actual recycling units as well.²²⁶ The alternatives presented below address the cost and delay associated with permitting, while retaining the benefits of a permitting process.

225. For example, even the RECYCLING REPORT recommends that the management standards applicable to tank systems be should applied to recycling units. Further, the standards applicable to containers, tank systems, and containment buildings be applied to units used to store materials prior to recycling. RECYCLING REPORT, *supra* note 6, at 5-16, 5-19, 5-20 & 5-25. If EPA requires extension of the permitting program to recycling units, it may be necessary to develop additional standards for other types of units, since it is unlikely that all recycling units would fit within the category of tank systems. Until such standards are developed, the standards applicable to miscellaneous units could be used. *See* 40 C.F.R. pt. 264(X) (1994).

226. This article does not address the legitimacy or wisdom of the existing regulatory and statutory exceptions and exclusions to the definition of solid and hazardous wastes, nor the special management and permitting requirements set forth at 40 C.F.R. pt. 266.

A. Streamlining the Permitting Process

The fact that RCRA's permitting process can be tortuously slow is not disputed. The permitting process, from application to issuance or denial of a typical storage or treatment permit, takes three to four years.²²⁷ The RCRA IMPLEMENTATION STUDY concluded that a number of factors contributed to the delays in the RCRA permitting process. Among the most significant factors were: (1) limited personnel resources of the Agency; (2) inadequate permit applications; and (3) delay caused by public participation.²²⁸

The factor of limited personnel resources is manifested in the high turnover rate of RCRA technical staff (the permit writers and the scientists and engineers who support them), and in the lack of adequate training programs.²²⁹ The high turnover results in a constantly changing corps of often inexperienced and ill-trained permit writers reviewing complex permit applications.²³⁰ Since each new permit writer assigned to a particular application must re-review the application, and inexperienced staff tend to be significantly slower in acting to approve or deny applications, delay is unavoidable.²³¹ The RCRA Implementation Study recommended that the personnel resources problems be addressed by, among other things: (1) increasing the staffing levels among permit writers and support staff; (2) enhancing the salary and incentive structure for those persons; (3) developing minimum training standards for new and existing staff; and (4) establishing a centralized, comprehensive RCRA training office.²³² At a time when the availability of funds has been generally declining, additional funding to the RCRA permitting program would obviously be needed to effect these measures.²³³

227. RIS, *supra* note 6, at 42-44.

228. *Id.* at 47, 50-52.

229. *Id.* at 47.

230. One facility had four different permit writers assigned to its application over a one and one-half year period. Another facility had five writers over a five year period. *Id.*

231. RIS, *supra* note 6, at 51.

232. *Id.* at 47, 92-94.

233. *Id.* at 94 (noting that EPA has experienced shortfalls in funding for salaries and expenses related to non-Superfund programs). In seeking to implement these measures, the Agency might consider Congress' approach to funding the Clean Air Act's operating permit program. Section 502(b)(3) of the Clean Air Act requires that all sources required to obtain operating permits pay annual fees sufficient to "cover all reasonable (direct and indirect) costs required to develop and administer" the permit program, including the reasonable costs of reviewing and acting on permit applications. 42 U.S.C. § 7661a(b)(3). On a more limited scale,

The permitting process is also delayed when inadequate permit applications are submitted. As explained below, such submissions are not necessarily the fault of the facility submitting the application. Nevertheless, if the application lacks sufficient information or detail on which to base a decision, the permit writer issues a Notice of Deficiency (NOD). The NOD identifies required additions or modifications to the application.²³⁴ Depending upon the adequacy of the response to the NOD, the permit writer may issue additional NODs before receiving the requisite information. In fact, it is not unusual for three or more NODs to be issued during the processing of a permit application, with each NOD requiring a response from the facility and increasing the processing time.²³⁵

There are several explanations for the amount of interaction between regulatory agency and applicant. In some cases, a facility may intentionally delay the process to maintain its interim status and avoid the costs associated with implementing permit conditions.²³⁶ In other cases, the delay may reflect an applicant's confusion over what information the regulatory agency requires.²³⁷ In addition, the permit writer's own inexperience might contribute to the delay by requiring several iterations of NODs before the permit writer finally identifies the relevant information he or she needs.²³⁸

the Agency could charge a RCRA application fee to cover the cost of processing the permit application.

234. 40 C.F.R. § 124.3(c) (1994). Prior to performing a substantive evaluation of the application, the permit writer reviews it to ensure that all the information required by the regulations have been submitted. If the application is deemed incomplete, the permit writer issues a Notice of Deficiency (NOD), which identifies the portions that must be supplemented. After an application is deemed "complete," the substantive review begins. That review may lead to the issuance of one or more NODs.

235. RIS, *supra* note 6, at 51.

236. See 4 RODGERS, *supra* note 41, at 115. Rodgers notes that an applicant may choose to delay the process to get the benefit of the less stringent management standards applicable to interim status. However, delay on those grounds may have lost its attraction. Recognizing that interim status had become the rule rather than a temporary exception, Congress, through HSWA, required a tightening of the interim status requirements. See FORTUNA & LENNETT, *supra* note 68, at 174 (noting that HSWA's new minimum technical requirements blur distinctions between interim status and permitting standards).

A facility facing financing difficulty or intending to close shortly, may attempt to delay a permit decision to either defer, or altogether avoid the capital costs that may be involved in meeting the management standards. 4 RODGERS, *supra* note 41, at 115. In addition, a facility may attempt to delay the process to avoid new requirements that are imposed only through a permit. See 40 C.F.R. § 270.32(b)(2) (1994) (omnibus authority).

237. RIS, *supra* note 6, at 51.

238. *Id.*

Whatever the cause, delay related to applications deemed inadequate by the permit writer can be reduced by forcing both the applicant and the permit writer to be more efficient and disciplined in their interactions. By adopting measures, as recommended in the RCRA IMPLEMENTATION STUDY, for facilitating communication between regulatory agency and applicant early in the process, a reduction may be achieved prior to the submission of a permit. Specifically, the Agency could issue clear and objective guidance to applicants regarding the contents of a complete and "approvable" application. The Agency could also require the facility representative and the permit writer to meet before and after the facility submits the application (with the permit writer visiting the facility at least once).²³⁹ Discipline can be added to the process by allowing no more than two NODs. If timely and adequate responses to NODs are not received, then the Agency would issue a permit denial.²⁴⁰

In addition to limited personnel resources and inadequate permit submissions, the current RCRA public participation procedures also contribute to the delay in reaching final permit decisions.²⁴¹ On average, the time between initiation of public participation and final action is between four and twelve months.²⁴² The delay is not attributable to public participation per se, but to the fact that current procedures do not involve the public until very late in the permitting process.²⁴³ The public first receives formal notification of the impending permit decision when the draft permit is issued, or when notice of intent to deny the permit application is issued.²⁴⁴ This event takes place well after the applicant and the regulatory agency have engaged in extensive discussion regarding the permit; thus, delaying formal notice until this stage hinders the regulatory agency's ability to consider significant issues raised by the public early in the process.²⁴⁵ By promoting early, meaningful interaction with the public, the regulatory agency and the applicant can ad-

239. *Id.*

240. *See* RIS, *supra* note 6, at 51.

241. *Id.* at 52.

242. *Id.*

243. *Id.*

244. *See* 40 C.F.R. § 124.10.

245. RIS, *supra* note 6, at 52; 59 Fed. Reg. 28,682 (1994). The timing for public involvement can also lead members of the public to conclude that their comments are not fully considered, and that it is difficult to influence the regulatory agency's decision-making so late in the process. RIS, *supra* note 6, at 52; 59 Fed. Reg. 28,682 (1994).

dress those concerns and reduce the amount of time between issuance of the draft permit and final action.²⁴⁶

EPA recently proposed modifications to RCRA public participation requirements. The modifications are intended to streamline the permitting process by initiating earlier public participation. The proposed changes would require that an applicant give notice and hold at least one informal public meeting prior to submitting the permit application. This requirement would allow the applicant to identify and respond to public concerns, perhaps resulting in changes to the facility location or design.

The EPA proposal also requires the regulatory agency to notify the public, upon submission of the permit application, that the application and supporting documentation are available for review. Such notice would better allow the public to express its concerns to the agency early on. The proposal also contains provisions designed to ensure that minority populations and low-income populations have a meaningful opportunity to influence permit decisions. If finalized, the proposal would implement the recommendations of the RCRA IMPLEMENTATION STUDY, and should thereby, reduce permitting decision delays without exempting recycling operations from the permitting process.

The factors of personnel resources, inadequate applications, and late public participation, as well as the recommendations proposed to address these factors, are admittedly mundane. Implementing the recommendations, however, could substantially reduce delays that proponents of exempting recycling facilities from permitting point to for justification. Most importantly, implementing the recommendations would reduce permitting delays without impairing direct participation by EPA or the public in the siting and operation of those facilities.

B. Issuance of Class Permits

Standardized permit applications for appropriate classes of facilities could further reduce the time, cost, and resources that the government and the regulated community expend on the process. Under current RCRA permitting procedures, each facility must develop an extensive application identifying which statutory and regulatory requirements apply, and demonstrating how the applicable requirements will be met.²⁴⁷ Even facilities with relatively simple

246. RIS, *supra* note 6, at 52; 59 Fed. Reg. 28,682-83 (noting that early, meaningful involvement should result in expeditious permit decision).

247. See *supra* notes 79-98 and accompanying text.

operations could be required to generate comprehensive, complicated permit applications that frequently address regulatory issues essentially identical to those that arise at numerous other similar facilities.²⁴⁸ Thus, a multitude of permit writers across the nation evaluate the same issues, while individual facilities must “reinvent the wheel” to prepare their applications. These redundant efforts are particularly troubling, considering that the costs and excessive delays in RCRA permitting can be traced in large part to disputes between the permit writer and the facility over the completeness and substantive adequacy of the application.²⁴⁹ Standardized application forms for classes of substantially identical operations could curb the potential redundancy in the process without sacrificing the benefits of permitting or public participation.

Class permitting in environmental regulation is not a new approach. Rather, it has been employed for some time under the Clean Water Act as part of the permitting procedures for the National Pollutant Discharge Elimination System (NPDES).²⁵⁰ Similarly, the Clean Air Act operating permit program authorizes general permits covering groups of similar air emission sources.²⁵¹ Even under RCRA, class permitting has long been accepted by Congress and EPA, although it has never been implemented as part of the RCRA permitting regulations. The Conference Committee Report for Hazardous and Solid Waste Amendments of 1984 noted that EPA has the authority under RCRA to issue class permits.²⁵² In 1984, EPA proposed amendments to RCRA regulations to incorpo-

248. See 49 Fed. Reg. 29,525 (1984) (to be codified at 40 C.F.R. pt. 270) (proposed July 20, 1984).

249. See *supra* notes 234-40 and accompanying text.

250. See 40 C.F.R. § 122.28. Under the National Pollutant Discharge Elimination System (NPDES), EPA is authorized to issue “general” permits to cover similar types of point source discharges. Unlike the class permit system proposed in this article, the NPDES general permit system does not require sources eligible for a general permit to file an application and receive an individual permit. Instead, after a public comment period, EPA (or the state) issues one general NPDES permit for all sources to be covered. Sources wishing to take advantage of the general permit must file a “notice of intent” to be covered by the general permit with the regulatory agency. *Id.*

251. Clean Air Act § 504(d), 42 U.S.C. § 7661c(d) (1988 & Supp.V 1993). The general permit would be issued after public participation procedures were completed. Although individual sources seeking coverage under the general permit must file an abbreviated permit application, no public participation requirements apply to the processing of such applications. 40 C.F.R. § 70.6(d).

252. H. R. CONF. REP. NO. 1133, 98th Cong., 2d Sess. 94-95 (1984), *reprinted in* 1984 U.S.C.C.A.N. 5649. The Committee observed that in issuing class permits, EPA must comply with the statutory public participation procedures. *Id.*

rate a class permitting system.²⁵³ While that proposal was never finalized, it stands as a model for developing a class permitting system for appropriate types of recycling facilities.

The underlying premise of EPA's 1984 proposal is to obtain all information concerning operations of certain classes of facilities, and how they will meet the applicable management standards, through answers to a series of standardized questions.²⁵⁴ Instead of the current freestyle, narrative application with extensive attachments, the proposed standard application would be a detailed checklist with limited attachments. For example, where compliance with a particular management standard could be achieved in one of several ways, the application would list each method for the applicant's selection.²⁵⁵

A standardized application approach would only be workable where the members of the class are sufficiently similar, and the management standards are sufficiently straightforward. Some RCRA requirements, such as the development of a facility contingency plan or waste analysis plan, may be so site-specific that individually developed attachments are necessary.

Under the 1984 proposal, the permit writer's review of a standard application would be relatively simple and expeditious. Most issues regarding implementing the appropriate management standards would have already been resolved when the application was developed and promulgated at the national level; the application defines the scope of all necessary information. The substantive review would therefore be limited to determining: (1) whether or not the facility meets the class criteria; (2) whether or not the answers to the application questions (and the individually developed documents) demonstrate compliance with the management standards; and (3) whether or not any conditions at the facility require imposition of permit terms beyond those identified in the standard application.²⁵⁶ Following the substantive review, the permit writer would issue a proposed permit decision for public comment.

253. 49 Fed. Reg. 29,524 (1984) (to be codified at 40 C.F.R. pt. 270) (proposed July 20, 1984).

254. See 49 Fed. Reg. 29,526-27 (1984).

255. *Id.* In certain circumstances, an applicant may modify the standard language and still be eligible for the class permit should the permit writer determine that the intent of the standard language is met. *Id.* at 29,529.

256. The permit writer would be required to visit the facility as part of the application review process. Based on the application, the site visit, and other information, the permit writer might determine that additional controls are necessary to protect human health and the environment. In that case, RCRA omnibus authority might be used to include additional controls.

This class permitting procedure, if properly implemented, would not have the flaws of a permit-free approach. The regulatory agency and the facility would still develop permit terms that translate the regulatory standards into site-specific controls. Much of this would be done nationally through the development of a standardized application for the class. The regulatory agency would retain use of the omnibus authority, and the public would retain its right to interact with the regulatory agency and the facility in a meaningful way.

Implementing such a system would require a substantial, continuing commitment by the Agency to obtain and continuously update information and data so that it could identify appropriate classes and develop standard applications for each class. With respect to class identification, the Agency must collect enough information to obtain a comprehensive understanding of the various types of recycling operations; including information relating to waste streams recycled, storage practices, recycling technologies, and other operational information.²⁵⁷ Although identification of appropriate classes is beyond the scope of this article, it appears that many facilities engaged in either on-site recycling operations or off-site captive recycling might benefit from this approach, while commercial recycling facilities would not.²⁵⁸

VI. CONCLUSION

Proponents of a permit-free approach to the regulation of hazardous waste recycling apparently view the permitting process and the permit itself to be superfluous. On the contrary, the permitting process is a dynamic vehicle for tailoring the generic management standards of RCRA regulations to site-specific conditions at facilities. The process also provides an avenue for involving the public in the siting and oversight of hazardous waste recycling operations in the community. Including recycling in the RCRA permitting system, would produce benefits that would justify the additional burdens in cost and time imposed on the recycling industry. Those burdens, which do not appear to significantly impede the growth of

257. In the 1984 class permitting proposal, EPA proposed a standard application for the class of facilities that store hazardous wastes in tanks and containers prior to on-site treatment. 49 Fed. Reg. 29,527 (1984). Because the recycling units are not subject to permitting, the proposal did not consider whether on-site recycling at such facilities would fall within the scope of the class.

258. 49 Fed. Reg. 29,527 (1984) (noting that facilities that manage the same manufacturing wastes on routine basis are more likely candidates for class approach because nature of their activities tend to be simpler).

the recycling industry, can be blunted by implementing relatively simplistic changes to the permitting system. By implementing these changes, the Agency can facilitate the achievement of RCRA's twin goals of protection of human health and the environment.