SOUNDS OF SILENCE: WHAT HAPPENED TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S HAZARDOUS WASTE RECYCLING PROGRAM REFORM?

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INTRODUCTION

For many years, the U.S. Environmental Protection Agency ("EPA" or "the Agency") has been evaluating proposals to reform the rules for hazardous waste recycling under the Resource Conservation and Recovery Act ("RCRA").[1] Public surveys show that Americans continue to be

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[1] The Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992k (1994). The RCRA was enacted in 1976, and amended in 1978, 1980 and 1984. *See* The Resource and Recovery Act of 1976, Pub. L. No. 95-580, 90 Stat. 2795 (1976); The Quiet Communities Act

troubled by waste issues.[2] Regulating recycling has proven particularly challenging because of its multifaceted nature. While proper recycling directs materials that would otherwise be discarded to commercial use, preserves landfill capacities, and produces a good from used rather than scarce virgin materials,[3] unsafe practices and sham operations harm human health and pollute the environment.[4]

EPA has attempted to resolve the conflicting scenarios posed by recycling through the definitions of "solid" and "hazardous" wastes under RCRA. The existing regulatory program requires that a material must first be defined as a solid waste before it can be considered a hazardous waste.[5] A negative determination for a certain material may mean that the transportation, handling, storage, and processing of the material are virtually unregulated, whereas a finding that the material is a solid and hazardous waste may subject it to onerous hazardous waste management requirements from inception to final disposition.[6] EPA's recycling regulations in 1980[7] embraced a broad concept of recycling but left policing in the hands of the regulated community.[8] In 1985, the Agency adopted a complicated regulatory definition of "solid waste,"

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of 1978, Pub. L. No. 95-609, 92 Stat. 3079 (1978); The Solid Waste Disposal Act Amendments of 1980, Pub. L. No. 96-482, 94 Stat. 2334 (1980); The Hazardous and Solid Waste Amendments of 1984, Pub. L. No. 98-616, 98 Stat. 3221 (1984); *see also* Randolph H. Hill, *The "Mind-Numbing" Provisions of the Most Complicated Environmental Statute*, 21 ENVTL. L. REP. (ENVTL. L. INST.) 10,254 (1991) (providing an excellent overview of RCRA); Barry Needleman, *Hazardous Waste Recycling Under the Resource Conservation and Recovery Act: Problems and Potential Solutions*, 24 ENVTL. L. 971, 974-975 (1994) (explaining that RCRA's roots extend back to the Solid Waste Disposal Act ("SWDA") of 1965, which constituted "essentially a nonregulatory statute," and that Congress amended the SDWA to include RCRA, thus eliminating the loopholes for unregulated land disposal of discarded materials and hazardous wastes).

[2] *See* EPA, EPA530SW-90-069, THE NATION'S HAZARDOUS WASTE MANAGEMENT PROGRAM AT A CROSSROADS: THE RCRA IMPLEMENTATION STUDY 5 (1990) [hereinafter 1990 RIS].

[3] *See* Philip L. Comella, *Understanding a Sham: When is Recycling, Treatment?* 20 B.C. ENVTL. AFF. L. REV. 415,427 (1993) (opining that "[o]nce waste is generated there is no better way to manage it than by recycling").

[4] *See RCRA's Recycling Loopholes: Legislative Proposals for Redress, 1992: Hearing Before the Subcomm. on Transp. and Hazardous Materials of the House Comm. on Energy and Commerce*, 102d Cong. 4-5 (1992) (testimony of Richard C. Fortuna, Executive Director of the Hazardous Waste Treatment Council) [hereinafter *HWTC Testimony*]; RICHARD C. FORTUNA & DAVID J. LENNETT, HAZARDOUS WASTE REGULATION: THE NEW ERA (1987).

[5] 42 U.S.C. § 6903(5); Overview of Subtitle C Regulations, 40 C.F.R. pt. 260, App. I (1997); *id.* § 261.3 (1999).

[6] *See* R. Michael Sweeney, *Reengineering RCRA: The Command Control Requirements of the Waste Disposal Paradigm of Subtitle C and the Act's Objective of Fostering Recycling: Rethinking the Definition of Solid Waste, Again*, 6 DUKE ENVTL. L. & POL. FOR. 1, 8 (1996)

[7] *See* 45 Fed. Reg. 33,084, 33,119 (May 19,1980) (final rule).

[8] *See* Timothy F. Malloy, *Once More Unto the Breach*, 7 VILL. ENVTL. L.J. 1, 2 n.4 (1996) (providing a brief account of EPA's hazardous waste recycling regulations); Needleman, *supra* note 1, at 977-80 (explaining that Congress responded to the lax recycling scheme with the 1984 Hazardous and Solid Waste Amendments).

which remains largely unchanged today.[9] The rule is predicated upon distinctions among types of materials and recycling methods.[10] Over the years, EPA's approach has spawned several court challenges to the scope of EPA's regulatory authority over recycling activities.[11]

In 1992, as a result of inside and outside pressures, including self-assessment, litigation, and public comments, EPA assigned a new task force to develop proposals for comprehensive recycling reform.[12] The Definition of Solid Waste Task Force ("the Task Force") published a report in 1994 that recommended a three-tiered regulatory system of exemptions, tailored standards, and full hazardous waste management requirements.[13] These proposals, however, were rejected by the regulated community and other interested parties.[14] EPA therefore aborted the Task Force approach and went back to the drawing board.

In 1996, EPA presented a significantly reduced reform package that embraced a simpler regulatory system for hazardous waste recycling.[15] The Agency advanced two options of differing scopes for conditionally exempting recycling from RCRA.[16] Again, EPA's proposals did not garner sufficient support and died.[17] Since it proved impossible to achieve a comprehensive consensus with respect to the process, extent, and content of its hazardous waste recycling reforms, the Agency opted for incremental nibblings around the edges.[18] Comprehensive redesign of the program vanished from EPA's agenda.

This article traces EPA's project of hazardous waste recycling program reform and explores the potential reasons for its breakdown. Part I provides a snapshot of the current regulatory framework for hazardous waste recycling. Part II overviews driving forces behind regulatory re-

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9 50 Fed. Reg. 614 (Jan. 4, 1985) (codified at 40 C.F.R. pts.260, 261, 264, 265, and 266) (final rule).

10 *See id.*

11 For discussions of the major cases that unfolded in the late 1980s and early 1990s, see, for example, Malloy, *supra* note 8, at 19-29; Needleman, *supra* note 1, at 1001-13; Sweeney, *supra* note 6, at 21-30.

12 *See EPA Task Force to Develop Strategy for Improving Definition of Solid Waste*, DAILY ENV'T. REP. (BNA), Oct. 7, 1992, at A1.

13 *See* OFFICE OF SOLID WASTE, EPA, REENGINEERING RCRA FOR RECYCLING, DEFINITION OF SOLID WASTE TASK FORCE: REPORT AND RECOMMENDATIONS iii (1994) [hereinafter TASK FORCE REPORT].

14 *See Roundtable Group Voices Major Concerns with Draft Plan to Redefine Solid Waste*, DAILY ENV'T. REP. (BNA), June 24, 1994, at A4 [hereinafter *Roundtable Group*].

15 *See* OFFICE OF SOLID WASTE, EPA, OPTIONS FOR REDEFINING RCRA JURISDICTION, PUBLIC MEETING (1996) [hereinafter OPTIONS PAPER]; OFFICE OF SOLID WASTE, EPA, BRIEFING DOCUMENT, DEFINITION OF SOLID WASTE, PUBLIC MEETING (1996) [hereinafter BRIEFING DOCUMENT].

16 *See* OPTIONS PAPER, *supra* note 15.

17 *See EPA Plans Narrow Regulatory Fixes To Improve Hazwaste Rules*, INSIDE EPA, Jan. 9, 1998, at 3 [hereinafter *EPA Plans*].

18 *See id.*

form processes. Part III describes the evolution of the various phases of EPA's recycling reform attempts. Finally, Part IV presents findings and perspectives.

I. SNAPSHOT SUMMARY: THE REGULATORY FRAMEWORK FOR HAZARDOUS WASTE RECYCLING

Congress enacted RCRA in 1976 to pursue four core objectives: (1) to protect human health and the environment; (2) to regulate hazardous waste from creation to disposal; (3) to establish guidelines for disposal of nonhazardous waste; and (4) to promote resource conservation and resource-recovery systems.[19] Subtitle C of RCRA authorizes EPA to regulate hazardous wastes as a subset of solid waste.[20] A waste is not considered hazardous, unless it is first a solid waste.[21]

A. SOLID WASTE DEFINITION

The statutory definition of a solid waste is based on the element of discard. RCRA defines solid waste as "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material."[22] The physical form of the material, "whether it is a solid, liquid, or gas," is not part of the definition.[23] Any discarded material that is not otherwise excluded by regulation is a solid waste.[24] Several types of regulatory exclusions exist under the current system.

"Simple exclusions" are available for certain primary materials, including domestic sewage, point-source industrial wastewater discharges, and source, which is special nuclear or by-product material under the Atomic Energy Act.[25] "Process-specific exclusions" relate to certain activities that involve materials reinjected productively into the manufac-

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19 The Resource Conservation and Recovery Act, 42 U.S.C. § 6902(a)-(b) (1994).

20 *Id.* § 6903(5); Overview of Subtitle C Regulations, 40 C.F.R. pt. 260, App. I (1997); *id.* § 261.3 (1999).

21 EPA, EPA530-R-97-051, RCRA, SUPERFUND & EPCRA HOTLINE TRAINING MODULE, INTRODUCTION TO: DEFINITION OF SOLID WASTE AND HAZARDOUS WASTE RECYCLING 3 (1997) [hereinafter TRAINING MODULE]; Needleman, *supra* note 1, at 972.

22 42 U.S.C. § 6903(27). This section defines "solid waste" as

> any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges. . . .

Id.

23 *See* TRAINING MODULE, *supra* note 21, at 3.

24 For a detailed description of the regulatory definition of solid waste, see Needleman, *supra* note 1, at 988-1001.

25 *Id.* at 984.

turing process.[26] "Facility-specific exclusions" are based on case-by-case variances.[27]

Discarded materials include abandoned,[28] recycled,[29] inherently waste-like materials,[30] as well as certain military munition materials.[31] The recycling prong requires that one must know both what the material is and how it is being recycled before making the waste determination.[32] Subject to exceptions, EPA classifies as solid wastes specific materials that are recycled in a particular fashion.[33] The Agency divides all used or residual waste-like materials into five types of materials: (1) spent materials;[34] (2) sludges;[35] (3) by-products;[36] (4) commercial chemical

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26 *Id.* at 985-87.

27 *Id.* at 987.

28 Materials are abandoned if they are "disposed of; or burned or incinerated; or accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated." 40 C.F.R. § 261.2(a)(2)(i), (b)(1)-(3) (1999); *see also* RIDGEWAY HALL ET AL., RCRA HAZARDOUS WASTES HANDBOOK 2.2, at 2-7 (11th ed. 1996) (noting (1) the centrality of the concept of "abandoned" to the regulatory definition of "solid waste;" and (2) the absence of a definition of the terms "burned" and "incinerated").

29 A material is a solid waste if it is recycled, or accumulated, stored, or treated before recycling, pursuant to any of four types of activities. 40 C.F.R. § 261.2(a)(ii), (c)(1)-(4). A material is "recycled" if it is "used, reused, or reclaimed." *Id.* § 261.1(c)(7). A material is "used or reused" if it is employed either as an ingredient in an industrial process to make a product or as an effective substitute for a commercial product. *Id.* § 261.1(c)(5). A material is "reclaimed" if it is processed to recover a usable product or if it is regenerated. *Id.* § 261.1(c)(4); *see also* TRAINING MODULE, *supra* note 21, at 5 (explaining that (1) distillation bottoms from one process utilized as feedstock in another process, such as spent pickle liquor applied as a sludge conditioner in wastewater treatment, fall into the category of used or reused materials; and (2) regeneration of spent solvents is an example of reclamation).

30 Certain materials are always considered "solid wastes" when they are recycled in any manner. 40 C.F.R. § 261.2(a)(2)(iii), (d)(1)-(3) (providing that the list of inherently waste-like materials includes (1) certain materials assigned with listed hazardous waste codes; (2) characteristic or listed hazardous materials fed to a halogen acid furnace, subject to certain exceptions for bromited materials; and (3) wastes added by the Administrator pursuant to certain regulatory criteria).

31 Certain unused, used, or fired munitions may constitute solid wastes. *Id.* §§ 261.2(a)(iv), 266.202(b)-(c).

32 *See* TRAINING MODULE, *supra* note 21, at 5.

33 *See* Jeffrey Gaba, *Solid Waste and Recycled Materials under RCRA: Separating Chaff from Wheat*, 16 ECOLOGY L. Q. 623, 634 (1989).

34 Spent materials are used materials that, as a result of contamination, can no longer serve the purpose for which they were produced without processing. 40 C.F.R. § 261.1(c)(1); *see also* 50 Fed. Reg. 614, 624 (Jan. 4, 1985) (providing examples of spent solvents, spent activated carbon, spent catalysts, and spent acids).

35 A sludge is any solid, semisolid, or liquid waste generated from a wastewater treatment plant, water supply treatment plant, or air pollution control device (e.g., baghouse dust from a primary metal smelter). *Id.* §§ 261.1(c)(2), 260.10; *see also id.* § 261.2(c) tbl.1 (showing two categories of sludges: (1) those on the F or K hazardous waste lists, and (2) those with a hazardous characteristic).

36 A by-product as a material that is not one of the primary products of a production process and that is not solely or separately produced by the production process. *Id.* § 261.1(c)(3); *see also id.* § 261.2(c) tbl.1 (containing two classes of by-products: (1) listed, and (2) those exhibiting a hazardous characteristic); TRAINING MODULE, *supra* note 21, at 6

products;[37] and (5) non-excluded scrap metal.[38] Recycling these materials pursuant to one of the following four activities may then trigger the solid waste definition: (1) use constituting disposal;[39] (2) burning for energy recovery;[40] (3) reclamation;[41] and (4) speculative accumulation.[42]

(explaining that "by-product" is a catch-all term for wastes that are not spent materials or sludges); Needleman, *supra* note 1, at 992 (noting that (1) by-products have to be distinguished from co-products, because most co-products are not wastes; (2) that this subtle distinction has been subject to abuse; (3) that co-products, which incidentally derive from the production process, can be used by the general public without further processing; and (4) that lead produced during copper smelting and kerosene or asphalt produced during petroleum refining are examples of co-products, whereas examples of by-products include still bottoms, reactor clean-out materials, slags, and drosses).

[37] Commercial chemical products ("CCPs") include unused chemical intermediates, off-specification variants, and spill or container residues. 40 C.F.R. § 261.33; *see also* TRAINING MODULE, *supra* note 21, at 6 (explaining that the expanded definition of CCPs, which is also part of the hazardous waste identification process for P- or U-listed wastes, includes (1) non-listed chemicals with a hazardous characteristic (e.g., off-specification jet fuel), and (2) unused chemicals that exhibit a hazardous characteristic, even though they are not commonly considered chemicals (e.g., unused circuit boards, unused batteries)).

[38] Scrap metal is defined as bits and pieces of metal parts or metal pieces that may be combined with bolts or soldering, which, when worn or superfluous, can be recycled. 40 C.F.R. § 261.1(c)(6); *see also* 50 Fed. Reg. at 624 (providing that the term includes products of metal that become worn out such as scrap automobiles and radiators). For the definitions of excluded scrap metal, see 40 C.F.R. § 261.1(c)(9)-(12).

[39] Use constituting disposal covers direct application to or placement on the land as well as use to produce products that are applied to or used on the land. 40 C.F.R. § 261.2(c)(1)(i)(A)-(B). If, however, direct placement of a CCP on the land is "consistent with its normal use (i.e. a pesticide)," it is not a solid waste. TRAINING MODULE, *supra* note 21, at 7 (explaining that heptachlor can be a P-listed waste, but it is not regulated as a solid waste when used as a pesticide).

[40] The term includes burning for energy recovery and using wastes to produce a fuel, or being otherwise contained in fuel. 40 C.F.R. § 261.2(c)(2)(i)(A)-(B). But listed commercial chemical products that are themselves fuels and certain used oils are not considered solid wastes when burned. *Id.* § 261.2(c)(2)(ii); *see also* TRAINING MODULE, *supra* note 21, at 7; Needleman, *supra* note 1, at 994 (explaining that wastes may be burned in three devices: incinerators, boilers, and industrial furnaces).

[41] Spent materials, listed sludges, listed by-products, and non-excluded scrap metal are solid wastes when reclaimed, while characteristic sludges, characteristic by-products, and listed commercial chemical products are not. 40 C.F.R. § 261.2(c)(3). For a definition of reclamation, see *id.*§ 261.1(c)(4) (explaining that a material is reclaimed if it is processed to recover a usable product or if it is regenerated, e.g., recovery of lead values from spent batteries and regeneration of spent solvents).

[42] Spent materials, listed sludges, characteristic sludges, listed by-products, characteristic by-products, and non-excluded scrap metal are solid wastes when speculatively accumulated, while listed commercial chemical products are excepted. *Id.*§ 261.2(c)(4). For a definition of speculative accumulation, see *id.* § 261.1(c)(8) (explaining that speculative accumulation occurs if a person cannot demonstrate that 75% or more of the material is recycled in a calendar year, commencing January 1). *See also* 50 Fed. Reg. at 634 (codified at 40 C.F.R § 261.2(c)(4)) (providing that a material is accumulated speculatively if it has no viable market); TRAINING MODULE, *supra* note 21, at 7 (providing an example of a facility deemed to engage in accumulative speculation). The penalty under the accumulation provision assures that legitimate quantities of the waste are recycled and not simply stored to avoid regulation. *Id.*

The Agency has summarized its solid waste recycling definition in a table matrix.[43]

In light of the breadth of its solid waste definition, EPA has crafted numerous exclusions and exemptions.[44] For instance, the Agency does not classify as solid wastes materials that are used as an ingredient,[45] used or reused as a product substitute,[46] or returned to the production process without reclamation,[47] except in specific circumstances that require solid waste management.[48] Moreover, certain closed-loop processes are also exempt from the solid waste definition.[49] In sum, EPA asserts RCRA jurisdiction when a process resembles waste management rather than an ongoing manufacturing process.[50]

B. HAZARDOUS WASTE RECYCLING REQUIREMENTS

After a material that is not eligible for exclusions or exemptions has been classified as a solid waste, the next step in the process is to determine whether it is a hazardous waste.[51] The statutory definition of hazardous waste focuses on the high-level threats that a solid waste may

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43 40 C.F.R. § 261.2(c) tbl.1.

44 *Id.* § 261.2(e)(1)-(2), (f). For a detailed discussion of regulatory exclusions and exemptions, see Needleman, *supra* note 1, at 984-88. *See also* Marcia E. Williams & Jonathan Z. Cannon, *Rethinking the Resource Conservation and Recovery Act for the 1990s*, 21 ENVTL. L. REP. (ENVTL. L. INST.), 10,063, 10,069 (1991) (observing that exclusions reduce the economic disincentives to recycling caused by RCRA).

45 A material is not a solid waste if it is directly used as an ingredient in a production process without being reclaimed. 40 C.F.R. § 261.2(e)(1)(i).

46 A material used as an effective substitute for a commercial product without first being reclaimed is not a solid waste. *Id.* § 261.2(e)(1)(ii). For examples, see TRAINING MODULE, *supra* note 21, at 9.

47 A material reintroduced into the original process of production without reclamation is not a solid waste. *Id.* § 261.2(e)(1)(iii); *see also* 59 Fed. Reg. 47982, 48041 (Sept. 19, 1994) (providing that the exclusion covers a return to both primary and secondary production processes); TRAINING MODULE, *supra* note 21, at 9 (observing with respect to "closed-loop recycling" that (1) the material has to be used as a raw material or feedstock in the production process, but must not be reclaimed prior to its reintroduction into the system; (2) the material does not have to be returned to a specific unit within the production process; and (3) in secondary production scenarios, the management of the material must not involve placement on land).

48 Certain materials are designated as solid wastes even though they are used or reused directly without prior reclamation: (1) those used in a manner constituting disposal or used to produce products applied to the land; (2) those burned for energy recovery, used to produce a fuel, or contained in fuels; (3) those accumulated speculatively; and (4) those considered inherently waste-like. 40 C.F.R. § 261.2(e)(2)(i)-(iv).

49 A material returned to the original production process from which it was generated with prior reclamation is not a solid waste if certain requirements governing the storage and conveyance system, the reclamation process, the accumulation time of the materials, and the usage of the reclaimed material are met. *Id.* § 261.4(a)(8)(i)-(iv).

50 *See, e.g.*, TASK FORCE REPORT, *supra* note 13, at B-4.

51 *See* TRAINING MODULE, *supra* note 21, at 10.

pose to human health and the environment.[52] RCRA does not prescribe a method for determining whether a solid waste is hazardous but delegates this authority to EPA.[53] The regulatory definition of hazardous waste,[54] barring certain exclusions and exemptions,[55] covers listed[56] and characteristic[57] wastes, as well as certain waste mixtures[58] and residues.[59]

EPA's "cradle to grave" regulations govern hazardous waste generators, transporters, and treatment, storage, and disposal facilities ("TSDFs").[60] A generator is a person who creates a hazardous waste or causes it to become subject to hazardous waste management requirements.[61] The regulatory stringency varies according to the volume of

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[52] The Resource Conservation and Recovery Act, 42 U.S.C. § 6903(5) (1994). According to the statute,

> The term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may: (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored or disposed of, or otherwise managed.

Id.

[53] 42 U.S.C. § 6921(a)-(b) (directing EPA to develop and promulgate criteria for hazardous waste taking into account "toxicity, persistence, and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics").

[54] 40 C.F.R. § 261.3 (1999).

[55] For statutory exclusions, see 42 U.S.C. § 6921(b)(2)-(3). For regulatory exclusions, see 40 C.F.R. §§ 261.3(a)(1), (c)(2)(ii), (d), 261.4(b)(1)-(15). For regulatory exemptions from certain hazardous waste management requirements, see *id.* § 261.4(c). *See also* TASK FORCE REPORT, *supra* note 13, at B-6 (explaining (1) that the statutory exemptions are known as "Bevill Wastes" and include wastes from the combustion of coal or other fossil fuels, mining wastes, and cement kiln dust; (2) that through the hazardous waste exemption EPA retains RCRA jurisdiction over these materials while not defining or regulating them as hazardous wastes; and (3) that examples of EPA's exemptions include certain chromium wastes from the leather tanning industry as well as chlorofluorocarbon refrigerants that are reclaimed).

[56] 40 C.F.R. §§ 261.3(a)(2)(ii), 261.11. For the various listed hazardous wastes, see *id.* §§ 261.30-261.33.

[57] *Id.* §§ 261.3(a)(2)(i), 261.10. EPA has identified four characteristics: ignitability, corrosivity, reactivity, and toxicity. *Id.* §§ 261.20-261.24.

[58] *Id.* § 261.3(a)(2)(iii)-(iv); *see also* Comella, *supra* note 3, at 430 n.146 (explaining that the combination of a listed hazardous waste with a solid waste results in a hazardous waste irrespective of toxic-constituent concentration levels).

[59] 40 C.F.R. § 261.3(c)(2); *see also* Comella, *supra* note 3, at 430 n.147 (explaining that according to the "derived-from" rule, any solid waste residue from the treatment, storage, or disposal of a listed hazardous waste is a hazardous waste irrespective of toxic-constituent concentration levels).

[60] 42 U.S.C. §§ 6921-6939e (containing hazardous waste management provisions). For the regulations that apply to each category, see 40 C.F.R. pts. 262-265. *See also* Needleman, *supra* note 1, at 976 (explaining that RCRA's hazardous waste system has established: (1) identification and listing methods; (2) tracking mechanisms; (3) standards for generators, transporters, treaters, and disposers; and (4) permitting controls).

[61] 40 C.F.R. § 260.10; *see also* Markus G. Puder, *Trash, Ash, and the Phoenix: A Fifth Anniversary Review of the Supreme Court's City of Chicago Waste-to-Energy Combustion Ash Decision*, 26 B.C. ENVTL. AFF. L.REV. 473, 480 n.45 (1999) (asserting that (1) generator re-

waste generated.[62] The requirements for transporters[63] and TSDFs[64] are rigorous and comprehensive.

Hazardous wastes that classify as "recyclable materials"[65] may be regulated at levels that range from zero to full regulation and that differ according to the type of material and recycling activity.[66] Recycling operations that are not exempt or governed by EPA's tailored provisions for recyclable materials[67] are subject to full-fledged RCRA hazardous waste regulation.[68] In general, management activities before recycling, like transportation and storage,[69] are subject to comprehensive regulation, whereas the actual recycling process itself is exempt.[70] While the treatment and land disposal of hazardous waste are subject to permit require-

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quirements include hazardous waste determination through knowledge or testing, completion of forms to obtain an EPA identification number, a manifest, proper waste handling and preparation for transportation, onsite storage restrictions, biennial reporting, and implementation of a waste-minimization program; and (2) compliance is in general more labor and management intensive than it is technically difficult or prohibitively costly).

62 For a summary, see TASK FORCE REPORT, *supra* note 13, at B-6, B-7 (explaining (1) that large quantity generators, who generate more than 1,000 kilograms of hazardous waste in any calendar month, must comply with full generator requirements and an accumulation time limit of 90 days; (2) that small quantity generators who produce more than 100 kilograms but less than 1,000 kilograms of hazardous each month are in general subject to large quantity generator provisions, except that the accumulation time limit is 180 days; and (3) pursuant to § 261.5, conditionally exempt small quantity generators, who generate less than 100 kilograms of hazardous waste each month, are exempt from most RCRA Subtitle C requirements).

63 *See* Puder, *supra* note 61, at 480, n. 45 (observing that offsite transportation rules require compliance with Department of Transportation ("DOT") provisions (including labeling, marking, placarding, proper container use, and spill reporting); completion and maintenance of manifests; delivery of hazardous wastes only to designated treatment, storage, and disposal facilities; and cleanup responsibility for accidental spills or discharges).

64 TSDF requirements involve permitting, unit-specific standards for each type of treatment or disposal facility; emergency preparedness and contingency plans; record-keeping and reporting; closure and post-closure requirements; Land Disposal Restrictions, which prohibit hazardous waste disposal in or on the land unless it has been treated according to EPA standards; and corrective action when hazardous waste is improperly handled and goes beyond facility boundaries. *Id.* For more detail, see Malloy, *supra* note 8, at 8-15 (describing management standards and permitting requirements that may be applicable to hazardous waste treatment, storage, and disposal facilities).

65 40 C.F.R. § 261.6(a)(1) (1999); *see also* Malloy, *supra* note 8, at 16 n.100 (observing that "EPA reluctantly adopted the term . . . to avoid any stigma associated with the term hazardous waste that might attach to the materials being recycled").

66 *Id.*t §§ 261.6, 26tl.9.

67 *Id.* § 261.6(a)(2)-(4).

68 *Id.* § 261.6(b)-(d).

69 *Id.* § 261.6(b) (requirements for generators and transporters of recyclables); § 261.6(c) (requirements for storage facilities).

70 *See* Malloy, *supra* note 8, at 17 (noting that "EPA's justification for excluding recycling processes from regulation was its inability to develop appropriate management standards in a timely manner").

ments, hazardous waste recycling does not require a RCRA hazardous waste permit.[71]

1. *Exemptions for Recyclables*

EPA's regulations exempt certain recyclables from hazardous waste regulation when they are recycled in a specific fashion.[72] The exempt materials include industrial ethyl alcohol,[73] scrap metal,[74] waste-derived fuels produced during refining processes,[75] and waste-derived fuels and oils that are not refined.[76]

2. *Specific Recycling Standards*

EPA has promulgated specific standards for a variety of recyclable materials[77]: those used in a manner constituting disposal,[78] those used for reclamation of precious materials,[79] spent lead-acid batteries that are re-

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71 40 C.F.R. § 261.6(c). Some air emission regulations, however, may apply as provided by *id.* § 261.6(d). *See* TRAINING MODULE, *supra* note 21, at 15-16. State hazardous waste regulations, and other federal or state environmental laws and regulations may also apply. *Id.*; *see also* Comella, *supra* note 3, at 416, 427-429 (explaining that RCRA exempts recycling from pre-construction and operating permits, which represents substantial time and cost savings, as well as more favorable public perceptions).

72 40 C.F.R. § 261.6(a)(3).

73 *Id.* § 261.6(a)(3)(i); *see also* TRAINING MODULE, *supra* note 21, at 14 (explaining that the Bureau of Alcohol, Tobacco and Firearms already regulates industrial ethyl alcohol from the point of regeneration to redistillation).

74 40 C.F.R. § 261.6(a)(3)(ii).

75 *Id.* § 261.6(a)(3)(iii) (stating that the wastes must have resulted from normal petroleum refining, production, and transportation practices); *see also* TRAINING MODULE, *supra* note 21, at 14-15 (noting (1) that wastes meet the requirement of being "refined" when they are inserted into part of the process designed to remove contaminants, typically prior to distillation; and (2) that the exemption is not triggered if a facility takes an oil-bearing hazardous waste and processes it without distillation to produce a fuel).

76 40 C.F.R. § 261.6(a)(3)(iv)(A)-(C) (stating that the exemption covers: (1) fuels reintroduced into a process that does not involve distillation or does not produce products from crude oil; (2) fuels inserted into the refining process after the distillation step; and (3) reclaimed oils burned as a fuel without reintroduction to a refining process); *see also* TRAINING MODULE, *supra* note 21, at 15 (emphasizing the requirement that the fuels and oils must meet the regulatory used oil specifications). For EPA's used oil specifications, see 40 C.F.R. § 279.11.

77 *Id.* § 261.6.

78 *Id.* §§ 266.20-266.23. This type of reuse of a recyclable material is regulated as land treatment or landfilling due to similarities with simple land disposal. *See* Training Module, *supra* note 21, at 12.

79 40 C.F.R. § 266.70. Recyclable materials reclaimed to recover economically significant amounts of individual or combinations of precious metals are subject to reduced management requirements, unless they are accumulated speculatively and have to comply with full hazardous waste management requirements. *Id.* § 266.70. Upon a finding of unsafe storage, however, the EPA Regional Administrator may subject storage of recyclable materials before reclamation to full RCRA hazardous waste management regulations. *Id.* §§ 260.40-260.41.

claimed,[80] hazardous wastes that are burned for energy recovery,[81] used oil,[82] exported or imported hazardous wastes from designated member countries of the Organization for Economic Cooperation and Development for the purpose of recovery,[83] and universal wastes.[84]

3. *Recyclables Subject to Full Regulation*

Recyclable materials that are not exempt or covered by reduced standards are subject to full hazardous waste regulation.[85] In addition, generators and transporters of recyclable materials must comply with all applicable hazardous waste generation and transportation requirements.[86] Finally, owners and operators of facilities that store hazardous materials prior to recycling must conform to all applicable treatment, storage, and disposal facility requirements.[87] However, if the owner or operator of a facility does not store the recyclable material prior to reuse or recycling, reduced requirements may apply.[88]

C. OBSERVATIONS

Without having articulated a basic philosophy for regulating hazardous waste recycling, EPA has devised a highly complex regulatory program.[89] The definitions, exclusions and exemptions, counter exceptions and negations, and layers of management standards are scattered, overloaded, and difficult to understand. Moreover, the Agency did not consolidate its recycling provisions into one discrete common area of the regulations. These program deficiencies may hamper proper implementation, permitting, and enforcement.[90] The high proportion of Superfund

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80 *Id.* § 266.80. For a table compiling plain-language requirements and exemptions for different combinations of reclamation and management activities, *see id.* § 266.80(a). For the alternative option of managing spent lead-acid batteries under the universal waste regulations, see *id.* pt. 273.

81 *Id.* §§ 266.100-266.206; *see also* JOHN-MARK STENSVAAG, HAZARDOUS WASTE LAW AND PRACTICE SECTION 3, 88 (1992) (contrasting wastes destroyed by incinerators, which are fully regulated under RCRA Subtitle C, from wastes burned in industrial furnaces for materials recovery, which may escape such regulation). For a discussion of the regulatory scheme for burning hazardous wastes, see Needleman, *supra* note 1, at 994-99.

82 40 C.F.R. § 261.6(a)(4).

83 Hazardous waste that is exported to or imported from designated member countries of the Organization for Economic Cooperation and Development ("OECD") for recovery is subject to regulation if it is subject to federal manifesting requirements, to universal waste management standards, or to state requirements. *Id.* § 261.6(a)(5).

84 Batteries, thermostats, and pesticides, and lamps destined for disposal or recycling are subject to the reduced requirements of part 273. *Id.* § 261.9.

85 *Id.* § 261.6(b)-(d).

86 *Id.* § 261.6(b).

87 *Id.* § 261.6(c)(1).

88 *Id.* § 261.6(c)(2).

89 *See* 1990 RIS, *supra* note 2, at 38.

90 *Id.*

sites that have been linked to unfettered recycling and unregulated disposal of recycling residues illustrates this deficiency.[91]

The evaluation of EPA's regulatory recycling program is further complicated by the limited amount of available data.[92] The information, which EPA collects from certain hazardous waste handlers that are required to report their activities every two years,[93] is fairly general.[94] Very little of the data is organized by specific industry or practice. According to the Agency, over 20,000 large-quantity hazardous waste generators produce almost 41 million tons of hazardous waste.[95] EPA estimates that about 300 facilities conduct "recovery operations"[96] which affect over 3.6 million tons of hazardous wastes and represent 10% of the total national hazardous waste management.[97] The Agency's figures may, however, only reflect a small portion of the recycling operations conducted nationwide.[98]

The main recyclers by industry branch include organic chemicals producers, blast furnaces and steel mills, business services, and industrial gas industries.[99] The main recycling categories include on-site re-

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91 *See* Needleman, *supra* note 1, at 1014-15 (noting that (1) 20% of the nation's worst hazardous waste sites have been created through activities related to hazardous waste recycling; (2) activities include recycling solvents, metals, batteries, polychlorinated biphenyls, used oil, fill and road materials, feedstocks, fly ash, smelting, and cement-kiln dust; and (3) the problem is widespread across the country).

92 *See* Telephone Interview with Jim O'Leary, Member, Definition of Solid Waste Task Force, Office of Solid Waste, EPA (Oct. 12, 1994) (on file with author) (explaining that (1) neither EPA nor the states currently gather comprehensive data pertaining recycling activities; (2) certain recyclers may qualify for exemptions from reporting requirements; (3) individual companies and industry associations are still conducting "specification" studies to characterize and ascertain their waste streams and volumes; and (4) recyclers may be reluctant to share cost and other financial information).

93 40 C.F.R. §§ 262.41, 264.75, 265.75 (1999).

94 For the most current report, see EPA, EPA530-R-99-036c, THE NATIONAL BIENNIAL RCRA HAZARDOUS WASTE REPORT (BASED ON 1997 DATA) (1999) [hereinafter 1999 BIENNIAL REPORT].

95 *See id.* at 1-1.

96 In contrast to the 1999 Biennial Report, the 1993 Biennial Report contained more extensive statistics and used the term "recycling" instead of "recovery operation." EPA, NATIONAL BIENNIAL RCRA HAZARDOUS WASTE REPORT (BASED ON 1989 DATA) (1993) [hereinafter 1993 BIENNIAL REPORT].

97 *See* 1999 BIENNIAL REPORT, *supra* note 94, at 2-9 (providing the methods defined as recovery operations and the quantity managed by each method); *see also* Malloy, *supra* note 8, at 4-7 (describing the commercial environment for recycling metal-bearing hazardous wastes, spent solvents, and energy recovery).

98 *See* TASK FORCE REPORT, *supra* note 13, at D-3 (describing a Chemical Manufacturers Association 1988 survey of 582 plants, which found that approximately 5 million tons of hazardous waste were recycled in the chemical industry alone); *see also* Telephone Interview with Jim O'Leary, *supra* note 92 (explaining that, in addition to reporting exemptions for certain generators, some recycled materials are not categorized as hazardous wastes by federal law although they may be covered by state law).

99 *See* TASK FORCE REPORT, *supra* note 13, at D-7.

cycling,[100] captive recycling and product stewardship,[101] and commercial recycling.[102] EPA estimates that over 43% of recycling occurs on-site.[103] Economic feasibility, the accessibility of technical expertise, the availability of markets, and the permitting burdens are important factors governing the decision to recycle and the selection of a particular location.[104]

EPA's hazardous waste recycling regulations have been subject to challenges and criticisms from a wide-ranging spectrum of interested parties, in particular industry, states, and environmental groups.[105] While most players agree that the regulatory system needs to be clarified, the details of their concerns differ significantly.[106]

Members of industry note the difficulty of interpreting and applying the definitions consistently; the costly, time-consuming, and uncertain permitting processes; the high production costs for recyclable materials and their derivatives; the stigma associated with hazardous waste recyclables; the danger of inconsistent implementation by the states; and the burdensome system for permit modifications.[107] According to industry officials, these deficiencies pose significant problems for manufacturing facilities.[108] Businesses are reluctant to invest in recycling units because of permitting uncertainties, competitive disadvantages against manufacturers using virgin materials, and enforcement based on paperwork violations.[109] As a consequence, industry representatives find that consumer

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100 On-site recycling is the recycling of materials generated at a manufacturing facility. *See id.* at D-1. Most industrial hazardous waste is recycled at the generating facility. *See id.*

101 Captive recycling involves the generation of materials at one location, while the recycling is conducted at another facility owned by the same company. *See id.* at D-2. In the course of product stewardship, manufacturers take back products for the purpose of recycling. *See id.*

102 Commercial recycling occurs when a manufacturer sends materials to an unrelated plant for recycling. *See id.*

103 *See id.* at D-3; *see also* Telephone Interview with Jim O'Leary, *supra* note 92 (observing that (1) 63% of all first-time recycling is conducted off-site; (2) first-time recyclers are those that have not been recycling but treating in the previous cycle; and (3) small businesses favor off-site recycling for economic reasons).

104 Two-thirds of the respondents to a survey reported individual or several factors limiting their recycling inclination, while the remaining third did not feel constrained to launch new recycling activities. *See* TASK FORCE REPORT, *supra* note 13, at D-3, D-4. For observations on the impact of permitting; see 1993 BIENNIAL REPORT, *supra* note 96, at 1; DPRA INC., COMPARATIVE ANALYSIS OF RCRA TREATMENT AND DISPOSAL COSTS WITH AND WITHOUT REGULATORY MODIFICATIONS (1991); EPA, METAL RECOVERY, ENVIRONMENTAL REGULATION & HAZARDOUS WASTES: AN ANALYSIS OF FEDERAL RCRA SUBTITLE C REGULATIONS AFFECTING METAL RECOVERY FROM HAZARDOUS WASTES (1994).

105 *See* TASK FORCE REPORT, *supra* note 13, at 3-1 to 3-3.

106 *See id.* at 3-1 to 3-3.

107 *See id.* at 3-2.

108 *See id.*

109 *See id.*

costs are raised, natural resources are wasted, and job creation and technology innovation are stifled.[110]

States have also raised concerns about the complexity of the regulatory definitions; the difficulty of distinguishing products, raw materials, and legitimate recycling from wastes and sham recycling; the loophole for characteristic wastes sent for reclamation; and the impossibility of tracking materials and inspecting facilities in the case of exempt recyclables.[111] Many states maintain that these factors interfere with their ability to implement and enforce the RCRA program by heightening administrative costs, creating the potential of mismanagement and overregulation of legitimate recycling activities, discouraging the approval or permitting of recyclers, preventing them from advising the regulated community before enforcement actions, and giving rise to a universe of potential unknown concerns.[112]

Finally, environmental groups have emphasized the high number of recycling sites on the Superfund National Priorities List; the information deficit associated with exempt recycling; and the lack of oversight, regulation or product specification for exempt waste-derived products.[113] According to the environmental community, human health and the environment are in jeopardy because of the specters of enforcement impairment, undetected releases, and hidden risks in waste-derived products.[114]

II. OVERVIEW: THE DRIVING FORCES BEHIND REGULATORY REFORM PROCESSES

The drivers of regulatory reform generally include a combination of congressional oversight, agency self-assessment, litigation, and public participation. Congress's oversight authority is generally rooted in its constitutional powers to legislate and appropriate.[115] Oversight is gaining increasing attention because of the growing numbers and complexities of federal programs and agencies.[116] Congressional oversight activities are conducted through a wide array of channels, organizations, and structures, including formal committee hearings, informal member contacts with executive officials, staff studies to support agency reviews, casework undertaken by member offices, and analyses prepared by non-congressional entities.[117]

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110 *See id.*

111 *See id.* at 3-2 to 3-3.

112 *See id.* at 3-3.

113 *See id.*

114 *See id.*

115 For an in-depth study of the power, see CONGRESSIONAL RESEARCH SERVICE, CRS REPORT FOR CONGRESS, CONGRESSIONAL OVERSIGHT MANUAL (1999).

116 *See id.*

117 *See id.*

EPA's rigorous self-evaluation, which launched the Agency's review of the nation's hazardous waste management program under RCRA, was sparked by a commitment made by a high-ranking EPA official during a congressional confirmation hearing.[118] Congress, however, never arrogated the process by changing the applicable law and requiring EPA to promulgate new recycling regulations.[119]

In the absence of statutory change, litigation has become a powerful weapon for those interested in shaping regulatory processes.[120] Earlier in the history of RCRA, the courts seemed to have sympathized with the immensity of EPA's task in implementing a highly complex and technical statute.[121] As a result of successful lawsuits brought by environmental groups, however, the courts have increasingly imposed on the Agency tight time schedules for promulgating regulations and implementing a host of programs.[122] Industry and trade associations have litigated to limit EPA's regulatory authority under RCRA.[123]

Cases involving the interpretation of statutes that are administered by agencies are regularly adjudicated pursuant to the two-pronged *Chevron* test.[124] If Congress has directly spoken to the question at bar no further analysis is required.[125] If the language is ambiguous, however, the analysis proceeds and the court defers to agency interpretation based on a permissible construction of the statute.[126] Many cases are decided

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118 During his confirmation hearings before the Senate Environment and Public Works Committee, Assistant Administrator Don R. Clay committed the Office of Solid Waste and Emergency Response to a comprehensive review of the hazardous waste provisions of RCRA. *See* 1990 RIS, *supra* note 2, at 1.

119 *See* Needleman, *supra* note 1, at 1039-40 (noting the advantages and disadvantages in opening the process to Congress and expanding EPA's jurisdiction to regulate).

120 *See* Eileen Gay Jones, *Risky Assessment: Uncertainties in Science and the Human Dimension of Environmental Decisionmaking*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 1, 32 (explaining that "[i]f the public and technocrats do not resolve their differences through deliberation," litigation becomes a viable mode of redress and the courts act "as referee[s] between scientists or technicians who disagree, or between a public demanding that the law fill a gap because scientific research is underdeveloped, inchoate, or in nascent form").

121 *See* 1990 RIS, *supra* note 2, at 9.

122 *See id.*

123 *See, e.g.*, Shell Oil Corp. v. EPA, 950 F.2d 741 (D.C. Cir. 1991) (involving a challenge to EPA's definition of "treatment," which included "processes designed to recover valuable materials from the recycling of solid wastes"); Am. Mining Cong. v. EPA, 907 F.2d 1179 (D.C. Cir. 1990) (involving a challenge to EPA's re-listing of six wastes generated from smelting operations as "hazardous"); Am. Petroleum Inst. v. EPA, 906 F.2d 729 (D.C. Cir. 1990) (involving a challenge by environmental groups and the treatment industry to EPA's determination that it lacked the authority to establish treatment standards for slag residues from metals recovery processes); Am. Mining Cong. v. EPA, 824 F.2d 1177 (D.C. Cir. 1987) (involving a challenge by representatives of the petroleum and mining industries to EPA's jurisdiction over materials returned to the refining process and over re-processed ore and the metal derived from it).

124 *See* Chevron, U.S.A., Inc. v. Nat'l Res. Def. Council, Inc., 467 U.S. 837 (1984).

125 *See id.*

126 *See id.*

based on the literal terms of the statute, which means that the analysis terminates before the second prong "deference to an agency's permissible interpretation" is even considered.[127] This trend dilutes the *Chevron* doctrine and narrows the interpretive power of administrative agencies.[128] But the sheer amount of litigation over the scope of EPA's authority to regulate hazardous wastes illustrates the disparity of conclusions that courts may reach when applying the *Chevron* test.[129]

Finally, regulatory reform is also driven by public participation. In consonance with the relatively young history of environmental law, which has witnessed an increasing role for public participation,[130] EPA

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[127] *See* Antonin Scalia, *Judicial Deference to Administrative Interpretations of Law*, 1989 DUKE L. J. 511, 521 (writing that "[o]ne who finds *more* often (as I do) that the meaning of a statute is apparent from its text and from its relationship with other laws, thereby finds *less* often that the triggering requirement for *Chevron* deference exists").

[128] *See, e.g.*, Thomas W. Merill, *Textualism and the Future of the Chevron Doctrine*, 72 WASH. U. L. Q. 351 (1994) (finding an "inverse relationship between the rise of textualism and the waning of [that doctrine]"); Markus G. Puder, 18 VA. ENVTL. L. J. 507,534 (1999) (observing that (1) this approach may reduce deference to administrative interpretations, "despite the potential benefits of an agency's technical expertise and closeness to the regulated community;" (2) "a weakening of *Chevron* may open the door for inconsistent applications of the doctrine and jeopardize legal certainty for those actors who rely on administrative interpretations in their day-to-day operations;" and (3) agency deference should be "a full-fledged jurisprudential doctrine in cases where the statute administered by the agency contains a general clause and the interpretation of the statute is permissible"); Robert L. Rabin, *Federal Regulation in Historical Perspective*, 38 STAN. L. REV. 1289, 1325 (1986) (noting that the Supreme Court has "oscillated between activism and restraint in reviewing agency decisions").

[129] *See* Shell Oil Co. v. EPA, 950 F.2d 741 (D.C. Cir. 1991) (finding EPA's recycling regulations consistent with clear congressional intent); Am. Mining Cong. v. EPA, 907 F.2d 1179 (D.C. Cir. 1990) (remanding to EPA for a fuller explanation of its decision to list six new wastes under RCRA); Am. Petroleum Inst. v. EPA, 906 F.2d 729, 741 (D.C. Cir. 1990) (concluding that RCRA is ambiguous as to EPA's authority to regulate K061 slag, and that a permissible construction of the relevant portions "must comport with the broader 'statutory purpose' of the RCRA"); Am. Mining Cong. v. EPA, 824 F.2d 1177, 1193 (D.C. Cir. 1987) (holding that EPA acted in contravention of Congress' intent in regulating in-process secondary materials, because "Congress clearly and unambiguously expressed its intent that 'solid waste' be limited to materials that are 'discarded'"); *see also* Malloy, *supra* note 8, at 19-29 (opining that the four decisions provide a "solid jurisdictional basis" for a hazardous waste recycling permitting system); Needleman, *supra* note 1, at 1012 (concluding from these four cases that, if secondary recyclable materials are to be exempt from RCRA jurisdiction, they apparently must be reinserted directly into the ongoing production process and not placed on the ground); Sweeney, *supra* note 6, at 21-30 (explaining the narrow nature of the holdings in *AMC et progeny* when applied to specific facts).

[130] *See* Adam N. Bram, *Public Participation Provisions Need Not Contribute to Environmental Injustice*, 5 TEMPLE POL. & CIV. RTS. L. R. 145, 150 n.40 (1996) (emphasizing EPA's historic adherence to the "Jeffersonian faith" that the public has the capacity to take part in decisions of potential impact); Jones, *supra* note 120, at 19, 30, 58 (discussing the importance of including public participation activities in decisionmaking processes); Nancy Perkins Spyke, *Public Participation in Environmental Decisionmaking at the New Millennium: Structuring New Spheres of Public Influence*, 26 B.C. ENVTL. AFF. L. REV. 263,264, 269-70 (1999) (discussing the development of public participation measures and opining that in recent years, such activities have stagnated). For a case study tracing environmental decisions made informally by the government without adequate public participation, see DANIEL MAZMANIAN &

has been a long-time advocate for integrating public participation activities into regulatory decision processes.[131] RCRA specifically directs EPA to provide for public involvement in the development, revision, implementation, and enforcement of any regulation, guideline, information, or program.[132] Since public participation takes various shapes[133] and features different agents[134], EPA has promulgated regulations[135] and issued policy statements[136] to meet the statutory mandate. Both establish uniform requirements and directions to public officials who manage and conduct EPA programs.[137]

EPA applies its public participation requirements to a wide range of decisions and actions.[138] The Agency has embraced a broad notion of

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DAVID MORELL, BEYOND SUPERFAILURE: AMERICA'S TOXICS POLICY FOR THE 1990S 58-76 (1992). For a critical analysis of public participation, see Jones, *supra* note 120, at 66 (discussing the concern that public sentiment is grounded in "cognitive limitations, biased information sources, cognitive dissidence, control, or framing bias").

131 *See, e.g.*, EPA, RCRA IMPLEMENTATION MANUAL 2-1 (1993) (encouraging public involvement beyond the formal requirements of the regulations to foster a meaningful dialogue among the public, the Agency, and the regulated entity); MARY GRISEZ KWEIT & ROBERT W. KWEIT, IMPLEMENTING CITIZEN PARTICIPATION IN A BUREAUCRATIC SOCIETY: A CONTINGENCY APPROACH 31 (1981); STUART LANGTON, *What is Citizen Participation? in* CITIZEN PARTICIPATION IN AMERICA 13 (Stuart Langton ed., 1978); Charles Fox, *A Real Public Role*, THE ENVTL. FOR., Nov./Dec. 1998, at 19, 21 (describing EPA stakeholder involvement activities and approaches from a senior agency official's perspective); J. Matthew J. McKinney, *Negotiated Rulemaking: Involving Citizens in Public Decisions*, 60 MONT. L. REV. 499, 502 (1999) (finding that EPA has been the most consistent and committed user of negotiated rulemaking at the federal level, accounting for about one-third of federal "reg-negs"); Spyke, *supra*, note 130, at 266.

132 The Resource Conservation and Recovery Act, 42 U.S.C. § 6974(b) (1999).

133 *See* Spyke, *supra* note 130, at 267 (listing (1) the broad forms of education, information, review and reaction, and interaction and dialogue; and (2) the specific examples of lobbying, public advocacy and protest, public hearings, solicitation of public comments, political party involvement, voting, payment of taxes, jury service, and litigation). For a discussion of the controversy over the relation between public participation and litigation, see Bram, *supra* note 130, at 154, 158 (asserting that meaningful citizen involvement may avert litigation); Jones, *supra* note 120 at 28-30 (characterizing litigation as an inferior form of public participation).

134 *See* Bram, *supra* note 130, at 149 (explaining that "a public consists of a number of people reacting to a perceived interest"); Spyke, *supra* note 130, at 267 (observing that the public, the government, the electoral process, or legal mandates generate participation).

135 *See* 40 C.F.R. pt. 25 (covering public participation programs under the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Clean Water Act).

136 *See* 46 Fed. Reg. 5,736 (Jan. 19, 1981) (containing the Final EPA Policy on Public Participation under various federal environmental statutes).

137 40 C.F.R. § 25.3(a)-(b); 46 Fed. Reg. at 5,736 (explaining that EPA views public involvement as a two-way concept: (1) opportunity and encouragement for the public at large to express their views to the regulator; and (2) due consideration of public input, concerns, values, and preferences).

138 *See* 40 C.F.R. § 25.2; 46 Fed. Reg. at 5,736 (listing the following activities: rulemakings, issuance, modification, and enforcement of permits, development of information material, certain strategy and policy guidance memoranda, financially assisted planning and programming, state primacy approval, and other activities deemed appropriate).

the public participant, which combines the general populace and identifiable segments of the public, including industry and business, trade associations, environmental organizations, consumers, health advocates, recreational and educational groups, organized labor, and federal, state, local, and tribal governments.[139] Since a standard recipe for measuring the effective solicitation and integration of public participation in environmental decision-making does not exist,[140] EPA views the improvement of the quality and quantity of public participation as a continuous process.[141] This commitment constitutes a centerpiece of the Agency's reinvention initiatives.[142]

III. FLASHBACK: THE MILESTONES IN RECYCLING REFORM

As a result of self-assessments, court battles, and public participation, EPA decided to move forward with a more structured reform process.[143] The evolution of the Agency's hazardous waste recycling project may be divided into four principal stages: (1) the initial phase; (2) the Task Force process; (3) the reduced-scale approach; and (4) the fallback to incrementation.

A. BEGINNINGS: 1990-1992

In July 1990, EPA published a study which evaluated the Agency's RCRA implementation record against the twin statutory goals of protecting human health and the environment, and encouraging the recovery of resources.[144] Finding that the definitions of solid waste and hazardous

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[139] *See* 40 C.F.R. § 25.3(a); 46 Fed. Reg. at 5,736.

[140] *See* Spyke, *supra* note 130, at 264 (observing that (1) the diverse scholarship fails to reveal a comprehensive solution that would erase existing problems; that (2) a unifying theme to help shape the next generation of public participation in environmental decision-making is not on the horizon).

[141] For a notice requesting public comment for potential revisions to the Agency's 1981 policy on public participation during, see 64 Fed. Reg. 66,906 (Nov. 30, 1999). *See also* Spyke, *supra* note 130, at 300 (noting that EPA is taking steps to evaluate the successes and failures of participation programs).

[142] For reinvention discussions of stakeholder involvement, see, *e.g.*, EPA, EPA100-R-99-002, REINVENTING ENVIRONMENTAL PROTECTION 23 (1999) (providing that EPA's efforts are "designed to give people more access to information so that they can understand environmental and public health issues and, if they choose, become more involved in environmental decision-making"); EPA, REPORT OF THE COMMON SENSE INITIATIVE COUNCIL'S STAKEHOLDER INVOLVEMENT WORKGROUP (1998) (documenting a three-fold need to: (1) integrate stakeholder involvement activities with decision-making; (2) make clear to the public how solicited information will be used; and (3) analyze each situation to determine the tools and expertise needed to develop and maintain lasting agreements); EPA, THE STAKEHOLDER ACTION PLAN (1998) (advancing specific actions to improve stakeholder involvement at EPA with respect to (1) planning and management of stakeholder involvement activities; and (2) internal and external capacities for stakeholder involvement).

[143] 1990 RIS, *supra* note 2, at v.

[144] *See id.*

waste were difficult to understand, implement, and enforce,[145] EPA concluded that it was time for a significant regulatory overhaul.[146] Reform efforts were to clarify "who is in and out of the system," establish "a philosophy of regulatory coverage, and consolidate and centralize the provisions."[147] The Agency held several public meetings in late 1990 to solicit information from industry, congressional staff, state officials, federal facilities, EPA regions, and environmental groups.[148] These meetings, according to the Agency, validated the findings of its earlier study.[149] EPA presented the results of this first round of dialogue in a report dated July 1992.[150] The process for achieving a better, less over- and under-inclusive definition involved fashioning a federal regulatory system for recycling tailored to different recycling categories, creating state requirements in RCRA-authorized jurisdictions, and making limited revisions to other parts of RCRA.[151]

B. TASK FORCE PROCESS: 1992-1995

In October 1992, EPA's Office of Solid Waste chartered the Definition of Solid Waste Task Force. The internal Agency workgroup was directed to formulate specific solutions for resolving the problems associated with the hazardous waste recycling regulations.[152] The three-prong objective of the Task Force included eliminating impediments to hazardous waste recycling, correcting over- and under-regulation of recycling, and clarifying and possibly simplifying applicable regulations.[153]

The Task Force first held meetings with industry representatives, environmental groups, and State agency personnel.[154] Second, it conducted site visits involving different kinds of recycling operations.[155] Third, the Task Force convened a sixteen-member dialogue group, the Solid Waste Definition Roundtable, and solicited technical comments from practitioners in hazardous waste management.[156] Finally, the Task

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145 *See id.* at 38 (observing that (1) in 1989, an average of over 1,000 calls were received by the RCRA Hotline on these definitions, which was approximately one-third of all Hotline calls received on the hazardous waste regulations, and (2) the RCRA program faced the challenge of having to cover highly diverse industrial situations).

146 *See id.*

147 *Id.*

148 *See* TASK FORCE REPORT, *supra* note 13, at 3-1.

149 *See id.*

150 *See* EPA, EPA530-R-92-021, RCRA IMPLEMENTATION STUDY UPDATE: THE DEFINITION OF SOLID WASTE 7 (1992).

151 *See id.*

152 *See* TASK FORCE REPORT, *supra* note 13, at 1-3.

153 *See id.*

154 *See id.* at 3-1.

155 *See id.*

156 *See id.* at 1-4, 3-5.

Force met with representatives from the Association of State and Territorial Solid Waste Management Officials to develop initial proposals and obtain feedback.[157] In April 1993, the Task Force presented a number of options for revising the definition of solid waste regulations.[158] Between July and November 1993, the Task Force held a series of Roundtable technical meetings, brainstormed more detailed alternatives, and developed a straw proposal.[159] While the Task Force proposals were being finalized, EPA promulgated a rule excluding oil from petroleum-refinery wastewater from the definition of "solid waste" and expanding the existing exemption for petroleum coke.[160] In September 1994, the Task Force released its final recommendations, which are summarized below.[161]

The Task Force proposed the establishment of three regulatory levels to advance tailored controls and oversight.[162] The first tier was to retain, introduce, and eliminate exclusions and exemptions for recycling.[163] The Task Force proposed that the processing of statutorily excluded materials should be exempt from RCRA Subtitle C.[164] In addition, the Task Force floated new exemptions for direct reuse of secondary materials containing hydrocarbons in thermal processes at a petroleum refinery,[165] direct reuse of secondary materials containing hydrocarbons when returned for blending into commercial grade gasoline at a petroleum refinery,[166] recovery of energy from "clean" waste-derived fuels,[167] and incidental processing.[168] All exemptions were to be subject to management prohibitions directed at land placement,[169] burning or use

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157 *See id.*

158 *See id.* at 3-3 to 3-4.

159 *See id.* at 3-5.

160 *See* 59 Fed. Reg. 38,536 (July 28, 1994) (codified at 40 C.F.R. pts. 261, 266) (explaining that (1) the new exclusion also applies to recovered oil from off-site sources owned by a different company, while refinery wastewaters are still considered a solid waste; and (2) the expansion covers coke produced by a single petroleum refining entity, even if the coker is located separately from the facility where the wastes are generated).

161 *See Draft Report from EPA Task Force on Definition of Solid Waste under RCRA Dated April 22, 1994*, DAILY ENV'T. REP. (BNA), SPECIAL SUPPLEMENT, Apr. 28, 1994 [hereinafter *Draft Report*]. For an in-depth description and analysis of the report's content, see Sweeney, *supra* note 6, at 30-74.

162 *See Draft Report*, *supra* note 161, at 3-5.

163 *See id.*

164 *See id.* at 4-6 to 4-8 (listing exclusions and their criteria).

165 *See id.* at 4-3 to 4-4 (explaining the purpose and scope of the exemption).

166 *See id.* at 4-4 (providing the purpose and scope of the exemption).

167 *Id.* at 4-3 (describing the exemption and noting that EPA will develop a specific regulatory definition).

168 *See id.* at 4-4 to 4-5 (offering the rationale for the exemption).

169 *See id.* at 4-2 to 4-3 (stipulating storage requirements for exempt materials).

to produce a fuel,[170] and speculative accumulation.[171] In addition, a determination of status and notification was to be required.[172] Finally, the Task Force proposed rescinding existing exemptions for spent materials transported off-site for direct reuse[173] and recycling of characteristic sludges.[174]

The second tier proposed tailored standards in lieu of full RCRA permitting for four recycling classes: direct reuse off-site of spent materials and recovery of precious metals (Category A);[175] on-site recycling (Category B);[176] captive recycling and product stewardship (Category C);[177] and off-site commercial recycling (Category D).[178] All four classes were to be prohibited from land storage,[179] speculative accumulation[180] and use of toxics along for the ride ("TAR").[181] The TAR was to determine the legitimacy of recycling operations, which was to be measured via three alternative testing regimes.[182] One approach, a self-implementing analytical method, would have required comparable levels of hazardous constituents in recycled products and in similar goods made from virgin materials.[183] In the alternative, a manufacturer or industry would have been enabled to apply for a variance from the TAR threshold

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170 *See id.* at 4-3 (stating that, except for the three new fuel exemptions and the current petroleum exemptions, EPA would continue to regulate recycling that includes burning secondary materials for energy recovery or to produce a fuel).

171 *See id.* at 4-5 to 4-6 (explaining the durational limits on speculative accumulation on- or off-site and the accompanying notification requirements).

172 *See id.* at 4-6 (emphasizing that (1) the recycler would have to prepare and keep on file a status determination that includes the grounds for claiming the exclusion or exemption; and (2) in certain instances, the recycler would have to notify the State or EPA).

173 *See id.* at 5-7 (stating that spent materials sent off-site for direct reuse without reclamation would be placed into the stricter controlled recycling class to assure appropriate transportation of these materials).

174 *See id.* (observing that these emission-control residues, which are currently not regulated because of the difficulties of distinguishing between the reclamation of product-like and waste-like sludges, would be better managed in the tailored recycling tier).

175 *See id.* at 5-2 to 5-3 (explaining the goal of ensuring that materials are not "lost" between generation and reuse).

176 *See id.* at 5-3 to 5-4 (noting that this type of recycling, which occurs at the generating facility, requires further processing that cannot be accomplished through the excluded closed-loop recycling).

177 *See id.* at 5-4 to 5-6 (observing that intracompany recycling and product stewardship foster the reuse of materials otherwise destined for treatment or disposal).

178 *See id.* at 5-6 (explaining that the products created by a commercial recycling facility are made primarily from ingredients other than virgin materials).

179 *See id.* at 5-8 to 5-9 (discussing the rationale of groundwater protection).

180 *See id.* at 5-23 to 5-25 (proposing accumulation time limits of 18 months for Category B and 12 months for Categories C and D).

181 *See id.* at 5-9 to 5-12 (describing "sham" recycling as treating or disposing of hazardous waste in the guise of legitimate recycling).

182 *See id.*

183 *See id.*

and demonstrate a functional need or industry specification.[184] Finally, a variance would have been available upon a showing of insignificant risk to human health or the environment over the life of the recycled product.[185] In addition to the prohibitions on land storage, speculative accumulation, and TAR, the second tier would have required state or EPA notification, biennial reporting,[186] and "recyclable materials" manifests for offsite shipments.[187] Categories B through D were to impose management standards upon operations plans,[188] certifications,[189] tanks, containers, and containment buildings,[190] emission control,[191] unit release response,[192] reporting of facility modifications,[193] and closure and financial assistance assurance.[194] In addition, Category C requirements were to include giving public notice and granting access to non-proprietary material.[195] Category D was to be subject to prior approval and full public participation.[196]

The third recycling category was to be governed by full RCRA Subtitle C regulation. Recycling of used oil[197] and inherently waste-like materials,[198] as well as activities and materials excluded from the first tier[199] or identified through future designations, were to be subject to the full brunt of hazardous waste management regulation.

The recommendations garnered mixed reactions from the participants in the Task Force process. Industry's approval was limited to sec-

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184 *See id.*

185 *See id.*

186 *See id.* at 5-12 to 5-13 (noting that the biennial reporting requirements would be new only for Category A).

187 *See id.* at 5-13 to 5-14 (explaining that the new manifests would not be associated with a hazardous waste stigma).

188 *See id.* at 5-22 to 5-23 (recommending a simplified two-part plan).

189 *See id.* at v (stating that certifications would replace full RCRA permits).

190 *See id.* at 5-16 to 5-20 (proposing the adoption of pertinent treatment, storage, and disposal facility standards).

191 *See id.* at 5-20 to 5-21 (supporting the adoption of regulations under the Clean Air Act and its amendments).

192 *See id.* at 5-30 to 5-33 (explaining that spill response requirements would replace facility-wide corrective action).

193 *See id.* at 5-25 to 5-28 (recommending a streamlined administrative process).

194 *See id.* at 5-28 to 5-30 (proposing a "cookbook" approach for a tailored worksheet that would be submitted at the time of closure).

195 *See id.* at 5-33 to 5-35 (identifying a threshold of 12,000 kg/yr of secondary materials received to trigger the requirement).

196 *See id.* (outlining the major elements that would require government approval).

197 *See id.* at 5-36 (emphasizing that rules pertaining to used oil management would not change).

198 *See id.* at 5-36 to 5-37 (presenting the examples of dioxins and certain materials fed to halogen acid furnaces).

199 *Id.* at 5-37 (providing the examples of waste-derived products or illegitimate materials, landfilling, land storage, burning for destruction, and speculative accumulation limits).

tor-specific first tier proposals.[200] Oil refiners, chemical manufacturers, and electric utilities applauded the flexibility associated with the new exemptions[201] and selected tailored management standards under the intermediate tier.[202] The same groups, however, rejected the bulk of the recommendations.[203] Industry representatives were willing to negotiate the design of the management standards under the second tier,[204] but

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200 *See* Telephone Interview with Jim O'Leary, *supra* note 92.

201 Industry representatives applauded the two new exemptions for direct reuse of hydrocarbons at a petroleum refinery. *See Stakeholders Assessing Positions on EPA Proposal to Redefine Solid Waste*, DAILY ENV'T. REP. (BNA), Apr. 28, 1994 at A4 [hereinafter *Stakeholders Assessing*]; Letter from S.R. Emery, Amoco, to James Berlow, Director, Definition of Solid Waste Task Force, EPA (June 17, 1994) (on file with author) (stating that (1) the use of secondary materials to produce a fuel at a petroleum refinery is essentially a chemical production process, not a process that blends hazardous waste fuels for combustion at an industrial facility; and (2) the imposition of RCRA tank standards would discourage recycling). Others favored the removal of clean-burning fuels from hazardous waste regulations governing burners and industrial furnaces. *See* Telephone Interview with Jamie Conrad, Chemical Manufacturers Association (Nov.21, 1994) (on file with author) (observing that (1) 17 million gallons of these (liquid) fuels are generated nationwide per year; and (2) a fuel-specification approach to the definition with fixed percentages for certain constituents would be favored); Letter from James R. Roewer, USWAG, to James Berlow, Director, Definition of Solid Waste Task Force, EPA (Feb. 15, 1994) (on file with author) (emphasizing that (1) while electric utilities do not generate a significant amount of clean fuels, electric utilities operate high-efficiency boilers that are ideal for clean fuel activities; and (2) a broadened clean fuels definition should also include materials which exhibit the toxicity characteristic for benzene or other non-chlorinated organics normally found in non-waste fuels). Still others welcomed the incidental processing exemption. *See Roundtable Group*, *supra* note 14 at A4; Letter from Emery, *supra* (stating that drying, filtering, and screening to remove impurities should be considered incidental to avoid the interpretation of these activities as "reclamation before reuse"). Finally, some representatives applauded the exemption of Bevill Wastes. *See* UTILITY SOLID WASTE ACTIVITIES GROUP, MAJOR ELECTRIC UTILITY INDUSTRY ISSUES PENDING BEFORE EPA'S OFFICE OF SOLID WASTE, RCRA DOCKET DSWP-50145 (1994); Telephone Interview with Andrew O'Hare, American Petroleum Institute (Oct. 12, 1994) (on file with author) (explaining that (1) produced waters, which constitute most of oil and gas exploration and production wastes, may be re-injected underground for water flooding; (2) fluid drillings may be reconditioned for closed-loop drilling; and (3) drill cuttings may be recycled as road fill, gravel, and cement mix).

202 *See, e.g.*, CHET M. THOMSON, METALS INDUSTRY RECYCLING COALITION, REDEFINITION OF SOLID WASTE DISCUSSION PAPER 6 (1995) (welcoming release response instead of full-blown corrective action because of cost and time savings); Letter from Emery, *supra* note 201 (providing an example of the new recycling opportunities for spent materials under Category A); Letter from Roewer, *supra* note 201 (commenting that the intermediate standards for captive and on-site recycling may greatly enhance the ability of utilities across the nation to recycle solvents, antifreeze, discarded commercial chemical products, and other characteristic hazardous wastes).

203 *See Roundtable Group*, *supra* note 14, at A4.

204 For criticisms of the tailored RCRA recycling tier, see *Stakeholders Assessing*, *supra* 201 at A5 (providing a challenge to the incentive value provided by the new transportation manifest); Telephone Interview with Jamie Conrad, *supra* note 201 (suggesting that onsite recycling activities under Category B should be exempt subject to notification requirements); Letter from Emery, *supra* note 201 (providing specific examples of potentially significant burdens imposed under Categories B and C); Letter from Neil Jay King, Wilmer, Cutler, and Pickering, to James Berlow, Director, Definition of Solid Waste Task Force, EPA (June 28, 1994) (on file with the *Cornell Journal of Law and Public Policy*) (questioning the distinction

viewed the Agency's approach toward delineation of jurisdiction[205] and the proposed regime for toxics along for the ride[206] as deal busters. According to the environmental community, the Task Force proposals fell short in protecting human health and the environment.[207] The states emphasized that their implementation and enforcement dilemmas would continue if the recommendations were codified.[208] All parties agreed

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between "off-site commercial recycling" and intracompany "captive" recycling or product stewardship arrangements); Letter from Roewer to Berlow, *supra* note 201 (characterizing the public notice requirement for Category C as a deterrent to recycling because of public anxieties associated with perceived waste management activities); Summary of Definition of Solid Waste Public Meeting of September 20, 1994, RCRA Docket DSWP-50145 (1994) [hereinafter Public Meeting Summary] (discussing the view that the lack of detail provided for financial assurance requirements and the potentially significant closure costs under RCRA may discourage capital investments in new recycling technologies);. For an indication of room for further negotiation, see Telephone Interview with Marilyn Goode, Office of Solid Waste, EPA and Member of the Definition of Solid Waste Task Force, (Dec. 2, 1994) (on file with author) (noting that the Agency has taken under advisement a proposal by the National Environmental Development Association for conditionally exempting on-site recycling).

205 For sources discussing the controversy over jurisdiction, see *Stakeholders Assessing, supra* 201, at A4; Letter from Andrew T. O'Hare, American Petroleum Institute, to James Berlow, Director, Definition of Solid Waste Task Force, EPA (June 1, 1994) (on file with *the Cornell Journal of Law and Public Policy*) (disputing RCRA jurisdiction over materials that are used on-site or off-site as ingredients, substitutes for commercial products, or substitutes for/supplements to raw materials or feedstocks without prior reclamation or processing); Letter from Krishna Parameswaran, ASARCO, to James Berlow, Director, Definition of Solid Waste Task Force, EPA (May 23, 1994) (on file with *the Cornell Journal of Law and Public Policy*) (arguing that RCRA Subtitle C requirements were developed to address treatment, storage, and disposal of hazardous waste, as opposed to "beneficial" resource recovery and recycling); Public Meeting Summary, *supra* note 204; *see also Industry Optimistic EPA Is Considering Jurisdiction In Definition of Solid Waste*, DAILY ENV'T REP. (BNA), Jan. 11, 1995, at A6 ; Telephone Interview with James Berlow, Director, Definition of Solid Waste Task Force, EPA (Dec. 2, 1994) (on file with author) (noting the Agency's plan to analyze specific waste streams by industry sectors and then decide their future regulatory status).

206 For widespread opposition against the test based on questions of feasibility, cost, design, and necessity, see *Stakeholders Assessing*, *supra* note 201, at A4; Letter from King, *supra* note 204 (proposing a "call-in" approach that would be triggered when EPA or the state specifically question the legitimacy of a recycling process); Letter from Roewer to Berlow, *supra* note 201 (indicating that only a few laboratories would be capable of testing for toxics along for the ride at a cost of over $4,000 per test); Public Meeting Summary, *supra* note 204 (recommending that the test be limited to "consumer products" because they may pose the greatest likelihood of impact on human health).

207 For resistance in the environmental community against the number and scope of the exemptions as well as the alleged jurisdictional concessions, see *Stakeholders Assessing, supra* note 201, at A4; *HWTC Testimony*, *supra* note 4, at 4-5 (suggesting that bad recycling is worse than good treatment and disposal); *Hazardous Waste Provisions, 1991: Hearings on S. 976 and S. 982 Before the Subcomm. on Envtl. Prot. of the S. Comm. on Env't and Pub. Works*, 102nd Cong. 2 (1991) (testimony of Karen Florini, Senior Attorney, Environmental Defense Fund) at 2 (observing that "poor quality recycling is no better than high-quality disposal; indeed, it is generally worse").

208 *See* BUSINESS RECYCLING COALITION, SUMMARY OF STATE COMMENTS ON REENGINEERING RCRA FOR [HAZARDOUS WASTE] RECYCLING 2 (1995) (reflecting the states' hesitancy to reach candid conclusions over whether the Task Force Report offers a better than the current system).

that the Task Force Report did not offer a more understandable regulatory system.[209] In sum, nobody moved to strike the kind of compromise that would have carried the Task Force proposals into the formal rulemaking phase.

C. REDUCED-SCALE APPROACH: 1995-1997

After some internal consideration and informal discussions with interested parties, EPA's Office of Solid Waste replaced the Task Force process with a smaller-scale effort.[210] The cast of players was reduced to selected Agency and state officials. Moreover, the scope of the recycling reform was re-focused on simplification and jurisdiction. After almost two years of deliberations, in November 1996, EPA conducted a public meeting and presented options for re-defining RCRA jurisdiction.[211] According to the proposal, federal rules were to be replaced with a new concept of recycling[212] predicated on either the "transfer-based"[213] or the "in-commerce"[214] approach.

Under the transfer-based option, the recycling location, the recycling manner, and the degree of a material's commodity-likeness were to serve as the determinants for the onset of RCRA jurisdiction.[215] The transfer-based approach was to exclude from the solid waste definition materials recycled on-site or within the same company, subject to certain management prohibitions.[216] The material was to be disallowed from being burned for energy recovery or used to produce a product that would be burned for energy recovery;[217] stored or otherwise managed on the land;[218] used in a manner constituting disposal or used to make a

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209 Telephone Interview with Jim O'Leary, *supra* note 92 (observing that simplicity was a "casualty" of the scope of the project).

210 After reviewing the Task Force Report, Elliot Laws, the EPA Assistant Administrator for the Office of Solid Waste and Emergency Response, directed the Office of Solid Waste to work with interested states and craft a new approach to the regulation of hazardous waste recycling. *See* Malloy, *supra* note 8, at 2 n.6.

211 BRIEFING DOCUMENT, *supra* note 15; OPTIONS PAPER, *supra* note 15.

212 For the underlying definition of the term "recycling", see BRIEFING DOCUMENT, *supra* note 15, at 8 (explaining that legitimate "recycling," the use of a secondary material to produce a good, involves the following conditions: (1) the product of recycling is sold, or otherwise has a demonstrable economic value; (2) the secondary material makes a significant contribution to the recycling process or the product; (3) no significant increase in levels of toxic constituents occurs; and (4) the secondary material is managed to minimize loss); OPTIONS PAPER, *supra* note 15, at 3.

213 BRIEFING DOCUMENT, *supra* note 15, at 2-4; OPTIONS PAPER, *supra* note 15, at 1-8.

214 BRIEFING DOCUMENT, *supra* note 15, at 5-7; OPTIONS PAPER, *supra* note 15, at 8-9.

215 *See* BRIEFING DOCUMENT, *supra* note 15, at 2; OPTIONS PAPER, *supra* note 15, at 1.

216 *See* BRIEFING DOCUMENT, *supra* note 15, at 3-4; OPTIONS PAPER, *supra* note 15, at 4-5.

217 *See* BRIEFING DOCUMENT, *supra* note 15, at 3; OPTIONS PAPER, *supra* note 15, at 4.

218 *See* BRIEFING DOCUMENT, *supra* note 15, at 3; OPTIONS PAPER, *supra* note 15, at 4 (referring to EPA's regulatory land disposal definition).

product that would be used in a manner constituting disposal;[219] speculatively accumulated;[220] or designated as inherently waste-like.[221] In addition, the exclusion was to be conditioned on certain basic record keeping and notification requirements.[222] If the generator failed to comply with these management conditions, hazardous secondary materials were to be controlled by streamlined or full hazardous waste management regulation.[223] However, despite their failure to meet the requirements of the transfer-based option, certain materials that were more "commodity-like" than "waste-like" still were to be granted exclusion from RCRA jurisdiction.[224] EPA further proposed a streamlined, nationally issued "general permit" process for off-site hazardous waste recyclers which, under the transfer-based approach, would be required to obtain a RCRA treatment or storage permit.[225]

Under the in-commerce option hazardous waste management controls were to be determined according to the type of recycling activity in question.[226] All recycled materials were to be potentially excluded from the definition of solid waste, subject to the same conditions outlined under the transfer-based option, including management prohibitions, record-keeping and notification requirements, and counter exceptions for commodity-like wastes.[227]

Environmentalists and industry officials vehemently criticized EPA's proposals and urged the Agency to abandon the two options.[228] The states and the environmental community argued that the proposals, especially the in-commerce approach, would exempt too many materials from RCRA without adequate environmental protection.[229] Industry representatives asserted that the proposals would bring more materials into RCRA jurisdiction and complicate rather than streamline recycling

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219 *See* BRIEFING DOCUMENT, *supra* note 15, at 3; OPTIONS PAPER, *supra* note 15, at 4.

220 *See* BRIEFING DOCUMENT, *supra* note 15, at 3; OPTIONS PAPER, *supra* note 15, at 4 (noting that the definition of speculative accumulation would be modified to allow 18 months of speculative accumulation wherein 100% of the material must be recycled).

221 *See* BRIEFING DOCUMENT, *supra* note 15, at 3; OPTIONS PAPER, *supra* note 15, at 4.

222 *See* OPTIONS PAPER, *supra* note 15, at 2; BRIEFING DOCUMENT, *supra* note 15, at 4.

223 *See* BRIEFING DOCUMENT, *supra* note 15, at 2; OPTIONS PAPER, *supra* note 15, at 5.

224 BRIEFING DOCUMENT, *supra* note 15, at 2, 9; OPTIONS PAPER, *supra* note 15, at 5-6 (explaining that a list of "commodity-like" materials and a case-specific variance procedure would be established).

225 BRIEFING DOCUMENT, *supra* note 15, at 10-16; OPTIONS PAPER, *supra* note 15, at 6-8.

226 *See* BRIEFING DOCUMENT, *supra* note 15, at 5; OPTIONS PAPER, *supra* note 15, at 8.

227 *See* BRIEFING DOCUMENT, *supra* note 15, at 5-7; OPTIONS PAPER, *supra* note 15, at 8-9.

228 *See* Telephone Interview with Chip Biterelis, Office of Solid Waste, EPA, (Feb. 2, 1998) (on file with author).

229 *See id.*

rules.[230] Small business groups criticized EPA's options for imposing significant economic burdens on their operations.[231]

D. INCREMENTATION: 1997 TO THE PRESENT

In late 1997, EPA aborted any further pursuit of the two alternative approaches and returned to the drawing board. This decision was based on public input and the Agency's own realization that it needed a better understanding of the environmental and economic consequences of the two options.[232] EPA decided to focus on fixes around the edges of the current system, collect comprehensive data, assess the experiences with currently exempt materials, and understand risks resulting from recycling.[233] Incremental improvements contemplated by EPA in early 1998 included crafting a regulatory exclusion for commodity-like materials, establishing a super-variance with a streamlined petition process, providing regulatory relief for product stewardship activities, formulating new legitimacy criteria for recycling operations, and drafting readable regulations.[234] The plans never materialized. However, EPA did promulgate some sector-specific rules.[235] In addition, the Agency has been quietly making system clarifications through administrative guidance short of formal rule-making.[236]

IV. FINDINGS AND PERSPECTIVES

More than ten years after EPA officially acknowledged the need for comprehensive recycling reform,[237] the regulatory picture has not

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230 *See id.* (discussing the industry position that the transfer-based option would increase compliance costs by subjecting materials to RCRA jurisdiction for the first time only because they were sent off-site for recycling).

231 *See id.*

232 *See* Telephone Interview with Chip Biterelis, *supra* note 228.

233 *See* Letter from Elizabeth A. Cotsworth, Acting Director, Office of Solid Waste, EPA, to Jeffrey Gunnulfson, Chemical Manufacturers Association (October 7, 1997) (on file with author) (explaining that EPA would: (1) propose the standardized permit that was part of the transfer-based option; (2) develop a data collection approach to make improvements in estimating the types and quantities of currently exempt recyclable materials, and in understanding the management practices pertaining to such materials; and (3) propose selected incremental improvements to the current framework).

234 *See EPA Plans, supra* note 17, at 3.

235 *See* Telephone Interview with Charlotte Mooney, Office of Solid Waste, EPA (Mar. 23, 2000) (on file with author) (explaining that reform steps are developed in consonance with EPA's Project XL initiatives).

236 *See, e.g., Sparking Industry Concerns, EPA Eyes Clarification of RCRA Hazardous Waste Recycling Rules*, INSIDE EPA'S SUPERFUND REPORT, Nov. 13, 2000 at 18 (reporting on new guidance to states that addresses the definition of certain types of recyclable hazardous materials, especially "incidental processing").

237 *See* 1990 RIS, *supra* note 2, at 38. The definition of recycled waste is significant also in determining the transboundary movement of wastes. *See, e.g.*, TASK FORCE REPORT, *supra* note 13, at 6-7 (emphasizing that if recycled hazardous waste were excluded or exempted from

changed substantially. After two unsuccessful attempts to achieve a new framework, the Agency's subsequent efforts seem incremental at best. The reform process was plagued by several factors, including the complexity and size of the project, the general data deficit, and the diverse spectrum of interested parties.[238]

Congress has largely left the operational implementation of RCRA's "multi-media, multi-material, multi-activity,"[239] and multi-objective programs[240] with EPA and the courts. The hazardous waste recycling arena vividly illustrates this quagmire. Hazardous waste recycling advances the recovery of resources, one of RCRA's main objectives, and, after waste minimization, constitutes the next preferred method for hazardous waste management.[241] Unsafe practices and sham operations, however, raise environmental concerns.

The combination of the ambitious, often overlapping statutory goals and EPA's efforts to balance hazardous waste recycling and environmental protection through interference with industrial production[242] has resulted in a complex regulatory web of definitions and a sentiment of

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the definition of hazardous waste, the export restrictions of the Basel Convention would not be triggered, and EPA would not be able to know whether the receiving country had an equally protective approach in place); William Schneider, *The Basel Convention Ban on Hazardous Waste Exports: Paradigm of Efficiency or Exercise in Futility?*, 20 SUFFOLK TRANSNAT'L L. REV. 247 (Winter, 1996) (providing a detailed description of the Basel Convention); *Basel Convention Ban on OECD Exports Hinges on Definition of Recycled Waste*, INT'L ENV'T. DAILY (BNA), Sep.20, 1995, at 1.

238 *See* Telephone Interview with Charlotte Mooney, *supra* note 235 (noting that EPA is in the process of finalizing a limited data collection effort).

239 RICHARD C. FORTUNA, HAZARDOUS WASTE TREATMENT COUNCIL, REVISING RCRA DEFINITION OF SOLID WASTE TO CONTROL HAZARDOUS WASTE RECYCLING PRACTICES 1 (1990) [hereinafter HWTC REPORT].

240 For general language in RCRA demonstrating congressional intent to foster bona fide recycling, see The Resource Conservation and Recovery Act, 42 U.S.C. § 6901 (1994) (emphasizing the need to reduce landfilling and domestic dependence on imports); *Id.* § 6901a (finding it in the national interest to recycle used oil); *Id.* § 6902 (identifying as the fundamental objectives of RCRA health and environment protection as well as the conservation of valuable material and energy resources, in part through waste minimization, process substitution, materials recovery, properly conducted recycling and reuse, and treatment). *See also* Needleman, *supra* note 1, at 979-80 (observing that Congress has been focusing on the municipal solid waste crisis, whereas hazardous waste recycling has not received much congressional attention).

241 *See* Comella, *supra* note 3, at 415 (explaining that next to waste reduction, the methods of waste management in order of preference are recycling, then treatment, and, as a last resort, land disposal); *see also* Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109 (1994) (placing waste reduction at the top of waste management priorities); 53 Fed. Reg. 31,138, 31,181 (Aug. 17, 1988) (expressing EPA's preference for recycling and recovery as the best method for treating a waste, as well as eliminating or reducing the residual to be disposed).

242 ROBERT V. PERCIVAL, ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 217 (1992).

perplexity among the regulated community and others.[243] The continuing court battles over the boundaries of the solid waste definition indicate that petitioners are willing to litigate the manifold scenario-specific nuances of the discard issue and the limits of EPA's recycling jurisdiction.[244] The line between wastes and recycled products remains hazy.

The sketchy regulatory baseline was compounded by the absence of comprehensive data that would have helped focus and guide the decision process.[245] The information presented during the discussions was cursory, generic, and often anecdotal.[246] The lack of more reliable data has curtailed EPA's ability to communicate effectively with all interested parties throughout the reform process. Each interest group interpreted the limited data in a different way to infer, extrapolate, and advocate in furtherance of its own agenda.[247] A common factual universe never materialized.

EPA's efforts to move forward with comprehensive recycling reform were ultimately stymied by the haggling over "who" and "how" those in the diverse spectrum of interested parties might or should have benefited from changes in the regulatory program.[248] Industry interests,

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243 *See, e.g.*, *HWTC Testimony*, *supra* note 4, at 16 (observing that the exceptions to EPA's solid and hazardous waste system are responsible for the scheme's complexity); HWTC REPORT, *supra* note 239, at 1 (alluding to "a riddle wrapped in a mystery inside an enigma"); Gaba, *supra* note 33, at 634 n.63 (noting that "the first step of the journey into the wonders of EPA's definition of solid waste" is "the nicely circular situation that a waste must be a solid waste to be a hazardous waste and hazardous to be a solid waste"); Sweeney, *supra* note 6, at 3 (stating that recycling is a concept associated with a wide range of meanings); Williams & Cannon, *supra* note 44, at 10,063 (characterizing the system as "a blessing and a curse").

244 *See HWTC Testimony*, *supra* note 4, at 18. For a summary of more recent litigation, see *Court Affirms Agency Limitations to Regulate Recyclable Material*, INSIDE EPA'S SUPERFUND REPORT, Apr. 26, 2000, at 16 (summarizing (1) a federal appeals court decision that unanimously struck down portions of EPA's final rule governing the storage of recyclable waste generated by mineral processing; and (2) an ongoing case over hazardous waste listings of petroleum wastes).

245 *See* 1990 RIS, *supra* note 2, at 40 (finding that (1) "[d]ata on the hazardous waste management industry have not been collected, analyzed, and used effectively in the development of regulations under [RCRA] Subtitle C;" (2) "[t]he establishment of national regulatory priorities is impaired by insufficient knowledge of the number and type of facilities handling different types of waste streams;" and (3) "[t]he limited availability of data has also hurt EPA's ability to communicate effectively with the public, Congress, and the regulated community").

246 *But see* Malloy, *supra* note 8, at 17 (asserting that EPA can no longer avoid this difficult issue by asserting a lack of information because the Agency's knowledge of the recycling industry, waste stream compositions, and recycling technologies, has increased dramatically).

247 Gerald Torres, *Environmental Burdens and Democratic Justice*, 21 FORDHAM URB. L.J. 431, 435 (1994) (detailing information necessary for meaningful public input). *But see* Baruch Fischoff, *Risk Perception and Communication Unplugged: Twenty Years of Process*, 15 RISK ANALYSIS 137, 140 (1995) (concluding that too much information can lead to confusion in decision-making).

248 For the view that public participation occasionally triumphs where narrow interests pre-dominate, see Spyke, *supra* note 130, at 264.

environmental groups, and experts "rather than the public at large" dominated the process by leveraging their knowledge and resources. Reflecting a general trend in the environmental arena, public participation was characterized by a high degree of institutionalization. Special interests have become increasingly active in the environmental arena.[249] Moreover, citizen stakeholders have often contented themselves with paying membership dues and allowing interest groups to act on their behalf, leveraging their technical expertise and funding sources.[250] The big players in the recycling reform process were convinced that their individual involvement guaranteed the achievement of their ambitious goals.[251] The Agency, on the other hand, attempted to accommodate as many views as possible and sacrificed administrative efficiency, expertise, and control.[252]

The different phases of EPA's recycling reform activities produced different types of public participation patterns. The Task Force embraced a broad pluralistic format encouraging all competing views to come to the table at the earliest time possible.[253] Through the Task Force process, EPA attempted to move away from antiquated announce-and-defend decision-making models that seek quick approval of pre-determined solutions.[254] The Task Force brought together regulators and stakeholders at the genesis of the reform process and shared the direction of the envisaged reform path at an early juncture in the process, before any ink of envisaged regulatory language was put on paper.[255] Moreover, EPA invested considerable staff time and funding into the Task Force process. But the Task Force's outreach practices unearthed con-

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249 *See id.* at 265-296 (observing that the decline in political parties corresponds with the growth in public and special interest group influence).

250 *See* Bram, *supra* note 130, at 157 (reasoning that, in many instances, individuals do not partake in decision-making processes because they (1) feel that others are representing their interests; (2) do not believe that the impact of the decision justifies public participation; (3) are not be aware that a particular decision affects them; and (4) assume that they cannot change the decision); Jones, *supra* note 120 at 45 (emphasizing the growing chasm between experts and the public).

251 *See* Spyke, *supra* note 130, at 273, 292 (observing that public participants may bring high expectations to environmental programs and lodge many standard complaints as well).

252 *See id.* (noting that public participation programs may demand large amounts of time and cost, pose management problems, result in lowest-common-denominator solutions, and conflict with the administrative goal of efficiency).

253 For an example of EPA's efforts to foster consensus building at the earliest time possible, see Lawrence E. Susskind, *Overview of Developments in Public Participation in* PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISIONMAKING 2, 2 (ABA Public Service Division, Standing Committee on Environmental Law, ed. 1994).

254 For a general discussion of the prevailing culture in many agencies, see Jones, *supra* note 120, at 14-25 (explaining that "in many cases the agency 'defines the agenda,' the 'agency chooses the game, the public plays in the last inning at best'"); Spyke, *supra* note 130, at 292 (observing that environmental decision-makers may be reluctant to give up power).

255 *See id.* at 287 (explaining that a successful consensus process requires all interested parties to develop tangible proposals and then debate the merits).

flicting goals, strategies, and assessments among the participants and the decision-makers as well as among the participants themselves.[256] The ensuing stalemate brought the process to a grinding halt. Thus, the Task Force report at least forced an abortive decision, thus avoiding any further lingering. In the next stage, EPA attempted to galvanize consensus around core areas of reform. The Agency embraced a format that was significantly reduced in scope and number of players. Moreover, EPA prepared less formalized discussion language. Yet, these somewhat altered process ingredients did not assuage the seemingly cemented unwillingness to compromise among the interested parties. The Agency finally opted for incremental fixes and reverted to the more traditional template of notice of proposal, opportunity for comment, and promulgation of a final rule.

Some observers may conclude that the fragmentation of the reform process resulted from a governance vacuum due to EPA's failure to assert regulatory will power and impose an executive decision.[257] Others may argue that the Agency's return to "square one" was the logical consequence of a decision process that determined the existing system as the path of least resistance; in other words, EPA merely bowed to stakeholder dynamics. The Agency was sandwiched between highly difficult and controversial economic and environmental considerations when attempting to devise definitions and recycling rules for diverse industrial situations. Moreover, reopening an entire web of regulations was believed to pose the specter of new waves of litigation.

The proposition that EPA was overtaxed by the sheer size of the reform project seems bolstered by the lack of a common vision in the legal scholarship. In addition to the proposal envisioning the creation of a separate and exclusive subtitle for recycling regulations,[258] commenta-

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256 *See* Authors Notes of Task Force Meeting (June 23, 1994) (observing that the initial reactions to the Draft Task Force Report of April 1994 were extremely negative).

257 For basic decision-making theories, see Michael D. Cohen, James G. March, & John P. Olsen, *A Garbage Can Model of Organizational Choice*, 17 ADMIN. SCI. Q. 1-25 (1972) (describing the "garbage can" model of organizational choice, which (1) emerges from "organized anarchies;" (2) explains decision-making as four independent "streams" of activities—problems, solutions, participants, and choice opportunities—that converge unpredictably; and (3) views the final decision, if any, as the result of whichever combination of solutions and problems happen to be pulled out of the mix in the "garbage can"); Paul J. Culhane, *NEPA's Impacts on Federal Agencies, Anticipated and Unanticipated*, 20 ENVTL. L. 681, 682-83 (explaining that under the rational-comprehensive model, decision makers agree on their objectives or preference function, identify all plausible alternate decisions, examine all costs, benefits, and other consequences of each alternative, and choose the optimum alternative).

258 *See* Williams & Cannon, *supra* note 44, at 10,074 (arguing (1) for a discrete subtitle focused on "the recycling facility itself: the recycling process used, and the air, water, and waste emissions generated by the process;" (2) that the program "would have to distinguish appropriately among a broad range of recycling processes and secondary materials, both hazardous and non-hazardous;" and (3) that two simpler permit systems, "one for mere operations and another, site-specific, for more complex processes," would have to be established). *But*

tors have analyzed a wide range of philosophical and substantive fixes. Some have advanced the idea of placing greater reliance on other environmental laws.[259] Other scholars have proposed reorienting the current system through the introduction of market mechanisms[260] and risk-based considerations.[261] Still others have specifically advocated standardizing the requirements for recycling and prior ancillary storage or other pertinent management through a streamlined permitting regime[262] or full exclusion.[263]

While the scholarly proposals for revision vary in form, substance, and detail, in the final analysis, "environmental protection, natural resource conservation, and economic competitiveness hang . . . in the balance" until the waste-product dichotomy is resolved.[264] Some observers have identified the panoply of jurisdictional, managerial, and residual loopholes as the culprit.[265] Others have criticized the lack of an objective test for distinguishing recycling from treatment.[266]

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see Needleman, *supra* note 1, at 1028-31 (arguing that "a separate subtitle would be impractical, redundant, and most importantly, would fail to address the root causes of the problems with RCRA," and asserting that a better approach is to "target specific problems with RCRA and design specific solutions in the context of the regulatory framework already in existence").

259 *See* Gaba, *supra* note 33, at 664 (suggesting reliance on the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 (1988 & Supp. V 1993); Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. §§ 11001-11050 (1988 & Supp. V 1993); Toxic Substances Control Act, 15 U.S.C. §§ 2601-2692 (1994)).

260 *See id.* at 623 (finding that (1) any reform should improve RCRA's performance in controlling economic externalities; (2) products do have economic value, while wastes do not; (3) wastes, which are not produced in response to market demands, gain value as commodities only through the imposition on society of externalities that RCRA intends to prevent; and (4) if the regulatory net were tightened, the costs that would otherwise be passed on to society remain with the regulated party).

261 *See* Sweeney, *supra* note 6, at 55-74 (proposing: (1) unconditional exemption of commodity-like, risk-free secondary materials from RCRA jurisdiction; (2) conditional exemption for low-to-medium-risk secondary materials that are handled in an environmentally sound manner; (3) RCRA Subtitle C regulations for recyclable materials that present a substantial risk of harm to human health and the environment prior to, during, or after recycling operations; and (4) RCRA Subtitle D control as a residual category for nonhazardous materials not destined for reuse or recycling or materials no longer possessing reclaimable secondary values); Williams & Cannon, *supra* note 44, at 10,067 (proposing criteria that would be easier to understand and facilitate proper compliance and effective enforcement).

262 *See* Malloy, *supra* note 8, at 19-50 (arguing that RCRA provides EPA with the requisite jurisdictional basis for imposing permitting requirements, and that permitting "which exhibits features of rulemaking, implementation, and enforcement" allows for tailoring of generic RCRA management standards to site-specific conditions).

263 *See* Comella, *supra* note 3, at 450-51 (arguing that the requirement of a hazardous waste storage permit partially negates the gains associated with a permit-free recycling process, and that the lack of on-site storage may force a facility either to transfer hazardous waste directly from the truck to the recycling process or to abandon recycling plans).

264 Sweeney, *supra* note 6, at 15.

265 *See* Needleman, *supra* note 1, at 973, 1018-25 (arguing that "jurisdictional, managerial, and residual . . . loopholes form the basis for the waste/product dichotomy").

266 Comella, *supra* note 3, at 416.

But fashioning a workable system able to distinguish between legitimate manufacturing and disguised discard does not have to start from zero. The TAR test proposed by the Task Force,[267] the reuse-efficiency recycling formula suggested in the literature,[268] and the six recycling-legitimacy questions outlined by the Office of Solid Waste[269] provide valuable discussion points for tackling the waste-product dichotomy. EPA's current effort to articulate a vision for the RCRA program into the next 20 years[270] sends a sounding signal that the Agency will not defer to the silence of the regulatory status quo in the hazardous waste recycling arena.

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267 *See* TASK FORCE REPORT, *supra* note 13, at 5-9 to 5-12.

268 *See* Comella, *supra* note 3, at 447-450.

269 *See* Memorandum from Sylvia K. Lowrance, Director, Office of Solid Waste, EPA to Hazardous Waste Management Division Directors: Regions I-X, EPA (Apr. 26, 1989) (on file with author) (inquiring (1) Is the secondary material similar to an analogous raw material or product?; (2) What degree of processing is required to produce a finished product?; (3) What is the value of the secondary material?; (4) Is there a guaranteed market for the end product?; (5) Is the secondary material handled in a manner consistent with the raw material or product it replaces?; and (6) Are there any other relevant factors?).

270 *See* EPA, BEYOND RCRA: PROSPECTS FOR WASTE AND MATERIALS MANAGEMENT IN THE YEAR 2020, DRAFT WHITE PAPER (2000); *see also Industry Gives New EPA RCRA "Vision" Paper Mixed Reviews*, INSIDE EPA'S SUPERFUND REPORT, Dec. 25, 2000 at 17 (reporting that EPA's vision document, inter alia, proposes to: (1) look at waste in the context of a product's lifecycle; (2) expand the current focus on "waste management" to a broader "materials management" approach; (3) meld RCRA with TSCA; and (4) increase EPA's authority over hazardous materials before they become wastes).