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# PUBLIC OPPOSITION TO HAZARDOUS WASTE SITES: THE SELF-DEFEATING APPROACH TO NATIONAL HAZARDOUS WASTE CONTROL UNDER SUBTITLE C OF THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976

*Sidney M. Wolf\**

## I. INTRODUCTION

In 1976 Congress enacted the Resource Conservation and Recovery Act (commonly known as RCRA)<sup>1</sup> which completely revamped federal regulation of solid waste disposal<sup>2</sup> and in Subtitle

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<sup>1</sup> Pub. L. No. 94-580, 42 U.S.C. § 6901 (1976).

<sup>2</sup> RCRA revised in its entirety the Solid Waste Disposal Act of 1965, (Title II of Pub. L. No. 89-272, 79 Stat. 997 (Oct. 20, 1965), *as amended* by the Resource Recovery Act of 1970, Pub. L. No. 91-512, 84 Stat. 1227 (Oct. 26, 1970). The Solid Waste Disposal Act of 1965 was the first federal legislation dealing directly with the solid waste problem. It was primarily aimed at establishing a national research and development program for new and better methods to dispose properly of solid waste. It authorized the Secretary of Health, Education, and Welfare (HEW) to make grants to state and interstate agencies to study solid waste disposal and associated problems. The Resource Recovery Act of 1970 amended the Solid Waste Disposal Act to include the promotion of resource recovery programs and added provisions for grants to these programs. It required HEW to submit to Congress a report on the feasibility of a system of national disposal sites for the storage and disposal of hazardous wastes.

RCRA has two major objectives: first, to protect human health and the environment by subjecting solid waste and hazardous waste disposal to regulation; and second, to foster resource conservation and recovery for wastes.

State regulation of nonhazardous solid waste is primarily the subject of Subtitle D of RCRA, RCRA §§ 4001-4009, 42 U.S.C. §§ 6941-6949 (1976). Subtitle D directs the Environmental Protection Agency to develop guidelines for the acceptable land disposal of

C<sup>3</sup> created the first federal regulatory program for the systematic control of hazardous waste. Subtitle C operates on the premise that public health and the environment can be protected through standards and requirements commanding the proper transportation, storage, treatment and disposal of hazardous waste. Congress had ample justification to enact Subtitle C, for improper management of hazardous waste was long the rule and not the exception. This widespread mismanagement of hazardous waste caused and continues to cause hazardous waste discharges harming people, property and the environment.<sup>4</sup> Over the course of 1978 proposed regulations were issued for various sections of Subtitle C.<sup>5</sup> EPA issued part of the final regulations in February, 1980,<sup>6</sup> and the remainder of final and some interim final regulations in May,<sup>7</sup> all of which are to take effect on November 19,

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solid wastes which will serve as minimum standards by which states will evaluate and regulate disposal operations. Those solid waste land disposal sites that do not comply with EPA guidelines will be designated as "open dumps" and prohibited. EPA is also directed to establish guidelines for the development of state solid waste plans. These plans are to identify open dumps, prohibit the establishment of any new ones, and require that all non-hazardous solid wastes either be used for resource recovery or disposed of in secure sanitary landfills. Any existing open dumps which cannot be upgraded to meet the criteria for an acceptable sanitary landfill must be closed.

Entirely excluded from regulation of hazardous and nonhazardous wastes under the Solid Waste Disposal Act as amended are discharges requiring permits pursuant to the Federal Water Pollution Control Act and nuclear wastes regulated pursuant to the Atomic Energy Act of 1954. RCRA § 1004(27), 42 U.S.C. § 6903(27) (1976).

<sup>3</sup> RCRA §§ 3001-3011, 42 U.S.C. §§ 6921-6931 (1976).

<sup>4</sup> Section 212 of the Resource Recovery Act of 1970, Pub. L. No. 91-512 directed HEW to submit to Congress a comprehensive report on hazardous waste disposal practices. EPA, created soon after, was given responsibility for the report and submitted it to Congress and the President on June 30, 1973, beginning serious congressional and executive branch consideration of hazardous waste control legislation. The major conclusions of the report were: management of the nation's hazardous waste was generally inadequate; hazardous waste disposal on land was increasing; and case studies made it clear that the public health and welfare were threatened by uncontrolled waste discharges into the environment. See OFFICE OF SOLID WASTE MANAGEMENT, U.S. ENVIRONMENTAL PROTECTION AGENCY, REPORT TO CONGRESS: DISPOSAL OF HAZARDOUS WASTES (1974).

<sup>5</sup> For draft regulations issued pursuant to Sections 3001, 3002, and 3004 of RCRA, see 43 Fed. Reg. 58946 (1978). Other Subtitle C draft regulations published include: pursuant to Section 3003, 43 Fed. Reg. 18506-12 (1978); pursuant to Section 3006, 43 Fed. Reg. 4336-73 (1978); pursuant to Section 3008, 43 Fed. Reg. 34738-47 (1978); and pursuant to Section 3010 and the Hazardous Materials Transportation Act, 43 Fed. Reg. 22626-34 (1978).

<sup>6</sup> Standards for generators and transporters of hazardous wastes pursuant to Sections 3002 and 3003 of RCRA were issued at 45 Fed. Reg. 12732 and 12743 (1980), respectively (to be codified in 40 C.F.R. §§ 262 and 263).

<sup>7</sup> 45 Fed. Reg. 33065-285 (1980) contains EPA regulations for a permit program for hazardous waste facilities and for the authorization of state hazardous waste programs respec-

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Subtitle C, and EPA regulatory measures implementing it, demand that hazardous wastes be treated, stored and disposed at waste facilities which are safe and sound. There is presently an acute shortage of environmentally suitable hazardous waste facilities, and more facilities will have to be built or upgraded to service growing hazardous waste generation in the manner prescribed by Subtitle C regulations. Standing in the way of the expansion of environmentally adequate hazardous waste service capacity is citizen opposition to the siting of hazardous waste operations in or near their communities.

This article examines the seeming contradiction between staunch public opposition to hazardous waste facilities and our first national hazardous waste control statute which seeks to provide facilities which protect public health and the environment from hazardous waste pollution. At first glance, public opposition to newer, safer, hazardous waste facilities appears irrational and destructive to a long and much needed national hazardous waste control system. But first impressions are misleading, for public opposition to hazardous waste sites is a reaction to the failure of federal and state governments in general, and RCRA in particular, to directly and effectively confront crucial hazardous waste issues of rightful public concern.

This article begins with a brief overview and history of hazardous waste pollution. Next, past inadequate hazardous waste regulation is examined, and the statutory framework of Subtitle C is outlined. From this background the article proceeds into a discussion of staunch citizen opposition to hazardous waste disposal and an examination of the justification for this opposition both in past inadequate regulation of hazardous wastes and in the serious shortcomings of Subtitle C control. Moreover, this section emphasizes that the major obstacle to implementing hazardous waste control is not public opposition but rather the lack of adequate financial and enforcement support for regulatory programs. Next the article finds that proposed EPA regulations do not provide adequate financial responsibility measures to ensure needed liability coverage for pollution at regulated waste sites or to ensure

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tively pursuant to Sections 3005 and 3006 of RCRA (to be codified in 40 C.F.R. Parts 122, 123 and 124), and regulations for the identification of hazardous waste pursuant to Section 3001 of RCRA and for facility standards pursuant to Section 3004 of RCRA (to be codified in 40 C.F.R. §§ 264, 265).

proper long-term care for closed waste sites. Finally, concluding that effective hazardous waste control requires the reduction of hazardous generation at its industrial sources, the article finds the major defect of national hazardous waste policy is in its failure to reduce waste growth.

## II. HAZARDOUS WASTE POLLUTION—A SHORT HISTORY

There is no doubt that we have more than enough wastes to look after. Our advanced industrial society creates not only huge amounts of goods and services but also prodigious amounts of wastes as the flotsam and jetsam of production, consumption, and ordinary living. Last year alone, the United States generated 130 million metric tons of municipal refuse, 5 million metric tons (dry weight) of sewage sludge, 430 million metric tons (dry weight) of agricultural wastes, over 3 billion tons of mining wastes, and about 344 million or more metric tons of industrial wastes.<sup>8</sup> Harm to the environment and public health from most of these huge volumes of wastes can be prevented through relatively simple methods of proper sanitary landfilling and through material conservation methods such as recycling and materials and energy recovery.<sup>9</sup>

All wastes are not equal, however, in their potential for inflicting harm upon people and nature, or in their susceptibility to proper management. Some wastes pose significantly greater hazards than others; those belong to a particular species of wastes called hazardous wastes.<sup>10</sup> Of the 344 million metric tons of hazardous industrial wastes generated yearly, approximately 47.5 million metric tons, well over 10 percent, are potentially hazardous.<sup>11</sup> Remarkably, 90 percent of our industrial hazardous waste

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<sup>8</sup> ENVIRONMENTAL PROTECTION AGENCY, ANNUAL ACTIVITIES UNDER THE RESOURCE CONSERVATION ACT OF 1976, ANNUAL REPORT TO THE PRESIDENT AND THE CONGRESS FISCAL YEAR 1978 (1979), at I-2 [hereinafter cited as 2ND ANNUAL RCRA REPORT].

<sup>9</sup> Resource recovery generally refers to collecting homogenous wastes for reuse as materials or energy in manufacturing operations. A. BARTON, RESOURCE RECOVERY AND RECYCLING 3, 6 (1979). Other definitions for terms related to resource recovery and resource conservation are found in RCRA § 1004(18)-(24), 42 U.S.C. § 6903(18)-(24) (1976).

<sup>10</sup> Subtitle C defines a waste as hazardous if it exhibits either of two effects: 1) the waste can cause or significantly contribute to death or serious irreversible or incapacitating illness because of its quantity, concentration, or physical, chemical, or infectious characteristics or 2) the waste poses a substantial or potential danger to human health or the environment when mismanaged. RCRA § 1004(5), 42 U.S.C. § 6903(5) (1976).

<sup>11</sup> ENVIRONMENTAL PROTECTION AGENCY, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR SUBTITLE C (January 1979) at VI-2 [hereinafter cited as DRAFT EIS].

has been disposed of in a manner actually or potentially harmful to public health and the environment.<sup>12</sup>

Stirred by the combination of spectacular and widely publicized hazardous waste catastrophes, such as that which occurred at Love Canal,<sup>13</sup> and by an aroused public consciousness of the threatening nature of hazardous wastes, public concern over hazardous waste pollution has been growing rapidly in recent years. The dangers of hazardous wastes are very real and often dramatic. Hazardous wastes can be toxic, carcinogenic, mutagenic, teratogenic, radioactive, flammable, explosive, biologically persis-

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<sup>12</sup> *Id.*, at V-36.

<sup>13</sup> The hazardous waste catastrophe at Love Canal stirred great national interest in hazardous waste pollution. Hooker Chemical Company used its own Love Canal Waste Landfill in Niagara Falls, New York as a chemical dumpsite from 1942 through 1953. Hooker buried at least 82 chemicals at Love Canal, 11 of which are widely suspected of being carcinogens. Hooker sold the property in 1953 to the local school board for \$1 with a clause in the deed releasing the company from any claims for future damage caused by the buried chemicals. Soon after the site was sold, a school and playground were built on it and homes sprung up in the surrounding area. An internal company memorandum dated June 18, 1958 reported that three to four children playing at the site were burned by buried chemicals that year, but Hooker decided not to inform the general public of the possible risks unless the school board advised it to do so. However, that never occurred and Hooker maintained their public silence about the potential danger of the site, apparently out of fear of legal reprisals. It was not until 1976 that the site began to release large amounts of hazardous wastes. Fumes and leachate, a mixture of groundwater and waste, began seeping into the basements of homes and rising to the surface of yards and children's play areas. Incredible stories of chemical assaults on people and property have been reported by local residents. Visitors have had the soles of their shoes corroded through, children and dogs have received burns from playing outside, gardens have burnt up, fence posts have been eaten away, and residents report that their neighbors have died from numerous kinds of cancer. The New York State Health Department believes the site has caused the area's high incidence of spontaneous abortions, birth defects, and numerous cases of serious illnesses. The cancer rate in the vicinity is 30 times the national average. The State evacuated all pregnant women and children under the age of two in the areas surrounding Love Canal because these two groups are most vulnerable to the adverse effects of exposure to toxic substances. Numerous residents have voluntarily abandoned their homes, and property near the dump site is virtually unsaleable. New York's U.S. Senator Patrick Moynihan estimates the cost of clean-up of the contaminated land and water at Love Canal and at two other Hooker disposal sites in Niagara Falls could reach \$280 million, and citizens in pending lawsuits are seeking up to \$2 billion in damages from Hooker Chemical. EPA estimates that it may cost \$20 million or more to relocate 200 families, buy property, perform remedial construction and conduct additional testing and monitoring at Love Canal. Federal assistance so far includes \$2 million in disaster relief and a \$4 million grant taken out of its RCRA appropriation for FY 79. See DRAFT EIS, *supra* note 11, at VI-6; 2ND ANNUAL RCRA REPORT, *supra* note 8, at I-3 to 4; 10 ENVIR. REP. (BNA) 27 (May 5, 1979). For an extensive review of the Love Canal disaster, see *Hazardous and Toxic Waste Disposal, Jt. Hearings Before the Subcommittees on Environmental Pollution and Resource Protection of the Senate Comm. on Environment and Public Works, 96th Cong., 1st Sess. (March 28-29, 1979).*

tent, and can accumulate in living organisms.<sup>14</sup> Hazardous wastes have even proven lethal.<sup>15</sup>

While the chief source of the most hazardous of hazardous wastes is industry, they may also come from many other sources, and may take many different forms.<sup>16</sup> From over 311 case studies of hazardous waste pollution incidents the Environmental Protection Agency (EPA) has determined that hazardous wastes enter the environment and damage it and public health through one or more of six major pathways.<sup>17</sup> The most prevalent and menacing kind of hazardous waste pollution is contamination of groundwater through leachate.<sup>18</sup> Fifty percent of the nation's drinking water supply comes from the ground, and the percentage increases annually.<sup>19</sup> Groundwater contamination by hazardous wastes is extremely elusive—usually not discovered until well after damage has occurred—and can endure for decades or even centuries. In most cases cleanup is neither technologically nor economically feasible. Once an underground water drinking supply is contaminated by toxic wastes it is no longer safe to use. The five other avenues hazardous waste injury can travel are: land surface contamination by way of runoff;<sup>20</sup> air pollution by open burn-

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<sup>14</sup> See DRAFT EIS, *supra* note 11, at V-1 to V-11.

<sup>15</sup> For instance, the December 8, 1977 explosion and fire at the Rollins Environmental Services chemical waste treatment plant in Logan Township, New Jersey killed seven construction workers. For an expanded description of the Rollins disaster, see note 205, *infra*.

<sup>16</sup> Hazardous wastes come in many forms—solids, powders, liquids, sludges and gases. The generators of hazardous wastes vary widely, and include industries, the military and nonmilitary activities of the federal government, agriculture, research laboratories and hospitals, utilities, mines and households. HOUSE SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE, MATERIALS RELATING TO THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, at 14 (April 1976) [hereinafter HOUSE RCRA MATERIALS].

<sup>17</sup> *Id.* at 40-42.

<sup>18</sup> Sixty-four percent of EPA's case studies of hazardous waste damage involved groundwater contamination by leachate, a mixture of wastes and water which can travel to the land surface or to groundwater supplies. One of the many examples of groundwater contamination occurred at a municipal landfill in Delaware. Thirteen years after the landfill had been closed, it was discovered that chemical and biological contaminants were leaching into the groundwater. The affected groundwater was the drinking supply source for 40,000 people. The estimated cost for decontaminating the groundwater is \$26 million. HOUSE RCRA MATERIALS, *supra* note 16, at 40.

<sup>19</sup> *Id.* at 41.

<sup>20</sup> A second major form of EPA-documented hazardous waste pollution is land surface contamination by way of run-off, accounting for 37% of EPA's case studies of reported incidents of hazardous waste pollution. One EPA-documented case of surface contamination from run-off was caused by the discarding of drums containing numerous toxic and corrosive substances, including cyanide, resulting in the death of three cattle from cyanide poisoning. Authorities later discovered that surface water run-off showed a cyanide con-

ing, evaporation, sublimation or wind erosion;<sup>21</sup> poisoning through direct contact with living organisms;<sup>22</sup> poisoning through the food chain;<sup>23</sup> and fire and explosions.<sup>24</sup>

EPA has prepared in excess of over 400 case studies of recent hazardous waste pollution ranging from extremely serious to minor, and has concluded that from the haphazard way in which virtually all of these incidents were discovered the vast majority of hazardous waste pollution occurrences are not reported at all.<sup>25</sup> There are between 32,000 and 50,000 treatment, storage and disposal sites containing hazardous wastes, 20,000 of which are active and the rest closed or abandoned.<sup>26</sup> Of the many active and

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centration 1800 times in excess of the U.S. Public Health Service standard for drinking water. HOUSE RCRA MATERIALS, *supra* note 16, at 41.

<sup>21</sup> An EPA case study of air pollution from hazardous waste reports the quarantining of 20,000 Louisiana cattle after they had absorbed from the air hexachlorobenzene, a toxic waste that had been dumped at a nearby rural landfill. Local farmers lost \$3.9 million and Louisiana and the federal government spent over \$150,000 just for sampling and testing. HOUSE RCRA MATERIALS, *supra* note 16, at 41.

<sup>22</sup> Poisoning from direct contact with hazardous waste usually occurs when surplus toxic wastes like pesticides or industrial chemicals are not properly disposed. For example, in California eighteen persons were hospitalized and two firemen contracted permanent disabling lung damage after they inhaled nematocide residue emitted from a 300-pound canister improperly disposed of by the manufacturer. The incident was triggered when a man picked up the canister, planning to use it as a "nice stand-up fireplace." HOUSE RCRA MATERIALS, *supra* note 16, at 41.

<sup>23</sup> Of all the types of hazardous waste damage, poisoning through the food chain is the most difficult to identify, trace, and confirm due to the great difficulty in showing causation and obtaining scientific evidence that isolates the cause of the injury to a specific toxic source. One clear-cut case of toxic injury from food contamination occurred in New Mexico when contaminated pork was eaten. Hogs, scavenging for food at a local dump, ate grain that had been discarded there. The grain had been treated with mercury as a seed dressing. The hogs were slaughtered locally and three children contracted alkyl mercury poisoning after eating the pork. A pregnant woman who ate the contaminated pork gave birth to a child suffering from congenital mercury poisoning. HOUSE RCRA MATERIALS, *supra* note 16, at 42.

The most tragic, extensive, and heavily publicized case of mercury poisoning due to mercury-laced wastes occurred in the 1950's in the seaside town of Minamata, Japan. Hundreds of persons contracted severe mercury poisoning from eating fish and shellfish contaminated by mercury which had been dumped into Minamata Bay by a local chemical firm. Minamata's disease, as this episode of mercury poisoning came to be called, resulted in adults and children suffering serious neurological injuries—many children and adults becoming spastic, retarded, afflicted with constant pain and faced with an early death. See W. SMITH, MINAMATA (1975).

<sup>24</sup> See note 205, *infra*, for the 1977 spectacular fire and explosion at the Rollins Chemical Waste Facility in Logan Township, New Jersey.

<sup>25</sup> ENVIRONMENTAL PROTECTION AGENCY, STATE DECISION-MAKER'S GUIDE FOR HAZARDOUS WASTE MANAGEMENT at III-12 (1977) [hereinafter cited as EPA DECISION-MAKER'S GUIDE].

<sup>26</sup> As reported by EPA Deputy Assistant Administrator Steffen Plehn in *An Open Let-*



inactive hazardous waste sites, up to 2000 pose a significant risk of imminent hazard to the public, and the total cost to respond to emergencies and take remedial action at all problem sites could exceed \$44 billion.<sup>27</sup>

The wrack and ruin inflicted upon the environment and public health by hazardous waste is not surprising considering that at least 90 percent of the industrial hazardous wastes generated during the last few decades have been treated or disposed of in an environmentally unsuitable manner jeopardizing human health and natural systems.<sup>28</sup> Furthermore, large, but generally undetermined amounts of industrial hazardous wastes have been dumped illegally onto the land and into the water.<sup>29</sup> Organized crime has even been implicated in the profitable illegal dumping business.<sup>30</sup>

The most insidious and yet common feature of hazardous waste pollution is the long gestation period between faulty disposal and onset of noticeable harm to people and the environment.<sup>31</sup> At

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*ter from EPA to You*, NATIONAL LEAGUE OF CITIES ENVIRONMENTAL REPORT (April 23, 1979). Also note that the waste sites across the nation include 100,000 industrial impoundments (pits, lagoons, ponds), 20,000 municipal refuse landfills, and 23,000 municipal sludge disposal sites, 2ND ANNUAL RCRA REPORT, *supra* note 8, at I-3.

<sup>27</sup> Plehn, *supra* note 26.

<sup>28</sup> Of the major conventional methods of disposing or treating hazardous wastes, the portion of each that occurs in an environmentally unacceptable manner is as follows: surface impoundments, 99.9%; dumps and landfills, 95%; incinerators, 55%; and almost 100% for road application, landspreading injection, and deepwell injection. *Draft EIS*, *supra* note 11, at VII-30. Eighty percent of all industrial hazardous wastes are disposed on land by the environmentally unsound methods of unsecured landfills and unlined surface impoundments such as lagoons. In comparison, only 0.1% of industrial hazardous wastes have been disposed in environmentally-adequate lined impoundments and only 2.3% at secure landfills. Only 5.6% of industrial hazardous waste is incinerated for treatment and detoxification under controlled, environmentally safe conditions, while about 10% of the industrial hazardous wastes are incinerated under uncontrolled, unsafe conditions. See EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 11-15.

<sup>29</sup> The illegal, purposeful and surreptitious dumping of hazardous wastes is sometimes called "midnight dumping," a literal event as well as a euphemism. The wanton illegal dumping of hazardous wastes includes discarding them in sewer systems ("down the drain," so to speak), onto roadsides, into ponds, rivers and lakes, in quarries, onto field and in forests, and numerous other pernicious ways. *Illegal, Unwitting Disposal Imperils the Chain of Life*, in NATIONAL LEAGUE OF CITIES ENVIRONMENTAL REPORT, *supra* note 26.

<sup>30</sup> Organized crime involvement is no surprise, considering that the illegal dumping business is highly lucrative. On April 5, 1979, Glenn Paulson, New Jersey's Assistant Commissioner for Science and Research, told the House Subcommittee on Oversight and Investigation that organized crime elements ran the Chemical Control Corporation site in Elizabeth, New Jersey, where 34,000 gallons of hazardous wastes had been illegally disposed and abandoned. 9 ENVIR. REP. (BNA) 2324 (April 13, 1979).

<sup>31</sup> There are two types of hazardous waste damage risks in terms of the time over which they can materialize: there are those hazardous wastes whose effects can be acute, that is,

Love Canal significant waste releases did not begin to appear until twenty-five years after the closing of the chemical waste dump.<sup>32</sup> The latency period for the occurrence of waste releases into the environment can stretch over years or decades. Hence, a major reason so many hazardous waste pollution incidents go unreported is that the health disorders and environmental injuries they cause may not become apparent until years after initial or prolonged exposure, and direct causative relationships are difficult to trace.<sup>33</sup> Because the victims of hazardous waste poisoning seldom know the true cause of their health disorders, they cannot take timely or proper actions to prevent or treat those disorders.<sup>34</sup> As a result of the extended time lag between improper hazardous wastes activities and the onset or discovery of harm, we can expect continuing damage incidents to occur in the future from wastes previously improperly stored, treated, or disposed of at sites closed, abandoned or forgotten long ago.<sup>35</sup>

### III. HAZARDOUS WASTE MISMANAGEMENT AND SUBTITLE C OF RCRA

The principal reason for the near universal mismanagement of hazardous waste has been the inadequate, permissive, and in many cases nonexistent regulatory control of hazardous wastes by state government.<sup>36</sup> Environmentally acceptable hazardous waste

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whose risks are immediate; and there are those hazardous wastes whose effects can be chronic, that is, likely to occur over an extended period. 2ND ANNUAL RCRA REPORT, *supra* note 8, at II-6.

<sup>32</sup> See note 13, *supra*.

<sup>33</sup> DRAFT EIS, *supra* note 11, at S-12.

<sup>34</sup> The disease-causing, teratogenic, mutagenic and carcinogenic agents in hazardous wastes may often remain dormant in the environment or body for years before injury materializes or becomes evident. These toxicants may be transferred to future generations in the form of gene mutations or birth defects. Seemingly low levels of toxicants may accumulate undetected in the body for several years until a threshold level is surpassed and injury occurs. Originally innocuous substances in the wastes may become toxic, and toxicants may become even more potent when they combine with water, air and other substances. Detecting and treating toxic injuries and diseases is undermined by the numerous ways these substances can enter and injure the body. The physician finds treatment complicated since cause-effect relationships, or the etiology of the malady, cannot be easily isolated from the many other environmental toxins and pollutants an individual encounters in his life. Preventive measures to protect those exposed to a toxicant in hazardous wastes cannot be taken if the precise cause of the injury is unknown or indeterminate. See Soble, *A Proposal for the Administrative Compensation of Victims of Toxic Substance Pollution: A Model Act*, 14 HARVARD JOURNAL OF LEGISLATION 683, 686 (1977).

<sup>35</sup> DRAFT EIS, *supra* note 11, at S-12.

<sup>36</sup> Prior to RCRA's passage in 1976, only five states had more or less comprehensive

treatment and disposal facilities are extremely costly. Before the passage of RCRA the federal government stayed out of hazardous waste control. Not faced with the coercion of regulation, hazardous waste generators sought to rid themselves of their hazardous waste in the least expensive legal, or sometimes illegal, way, rarely giving any regard to the well-being of the environment or public.<sup>37</sup> The typical criteria for selecting a site for a hazardous waste facility was not the environmental suitability of the site but low land cost, ease of land acquisition, nearness to waste sources, and ease of site approval.<sup>38</sup> Minimal attention was given to whether

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hazardous waste management legislation—Minnesota, California, Illinois, New York and Oregon. While vastly superior to hazardous waste legislation in other states, these statutes did not result in totally adequate hazardous waste management programs due to a lack of funding and manpower. At the time RCRA was enacted, half the states assigned at most one person to work full time on hazardous waste. While legislation in all states addressed hazardous waste control to some degree, the scope of actual state regulation ranged from virtually nothing to what appear to be comprehensive programs. In most states hazardous waste regulation was not based on specific hazardous waste acts but instead on existing solid waste statutes. These solid waste statutes were generally devoid of guidelines, criteria or standards properly tailored to the radically different needs of hazardous waste control. Thus, the regulation of hazardous waste that did exist was largely a matter of broad and sometimes incorrect interpretation of state solid waste statutes. See HOUSE RCRA MATERIALS, *supra* note 16, at 26; DRAFT EIS, *supra* note 11, at II-18 to 36.

<sup>37</sup> One example of illegal dumping on the grandiose scale was the dumping of highly toxic polychlorinated biphenyls (PCB's) along 210 miles of rural North Carolina roadways by a waste disposal outfit. *Jt. Hearings on Hazardous and Toxic Waste Disposal*, *supra* note 13, at 84-85 (statement of Thomas C. Jorling, EPA Assistant Administrator for Water and Waste Management). The "Valley of the Drums" in Shepardsville, Kentucky represents another spectacular example of reckless, illegal hazardous waste dumping. T.A. Taylor, a waste dealer, illegally disposed over 17,000 barrels of waste of undetermined toxicity, explosiveness, and flammability on a 23-acre site which made up his backyard. An undetermined amount of waste material was buried in drums at the site, thousands of barrels were stacked on top of the site, and no attempt was made to prevent the site from polluting surface water. Some of the materials found in the "Valley of the Drums" include alkyl aromatics, ketones, many alcohols, organic acids, and heavy metals. Thousands of drums in a deteriorating condition were stacked on the property. Many of the drums had become swollen by internal pressure and many burst, spilling their contents onto the ground. For this and other examples of illegal or highly improper waste disposal, see SUBCOMM. ON OVERSIGHT AND INVESTIGATIONS OF THE HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, REPORT ON HAZARDOUS WASTE DISPOSAL, 96th Cong., 1st Sess. (September 1979), at 9-18 [hereinafter cited as HOUSE REPORT ON HAZARDOUS WASTE DISPOSAL].

<sup>38</sup> The suitability of a site for a hazardous waste facility, particularly in respect to land disposal and waste water impoundments, depends on geology, climate, topography, hydrology, ecology, and other environmental factors which contribute to or detract from lending overall natural protection to the environment. To the extent that favorable natural site characteristics are lacking, engineered techniques are required to contain and isolate hazardous wastes from the environment. See EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 69.

the site had natural or engineered features that could protect against waste releases.<sup>39</sup> The same disregard for environmental and public health protection characterized the operation of hazardous waste facilities.

### A. RCRA and Subtitle C

The menacing character of hazardous wastes and the grim history of pollution caused by inadequately regulated and improper treatment and disposal activities has stirred strong and growing opposition by citizens against the siting of hazardous waste facilities in or near their communities. Recognizing that public health and the environment were compromised by the uncontrolled and unsound management of hazardous wastes, Congress enacted Subtitle C of RCRA, which directs EPA to establish a comprehensive, "cradle to grave" system for regulating hazardous wastes from the generator, through transportation and storage, and to final treatment and disposal.<sup>40</sup>

Six major sections of Subtitle C, 3001 through 3006,<sup>41</sup> provide the blueprint for a regulatory program. Section 3001 calls for the identification of wastes which are hazardous and thus subject to Subtitle C regulation.<sup>42</sup> Section 3002 addresses the standards governing hazardous waste generators<sup>43</sup> and includes a "manifest" system which is meant to track wastes from cradle to grave to

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<sup>39</sup> *Id.* at 69.

<sup>40</sup> RCRA §§ 3001-3011, 42 U.S.C. §§ 6921-6931 (1976).

<sup>41</sup> 42 U.S.C. §§ 6921-6926 (1976).

<sup>42</sup> In order to be subject to Subtitle C regulation, a waste must be identified as hazardous. For a definition of hazardous wastes, see RCRA § 1004(5), 42 U.S.C. § 6903(5) (1976), as explained at note 10, *supra*. Section 3001 provides two measures or methods by which EPA can establish a waste as hazardous: 1) by a list of specific wastes deemed to be hazardous and 2) by a set of identifying characteristics for determining whether any waste is hazardous. In its preparation of a list of specified hazardous wastes and a set of identifying characteristics, Section 3001 directs EPA to take into account such factors as "toxicity, persistence, degradability in nature, potential for accumulation in tissue and other related factors such as flammability, corrosiveness and other hazardous characteristics." 42 U.S.C. § 6921 (1976).

<sup>43</sup> EPA is directed to promulgate standards governing the activities of hazardous waste generators covering the following six areas: 1) record keeping to identify the quantities, composition and disposal of hazardous wastes; 2) the labeling of containers used for storage, treatment or disposal of hazardous waste; 3) the proper containerization of hazardous wastes; 4) information on the general chemical composition of hazardous wastes to persons transporting, treating, storing or disposing of these wastes; 5) compliance with a manifest system to assure that hazardous wastes reach environmentally acceptable and permitted facilities; and 6) submission of periodic reports to regulatory authorities on the quantities and disposition of hazardous wastes. 42 U.S.C. § 6922 (1976).

assure they are disposed of properly.<sup>44</sup> Section 3003 authorizes standards for the transportation of hazardous waste.<sup>45</sup> Section 3004 authorizes standards for the owners and operators of facilities which store, treat or dispose of hazardous waste.<sup>46</sup> Section 3005 establishes a permit program for hazardous waste facilities.<sup>47</sup>

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<sup>44</sup> The manifest is defined by RCRA as a form for identifying the quantity, composition, origin, routing, and destination of hazardous waste from the point of generation to the point of disposal, treatment, or storage. RCRA § 1004(12), 42 U.S.C. § 6903(12) (1976). A hazardous waste program can only be effective if it assures regulatory surveillance over the whole life cycle of hazardous wastes, that is, from "cradle to grave." To keep track of hazardous waste the regulatory program has to require the hazardous-waste hauler to report where and when the wastes are picked up and delivered. *Jt. Hearings on Hazardous and Toxic Waste Disposal, supra* note 13, at 41.

The Subtitle C regulations establish a manifest system in which the generator must give the hauler a manifest indicating the quantity and composition of the waste being hauled, and the hauler in turn surrenders the manifest to the treatment or disposal facility receiving the wastes. The treatment and disposal facility sends back the manifest to the generator as confirmation that the wastes have been received according to the generator's instructions. If the generator does not receive the manifest back within thirty-five days after sending off the wastes, this must be reported to EPA. For record-keeping purposes, the generator must keep a copy of manifests or delivery documents. The filed manifests serve as the basis for the generator's yearly reports to regulatory authorities on the amounts and kinds of hazardous wastes generated and shipped off-site. The unreturned manifests are the basis for quarterly exception reports from the generator which specify the occasions where manifests were not returned to the generator, indicating the shipment may either have been lost in transport, illegally disposed, or otherwise mishandled. This combination of manifest and reporting requirements for the shipment of hazardous wastes by their generators is expected to result in the near complete elimination of illegal or surreptitious dumping of hazardous wastes by assuring their delivery to environmentally acceptable facilities. See 45 Fed. Reg. 33226-32 (1980) (to be codified at 40 C.F.R. §§ 262.20-.23, 262.40-.42, 263.20-.23, 264.70-.77) for the manifest and reporting standards.

<sup>45</sup> Section 3003(a) of RCRA directs EPA to promulgate regulatory standards for the transportation of hazardous waste to at least include requirements for recordkeeping, restricting transportation to properly labeled wastes, compliance with the manifest system, and restricting the transportation of hazardous waste only to permitted facilities. 42 U.S.C. § 6923(a) (1976). Section 3003(b) calls for coordination and cooperation between EPA and the Department of Transportation in regulating the shipping of hazardous materials subject to both RCRA and the Hazardous Materials Transportation Act. 42 U.S.C. § 6923(b) (1976).

<sup>46</sup> Section 3004 directs EPA to promulgate performance standards for facilities storing, disposing or treating hazardous wastes. At the minimum these standards must include requirements covering the following seven activities: 1) record keeping; 2) reporting, monitoring, and inspection and compliance with the manifest system; 3) facility operating standards; 4) siting, design and construction standards; 5) contingency plans for hazardous waste damage occurrences; 6) compliance with permit requirements for hazardous waste facilities; 7) standards in respect to continuity of operation, training of facility personnel, and financial responsibility for hazardous waste damage liability. 42 U.S.C. § 6924 (1976).

<sup>47</sup> Section 3005 requires that hazardous waste facilities obtain an operating permit issued by EPA or by an authorized state program. The purpose of the permit is to assure that hazardous waste facilities fully comply with the standards promulgated pursuant to

Finally, section 3006 directs EPA to establish guidelines for the authorization of voluntarily adopted state hazardous waste programs in lieu of EPA administration for states which comply with statutory and regulatory requirements.<sup>48</sup>

#### IV. PUBLIC OPPOSITION TO HAZARDOUS WASTE SITES

In recent years public opposition to the siting of hazardous waste facilities has intensified.<sup>49</sup> This public outcry joins citizen

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section 3004. 42 U.S.C. § 6925 (1976).

<sup>48</sup> Congress wanted to encourage the states to adopt their own hazardous waste control programs, directing EPA to assist the states in the development of these programs and allowing states, rather than EPA, to voluntarily administer and enforce comprehensive hazardous waste programs authorized by EPA. Section 3006 provides two types of authorized programs—interim and full authorization. To qualify for full authorization the state program must be equivalent to the federal program, be consistent with federal and state programs nationwide, and provide adequate enforcement of compliance with RCRA regulations. Interim authorization is available to those states with existing hazardous waste control programs that do not qualify for full authorization at the time the RCRA regulations first go into effect but which wish time to build a fully authorized program. Restricted to no more than two years, interim authorization allows a state to continue running its own hazardous waste control program and in the meantime enjoy the opportunity to make an orderly transition to a fully authorized hazardous waste control program. Simply having an existing program is not sufficient to render a state eligible for interim authorization; its program must be “substantially equivalent” to EPA’s own comprehensive program and to its requirements for a fully authorized state program. 42 U.S.C. § 6926 (1976).

<sup>49</sup> For an excellent review of the major issues surrounding public opposition to hazardous waste sites, see *COMPTROLLER GENERAL OF THE UNITED STATES, HOW TO DISPOSE OF HAZARDOUS WASTE—A SERIOUS QUESTION THAT NEEDS TO BE RESOLVED* (December 18, 1978) [hereinafter *GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE*].

Recent fervent public opposition to hazardous waste sites has generally been successful. From 1975 to 1978 the Minnesota Pollution Control Agency identified 16 candidate sites for a chemical landfill. Citizens and local governments in every designated area protested that they did not want the landfill, and the state agency backed down. Vehement public opposition was massed against plans for a new hazardous waste landfill in New York which the state’s Department of Environmental Conservation considered to be environmentally sound. Two local groups successfully obtained an injunction in the lower state court to bar excavation, but a higher state court overturned the injunction on a state appeal. The State of Washington’s Department of Ecology spent over four years and evaluated twenty sites in trying to locate a hazardous waste disposal site. After the most desirable site was rejected by county officials and they repeatedly failed to find a site on private or public land, the Department of Ecology proposed a site on the federally-owned Hanford Reservation, presently the home for a nuclear power plant and some nuclear waste disposal. Fierce opposition arose from the public, and the City of Richland, located twelve miles from the proposed site, filed a lawsuit challenging the sufficiency of the state’s environmental impact statement. The State of Washington abandoned the Hanford site in the face of this public resistance. The Department of Ecology then proposed an alternative site on the Hanford Reservation and reached an agreement with the City of Richland on procedures for environmental impact statement review and for administering the landfill. In Penn-

protest against the siting of other industrial facilities which can imperil the public and environment, such as refineries, liquefied natural gas operations, oil and gas pipelines, nuclear power plants, high power electrical transmission lines, and so on. Subtitle C's promise of stringent new regulation of hazardous waste facilities has failed to dissipate citizen fears and opposition to hazardous waste facilities. Ironically, the statute may exacerbate citizen concern and opposition to hazardous waste operations. This failure is due, in part, to the fact that Subtitle C is not successful in surmounting the problem of locating hazardous waste facilities in or near populated communities.<sup>50</sup> However, Subtitle C's failure to overcome public opposition is also due to the entrenched nature of that opposition. No one wants a waste disposal site in their back yard, so to speak.<sup>51</sup> In turn, the ferocity of citizen opposition can be traced to the poor history of hazardous waste control. Combining people and hazardous waste operations in the same area frequently results in public opposition.

#### A. Subtitle C—Failure to Mollify Public Opposition

Hazardous waste facilities can be categorized as either off-site or on-site, the distinction being in their proximity to the industrial waste generator. Nationwide there are 100,000 industrial waste water impoundments and landfills situated on or near plant grounds.<sup>52</sup> These are called on-site facilities. Approximately 82 percent of the industrial hazardous waste generated in recent years has been stored, treated or disposed of on-site.<sup>53</sup> Most re-

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sylvania the EPA proposed a demonstration project on federal land at which municipal sludge from Philadelphia would be processed into a lower cost fertilizer for local agricultural use. Within one week of the first press release announcing the project, local citizens began fighting, elected officials protested, the public was up in arms, and petitions to kill the project were circulated. EPA quickly dropped the project. *Id.*, at 13-15.

<sup>50</sup> A good example of the usual location of hazardous waste sites in or near populated areas is Contra Costa County. Located immediately northwest of San Francisco, it is the final resting place for 80 percent of northern California's hazardous wastes. Contra Costa's dangerous waste burden is in addition to, and primarily a result of, the numerous oil refining operations in and immediately surrounding the county. See testimony of Jean B. Siri, President of the West Contra Costa Conservation League, in *Environmental Protection Agency, Proceedings: 1975 Public Meeting on Hazardous Waste Management*, 1200-06 (1976).

<sup>51</sup> See note 284, *infra*.

<sup>52</sup> 9 ENVIR. REP. (BNA) 1301-02 (Nov. 18, 1978).

<sup>53</sup> DRAFT EIS, *supra* note 11, at VII-32.

ported incidents of public opposition concern off-site facilities.<sup>54</sup> Residents in industrial zones often become inured after many years to the noxious industrial activities around them. Furthermore, they are usually unaware either of the existence of hazardous substances at plant waste sites or of the fact that virtually all on-site hazardous waste activities have been egregiously mismanaged in a manner endangering people and nature.<sup>55</sup>

Fifteen percent of the nation's hazardous wastes are treated, stored, or disposed off-site, either at the 110 facilities specifically operated to receive dangerous wastes or at the scores of thousands of public and private landfills, impoundments, and other facilities taking industrial waste.<sup>56</sup> Most off-site facilities are located in or near industrialized areas because these are the only locations which can provide the large waste stream volumes such facilities require to be economical and because the costs and risks of hazardous waste transportation sharply increase with distance. By their very nature, off-site facilities cannot help but arouse citizen protests. Special chemical landfills and lagoons, chemical and biological treatment works, incineration operations and other types of off-site hazardous waste operations are conspicuous as to their functions and dangers. Such facilities handle large volumes and many varieties of extremely pernicious wastes which pose various types of hazards.<sup>57</sup> A proposal to build or ex-

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<sup>54</sup> See generally GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 13-14.

<sup>55</sup> EPA reports that in a study of 50 on-site hazardous waste facilities for which no damage had been previously reported, it found 43 (or 86 percent) of the facilities were releasing dangerous amounts of toxins into groundwater that made it unfit as drinking supply. On-site hazardous waste storage, treatment and disposal have a much poorer record of environmental contamination than off-site practices. Sixty-three percent of the over 400 case studies of hazardous waste pollution occurred at on-site operations. 9 ENVIR. REP. (BNA) 1301-02 (Nov. 17, 1978); GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 9.

<sup>56</sup> EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 43.

<sup>57</sup> The estimated proportion of hazardous wastes treated or disposed at off-site facilities by each of the thirteen categories of industry that generate virtually all the industrial hazardous waste is, on an unweighted basis, as follows: 1) electronic components manufacturing—66 percent; 2) electroplating and metal finishing—81 percent; 3) inorganic chemicals—15 percent; 4) leather tanning and finishing—90 percent; 5) metal smelting and refining—2 percent; 6) organic chemicals—5 percent; 7) petroleum refining—56 percent; 8) pharmaceuticals—60 percent; 9) storage and primary batteries—65 percent; 10) textiles—51 percent; 11) paint and allied products—90 percent; 12) petroleum re-refining—76 percent; and 13) special machinery manufacturing—90 percent. Scores of thousands of different materials and chemical substances constitute the hazardous residuals of these thirteen industries. DRAFT EIS, *supra* note 11, at V-42.



pand an off-site hazardous waste facility in any populated area is bound to provoke reaction and opposition.

According to EPA, Subtitle C will rapidly and greatly enlarge the demand for environmentally adequate off-site hazardous waste facilities, with perhaps 25 percent of this nation's industrial hazardous wastes being sent off-site for treatment and disposal by 1984.<sup>58</sup> While there is no shortage of unsound waste sites, EPA maintains there is currently a shortage of environmentally suitable off-site hazardous waste facilities.<sup>59</sup> Although only 53 percent of the capacity of existing off-site facilities is currently used, EPA explains that all of the environmentally adequate off-site capacity would be far outdistanced by demand if the 90 percent of the hazardous waste formerly mismanaged were managed properly as Subtitle C commands.<sup>60</sup> EPA projects an acute shortfall in off-site hazardous waste service capacity by 1984 unless fifty to sixty new off-site facilities are built (including twenty landfills) and existing facilities are upgraded to meet Subtitle C standards and are utilized at full capacity.<sup>61</sup>

Propelling the demand for more off-site hazardous waste facilities is the growing generation of wastes. In general, industrial hazardous waste generation is growing at a rate of 4 percent to 6

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<sup>58</sup> *Id.* at VII-36 to 37.

<sup>59</sup> According to one EPA estimate, the 12 major hazardous waste generating industries in 1977 produced at least 46 million metric tons of hazardous waste, of which 7.9 million metric tons (about 15 percent) should have been disposed off-site for environmentally adequate management. At that time EPA reported the environmentally adequate capacity for off-site disposal stood at 6.2 million metric tons, a capacity shortfall of about 1.7 million metric tons. The General Accounting Office believes this shortfall estimate substantially understates the deficit in environmentally adequate hazardous waste management capacity. See GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 5-7; DRAFT EIS, *supra* note 11, at S-35; see also note 61, *infra*.

<sup>60</sup> EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 43.

<sup>61</sup> See EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 43; GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49; DRAFT EIS, *supra* note 11, at S-35.

EPA predicts that by 1984 the off-site hazardous waste capacity deficit could increase 53 percent to 2.6 million metric tons unless at least 46 new off-site facilities are built. Even if sufficient capacity to properly handle hazardous waste off-site materializes nationally in the near future, localized shortfalls are likely. In New Jersey, Ohio, and Pennsylvania—respectively, the first, sixth, and seventh largest hazardous waste generating states nationally—the present off-site shortfall in environmentally adequate hazardous waste capacity probably considerably exceeds the national average. Some states, like New York, have a sufficiently large geographic area to accommodate hazardous wastes, but for many hazardous waste generators this region lies outside a reasonable and economic distance for transporting their wastes. GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 5-7; DRAFT EIS, *supra* note 11, at S-35.

percent annually, although some industries are generating wastes at vastly greater rates of growth.<sup>62</sup> Consequently, annual hazardous waste generation can be expected to double in the next twelve to twenty-four years. Because on-site hazardous waste activities

<sup>62</sup> EPA projects hazardous waste production to proceed at a 4 to 6 percent annual growth rate for the 14 major hazardous waste generating industry groupings, with overall hazardous waste growth experiencing a 48 percent increase for these industries over the ten-year period from 1974 to 1983. The table below shows that waste growth projections for 1974 to 1983 vary tremendously among these industries.

HAZARDOUS WASTE GROWTH PROJECTIONS

Industry	1974*		1983*		% Increase '74-'83*
	Dry	Wet	Dry	Wet	
1. Batteries	0.005	0.010	0.105	0.209	2000
2. Inorganic Chemicals	2.000	3.400	2.800	4.800	40
3. Organic chemicals, pesticides, and explosives	2.150	6.860	3.800	12.666	77
4. Electro- plating	0.909	5.276	1.751	5.260	92
5. Paint and allied products	0.075	0.096	0.105	0.145	40
6. Petroleum refining	0.625	1.757	0.811	1.888	30
7. Pharmaceuticals	0.062	0.065	0.104	0.108	68
8. Primary metals, smelting and refining	4.454	8.335	5.536	10.418	24
9. Textile dye- ing and finishing	0.048	1.770	0.179	0.716	373
10. Leather tanning	0.045	0.146	0.068	0.214	51
11. Special machinery	0.102	0.163	0.157	0.209	54
12. Electric components	0.026	0.036	0.050	0.108	92
13. Rubber and plastics	0.205	0.785	0.299	1.204	46
14. Waste Oil refining	0.057	0.057	0.144	0.144	253
Totals	10.763	28.755	15.909	38.089	48

\*Based on dry weight quantities per million metric tons

Figures derived from table in EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 14. See also notes 345-48 and accompanying text, *infra*, regarding the major contribution made by pollution control on industrial waste growth.

have always posed a greater risk to the public and environment due to their near universal mismanagement,<sup>63</sup> EPA plans to give priority to enforcing Subtitle C standards against transgressing on-site facilities.<sup>64</sup> EPA's enforcement emphasis against on-site facilities deliberately seeks to push more wastes to safer off-site facilities.<sup>65</sup>

Subtitle C is expected to reverse the trend of recent years toward increasing on-site hazardous waste disposal by removing the cost advantage it had over off-site treatment or disposal.<sup>66</sup> Both on-site and off-site hazardous waste operations were grossly underregulated in the past, but on-site operations were considerably less expensive because their regulation by the states was either nonexistent or extremely lax. Any regulation that did exist was primarily directed at off-site facilities.<sup>67</sup> Subtitle C's equally stringent regulation of both kinds of facilities will in many cases turn the tables and confer a cost advantage on off-site hazardous waste management. Many industrial hazardous waste generators may find it less expensive to share with others the costs of off-site facilities by shipping their wastes to these facilities rather than bearing the expense of their own individual waste sites.<sup>68</sup> Other factors<sup>69</sup> influenced by Subtitle C which will shift more waste to off-site facilities include: the diminishing availability of land for on-site hazardous waste activities in urban areas, the expected removal of large quantities of wastes previously disposed improperly to off-site facilities as a precaution against future injury to people and the environment, and the designation by Subtitle C of many more wastes as hazardous because of Subtitle C.

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<sup>63</sup> See note 55, *supra*.

<sup>64</sup> Michael A. Kilpatrick, a chemical engineer at EPA's Office of Enforcement, announced his agency's enforcement emphasis against on-site facilities in an April 3, 1979 address to the Chemical Congress of the American Chemical Society in Honolulu. 9 ENVIR. REP. (BNA) 2295 (April 6, 1979).

<sup>65</sup> Pushing more hazardous wastes off-site will gain the additional benefit of somewhat easing the regulatory load. The regulatory burden relaxes as more wastes can be concentrated at a relatively few large off-site facilities rather than disposed on the grounds of scores of thousands of factory waste sites.

<sup>66</sup> DRAFT EIS, *supra* note 11, at VII-33.

<sup>67</sup> HOUSE REPORT ON HAZARDOUS WASTE DISPOSAL, *supra* note 37, at 26.

<sup>68</sup> For instance, the American Paper Institute claims it would cost from \$75,000 to \$200,000 to provide impermeable liners up to Subtitle C standards for pulp and paper mill wastewater lagoons, and the cost of retrofitting an existing lagoon with an impermeable liner "could be astronomical." 10 ENVIR. REP. (BNA) 291 (June 22, 1979).

<sup>69</sup> See DRAFT EIS, *supra* note 11, at VII-32 to VII-38, and GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 9-10.

The greatly enlarged demand for more new, environmentally adequate, off-site hazardous waste facilities will be matched every step of the way by public opposition. Citizen opposition has already shut down existing hazardous waste and solid waste facilities.<sup>70</sup> The fear of bad publicity and the high costs of battling citizen opposition have even forced some facility proponents to abandon siting proposals at the first hint of local protest.<sup>71</sup>

Subtitle C regulation not only generates greater public opposition by creating demand for new, additional off-site hazardous waste facilities but also has the distinction of actually facilitating opportunities for public opposition. EPA provides for public hearings in the issuance of permits for hazardous waste management facilities.<sup>72</sup> One Illinois official told the General Accounting Office that public hearings would force the closing of every hazardous waste facility in the state, and another California official said hearings could lead to the closing of eight to ten existing facilities.<sup>73</sup> RCRA, in fact, demands the incorporation of public participation into all its programs, even though it could slow down and, in some instances, stop the siting of hazardous waste facilities.<sup>74</sup>

The purpose of Subtitle C is to protect citizens from hazardous waste pollution.<sup>75</sup> Protection of the public is not achieved by the mere existence of strict standards for hazardous waste facilities—although these are a necessary element in any effort to achieve this end. In order to protect the public it is essential to afford citizens the means and a forum to protect themselves. This can be accomplished by full and consequential participation in the regulatory process, even though such public participation

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<sup>70</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 14.

<sup>71</sup> *Id.* at 9-10.

<sup>72</sup> 45 Fed. Reg. 33290, 33485-492 (May 19, 1980) (to be codified at 40 C.F.R. § 124.1-124.21).

<sup>73</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 15.

<sup>74</sup> RCRA § 7004 requires that public participation be “provided for, encouraged and assisted in the implementation of all the parts of RCRA by both EPA and the states.” 42 U.S.C. § 6974 (1976).

<sup>75</sup> Protection of the well-being of people and the environment from the adverse impacts of solid and hazardous wastes was a major congressional motivation in enacting RCRA and is represented in the findings of the statute. 42 U.S.C. § 6901(b)(1)-(6) (1976). In particular the statute justifies Subtitle C in the finding that “hazardous waste presents . . . special dangers to health and requires a greater degree of regulation than does nonhazardous solid waste . . .” 42 U.S.C. § 6901(b)(5) (1976). *See also* HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, REPORT ON H.R. 14496, 94th Cong., 2d Sess. 3 (1976).

might at times infuse some inefficiency into that process.

Yet, while public participation measures in hazardous waste control is highly desirable, it can be an obstacle to the expansion of hazardous waste facilities. Top EPA officials and many state environmental control officials and hazardous waste service industry representatives single out public opposition as the only major barrier to the siting of more, needed off-site facilities.<sup>76</sup> They portray as surmountable other technical, economic and environmental impediments to the implementation of Subtitle C. The boosters of more waste facilities contend that if citizens succeed in killing most new hazardous waste facility sitings, they will also kill Subtitle C's primary objective, namely, to safeguard the public and the environment against hazardous waste mismanagement by insuring that there are enough places where all hazardous waste can be properly cared for.<sup>77</sup>

### B. *Entrenched Public Opposition*

While Subtitle C may foster public opposition, such opposition may be unavoidable regardless of the severity or the nature of regulation for hazardous waste sites. Citizen anxiety and repugnance for hazardous waste sites appears largely entrenched and intransigent.<sup>78</sup>

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<sup>76</sup> The top EPA officials that have singled out public opposition to hazardous waste facility siting as the major barrier to the implementation of Subtitle C include Thomas Jorling, Assistant Administrator for Water and Waste Management; Gary Dietrich, Associate Deputy Assistant Administrator for Solid Waste; and Steffen Plehn, Deputy Assistant Administrator for Solid Waste. See testimony of Thomas Jorling, in *House Subcommittee on Transportation and Commerce, Resource Conservation and Recovery Act Oversight Hearings*, 95th Cong., 2d Sess., at 12-16 (March 7-9, 1978) [hereinafter cited as *House Subcomm. on Transportation and Commerce*]; for reports of Dietrich and Plehn statement on public opposition, see 9 ENVIR. REP. (BNA) 2295-96 (April 6, 1979); 9 ENVIR. REP. (BNA) 2114-15 (March 3, 1979).

<sup>77</sup> In a statement at a House subcommittee hearing, Thomas Jorling, EPA Assistant Administrator, summarized the actions needed to implement Subtitle C and issued the following warning that public opposition stood in the way of achieving the statute's objective of public protection:

All these actions will require new sites, yet no matter what type of solid waste facility is proposed, public opposition is dramatic, often strong and well-organized. If we are not able to convince the American public that RCRA will ensure that disposal sites are safe and well managed, we will never acquire the needed and necessary sites for facilities, and, therefore, never achieve the objectives of RCRA, namely protection of health and the environment, and resource recovery. I think it is clear that the siting issue is the most difficult problem facing us in the implementation of RCRA.

*House Subcomm. on Transportation and Commerce, supra* note 76, at 15.

<sup>78</sup> See note 284, *infra*.

The two distinct types of public opposition to hazardous waste sites are: 1) site-specific resistance by citizens and local governments to facilities proposed in or near their communities; and 2) state laws or policies which either intentionally limit or have the unintentional effect of obstructing the development of off-site hazardous waste facilities. Local opposition generally consists of vocal and well-organized citizen protests and local government rejection of waste sites.<sup>79</sup> State antagonism to waste sites comes in several forms. A few states had enacted bans on the importation of out-of-state wastes for treatment or disposal,<sup>80</sup> but state waste import bans were invalidated when the U.S. Supreme Court struck down New Jersey's version in the *City of Philadelphia v. New Jersey*.<sup>81</sup> The Supreme Court held that the New Jersey waste import ban violated the commerce clause of the U.S. Constitution by unduly interfering with the free movement of wastes as an item of commerce. In Kentucky a new hazardous waste facility cannot obtain a state permit without the approval of both the legislature and the governor.<sup>82</sup> Moreover, seeking a hazardous waste facility permit in Kentucky is a futile effort since applicants must wait up to two years for the legislature to meet in its biennial session, and both the legislature and governor are likely to be reluctant to overrule local government rejection of a hazardous waste facility.<sup>83</sup> Connecticut allows local governments to forbid, through zoning, the siting of hazardous waste operations.<sup>84</sup>

Although state regulation of hazardous waste overall has never been distinguished for its stringency, EPA has in the past expressed concern that "overregulation" in some states, such as waste import bans, statutory deference to local siting approval, etc., could intentionally or unintentionally discourage the operation of hazardous waste facilities in these states and thereby force wastes to move to other states where it is comparatively easier to

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<sup>79</sup> See note 49, *supra*.

<sup>80</sup> Louisiana, Minnesota, Massachusetts, New Hampshire, Rhode Island and Vermont have enacted waste import bans, as reported in DRAFT EIS, *supra* note 11, at VII-42. No state has an export ban on hazardous waste, but EPA's Thomas Jorling has suggested such a measure would force communities to face the problem of siting hazardous waste facilities. 10 ENVIR. REP. (BNA) 290 (June 22, 1979).

<sup>81</sup> 437 U.S. 617 (1978).

<sup>82</sup> KY. REV. STAT. § 224.855(5) (1974).

<sup>83</sup> *Id.*

<sup>84</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 8.

site facilities.<sup>85</sup> With Subtitle C Congress established a uniform system of hazardous waste control throughout the nation. A major reason for uniform national regulation was to equalize the economic impact of regulation so that facilities can be sited where and when needed and to close off opportunities for improper hazardous waste dumping in states with inadequate controls.<sup>86</sup> While Subtitle C does not expressly prohibit states from adopting more stringent controls than those dictated by EPA because Congress was more concerned with state underregulation than overregulation, it appears that state regulation would be void to the extent it unduly restricts the free movement of wastes in interstate commerce<sup>87</sup> and undermines the uniform, national system of waste control which Subtitle C establishes and EPA implements. Subtitle C denies federal authorization to any state program which is not equivalent to that of the EPA or not consistent with both EPA and other state programs.<sup>88</sup>

By encouraging and prodding states to bear the primary responsibility for administering hazardous waste control, Subtitle C dissolves state obstacles to facility siting and pits the states against local citizens opposing hazardous waste sites. In fact, state agencies which now have or will have jurisdiction over hazardous waste regulation under Subtitle C are among the strongest advocates of measures to defeat local opposition to proposed hazardous waste sites.<sup>89</sup>

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<sup>85</sup> EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 31.

<sup>86</sup> Overregulation of industrial waste treatment and disposal which obstructs the free flow of wastes can have adverse economic impacts on the communities, states, or regions that maintain them. Often the location decisions of manufacturing industries which generate these hazardous wastes are influenced by the availability of waste sites. Blocking or impeding the disposal of waste in one geographic area favors other places without similar barriers but having similar merits. Consequently, overregulation can have a negative impact on the local or regional economy which it affects and a positive impact on other competing places lacking similar restraints on waste activities. The availability of waste sites, hazardous and non-hazardous, is increasingly becoming an important ingredient in industrial siting decisions, joining the more traditional industrial site criteria such as the availability of adequate power, water, and labor. *See generally*, EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 31.

<sup>87</sup> *City of Philadelphia v. New Jersey*, 437 U.S. 617 (1978).

<sup>88</sup> *See* RCRA § 3006(b), 42 U.S.C. § 6926(b) (1976). EPA has defined consistency in its rules so as to bar federal approval of a state hazardous waste program if any aspect unreasonably restricts the interstate movement of wastes to licensed hazardous waste facilities or if any aspect of state law or the state program prohibits hazardous waste facilities without any basis in human health or environmental protection. 45 Fed. Reg. 33465-66 (May 19, 1980) (to be codified in 40 C.F.R. § 123.32(a), (b)).

<sup>89</sup> At the December 4 and 5, 1978 International Conference on Hazardous Materials

The most frequent and fierce source of opposition to hazardous waste facilities are citizens and local governments in communities where the sites are proposed. County and city governments and their elected officials, reflecting citizen sentiment and responding to citizen pressure, fight hard, and frequently succeed in barring hazardous waste sites from their jurisdictions through zoning and other local regulations. The major proposals offered by federal and state regulatory officials for overcoming local opposition or for winning public support for hazardous waste facilities are: state site selection;<sup>90</sup> the siting of hazardous waste facilities on public land (including the option of state operation of facilities);<sup>91</sup> federal siting;<sup>92</sup> remote siting;<sup>93</sup> and education and information programs on hazardous waste.<sup>94</sup>

### 1. State Site Selection

Traditionally the task of finding a location for an off-site hazardous waste facility has been left up to its proponent, usually a waste disposal or chemical processing firm and occasionally a municipality. The state's role has generally been confined to reviewing proposals for compliance with environmental and public safety standards and procedures prescribed by state statutes and regulations, if, and to the extent that, they existed or were seriously invoked. The Subtitle C regulations do not deviate from the traditional site selection process, making no attempt to direct the geographic location of facilities.<sup>95</sup> Many state officials and the EPA favor a more active state role in identifying sites for privately operated hazardous waste facilities.<sup>96</sup> The major benefit attributed to state site selection is that the identification of several environmentally, economically, and perhaps politically acceptable

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Management held in Detroit, several state and federal regulatory officials and waste management industry representatives attacked local citizen opposition, contending it was the major barrier to Subtitle C implementation. These regulatory officials and waste industry representatives advocated stronger state and federal measures for facilitating hazardous waste facility siting over local opposition. 9 ENVIR. REP. (BNA) 1406-07 (December 8, 1978).

<sup>90</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 11-12.

<sup>91</sup> *Id.*

<sup>92</sup> *Id.* at 42.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 12, 16-17.

<sup>95</sup> 45 FED. REG. 33220-58 (May 19, 1980) (to be codified at 40 C.F.R. §§ 264, 265).

<sup>96</sup> See notes 100, 117, *supra*.



sites advances hazardous waste facility development. State identification of sites gives facility proponents the added option of taking advantage of a ready-made, carefully selected list of acceptable sites instead of having to endure the frequently costly process of struggling to find their own suitable sites. From a more opportunistic perspective state site selection is viewed by its state and federal supporters as a tool to gain public support for hazardous waste siting by offering a better, more comprehensive means to discover suitable sites.<sup>97</sup> EPA's proposed guidelines for state solid waste management plans recommend that these plans include hazardous waste site identification as one of its elements.<sup>98</sup>

While the desirability of a state role in site identification is unmistakable, it does little to eliminate public opposition. For instance, Minnesota learned that public opposition can be just as severe for state identification of technically suitable hazardous waste sites utilizing sophisticated and environmentally sensitive selection methods as for site selection by private industry.<sup>99</sup> In 1975 EPA awarded the Minnesota Pollution Control Agency a \$3.7 million grant to conduct a five year demonstration project for state identification of suitable sites for a chemical waste landfill. Over a three year period the state identified sixteen sites, using impeccable environmental criteria. Fierce local opposition by citizens and elected officials torpedoed each site proposal and with two years funding remaining on the grant, an exasperated Minnesota returned the remaining monies to EPA.

## 2. Siting on Public Lands

Closely related to state identification of hazardous waste sites is the idea of siting on state-owned land. Public land siting can also entail state operation of the facility,<sup>100</sup> operation by a private licensee, or the availability of both options.<sup>101</sup> Eminent domain has

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<sup>97</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 11-12; 9 ENVIR. REP. (BNA) 1406-07 (Dec. 8, 1978).

<sup>98</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 15.

<sup>99</sup> *Id.* at 13. See generally note 49, *supra*.

<sup>100</sup> For instance, Frank Beal, Director of the Illinois Institute of Natural Resources, recommended at a Chicago solid waste conference that the states legislate agency authority to select and administer landfill sites for all types of solid wastes, hazardous and non-hazardous. 8 ENVIR. REP. (BNA) 81 (May 18, 1977).

<sup>101</sup> As of 1979, Oregon appeared to be the only state where a hazardous waste disposal site must by law be owned by the state. If, prior to operation, the permitted site is not owned by Oregon, it must be deeded to the state by the private operator. OREGON REV.

also been recommended for the quick and assured capture of sites for private facilities and is usually presupposed an integral part of the public land siting option.<sup>102</sup> The justifications for public siting seem to be that it allows the prompt acquisition and development of sites when needed, provides a stronger state role in site care during and after operations, and, through the intermediary of state government, moves citizens closer to decisions about the proper management of hazardous waste sites.

The rationales for public siting dissolve when public siting is scrutinized either as it has actually been practiced or alongside other regulatory measures which attain the same ends. The ultimate in public land siting is the government owned and operated waste facility, yet this facility is just as prone to hazardous waste pollution catastrophe as any private facility sited on private or public land. A case in point is the hazardous waste disaster at the federally owned Rocky Mountain Arsenal near Denver.<sup>103</sup> Discharges of industrial and military wastes at the arsenal have contaminated thirty square miles of underground water and EPA believes that merely to study the problem could cost up to \$78 million; the actual clean-up costs would be several times larger. From the perspective of Subtitle C control, public land siting provides neither greater nor lesser citizen power in the management of hazardous waste sites than does private land siting. No distinction between hazardous wastes facilities on public land and those on private land is made by Subtitle C or its draft regulations either in the type of control or in the extent of public involvement in the regulation of the facilities. The only advantage possibly gained by public siting or eminent domain for hazardous waste facilities is a greater ease in securing sites. Public ownership of hazardous waste sites, in itself, gives no assurance of greater se-

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STAT. § 459.590 (1979).

<sup>102</sup> Oregon law allows the state to condemn land for hazardous waste disposal sites, all of which must be owned by the state but will be operated by licensees. OREGON REV. STAT. § 459.595 (1979). Maryland also permits the state to condemn hazardous waste sites, but apparently only those which have been closed, and only for the purpose of assuring the proper perpetual care of the idle site or protecting against any substantial threat to the public health or the environment. MD. NAT. RES. CODE ANN. § 8-1412, 2(n) (Michie Supp. 1979). Michigan, likewise, allows the state to acquire ownership of any closed waste site formerly licensed for the purpose of assuming the responsibility for long-term care of the site. Michigan Hazardous Waste Management Act, 1979 MICH. PUB. ACTS No. 64 (July 25, 1979).

<sup>103</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTES, *supra* note 49, at 23-24.

curity against harm nor of diminished public opposition.

EPA has not adopted a formal policy supporting or promoting the use of public land (federal, state or local) for the siting of hazardous waste facilities in any manner. Conspicuous in its absence is any provision in Subtitle C which even faintly refers to state or federal ownership of hazardous waste sites or facilities.<sup>104</sup> The Subtitle C which Congress fashioned is firmly anchored to the long-held assumption that the private sector is competent to manage waste sites and the proper role of government is as a regulator not an owner or operator of waste sites.<sup>105</sup> Whether private waste facility operators are in fact competent is another matter, but there is no reason to believe state government can do a better job of running hazardous waste sites.

In the years leading up to Subtitle C's enactment EPA remained true to the belief that the siting of hazardous waste facilities on public land or the operation of facilities by government is unnecessary, provided strong regulation of private hazardous waste management could be maintained. EPA's philosophy favoring privately sited hazardous waste management facilities was originally articulated in its first major report on hazardous waste to Congress which the Agency submitted in 1973 and which heavily influenced the final shape Congress gave Subtitle C.<sup>106</sup> Section 212 of the now defunct Resource Recovery Act of 1970<sup>107</sup> directed the Secretary of the Department of Health, Education, and Welfare (HEW) to submit to Congress a report evaluating the feasibility of a system of nationally owned hazardous waste facilities. Created after the passage of the Act, EPA completed the 212 report in the place of HEW and recommended that Congress emphasize regulatory strategies rather than create a nationalized system of hazardous waste facilities.<sup>108</sup> In a later report written to assist the states in their development of Subtitle C hazardous

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<sup>104</sup> *Id.* at 15-16. EPA has only promoted state hazardous waste site or facility ownership insofar as to recommend it be considered in state solid waste management plans when there is an imminent shortage of treatment and disposal facilities in an area.

<sup>105</sup> EPA Assistant Administrator Thomas C. Jorling has said that the regulatory framework of Subtitle C "assumes that private industry and private capital will produce facilities that will comply with the hazardous waste regulations. EPA believes that this reliance on the private sector is desirable and appropriate." *House Subcomm. on Transportation and Commerce, supra* note 76, at 15.

<sup>106</sup> See note 4, *supra*.

<sup>107</sup> Pub. L. No. 91-512, 84 Stat. 1227 (Oct. 26, 1979).

<sup>108</sup> EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 39-40.

waste programs EPA advised against siting hazardous waste facilities on federal land,<sup>109</sup> but its arguments apply equally well to state land. Specifically, the report questioned the necessity and wisdom of public land siting, emphatically declaring that reliable hazardous waste management was readily achievable through stringently regulated private facilities, and that public land siting solved neither the problem of long-term security nor that of public opposition to hazardous waste sites.<sup>110</sup> The EPA report explained that the strict regulation of hazardous waste demanded by Subtitle C would give birth to a thriving business for the private hazardous waste service industry and that providing public land for private waste facilities would be an undeserved bonus or subsidy.<sup>111</sup> The report concluded that Subtitle C's existence was ample incentive to the hazardous waste service industry to build needed facilities and that offering government land for these businesses would be inequitable because it would shift to the public much of the costs of hazardous waste management RCRA meant to be borne by the producers and consumers of goods and services generating hazardous wastes.<sup>112</sup> An EPA report to the states, like the previous section 212 report, declared that public siting of hazardous waste facilities was only justifiable when all efforts to site a private facility proved futile.<sup>113</sup>

A further windfall accrues to the private hazardous waste service industry when both it and the state are engaged in operating hazardous waste facilities. In Indiana both industrial hazardous waste generators and the hazardous waste facility operators have urged legislators to give the state the authority to operate hazardous waste disposal sites.<sup>114</sup> Hazardous waste firms would prefer to

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<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> The Indiana General Assembly's Solid Waste Management Study Commission has drafted a hazardous waste management bill which includes a provision establishing a commission with the authority to construct hazardous waste facilities in the state, and authorizing the Indiana Department of Natural Resources to operate any such facility. Solid Waste Management Study Commission of the Indiana General Assembly bill draft 80PD6. The author discussed the motivations behind support for state-operated hazardous waste facilities of both industrial waste generators and the waste management firms in Indiana during a telephone interview with Patrick Haynes, Commission Counsel, Solid Waste Management Study Commission of the Indiana General Assembly, Indianapolis, July 18, 1979.

concentrate on the treatment and disposal of those hazardous wastes posing manageable and relatively modest risks while leaving the state with the responsibility and risks of maintaining landfills for the untreatable and the most perilous hazardous wastes.<sup>115</sup> Industrial hazardous waste generators fear that unless the State enters the hazardous waste business they will have no place to discard the worst of their hazardous wastes.<sup>116</sup>

The siting of waste facilities, hazardous and nonhazardous, is a land-use decision and traditionally the final say on siting has been left up to localities through zoning and building controls, as is the case with the control of most land use activities in American communities. Federal and state governments in the past have not attempted to interfere with the long-established local prerogative in the siting of waste facilities, but the explosive demand for new sites, the growing local resistance to these sites, and the newly imposed obligation for strong solid waste and hazardous waste regulation conferred upon state and federal governments all combine to soften federal and state deference toward the local land use prerogative in siting approval.<sup>117</sup> State or federal preemption is the most direct means to override local authority and has gained serious consideration which was unheard of before the enactment of Subtitle C.<sup>118</sup> The rationale offered for preemption is that state or federal agencies are less vulnerable to local political pressure and can therefore better dispassionately judge the

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<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> Several top EPA officials have expressed an aversion to a significant federal role in hazardous waste facility siting, or at least recognized the improbability of its occurrence, although they have encouraged a much stronger state role. Steffen Plehn, EPA Deputy Assistant Administrator, states that the choice of a hazardous waste site "is not one which the federal government can contribute to. This is something the states have got to do." Plehn advised that it might be necessary for some states to preempt local zoning laws. 10 ENVIR. REP. (BNA) 29 (May 4, 1979). In an address before the International Hazardous Material Management Conference held in Detroit on December 4-5, 1978, EPA Assistant Administrator Thomas Jorling told the participants not to hope for federal siting, declaring, as an example, that past federal attempts to site power plants have failed. 9 ENVIR. REP. (BNA) 1406-07 (Dec. 8, 1978). EPA has informed the GAO that it would pay increased attention to hazardous waste siting problems, but EPA said it had to "stress the restraints on a more active federal involvement that are presented by the long tradition of state and local rights and responsibilities for land-use planning." GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 22.

<sup>118</sup> Gary Dietrich, EPA's Assistant Deputy Administrator, told the Chemical Congress of the American Chemical Society on April 2, 1979, that state or federal override of local authority may sometimes be warranted to obtain needed hazardous waste sites. 9 ENVIR. REP. (BNA) 2299 (April 6, 1979).

public necessity and technological adequacy of a proposed hazardous waste site.<sup>119</sup>

Though preemption is an effective weapon for vanquishing public opposition to hazardous waste sites, it has several drawbacks. In the first place, preemption certainly does not win community support for a waste site but instead simply leapfrogs over or steamrolls public opposition. State preemption presumes local governments cannot be worked with as sensible partners in siting hazardous wastes facilities but rather are to be viewed as obstructions. Still, the mere existence of state preemptive authority does not mean it will actually be used to defeat local opposition to a proposed hazardous waste site. A 1978 General Accounting Office report discovered three states with preemptive authority for hazardous waste siting but no cases where this authority was exercised.<sup>120</sup> The rare use of preemptive authority for hazardous waste siting is representative of the firmly established unwillingness on the part of state agencies to overrule local land use decisions. In addition, local governments and their elected officials can utilize their political influence with state elected officials and agency heads to abort the exercise of state preemptive authority or eminent domain for waste sites.

### 3. Federal Siting

Federal siting of hazardous waste facilities—be it in the shape of site identification, federally owned sites, or both—does not appear likely in the near future. In its section 212 report to Congress,<sup>121</sup> EPA rejected nationalized hazardous waste sites.<sup>122</sup> At the December 1978 International Conference on Hazardous Waste Management in Detroit, EPA Assistant Administrator Thomas Jorling remarked that past federal attempts to site power plants and landfills were failures and that the states cannot expect a federal siting role in hazardous waste activities.<sup>123</sup>

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<sup>119</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 12.

<sup>120</sup> *Id.* See, for example, the Michigan Hazardous Waste Management Act, under which no local ordinance, permit requirement, or other requirement can prohibit the construction of a hazardous waste facility that has received a state permit. 1979 MICH. PUB. ACTS No. 64 § 21(1) (July 25, 1979).

<sup>121</sup> EPA REPORT TO CONGRESS, *supra* note 4.

<sup>122</sup> As reported in EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 39.

<sup>123</sup> 9 ENVIR. REP. (BNA) 1406-07 (Dec. 8, 1978).

#### 4. Remote Siting

Generally, the remote siting of hazardous waste facilities in rural areas of a state or in the desolate plains, deserts and rangelands of the West is not economically feasible.<sup>124</sup> The cost and risks of hazardous waste transportation increase substantially with distance and therefore most new or expanded waste facilities must be located near the urban, industrialized areas where most of the waste is generated. In order to be economically feasible, off-site hazardous waste facilities require large waste volumes, and thus the logical facility location is in or near the industrial areas where virtually all the hazardous wastes are generated. Moreover, because citizen opposition does not discriminate on the basis of where hazardous waste originates, one should not be surprised to encounter protests from citizens living or working near a site proposed to receive wastes exiled from some distant place.<sup>125</sup>

#### 5. Education and Information Programs

EPA is trying to educate and inform the public regarding the safety and necessity of hazardous waste facilities in hopes of winning greater public acceptance of hazardous waste sites. EPA views the very creation and implementation of Subtitle C as playing a major role in this public education process.<sup>126</sup> EPA expects Subtitle C initially to heighten public awareness of the problems of hazardous waste and thereby to fuel public opposition to the local siting of hazardous waste facilities.<sup>127</sup> However, EPA maintains that in the long run the presence of a more effective hazardous waste control program, one in which the public can play an active role, could lessen public opposition by demonstrating to citizens that safe hazardous waste management is achievable.<sup>128</sup> Toward this end EPA hopes further to enlighten the public about the safety and necessity of hazardous waste siting through a public education and information campaign. Nonetheless EPA's investment in public education has so far been parsimonious. From

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<sup>124</sup> See EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 41.

<sup>125</sup> *Id.* Citizens can be especially hostile when their community becomes the dumping ground for wastes generated somewhere else. For instance, the protests of residents living near a privately owned landfill in Ohio stopped disposal there of municipal wastes shipped all the way from Montgomery County, Maryland.

<sup>126</sup> DRAFT EIS, *supra* note 11, at V-34.

<sup>127</sup> *Id.* at S-34.

<sup>128</sup> *Id.*

1975 through 1978 EPA spent only about \$300,000 to inform the entire nation about hazardous waste control.<sup>129</sup> In 1979 EPA awarded a \$350,000 grant to six public health and environmental organizations to conduct a four-year national public awareness campaign on hazardous waste issues.<sup>130</sup>

EPA does not really appear to have much faith in the inherent educational value of Subtitle C nor in the effectiveness of more direct public education and information campaigns to sway communities toward accepting hazardous waste facilities. While it is easy to convince the general public that more waste sites are needed to properly control hazardous wastes, to convince a community to actually accept a hazardous waste facility is entirely a different matter. According to EPA's Steffen Plehn this distinction is the "social dilemma" of hazardous waste siting in that "[E]veryone in this society wants hazardous waste managed properly and almost everyone in society would rather that it was not near them."<sup>131</sup> To date, the small sums EPA has directed towards public education and information programs on hazardous waste issues underscores the agency's low regard for this approach for convincing citizens to accept hazardous waste facilities.

According to a GAO report, past experience in the siting of hazardous waste facilities suggests that while in some instances one or more of the major measures proposed or used for overcoming or pacifying public opposition may work, none has been shown to be universally successful.<sup>132</sup>

### *C. Public Opposition—Justified By Meager Funds For Regulation*

The time-worn admonition, "they have nobody to blame but themselves," rings true for the difficulty state and federal governments are encountering in building hazardous waste facilities. Federal and state officials who charge that citizen opposition is the greatest or only major obstacle to implementing Subtitle C are, by negative implication, downplaying several other serious

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<sup>129</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 16.

<sup>130</sup> The campaign has been titled "Waste Alert" and is being conducted as a joint effort by the National Wildlife Federation, American Public Health Association, Environmental Action Foundation, League of Women Voters Education Fund, Technical Information Project, and the Izaak Walton League. 9 ENVIR. REP. (BNA) 2038 (March 2, 1979).

<sup>131</sup> 9 ENVIR. REP. (BNA) 1603 (Dec. 28, 1978).

<sup>132</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 13.



problems which accompany this new control program. Most of these problems originate from within rather than from outside federal and state governments.

Some state officials connected with regulating hazardous waste facilities characterize citizens who oppose sites as ignorant about the safety and security of the new, tightly regulated hazardous waste facilities of today.<sup>133</sup> According to one top EPA official, the philosophy of Subtitle C regulation is 100 percent protection of the public and environment in the control of hazardous waste facilities.<sup>134</sup> However, other EPA and state officials concede this cloud-touching goal may not always be attainable. One state official declares that hazardous waste treatment and disposal activities are inherently dangerous, even when highly regulated and utilizing the latest technology.<sup>135</sup> Most EPA decision makers appear to view Subtitle C more realistically, not promising absolute safety for hazardous waste facilities but recognizing that Subtitle C's main point is to eradicate the uncontrolled and improper hazardous waste practices that have caused nearly all the past incidents of harm and to replace them with proper management practices.<sup>136</sup> As long as hazardous waste facilities remain inherently dangerous, citizens are prudent in retaining some measure of apprehension toward even the best regulated, built, and operated hazardous waste facilities.

### 1. Inadequate Financial Support

Establishing and maintaining the national program incarnated in Subtitle C to control hazardous waste is a huge undertaking, one which can only be satisfactorily carried out with adequate financial support. Subtitle C regulation for state and federal governments encompasses overseeing up to 760,000 hazardous waste

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<sup>133</sup> Beatrice Tylutki, Director of New Jersey's Solid Waste Administration, is one top state regulatory official who has said citizen opposition is based on ignorance about the safety and security of new control measures and new facilities for hazardous wastes. 9 ENVIR. REP. (BNA) 1406-07 (Dec. 8, 1978).

<sup>134</sup> The contention that Subtitle C control seeks absolute environmental protection has been made by Gary Dietrich, EPA Associate Deputy Assistant Administrator. 10 ENVIR. REP. (BNA) 531 (June 29, 1979).

<sup>135</sup> Statement of Glenn Paulson, Assistant Commissioner of the New Jersey Department of Environmental Conservation, in *House Subcomm. on Transportation and Commerce, RCRA Oversight Hearings*, *supra* note 76, at 139.

<sup>136</sup> See, for example, the testimony of Steffen Plehn in *House Subcomm on Transportation and Commerce, RCRA Oversight Hearings*, *supra* note 76, at 112-24.

generators, granting and monitoring 29,000 hazardous waste facility permits, maintaining and reviewing the over 800,000 annual reports from both hazardous waste generators and service facilities, and, by 1985, keeping tabs on the 690,000 yearly shipments of hazardous wastes.<sup>137</sup> A Congressional report has sharply criticized EPA for starving Subtitle C of necessary funds during its initial three-year authorization,<sup>138</sup> and according to a GAO report, unless assured adequate funding over the long-term is made available to EPA and state regulatory authorities, the Subtitle C program cannot succeed.<sup>139</sup> In this case local opposition to waste sites is a moot issue. For Subtitle C to work, adequate funding must be available to the federal government to carry out its administrative responsibilities, aid states in developing their programs, and administer federal control programs in states without authorized programs.<sup>140</sup> The states as well must provide the long-term financial security and self-support needed to maintain their own hazardous waste control programs. Therefore, the most formidable obstacle to effective regulation of hazardous waste control is not citizen opposition. It is, rather, the questionable availability of adequate funding to provide Subtitle C regulation with a healthy start and effectively sustain it for years to come.

Recognizing that the states will need financial assistance in developing their hazardous waste programs and to stimulate adoption of federally authorized programs, Congress set aside \$50 million in grants for state program development to be equally divided in fiscal years 1978 and 1979.<sup>141</sup> In contrast, as part of its policy of reducing federal spending whenever possible, the Carter Administration did not request from Congress any of the Subtitle C state grant funds authorized for fiscal year 1978.<sup>142</sup> Instead, EPA diverted \$3.4 million for this purpose from its Subtitle D appropriation which Congress had originally intended to be used

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<sup>137</sup> DRAFT EIS, *supra* note 11, at S-19 to S-20.

<sup>138</sup> HOUSE REPORT ON HAZARDOUS WASTE DISPOSAL, *supra* note 37, at 35-38.

<sup>139</sup> COMPTROLLER GENERAL OF THE UNITED STATES, HAZARDOUS WASTE MANAGEMENT PROGRAM WILL NOT BE EFFECTIVE: GREATER EFFORTS ARE NEEDED (Jan. 23, 1979) [hereinafter cited as COMPTROLLER GENERAL OF THE UNITED STATES]. This GAO report is an excellent review of the underfunding and understaffing problems that have severely disabled the development and implementation of Subtitle C control programs.

<sup>140</sup> *Id.* at 1, 4, 11-12.

<sup>141</sup> RCRA § 3011, 42 U.S.C. § 6931 (1976).

<sup>142</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 15.

for development of state and regional solid waste plans.<sup>143</sup> For fiscal year 1979 the Administration requested an appropriation for state Subtitle C grants of \$15 million, utilizing in total only 30 percent of all the funds Congress had originally authorized for grant to states in order to help them develop their hazardous waste programs.<sup>144</sup>

The Administration's parsimony toward Subtitle C funding for state grants was the work of the President's Office of Management and Budget (OMB), which likewise convinced the White House to curtail funds for EPA's administration of its own Subtitle C responsibilities.<sup>145</sup> During fiscal year 1978 EPA spent less than \$200,000 on the hazardous waste operations of its ten regional offices,<sup>146</sup> and they informed GAO that in the immediate future it would be impossible for them to satisfactorily carry out critical program activities such as inspecting sites, surveilling the transportation and disposal of hazardous wastes, and monitoring state permit programs.<sup>147</sup> For fiscal year 1978 EPA sought approval from OMB for \$14,450,000 and 195 staff positions in order to properly administer Subtitle C.<sup>148</sup> In arriving at the Administration's final appropriation request to Congress, OMB cut by two-thirds EPA's recommendation, asking for only forty-eight staff positions and \$5,068,000—an amount significantly less than the minimum \$11.4 million authorized by the Act.<sup>149</sup> Congress improved slightly the Administration's OMB-determined request by approving an additional \$40,000 and six positions for EPA administration of Subtitle C.<sup>150</sup>

Although federal funding for Subtitle C has been inadequate, state funding of hazardous waste control has been far worse. The past laxity in state regulation of hazardous waste which provoked Congress to enact Subtitle C, resulted primarily from insufficient

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<sup>143</sup> 2ND ANNUAL RCRA REPORT, *supra* note 8, at I-24.

<sup>144</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 15.

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Id.* at 11-12.

<sup>148</sup> *Id.* at 15.

<sup>149</sup> RCRA originally authorized \$38,000,000 for EPA administration of the Act for fiscal year 1978. RCRA § 2006(a). The Act directed that not less than thirty percent of the amount appropriated under subsection (c) be used exclusively for EPA's Subtitle C regulatory duties. RCRA § 2006(c); 42 U.S.C. § 6916(a) (1976).

<sup>150</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 15.

state funding.<sup>151</sup> A recent GAO report found that the states continue to shortchange their hazardous waste programs financially.<sup>152</sup> GAO contacted twenty-six states and found that together these states in 1978 needed 594 positions in order to implement Subtitle C properly. The states, however, assigned only 180 persons to hazardous waste control programs and were \$9.3 million short of adequate funding for these programs.<sup>153</sup>

The financial deprivation suffered by federal and state hazardous waste programs creates serious and debilitating complications for present and future Subtitle C control. Due to inadequate funding, EPA has been unable to provide the necessary technical assistance and proper supervision for the development and administration of state hazardous waste programs.<sup>154</sup> Moreover, without federal financial assistance, states have been reluctant, slow, or simply unable to develop proper hazardous waste programs.<sup>155</sup>

Sparse EPA funding harms the implementation of state programs as well. During RCRA's initial three-year authorization, EPA lacked the necessary funds and staff,<sup>156</sup> to provide assistance for state program implementation, to review and monitor the continuing adequacy of state programs, and to be assured that it could, in the future, take over control of hazardous waste regulation in those states with poor programs or which were unable or unwilling to adopt authorized programs.

Subtitle C's financial impoverishment is part of a severe predicament. Many states have implied or outright declared that without substantial federal funding for the development and on-going implementation of their Subtitle C programs they would be unwilling or unable to adopt authorized programs and instead would leave EPA with the regulatory responsibility within their borders.<sup>157</sup> Of the twenty-six states GAO contacted, at least sixteen indicated an unwillingness to adopt hazardous waste programs

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<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> *Id.* at 16.

<sup>154</sup> *Id.* at 1, 4, 11-12.

<sup>155</sup> *Id.* at 15-16.

<sup>156</sup> In 1979, of 11,000 EPA employees, a mere 160 were assigned to the hazardous waste and solid waste activities of the agency at its Washington, D.C. headquarters and ten regional offices. Only \$25.2 million of the agency's \$1.2 billion budget was directly or indirectly devoted to the hazardous waste program. 10 ENVIR. REP. (BNA) 75 (May 18, 1979).

<sup>157</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 16.

unless a large share of program administration costs were borne by the federal government.<sup>158</sup> Four of the states (Indiana, New York, Ohio, and Pennsylvania) account for approximately one-quarter of the nation's hazardous waste generation.<sup>159</sup> In 1978 EPA regional officials told GAO that they lacked the funds and staff to administer hazardous waste regulation in any of twenty states which are not expected to apply or qualify to run their own programs.<sup>160</sup> Even those few states that have maintained relatively good hazardous waste programs prior to the passage of Subtitle C claim there is a need for continuous, ample, federal funding to support their regulatory programs—California is a prime example. California is a pioneer in hazardous waste regulation, possessing possibly the best program in the nation before RCRA was enacted.<sup>161</sup> However, in early 1978 the California Department of Health warned a Senate subcommittee that the effectiveness and long-term acceptance of its hazardous waste program would be seriously jeopardized without lasting federal financial support.<sup>162</sup> The California program could not have sustained itself up until now had it not received one-half of its financial support during its formative years from the federal government.<sup>163</sup> Moreover, California maintains that without federal financial assistance it cannot upgrade and maintain its effective control program in accordance with the even better standards Subtitle C requires.<sup>164</sup>

States generally seem disinclined to provide the substantial funding necessary to properly build and maintain authorized hazardous waste control programs. Instead states expect and demand federal assistance to absorb a large part of the expense.<sup>165</sup> Congress originally intended that the states carry the lion's share of the funding for the operation and enforcement of their hazardous

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<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 23.

<sup>160</sup> *Id.* at 16.

<sup>161</sup> Calif. Hazardous Control Law (added by 1972 Cal. Stats., Ch. 1236, amended by 1977 Cal. Stats., Ch. 1039), CALIF. HEALTH & SAFETY CODE §§ 25100-25600.5 (West Supp. 1980).

<sup>162</sup> *Senate Subcommittee on Resource Protection, Resource Conservation and Recovery Act Oversight Hearings*, 95th Cong., 2d Sess., at 188-95 (March 20, 1978) [hereinafter cited as SENATE RCRA OVERSIGHT HEARINGS].

<sup>163</sup> *Id.* at 91-92.

<sup>164</sup> *Id.* at 92.

<sup>165</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 15.

waste control programs when Congress did not authorize grant assistance for this purpose. However, in authorizing \$50 million in grants to help states develop hazardous waste programs, Congress apparently intended that a large share of the cost for creating state programs be borne by the federal government in order to get Subtitle C regulation off to a quick start.<sup>166</sup> By greatly reducing the federal funds available to the states for program development, the executive branch has not only deprived the states of a decent beginning for hazardous waste control but has given them a good reason to avoid accepting full financial responsibility for their hazardous waste control programs. One state that has seriously considered not adopting its own hazardous waste control program is Pennsylvania, which indicated it was reluctant to follow the federal lead in implementing Subtitle C because it sees sparse federal funding of state program development as evidence of a lack of sincere federal concern and commitment to hazardous waste control.<sup>167</sup> Like EPA, state environmental protection agencies such as the Pennsylvania Department of Environmental Resources face tight and sometimes diminishing budgets for their existing programs, including non-hazardous solid waste management.<sup>168</sup> State legislatures which are tightening the budgets for existing environmental programs are obviously reluctant to appropriate additional funds for new state environmental protection programs such as Subtitle C regulation. Many state officials and legislators regard Subtitle C regulation as just another federally imposed environmental protection program, and believe that the federal government, not the states, should provide a large share of the funds states will need to operate their own programs.<sup>169</sup>

In slowing the development of Federal and state Subtitle C regulatory programs, inadequate funding is at least as responsible as citizen opposition for the current and anticipated shortfall in environmental hazardous waste facility capacity. As a result of insufficient funding, and the complexity of developing hazardous waste regulations which EPA should have foreseen, the Subtitle C regulations were not promulgated until slightly more than two

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<sup>166</sup> RCRA § 3011, 42 U.S.C. § 6931 (1976).

<sup>167</sup> Pennsylvania's problems in adopting a Subtitle C program were described by Pennsylvania Congressman Robert Edgar in testimony at the *Senate RCRA Oversight Hearings*, *supra* note 162, at 5-11.

<sup>168</sup> *Id.* at 6.

<sup>169</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 15.

years after the April 21, 1978 deadline Congress first fixed for their formulation.<sup>170</sup> Some states have enacted comprehensive hazardous waste control legislation recently as the first step in building their own Subtitle C programs.<sup>171</sup> No state can really begin fully to develop and implement regulatory programs, however, until EPA's own belated regulatory scheme is finally and firmly in place and adequately funded, and until sufficient funds are made available for state program development. Eugene J. Wingerter, executive director of the National Solid Waste Management Association, points out that any delay in implementing the Subtitle C program also delays the development of new, environmentally acceptable waste facilities.<sup>172</sup> Wingerter noted that until Subtitle C regulation is actually in place and enforced, there is no reason for hazardous waste generators to pay the high cost of proper treatment and disposal required by Subtitle C regulation.<sup>173</sup>

Worse yet, EPA Assistant Administrator Thomas Jorling told a Senate Committee in early 1979 that due to staff shortages and enormous paperwork unless the Agency receives substantially

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<sup>170</sup> Virtually all of Subtitle C's regulations were required to be promulgated within 18 months after the October 21, 1976 enactment of RCRA and to take effect 6 months after their promulgation. See RCRA §§ 3001-3006, 3010; 42 U.S.C. §§ 6921-6926, 6030 (1976). Thus, April 21, 1978 was the deadline for issuing the Subtitle C regulations, and October 21, 1978 was the deadline for their taking effect. When EPA was unable to meet the April 21, 1978 promulgation deadline, it was sued on September 7, 1978 by several environmental groups, a solid waste trade association, and the State of Illinois. The U.S. District Court for the District of Columbia ruled EPA, though not able to meet statutory deadlines, was making a "good faith" effort to issue regulations in a timely manner. *State of Illinois v. Costle*, No. 78-1689 (D.D.C., Jan. 13, 1979). On January 3, 1979, the district court issued a compliance schedule for the promulgation of the Subtitle C regulations, which was nearly identical to EPA's own suggested schedule. The court set a December 31, 1979 deadline for the issuance of final regulations under sections 3001 through 3004 of Subtitle C, and an October 31, 1979 deadline for the promulgation of final rules under sections 3005 and 3006. On June 1, 1979, EPA filed an affidavit with the District Court of the District of Columbia declaring it was certain that it could not conform with the court's compliance schedule and announced instead that all the final regulations would probably be promulgated sometime in March, 1980, rather than on or before December 31, 1979. EPA Administrator Douglas Costle indicated EPA would make every effort to comply with the court-ordered deadlines, but was not optimistic that it actually could do so. See 10 ENVIR. REP. (BNA) 227-28 (June 15, 1979), and 653-54 (July 13, 1979). The court order was subsequently modified to require EPA to meet a promulgation date of April, 1980. 45 Fed. Reg. 33086 (May 19, 1980). See notes 6 and 7, *supra*, for EPA rules issued pursuant to Subtitle C of RCRA.

<sup>171</sup> See, for example, the new Michigan Hazardous Waste Management Act, 1979 MICH. PUB. ACTS No. 64 (July 25, 1979).

<sup>172</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 4.

<sup>173</sup> *Id.*

more funds it will take up to ten, instead of the expected five, years to issue permits for all the hazardous waste facilities operating or needed in the next few years.<sup>174</sup>

Jorling's warning of protracted delay in the implementation of Subtitle C due to underfunding has already started to unfold with EPA's promulgation of the regulations for hazardous waste facilities.<sup>175</sup> When EPA issued proposed regulations for hazardous waste facilities on December 18, 1978,<sup>176</sup> it was understood that the next set of regulations would soon be forthcoming and would be a complete and conclusive version of the concept presented in the proposed draft regulations.<sup>177</sup> Despite issuing the proposed regulations eight months after the deadline for the final regulations,<sup>178</sup> and a federal court order setting April 1980 as the deadline for fully and finally issuing Subtitle C regulations,<sup>179</sup> EPA's most current version of the regulations for hazardous waste facilities is rudimentary and preliminary.<sup>180</sup> EPA blames limited resources for its failure to complete once and for all a control program for hazardous waste facilities.<sup>181</sup> Whatever justifications EPA offers for failing to complete a definitive control program for hazardous waste facilities, the public and the environment will merely be minimally protected for a period of several years against the risks of pollution by hazardous waste facilities. An optimistic characterization of EPA's latest version of regulations for hazardous waste facilities is that some control is better than none.

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<sup>174</sup> Testimony of Thomas Jorling, reported in 9 ENVIR. REP. (BNA) 2250 (March 30, 1979).

<sup>175</sup> See generally, 45 Fed. Reg. 33154-258 (May 19, 1980) (to be codified in 40 C.F.R. §§ 264 and 265).

<sup>176</sup> 43 Fed. Reg. 58946-59022 (Dec. 18, 1978).

<sup>177</sup> EPA's proposed regulations provided for two tiers of performance standards for hazardous waste facilities. The first basic level consisted of specific standards for the design, construction and operation of various types of hazardous waste facilities. On top of these specific design and operation standards, the draft regulations contained overriding human health and environmental performance standards for protecting ground water, surface water, and air quality. Compliance with the overriding human health and environmental standards was to be generally assumed for facilities built and operated in accordance with the specific design and operation standards, but in those presumably few situations where the design and operation standards failed to satisfactorily protect health and the environment, then the overriding standards would supersede them and provide the regulatory authority for ordering more stringent facility standards. See generally, 43 Fed. Reg. 58946, 58990-59015 (Dec. 18, 1978).

<sup>178</sup> See note 170, *supra*.

<sup>179</sup> *Id.*

<sup>180</sup> 45 Fed. Reg. 33220-58 (May 19, 1980) (to be codified in 40 C.F.R. §§ 264, 265).

<sup>181</sup> 45 Fed. Reg. 33157 (May 19, 1980).



The Agency has made complicated what would have been simpler had one definitive set of regulations been issued. EPA's latest set of regulations for hazardous waste facilities constitutes the first and most elementary stage of a three-phase program EPA promises to complete.<sup>182</sup> According to EPA the first phase of its regulations represent a "bare outline" of those forthcoming in the last two stages.<sup>183</sup> The first phase rules for hazardous waste facilities consist of two types of regulations that are categorized as interim status standards<sup>184</sup> and general status standards.<sup>185</sup> In addition, the rules for hazardous waste facilities distinguish between the "interim final" provisions which constitute most of the regulations and the tautological "final final" regulations.<sup>186</sup> The interim status standards introduced in the Phase I regulations cover currently operating hazardous waste facilities in existence prior to RCRA's enactment and pertain to any such facility between the time it applies for a permit and the time that the regulatory authority makes a final decision on the permit.<sup>187</sup> The general status standards contained in the Phase I regulations are independently enforceable standards which will be used to issue permits and which will apply to facilities once they have received a permit.<sup>188</sup> Both types of standards are essentially identical for administrative and nontechnical requirements governing operations at hazardous waste facilities.<sup>189</sup> The differences in the Phase I regulations are that very few technical design and operation standards for environmental and public health protection are specified in the interim status standards while the general status standards specify virtually none.<sup>190</sup> Despite having nearly four

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<sup>182</sup> 45 Fed. Reg. 33156-57 (May 19, 1980).

<sup>183</sup> 45 Fed. Reg. 33157 (May 19, 1980).

<sup>184</sup> 45 Fed. Reg. 33232-58 (May 19, 1980) (to be codified in 40 C.F.R. § 265).

<sup>185</sup> 45 Fed. Reg. 33221-32 (May 19, 1980) (to be codified in 40 C.F.R. § 264).

<sup>186</sup> Most of the sections of the regulations had been substantially modified from the draft regulations, and therefore they were issued as interim final regulations so that further public comment could be received before they were promulgated as "final regulations." 45 Fed. Reg. 33157 (May 19, 1980).

<sup>187</sup> Section 3005(e) of RCRA provides that, if the owners or operators of a facility which is in existence on October 21, 1976 (the date of enactment of RCRA) notify EPA and properly applies for a permit, then the owner or operator is to be "treated as having been issued such a permit." EPA refers to such an owner or operator as having "interim status" because that is the title of subsection 3005(e). 42 U.S.C. § 6925(e) (1976).

<sup>188</sup> 45 Fed. Reg. 33157 (May 19, 1980).

<sup>189</sup> 45 Fed. Reg. 33156 (May 19, 1980).

<sup>190</sup> 45 Fed. Reg. 33156-57 (May 19, 1980).

years since RCRA's enactment to develop technical facility standards for hazardous waste facilities, and despite having presented a fairly complete assemblage of these types of standards in the draft regulations,<sup>191</sup> EPA now declares it may be years away from fully compiling detailed national technical standards for hazardous waste facilities.<sup>192</sup> Consequently, as an interim measure, EPA pledges to issue sometime in the fall of 1980 a second phase of moderately technical standards for many types of hazardous waste facilities.<sup>193</sup> These Phase II regulations will provide the basis by which permit applications for facilities can be technically evaluated via the regulators "best engineering judgment,"<sup>194</sup> an apparent euphemism meaning that ample flexibility and discretion will be afforded EPA in negotiating and deciding permits. EPA declares that these Phase II regulations will contain both site-specific and waste-specific factors as well as a more systematic method of facility evaluation to determine the safety and security of a facility.<sup>195</sup> The Phase II regulations will become general status standards and be incorporated, where appropriate, as interim status standards as well.<sup>196</sup> The Phase II regulations are not envisioned as the highest and best standards for hazardous waste facilities, but primarily as interim means to determine whether a facility will adequately safeguard human health and the environment.<sup>197</sup> The third phase of EPA's regulations is conceived as providing maximal and definitive control of hazardous waste facilities and as providing thoroughly detailed technical requirements for hazardous waste operations.<sup>198</sup> The best estimate EPA can provide as to the time Phase III regulation will take effect is that it is several years away.<sup>199</sup> In the meantime, the inferior standards embodied in the Phase I and II regulations will reign.

EPA concedes that with Subtitle C Congress wanted hazardous waste facilities stringently and fully regulated as quickly as possi-

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<sup>191</sup> See note 177, *supra*.

<sup>192</sup> 45 Fed. Reg. 33156-57 (May 19, 1980).

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*

<sup>195</sup> *Id.*

<sup>196</sup> *Id.*

<sup>197</sup> 45 Fed. Reg. 33157 (May 19, 1980).

<sup>198</sup> 45 Fed. Reg. 33156 (May 19, 1980).

<sup>199</sup> *Id.*

ble.<sup>200</sup> But EPA's incremental and tentative three-phase strategy for implementing controls for hazardous waste facilities is contrary to full and expeditious regulations. EPA's reliance on interim status standards indicates that its method for controlling hazardous waste facilities will, for several years, provide little more than modest protection from the perils of hazardous waste. Congress provided for interim status in order to facilitate the smooth transition from a virtually unregulated situation to full national regulation for hazardous waste facilities. In the meantime it was Congress' intent to allow existing facilities to continue operating until permit applications were determined for the approximately 26,000 hazardous waste facilities nationwide.<sup>201</sup> Though it seems inconceivable that Congress wanted the lesser interim status standards to continue for several years, that is exactly what EPA indicates will and must occur due to insufficient resources to facilitate swift processing of permit applications.<sup>202</sup> During the initial stages of EPA's review of permit applications most of the nation's 26,000 hazardous waste facilities will be operating under interim status standards. It will be at least two, probably more, years before most of the hazardous waste facilities will have permits under the Phase II rules. Likewise, during the extended and indeterminate period of several years the Phase II regulations are in effect hazardous waste facilities with permits will not be subject to standards assuring adequate protection to people and the environment.

## 2. Inadequate Enforcement

A regulatory program is only as good as its enforcement.<sup>203</sup> There are few better ways to inspire and keep public confidence

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<sup>200</sup> 45 Fed. Reg. 33157 (May 19, 1980).

<sup>201</sup> 45 Fed. Reg. 33158 (May 19, 1980).

<sup>202</sup> *Id.*

<sup>203</sup> RCRA provides federal and state governments and citizens with a broad range of enforcement measures, including: permit suspension or revocation, RCRA § 3005(d), 42 U.S.C. § 6925(d) (1976); withdrawal of state authorization, RCRA § 3006(e), 42 U.S.C. § 6926(e) (1976); inspection of hazardous waste activities, RCRA § 3007(a), 42 U.S.C. § 6927(a) (1976); compliance orders, civil penalties up to \$25,000 per day, and criminal penalties for knowing transportation to an unpermitted facility, unpermitted disposal, and making false statements in applications, manifests, labels, and reports, RCRA § 3008, 42 U.S.C. § 6928 (1976). Section 7003 of RCRA additionally authorizes EPA to bring suit to immediately restrain or take any other action necessary against the handling, storage, treatment, transportation or disposal of hazardous or solid waste which poses an imminent or substantial danger to health or the environment. 42 U.S.C. § 6973 (1976).

about the safety and security of hazardous waste facilities than by strict, prompt, and full enforcement of environmental and safety standards. State agencies regulating hazardous waste activities have a poor reputation in this regard. The current crisis over facility shortfall and siting which many regulatory officials blame on citizen opposition is more correctly the fault of the dreadful past regulatory behavior which allowed 90 percent of all hazardous waste to be disposed improperly and thus inspired public mistrust about present and future hazardous waste control. Here too, despite the stated sincerity and determination of many regulatory officials to make Subtitle C control work well, successful enforcement of this program depends principally upon adequate financial support. When the GAO contacted twenty-six states in 1978 it found that all of them inadequately enforced even the limited hazardous waste control programs which they had.<sup>204</sup> Citizens and state regulatory agencies will differ on the adequacy of state regulation. Many regulatory officials might be predictably self-satisfied or defensive about their performance while citizens are displeased. In fact, citizens have ample justification for distrusting sincere pledges by state regulatory officials that hazardous waste facilities will be properly regulated. Such promises have been made before, only to be followed by serious hazardous waste mishaps.<sup>205</sup>

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<sup>204</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 6.

<sup>205</sup> A prime example of failed promises of safe and secure hazardous waste regulation was the 1977 fire and explosion at the Rollins chemical treatment and disposal plant in Logan Township, New Jersey. This catastrophe killed seven laborers, sent forty-five policemen and firemen to the hospital (some are still experiencing health disorders as a result of the disaster), and exposed over 400 people to harmful and deadly gases and liquids. The fire consumed hundreds of thousands of gallons of toxic chemicals, transforming them into airborne gases spreading out into the broader environment, including the burning of 45,000 gallons of highly toxic polychlorinated biphenyls (PCB's). In testimony before a House Subcommittee in early March, 1978, Glenn Paulson, Assistant Commissioner of the New Jersey Department of Environmental Protection, submitted a brief history of his state's hazardous waste regulation program, praising the Rollins facility as a model operation of the kind the state would encourage within its borders. Obviously this document lauding Rollins was written before it blew up. For several years prior to the Rollins conflagration, New Jersey environmental protection officials prided themselves on what they considered a growing get-tough policy against improper hazardous waste activities. Considerably less satisfied with New Jersey's regulation were the citizens and local government officials of Logan Township. To convince Logan Township to grant a permit for the building of the chemical treatment plant, Rollins guaranteed that surface water impoundments holding wastes would possess impermeable liners to protect groundwater. In fact, no such liners were installed, and seeping wastes polluted underground water until the state finally stepped in and ordered protective measures. After Rollins was built, citizens repeatedly

The regulatory failures which have led to serious hazardous waste pollution corroborate the citizen perception that the permissiveness state regulators sometimes exhibit toward risky hazardous waste activities will not be automatically removed by the adoption of new, supposedly stringent state control programs.<sup>206</sup> Compromises by regulatory officials toward improper and often dangerous activities at hazardous waste sites is the inevitable consequence of inadequate regulatory budgets and rapid waste growth exceeding regulatory capabilities. Though the states are the usual targets of citizen disenchantment and anger over poor enforcement of hazardous waste control, the federal government as well can be the object of criticism for slow or poor regulatory response.<sup>207</sup>

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protested to the state about dangerous, improper, and illegal activities at the facility—but to little avail. The responses of state officials to citizen complaints and reports of improper activities at the “model” Rollins facility were always slow and weak-kneed. Harried and squeezed by a tight regulatory budget and by hazardous waste generation which outran instate capacity to properly manage it, New Jersey officials chose indulgence toward abuses at the Rollins facility over swift and stern enforcement actions to protect citizens from what is widely regarded as an inherently dangerous business. The consequences of this forbearing regulatory response, though somewhat understandable in light of difficult circumstances, were continued, worsening transgressions and pollution, contributing eventually to the disaster at Rollins. See testimony of Paulson and Logan Township Solicitor Kenneth A. Dimizio, regarding the Rollins disaster, in *House Subcommittee on Transportation and Commerce, supra* note 76, at 138-45, 196-205.

The Love Canal catastrophe exemplifies equally well the incredible indolence state and local officials have sometimes exhibited toward toxic substance pollution. At first, the Niagara County Health Department and city government did not consider the Love Canal situation an emergency and played down the problem. When citizens reported mysterious releases of toxic substances and serious health disorders to their children and themselves, the N.Y. State Department of Environmental Conservation conducted very little investigation. Only after the State Department of Health entered the picture was the matter finally regarded as urgent. Brown, N.Y. Times (Jan. 21, 1979) (Magazine), reprinted in 125 CONG. REC. S6827 (daily ed. June 4, 1978) (exhibit accompanying remarks of Sen. Dale Bumpers) [hereinafter cited as BROWN].

<sup>206</sup> *Id.*

<sup>207</sup> On May 15, 1979, the State of Michigan notified the Department of Defense and the EPA of its intent to sue for their failure to stop the discharge of toxic substances onto the ground at the Wurtsmith Air Force Base near Oscoda, Michigan. In October, 1978, EPA discovered serious groundwater contamination at the base caused by trichloroethylene (TCE), a toxic degreasing agent for airplane engines and other equipment. The TCE in the ground extended up to 4 miles from the base and EPA declared that it posed an imminent threat to nearby surface waters. Soon afterwards, EPA issued an administrative order compelling the Air Force to clean up the TCE. However, after the order was issued, nothing was done by the Air Force, the situation worsened, and EPA failed to follow through on the order. As a result, Michigan threatened a lawsuit. 10 ENVIR. REP. (BNA) 122-23 (May 25, 1979).

Only after the House Subcommittee on Oversight and Investigations of the Committee

With or without adequate federal funding it is a good bet that most, if not all, of the states generating the largest amounts of industrial hazardous wastes will institute hazardous waste programs under Subtitle C. However, many of these programs will be instituted for the wrong reasons. State officials often boast that state administration of pollution control programs established by the federal government is more "flexible" and "responsive" to industry than federally run programs.<sup>208</sup> In fact, it has been suggested that the claims of flexibility and responsiveness made about state programs are euphemisms for favoritism toward industry.<sup>209</sup> Regulatory bias favoring the powerful industrial sector could take an insidious form in state siting determinations for hazardous waste facilities. Because decisions to site a hazardous waste facility must now anticipate and respond to public opposition, decision makers have become increasingly conscious of political solutions. The opportunistic regulator and site proponent will seek and favor sites where there is the least opposition. That often means locations where the least politically potent of our society—poor and minorities—live. The State of North Carolina has been accused of following this course of least political resistance in its recent plan to establish a hazardous waste landfill to

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on Interstate and Foreign Commerce applied intense pressure in early 1979 did the EPA reverse its policy of intentionally not searching for and not investigating inactive hazardous waste dumpsites which might present severe and imminent hazards to the public and the environment. See reference to Brown article in CONG. REC., *supra* note 205.

<sup>208</sup> In a late spring 1979 conversation with the author in Indianapolis, Dave Lamm, then acting chairman of the solid waste management section of the Indiana Board of Health, said that Indiana's industrial waste generators and waste management firms very much wanted the state and not EPA to regulate hazardous waste because they believed the state would be more "flexible" and "responsive." Lamm shared that sentiment. For the justifications typically given for maximizing the state role in hazardous waste control while downplaying the federal role, see 2ND ANNUAL RCRA REPORT, *supra* note 8, at II-20 to 21. The reasons listed for preferring the states over the federal government as hazardous waste regulators were: 1) the state is more familiar with its people, problems, and solutions; 2) it is better able to tailor a program to suit the needs of its citizens; 3) because some states have existing programs, it is more sensible to build on them rather than have EPA preempt or needlessly duplicate them; 4) state involvement results in greater public participation and education; 5) without a strong state role, siting of hazardous waste facilities is likely to be more difficult; and 6) states have traditionally regulated waste activities under their police power to further public health and sanitation.

<sup>209</sup> William Goldfarb, *The Hazards of Our Hazardous Waste Policy*, 19 NAT. RESOURCES J. 259 (1979) [hereinafter cited as GOLDFARB]. In addition, in note 45, at page 259 of his article, Goldfarb reports that citizens in Ohio sued EPA to force the withdrawal of the state's authority to conduct its own water pollution discharge program on the grounds that state agencies were overly lenient with violators.

take PCBs (polychlorinated biphenyls) which had been illegally dumped elsewhere.<sup>210</sup>

The beginning and end points of enforcing hazardous waste control are investigating violations, and if necessary, taking violators to court. United States Assistant Attorney General James W. Moorman told the Senate Judiciary Committee in 1979 that the major problem in toxic materials control is that both EPA and the Justice Department lack the financial resources to support enough investigators, technical experts, and government attorneys to search out most toxic substance violations and bring violators to court.<sup>211</sup> The same enforcement disabilities plague the states.<sup>212</sup> Moorman said that while the disposal of poisons is one of the most serious environmental issues of our time, it appears to rank low among the Federal government's environmental protection concerns in view of the small amounts of funds and manpower devoted to enforcing hazardous waste pollution laws.<sup>213</sup> In mid-1979 the Administration announced that EPA and the Justice Department would mount a long-needed, aggressive and well-funded investigation and enforcement campaign against abandoned and closed waste sites where improperly treated or disposed wastes seriously imperil the environment and public health.<sup>214</sup> EPA is perfectly justified in seeking to correct the hazardous waste mistakes of the past, but if Subtitle C regulation is to succeed, the federal government and the states must also look to the present and future and undertake an equally strong com-

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<sup>210</sup> The State of North Carolina proposed locating a hazardous waste dump in Warren County. This landfill was to receive 40,000 cubic yards of soil from along 210 miles of rural state roads which had been contaminated by the illegal dumping of PCB's. Warren County has only 16,000 people, 70 percent of whom are black, and is the poorest of the state's 100 counties. One citizen advocate charged that Warren County was chosen because its residents were "few, poor and black." "Three Plead Guilty to Dumping PCB's in North Carolina," N.Y. Times, at A19 (June 15, 1979).

<sup>211</sup> 9 ENVIR. REP. (BNA) 2328 (April 13, 1979).

<sup>212</sup> For example, New York Assistant Attorney General John F. Sheer told a House Commerce Subcommittee that New York State lacks the funding and staff to investigate hazardous waste violations and bring transgressors to court. 10 ENVIR. REP. (BNA) 122-23 (May 25, 1979).

<sup>213</sup> See 9 ENVIR. REP. (BNA) 2328 (April 13, 1979).

<sup>214</sup> To fund federal investigations and lawsuits against illegal and harmful dumping of hazardous wastes at abandoned or inactive sites, President Carter in June, 1979 asked Congress to authorize for FY 1980 \$45 million and 70 positions for EPA, and \$1.2 million and 30 positions for the Department of Justice. The Administration's request of \$46.2 million was far short of the \$131 million both agencies originally informed the White House they needed to do the job properly. 10 ENVIR. REP. (BNA) 223-25 (June 15, 1979).

mitment to investigate and litigate against those violating Subtitle C regulation. That unfortunately has not happened, for EPA and the states still lack both present and long-term assurances of the financial and manpower resources needed to investigate earnestly and litigate against violators of hazardous waste regulation.

### 3. Funding Alternatives

The prospects are dim for soon providing state and federal hazardous waste control programs with the adequate financial security they need to function successfully. In November 1979 President Carter approved a \$22 million fiscal year 1980 appropriation for EPA's hazardous waste activities, a \$9.6 million increase over the previous year.<sup>215</sup> As the measureably improved fiscal year 1980 appropriation was still not enough, EPA reprogrammed for hazardous waste control an additional \$12.6 million, plus 235 people from other Agency activities.<sup>216</sup> The President's proposed fiscal 1981 budget contemplated further increased authorizations for Subtitle C program development and enforcement,<sup>217</sup> but these plans were announced before the pressures of the democratic presidential primary campaign and uncontrolled inflation compelled the President to propose in February 1980 that the national budget be balanced. The President's Office of Management and Budget (OMB) directed all federal agencies to recommend spending cuts for fiscal year 1981. In response to the OMB directive, EPA proposed a \$1 billion budget reduction for its activities, nearly all of which was to come out of the program for sewage construction grants to the states.<sup>218</sup> This EPA proposal, as was evidently intended, would spare most of its own programs from funding cutbacks, and even allow for planned increases to hazardous waste control.<sup>219</sup> The EPA savings recommendation would penalize the states, the prime beneficiaries of the sewage construction grants. But EPA's strategy to protect funding for its own programs by inflicting virtually all the financial reductions upon

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<sup>215</sup> 10 ENVIR. REP. (BNA) 1537 (Nov. 5, 1979); 10 ENVIR. REP. (BNA) 1610 (Dec. 7, 1979).

<sup>216</sup> 10 ENVIR. REP. (BNA) 1678 (Dec. 21, 1979).

<sup>217</sup> The President's proposed fiscal year 1981 budget called for a \$111 million authorization for EPA hazardous waste regulatory activities, \$30 million for state hazardous waste program development grants, and \$10 million for federal enforcement activities against hazardous waste violations. 10 ENVIR. REP. (BNA) 1938 (March 1, 1980).

<sup>218</sup> 10 ENVIR. REP. (BNA) 2113 (March 14, 1980).

<sup>219</sup> *Id.*



state sewage construction grants is not likely to gain Congressional acceptance. Congress can be expected to insist that any EPA budget cuts be more equitably distributed, providing for EPA programs to suffer reduced funding as well. Hence, even the best intentions of the Administration and EPA to increase spending for hazardous waste control seems destined to experience a setback in the war against inflation.

What hope there is for adequate long-term financial security for Subtitle C regulation remains with the states. The two major options available for adequate state funding are 1) legislative appropriations; or 2) measures compelling hazardous waste generators to support all or most of the costs of Subtitle C regulation of their wastes. Considering the past and continuing unwillingness of many legislatures to provide adequate funds for hazardous waste control,<sup>220</sup> the first option does not appear promising.

GAO advises the states to pursue the second option and levy fees or charges on the disposal and treatment of hazardous wastes.<sup>221</sup> Essentially, this would impose a large part of the costs of maintaining state regulatory programs upon hazardous waste facilities as to make these programs largely self-supporting. GAO found support for the fee concept from nearly all of the state and EPA officials it contacted.<sup>222</sup> Most of these officials had not previously considered the idea of self-supporting regulatory programs. In 1974, before the enactment of Subtitle C and its present funding difficulties, EPA rejected waste disposal fees for regulatory program support.<sup>223</sup> GAO reports that as of 1979 only seven to eight states levied charges for solid waste and only California and Maryland had hazardous waste charges.<sup>224</sup>

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<sup>220</sup> See text at notes 151, 153, and 169, *supra*.

<sup>221</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 139, at 17-19.

<sup>222</sup> *Id.* at 18.

<sup>223</sup> *Id.* at 17.

<sup>224</sup> California and Maryland utilize the two major forms of waste disposal charge. California, which established its fee system in 1974, adopted what is called the fixed fee or tonnage charge, so named because it is set at a fixed dollar amount per ton of wastes received by the waste facility, regardless of the waste type. On the average, the California fee constitutes about 50 percent of the total waste management costs borne by the hazardous waste generator. The California fee is still insufficient to defray all the costs of the state's hazardous waste control program. Moreover, the new demands of Subtitle C will generate even greater program costs for California. Maryland has adopted a variable disposal fee, so named because it reflects the degree of risk a specific kind of hazardous waste poses to the environment and public health, and the expense for government control required to safely manage and properly respond to this risk. See COMPTROLLER GENERAL OF

Disposal charges are an excellent way to achieve one of the primary goals of hazardous waste control embodied in Subtitle C, which is to shift the costs of hazardous waste pollution and control from the general public to the specific producers and consumers of the goods and services leaving behind the hazardous wastes. In short, disposal charges leading to partially or fully self-supporting hazardous waste control programs make the polluter pay for its own regulation. Moreover, disposal charges should be attractive to legislatures because they reduce the appropriations needed to fund state hazardous waste control programs.

The federal government, particularly EPA, has not vigorously promoted disposal charges and self-support for state hazardous waste programs. The quickest and most direct means for instituting hazardous waste disposal charges nationwide is through a federally required charge. Unfortunately, the federal interagency Resource Conservation Committee, created by RCRA to study major waste and material conservation issues,<sup>225</sup> has endorsed the concept of disposal charges for solid wastes only, rejecting the concept of a national charge in favor of leaving its adoption up to the individual states.<sup>226</sup> Few states have yet shown much interest in disposal charges and their great value for helping hazardous waste or solid waste control programs to become more self-supporting. The GAO has recommended that EPA seek legislation allowing it to impose disposal charges for state hazardous waste programs it must take over. A congressional report recommended legislation requiring the states to utilize fee systems for hazardous waste generation to finance state control programs.<sup>227</sup> EPA has been indifferent to these suggested improvements.

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THE UNITED STATES, *supra* note 139, at 27-29. The Maryland fee is initially collected from the facility operator as part of the operating permit fee and is a condition precedent to obtaining such a permit. MD. NAT. RES. CODE ANN. § 8-1413.2(j) (Michie Supp. 1979).

Oregon has also adopted a fee system in which hazardous waste generators and facilities help pay the costs of regulating hazardous waste sites. Oregon requires an annual license fee for an operator of a hazardous waste disposal site. The fee fixed is established to reflect the amount which the state determines is adequate to defray its costs of monitoring and surveilling the site. OR. REV. STAT. § 459.610-670 (1979).

<sup>225</sup> RCRA § 8002(j), 42 U.S.C. § 6982(j) (1976).

<sup>226</sup> See RESOURCE CONSERVATION COMMITTEE, CHOICES FOR CONSERVATION (SW 779), Office of Solid Waste United States Environmental Protection Agency (June 1979).

<sup>227</sup> SUBCOMM. ON OVERSIGHT AND INVESTIGATIONS OF THE HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, *supra* note 37, at 50, 59-60.

### V. FINANCIAL RESPONSIBILITY<sup>228</sup>—A MISGUIDED APPROACH TO CONTROL

Section 3004(b) of RCRA authorizes EPA to establish standards governing the financial responsibility of owners and operators of hazardous waste facilities permitted under Subtitle C.<sup>229</sup> Financial responsibility generally refers to the capability and liability of the facility owner or operator to pay for proper maintenance and operation of a site, the site's proper closing, the long-term care of a closed site, and for remedial action and damages resulting from the release of hazardous wastes into the environment.<sup>230</sup> EPA has issued a partial set of regulations governing financial responsibility<sup>231</sup> and these contain mere guidelines for estimating the costs of securely closing a hazardous waste site<sup>232</sup> and the costs of proper long-term care for a closed site.<sup>233</sup> After receiving significant criticisms about its proposed regulations for financial responsibility, EPA decided to revise its proposal.<sup>234</sup> The revised financial responsibility requirements are proposed for both interim status and general status application and prescribe the financial mechanisms available to the hazardous waste facility for achieving financial responsibility.<sup>235</sup>

Implicit in a national hazardous waste policy that allows the generation and disposal of huge amounts of long-lived wastes is recognition of the fact that some places will become long-term toxic pollution sinks capable of injuring health and the environment. One high ranking EPA official has conceded as much.<sup>236</sup> Few communities are willing to sacrifice themselves to this fate.

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<sup>228</sup> This article does not discuss financial responsibility and liability for waste sites, such as Love Canal, which were closed or abandoned prior to Subtitle C enactment or regulation and thus not subject to Subtitle C control.

<sup>229</sup> RCRA § 3004(6), 42 U.S.C. § 6924(6) (1976).

<sup>230</sup> 43 Fed. Reg. 58986-88 (Dec. 18, 1978).

<sup>231</sup> 45 Fed. Reg. 33243-44 (May 19, 1980) (to be codified at 40 C.F.R. § 265.140, .142, .144).

<sup>232</sup> 45 Fed. Reg. 33243-44 (May 19, 1980) (to be codified at 40 C.F.R. § 265.142).

<sup>233</sup> 45 Fed. Reg. 33244 (May 19, 1980) (to be codified at 40 C.F.R. § 265.144).

<sup>234</sup> 45 Fed. Reg. 33260-65 (May 19, 1980).

<sup>235</sup> 45 Fed. Reg. 33265-78 (May 19, 1980) (to be codified at 40 C.F.R. § 265.140).

<sup>236</sup> In a speech to the American Chemical Society recommending state preemption for hazardous waste facility siting, EPA Deputy Assistant Administrator Gary Dietrich said, "The purposeful dedication of parcels of land as pollution sinks, for the ultimate disposal of pollutants, must be allowed, albeit with care and stringent management. The hazardous waste program must admit to and allow long-term, perhaps perpetual pollution sinks." 9 ENVIR. REP. (BNA) 2295-96 (April 6, 1979).

The existence of financial mechanisms for hazardous waste damage and care at regulated sites, while necessary, evidences the inappropriate thrust of Subtitle C control: regulating hazardous waste after it is generated and at disposal rather than reducing waste generation at the source.<sup>237</sup> More wastes mean more pollution sinks at which they are disposed, and matters are only made worse when financial mechanisms for waste site care and liability are deficient.

Liability insurance requirements for operating waste sites,<sup>238</sup> called site life liability standards, are necessary because of the potential for damage to people and property from hazardous waste operations. To the extent that the facility owner or operator lacks sufficient financial resources to compensate third parties for damages, injured parties and government may be forced to bear the costs.

There are two types of hazardous waste damage to which liability could apply: sudden and nonsudden harm to the environment, people and property.<sup>239</sup> Examples of sudden waste damage incidents are explosions, ground spills, and fires. Nonsudden damage at hazardous waste sites typically involves the prolonged or latent release of toxicants into the environment and the latent onset or discovery of noticeable injury to the environment, human health, and property. Love Canal's twenty year hiatus between its closing and the occurrence of disastrous waste releases is the classic example of nonsudden damage at a closed waste site.<sup>240</sup> Less dramatic than Love Canal but much more significant is the slow but sure contamination of underground water supplies by active and

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<sup>237</sup> See Section VI, *infra*.

<sup>238</sup> Liability insurance for hazardous waste releases is like any other form of industrial liability insurance in that it is a contract between the insurer and the insured. The insured pays a premium in return for which the insurer agrees to protect the insured against legal obligations incurred due to stipulated kinds of occurrences causing bodily injury or property damages. See testimony of James L. Kimble, *House Subcomm. on Consumer Protection and Finance, Comm. on Interstate & Foreign Commerce, Hearings on the Toxic Substances Control Act Amendments H.R. 9616 and S. 1531*, 95th Cong., 2d Sess., at 368 (March 7, April 24 and July 24, 1978); John E. Blodgett, *Pollution Damages and Insurance* (ch. XV), reprinted in HOUSE COMM. ON PUBLIC WORKS AND TRANSPORTATION, COMPENSATION FOR VICTIMS OF WATER POLLUTION, 96th Cong., 1st Sess. at 370 (May 1979) [hereinafter cited as BLODGETT]; Michael E. Shannon, *Long-Term Care and Liability Issue Related to Hazardous Waste Treatment, Storage in Disposal Sites*, reprinted in EPA 1975 PROCEEDINGS ON HAZARDOUS WASTE MANAGEMENT at 335-53 (1976) [hereinafter cited as SHANNON].

<sup>239</sup> 43 Fed. Reg. 58987 (Dec. 18, 1978).

<sup>240</sup> See note 13, *supra*.

closed hazardous waste disposal sites around the nation.<sup>241</sup>

The development of EPA regulations for site life liability has been hampered by the fundamental problem of attempting to assure adequate indemnification protection for the public without requiring prohibitively expensive coverage. EPA appears headed toward a solution to this problem which sacrifices fair and adequate indemnification protection for the public in favor of keeping hazardous waste facilities in business.

The proposed regulations contained site life liability requirements which were applicable to general status facilities, but not to those with interim status permission.<sup>242</sup> Accompanying the final regulations, EPA issued a revised proposal for site life liability which also covered interim status facilities but only for non-sudden damage incidents.<sup>243</sup> The minimum insurance level for the general status standards were not contained in the new proposal, but they were reopened to public comment, clearing the way for possibly amending them.<sup>244</sup> EPA's revised proposal for site life liability coverage for interim status facilities allows a significant reduction in indemnification protection when compared with the general status liability requirements contained in the original proposal. It can be feared that the new proposal for interim status facilities foreshadows and opens the way for an erosion in the indemnification protection originally proposed and then repropoed for general status facilities. Since general status site life liability measures were of questionable adequacy in the first place, any diminution in indemnification protection for permitted facilities would not benefit the public. A discussion of the shortcomings of the site life liability standards for interim status facilities which have been newly proposed by EPA should serve to demonstrate the dangers of replicating these defects in the final regulations for general status facilities.

The interim status site life liability standards newly proposed by EPA would require the owner or operator of a hazardous waste facility to carry minimum insurance coverage for only sudden ac-

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<sup>241</sup> Over one-half of the nation's industrial disposal facilities, active and closed, leak toxic contaminants into groundwaters, making them unsafe as drinking sources for generations, if not forever. 2ND ANNUAL RCRA REPORT, *supra* note 8. More than 100 million Americans depend on groundwater for their drinking supply. HOUSE RCRA MATERIALS, *supra* note 16, at 40-41.

<sup>242</sup> 45 Fed. Reg. 59007 (Dec. 18, 1978).

<sup>243</sup> 45 Fed. Reg. 33273 (May 19, 1980) (to be codified at 40 C.F.R. § 265.147).

<sup>244</sup> 45 Fed. Reg. 33260-61 (May 19, 1980).

cidental damage at the amount of \$1 million per incident as well as \$2 million per firm in the aggregate on an annual basis.<sup>245</sup> In contrast, the original proposal specified that in order to be permitted a general status facility must maintain insurance for sudden accidents in the amount of \$5 million per site per occurrence and for nonsudden accidents in the amount of \$5 million per occurrence and \$10 million on an annual aggregate basis.<sup>246</sup>

EPA reduced the minimum site life liability insurance requirement originally proposed at \$5 million for sudden accidents at general status facilities to \$1 million for interim status facilities because it said the lower figure represented current underwriting levels and would be adequate. There is little convincing evidence to support the EPA reduction, which appears to be more concerned with the affordability of already costly insurance for hazardous waste facilities than with the availability of adequate indemnification funds for hazardous waste damage. In support of the reduced site life liability coverage for interim status facilities EPA relied both on information from a few insurers that small firms typically maintain coverage ranging from \$300,000 to \$1 million for sudden accidents<sup>247</sup> and on the fact that four states known to prescribe insurance coverage for sudden accidents have required coverage ranging from \$300,000 to \$1 million.<sup>248</sup> EPA does not address the possibility that these reported levels of insurance coverage for sudden damages could represent the limits of affordable insurance while still falling far short of providing adequate indemnification protection. What data EPA does have on damage costs for sudden incidents at operating sites is extremely limited, yet it forms the insufficient basis for EPA's latest proposal. EPA indicates that it undertook an extensive analysis of its damage report files to ascertain a proper required level of coverage for interim status facilities. In that analysis only one sudden occurrence was found where damage was estimated, and it was for \$216,500 in 1979 dollars.<sup>249</sup> This is hardly enough data on which to determine the typical cost, if there is such a thing, of a sudden damage incident at a waste facility. In contrast, EPA's discussion of its original site life liability proposal for general sta-

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<sup>245</sup> 45 Fed. Reg. 33273 (May 19, 1980) (to be codified at 40 C.F.R. § 265.147).

<sup>246</sup> 43 Fed. Reg. 59007 (Dec. 18, 1978).

<sup>247</sup> 45 Fed. Reg. 33263 (May 19, 1980).

<sup>248</sup> *Id.*

<sup>249</sup> *Id.*

tus facilities explained that the "dollar value of damage incidents in EPA files ranges from \$100,000 to many millions of dollars."<sup>250</sup> EPA further noted that it "is not unrealistic to imagine claims of several million dollars against a hazardous waste management facility."<sup>251</sup>

EPA portrays the \$2 million annual aggregate coverage proposed for interim status facilities as offering increased indemnification protection that will assure adequate coverage for sudden accidents.<sup>252</sup> Just the opposite might be the case because the annual aggregate minimum coverage is to be maintained on a per firm rather than a per site basis. Again, EPA justifies its proposal as reflecting conventional insurance industry practices. EPA explains that insurers generally provide coverage to all facilities owned or operated by a firm under a single policy because, through the use of an annual aggregate, they are able to take into account the risk of multiple accidents occurring for a firm which owns one or more facilities.<sup>253</sup> But this insurance industry practice is not meant to maximize compensation protection to third parties. Instead it is based on a calculated business judgement of spreading the risks of indemnification and maximizing coverage of costly premiums for the insured hazardous waste business. In effect, liability coverage on a per-firm rather than a per-site basis dilutes required coverage in direct relation to the number of facilities a firm owns or operates.

The EPA proposal may be correct in its assumption that the minimum coverage it would require is adequate. But EPA's conclusion is based on speculation rather than on firm data. As EPA admitted in its original proposal for site life liability, the "major difficulty in establishing insurance and indemnification levels is the lack of actuarial data on a regulated waste management."<sup>254</sup> EPA noted that what information it has primarily is derived from an unregulated industry and that while its regulations will reduce the risks of hazardous waste facilities, "the degree to which this will occur is open to speculation."<sup>255</sup>

EPA is in the difficult position of trying to strike a balance be-

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<sup>250</sup> 43 Fed. Reg. 58987 (Dec. 18, 1978).

<sup>251</sup> *Id.*

<sup>252</sup> 45 Fed. Reg. 33263 (May 19, 1980).

<sup>253</sup> *Id.*

<sup>254</sup> 43 Fed. Reg. 58987 (Dec. 18, 1978).

<sup>255</sup> *Id.*

tween assuring adequate indemnification protection to the public while keeping liability insurance levels from being prohibitively high. But implicit in the mere attempt to attain such a balance is the belief that it is achievable, which, in this case, it may not be. EPA's decision to propose relatively low minimum site life liability coverage for sudden damages at interim status facilities obviously contributes to the viability of already costly regulated disposal practices. But because of insufficient data on insuring hazardous waste facilities it can neither be proved nor is it obvious that the low coverage required for interim status facilities achieves what should be the primary objective of site life liability requirements, which EPA has declared "is to insure that funds be available to satisfy legitimate damages claims against a facility during its operating life."<sup>256</sup>

At first glance EPA's proposed site life liability requirement for sudden accidents at interim status facilities appears to be an improvement over the original regulatory proposal which did not require any type of coverage for interim status facilities. However, this is a dubious improvement if, as EPA admits, many thousands of the 26,000 hazardous waste facilities will have to operate under interim status standards for several years. Furthermore, while any measure of indemnification protection is wise for interim status facilities, it legitimates the minimal environmental and public health protection embodied in interim status facility standards that will prevail for years due to EPA's lack of resources with which to implement the stronger general status facility standards.

The fact that the insurance coverage proposed for the interim status period is much less than the coverage proposed previously for general status facilities could be used as a preliminary justification for reducing EPA's final liability requirements for general status facilities from the initially proposed levels. This is because the number and severity of damage incidents theoretically should be less at facilities which have been thoroughly reviewed and granted general status permits than those facilities with rudimentary interim status permission.

When EPA first recommended its site life liability requirements for general status facilities it received complaints that the insurance cost was prohibitively high.<sup>257</sup> At the time EPA dis-

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<sup>256</sup> *Id.*

<sup>257</sup> *Id.*



missed the complaints, declaring that after a review of premium costs for its originally proposed liability requirements it concluded the insurance costs were not unreasonable.<sup>258</sup> Nevertheless EPA's proposal to require minimum coverage of \$5 million per occurrence per site for both sudden and nonsudden accidents and of \$10 million annually in the aggregate for nonsudden accidents appears to approach the outermost limits for which insurance coverage can be obtained at hazardous waste sites. If one wanted to encourage hazardous waste management activities, one of the best ways would be to lessen costly site life liability coverage.

The critical insurance protection for hazardous waste facilities, whether operating or inactive, is for nonsudden damage incidents.<sup>259</sup> In its various regulations for site life liability, EPA appears to be capitulating to the problems in providing adequate indemnification coverage for nonsudden accidents.

Generally, insurance companies will not issue industrial liability policies for nonsudden pollution, apparently because the risks of frequent and severe damage are too great.<sup>260</sup> The gradual or steady release of hazardous substances from wastes is often not discovered until extensive and costly damage has occurred, particularly to underground water supplies.<sup>261</sup> The costs of cleaning up nonsudden waste damage can be enormous and well beyond the \$5 million per incident and \$10 million annual aggregate insurance levels specified by the general status regulations, as evidenced by the contamination at Love Canal and the Rocky Mountain Arsenal<sup>262</sup>. In an analysis of ninety damage incidents from its damage report files, EPA found that seventy-five were nonsudden events.<sup>263</sup>

EPA's requirements for nonsudden site life liability coverage are not now adequate. Any reduction in these monetary standards would further deprive the public of even a modest guarantee of indemnification for nonsudden damage. It is alarming to find completely absent from the regulations indemnification protection from nonsudden damage caused by interim status facilities.

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<sup>258</sup> *Id.*

<sup>259</sup> *Id.*

<sup>260</sup> It is standard for an industrial liability insurance contract to contain an exclusion of liability clause for pollution damages which are neither sudden nor accidental nor unexpected. See BLODGERT, *supra* note 238.

<sup>261</sup> See text and notes at notes 18-19, *supra*, and note 241, *supra*.

<sup>262</sup> See note 13, *supra* and text at note 103, *supra*.

<sup>263</sup> 45 Fed. Reg. 33263 (May 19, 1980).

EPA declares it did not propose coverage for nonsudden damage occurrences at interim status facilities because the insurance industry appears unwilling to indemnify facilities until they have obtained general status permits.<sup>264</sup> Consequently, during the several years required to issue permits for all the nation's 26,000 hazardous waste facilities the public will be deprived of indemnification protection for the most threatening form of waste damage—nonsudden pollution occurrences—at the many thousands of hazardous waste facilities operating under interim status.

Another weakness in the site life liability provisions of the draft regulations is their failure to address nonaccidental damage caused at permitted facilities. Because of the unavailability of insurance for nonsudden and non-accidental occurrences,<sup>265</sup> the regulations defer these liability disputes to traditional tort remedies governed by applicable negligence and strict liability principles.<sup>266</sup> Insurers will be inclined to dispute claims by insured facility operators that a damage incident at a site was accidental and thus indemnifiable. Due to the exceedingly high standard of care necessary for the safe operation of inherently dangerous hazardous waste facilities, insurers should have little trouble proving that most damage mishaps are nonaccidental and thus not indemnifiable under insurance coverage required by the regulations. Because liability insurance coverage for nonaccidental damage is totally unavailable or unaffordable, when such damage occurs the costs of clean-up and recompensing the injured will fall in whole or in part on the taxpayers and the victims.<sup>267</sup>

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<sup>264</sup> *Id.*

<sup>265</sup> See note 260, *supra*.

<sup>266</sup> For an explanation of the application of tort law to toxic substance pollution, see Costello, *Tort Law Principles*, in *COMPENSATION FOR VICTIMS OF WATER POLLUTION*, note 238, *supra*, at 321-38.

<sup>267</sup> Love Canal provides one illustration of the extent to which taxpayers bear the costs of hazardous waste pollution. More than \$20 million may be required to relocate 200 families, buy property, perform remedial construction, and conduct additional testing and monitoring. Federal assistance for Love Canal so far totals \$6 million: \$2 million in disaster relief and a \$4 million grant from EPA for fiscal year 1979. 2ND ANNUAL RCRA REPORT, *supra* note 8, at 1-3 to 4. Michigan recently created a hazardous waste service fund for use in hazardous waste emergencies. The fund is established at a minimum of \$1 million and to be financed by legislative appropriations. After the fund has been used in response to actual or potential damage from hazardous waste, the State Attorney General can begin proceedings to recover the expenditure from the person responsible for the emergency. Of course, the emergency may cost more than the \$1 million minimum level of the service fund, and the site owner may lack the capital, insurance, or bonding sufficient

The careful closing of a hazardous waste site is just as important as conscientious site selection and operation. Pursuant to the closure standards prescribed by the regulations<sup>268</sup> an owner or operator of a hazardous waste facility will no longer be able to abandon or close a waste site and neglect precautionary measures for securing the idle site against future waste releases. At the time the hazardous waste facility stops accepting wastes, an event called closure, the regulations provide for a closure period, not to exceed three years in duration, during which time the site is to be rendered secure against future waste releases.<sup>269</sup> The critical element required for proper closure is the assurance that there will continue to be available sufficient funds to properly close the site when the time comes even if the site is prematurely abandoned by an insolvent owner or operator. EPA's proposed interim status and final regulations furnish the assurance of adequate closure funds by requiring as a prerequisite to the issuance of a permit that the facility owner or operator establish a trust fund or obtain a surety bond, letter of credit, guaranty or any other financial mechanism which can adequately cover estimated closure expenses.<sup>270</sup>

Because the closure regulations<sup>271</sup> order the complete removal of hazardous wastes from sites occupied by most types of closed-out treatment, storage or disposal facilities, these sites can be restored to relatively unrestricted use afterwards and there is often little or no need to monitor and maintain them against waste escapes in the future. In contrast, the total removal of hazardous

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to recompense the state for a serious hazardous waste emergency. Mich. Hazardous Waste Management Act, 1979 MICH. PUB. ACTS, No. 64 § 43(1) (July 25, 1979).

<sup>268</sup> There are two types of closure requirements in EPA's final rules. First, there are general requirements, many of which are administrative in nature. 45 Fed. Reg. 33242-43 (May 19, 1980) (to be codified in 40 C.F.R. § 265.111-115). Second, there are specific technical requirements, which are included in regulations for specific types of hazardous waste facilities. For tanks, see 45 Fed. Reg. 33245 (May 19, 1980) (to be codified in 40 C.F.R. § 265.197); for surface impoundments, see 45 Fed. Reg. 33246 (May 19, 1980) (to be codified in 40 C.F.R. § 265.228); for land treatment, see 45 Fed. Reg. 33248 (May 19, 1980) (to be codified at 40 C.F.R. § 265.280); for landfills, see 45 Fed. Reg. 33249 (May 19, 1980) (to be codified in 40 C.F.R. § 265.310); for incinerators, see 45 Fed. Reg. 33250 (May 19, 1980) (to be codified at 40 C.F.R. § 265.351); for thermal treatment, see 45 Fed. Reg. 33251 (May 19, 1980) (to be codified in 40 C.F.R. § 265.381); for chemical, physical and biological treatment, see 45 Fed. Reg. 33251 (May 19, 1980) (to be codified in 40 C.F.R. § 265.404).

<sup>269</sup> 45 Fed. Reg. 33242 (May 19, 1980) (to be codified at 40 C.F.R. § 265.113(b)).

<sup>270</sup> 45 Fed. Reg. 33265-73 (May 19, 1980) (to be codified at 40 C.F.R. § 265.143).

<sup>271</sup> See note 268, *supra*, for final closure rules for tanks, surface impoundments, land-spreading, incinerators, and thermal, physical, chemical and biological treatment facilities.

wastes discarded at a closed landfill, pit, or lagoon site is usually not possible, preserving the potential for future releases of wastes whose danger may endure for decades or even centuries. Consequently, it is necessary to ensure that conscientious, long-term care be extended to the closed disposal sites at which hazardous wastes remain. Unfortunately, EPA's regulations do not assure the financial base needed to carry out long-term care for closed land disposal sites.

Two major financial issues characterize the problem of long-term care for closed hazardous waste land disposal sites. The first involves financial responsibility for monitoring and maintaining closed land disposal sites against waste releases, usually called post-closure care. The second concerns financial responsibility for damage liability to people and the environment which occurs or is discovered after the land disposal site has closed and secured.

In addition to requiring an appropriate financial mechanism to assure proper closure,<sup>272</sup> the regulations would require the use of the same types of financial mechanisms<sup>273</sup> assuring that at the time of closure there would be adequate funds to pay the cost for prescribed post-closure care for 30 years.<sup>274</sup> The thirty year post-closure period is entirely arbitrary and leaves unresolved the problem of financial and functional responsibility for long-term or perpetual site care following the thirty year period. Many hazardous wastes, it will be recalled, have ill-effects which are long-lived. Several experts have endorsed careful monitoring and maintenance for closed disposal sites for at least fifty to one hundred years.<sup>275</sup> Someone must pay for long-term site care following the thirty year period of owner/operator financial responsibility. It seems that EPA's decision to limit owner/operator post-closure financial responsibility to thirty years is based on practical necessity. Few businesses—waste disposal firms included—live as long as many of the enduring wastes inhabiting closed waste sites. Encumbering the owner/operator of a disposal site with post-closure costs for more than thirty years is too financially burdensome for

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<sup>272</sup> 45 Fed. Reg. 33265-68 (May 19, 1980) (to be codified in 40 C.F.R. § 265.143).

<sup>273</sup> 45 Fed. Reg. 33265-73 (May 19, 1980) (to be codified at 40 C.F.R. § 265.145). See text at note 270.

<sup>274</sup> 45 Fed. Reg. 33243 (May 19, 1980) (to be codified at 40 C.F.R. § 265.117(d)).

<sup>275</sup> One expert advocating a 50- to 100-year post-closure care period is Thomas Conry, director of the toxic waste program of the Technical Information Project. 9 ENVIR. REP. (BNA) 1746 (Jan. 19, 1979).

many hazardous waste disposal operations.

EPA appears to assume that the states will provide and pay for the long-term or perpetual care of closed waste sites at the end of the thirty year care financed by the owner/operator. There is no guarantee, of course, that any state government will conscientiously persevere in the extended care of hazardous waste disposal sites closed long ago and which appear safe and secure. As a result dormant toxins at closed waste sites will occasionally awake to threaten or actually injure public health and the environment.

It has been noted that measures for site life liability adopted by the regulations are inadequate. Moreover, the regulations make no provision for owner/operator post-closure liability, whether accidental or nonaccidental. EPA had originally proposed that owner/operators obtain liability insurance to cover damages for injurious waste releases caused at closed hazardous waste disposal sites formerly permitted under Subtitle C.<sup>276</sup> EPA decided against requiring owner/operator post-closure liability insurance because it was not readily available and, like surety bonds and individual facility trust funds, simply unaffordable at levels for truly adequate coverage.<sup>277</sup> Requiring owner/operators to assume financial responsibility for post-closure liability could arguably close down the hazardous waste disposal industry because it would not be profitable for investors to encumber their assets for decades in order to cover liability at closed sites which produce no earnings. Industrial liability policies for dangerous activities ordinarily cover only sudden damage occurrences.<sup>278</sup> However, as previously mentioned, the critical insurance protection for hazardous waste disposal sites, open or closed, is for nonsudden occurrences.<sup>279</sup> The insurance industry will not issue policies for nonsudden occurrences at closed disposal sites.<sup>280</sup> The unavailability of post-

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<sup>276</sup> An early but now abandoned EPA proposal called for owner/operator post-closure liability through private insurance or self-insurance. The proposal established minimum coverage at \$5 million per closed site and for a maximum 40-year term. COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 49, at 23.

<sup>277</sup> *Id.* GAO found that only one of the many hazardous waste disposal firms it contacted had post-closure insurance, and it was for less than \$3 million, had an exorbitant premium of \$57,000, would only pay out if the cause of damage occurred before the site closed (difficult to prove), and could be unilaterally cancelled by the insurer with thirty days notice.

<sup>278</sup> See note 260, *supra*.

<sup>279</sup> See text at note 259, *supra*.

<sup>280</sup> 43 Fed. Reg. 58987 (Dec. 18, 1978).

closure liability coverage from private insurers underscores the substantial risks of closed disposal sites.

EPA and the hazardous waste service industry recognize that the public needs reassurance that if a waste release occurs at a closed disposal site, the condition will be corrected and liability will be fairly covered. To fill the void for post-closure liability created by the unavailability of private insurance, EPA and the waste service industry support the establishment of a self-sustaining national trust fund for post-closure liability protection.<sup>281</sup> Such a fund would be financed by a surcharge or fee assessed on the disposal of hazardous waste. Though EPA has promised to introduce post-closure trust fund legislation it has not fulfilled this pledge nor has it supported the post-closure trust fund bill recently introduced by Senator Randolph which has been strongly endorsed by environmental groups and the hazardous waste service industry.<sup>282</sup>

Even if the faults in the EPA's proposed regulations covering financial responsibility and liability for waste sites are corrected, it would do little to appease those citizens opposing hazardous waste sites proposed for their communities. The opponents of hazardous waste sites find no solace in the assurance that after a hazardous waste mishap the costs of environmental clean-up, medical expenses and property damage will be paid. Even if adequate funds were made available for liability protection and site security it would not cure the inherent weakness of hazardous waste control; that no society has yet demonstrated that it can maintain long-term physical security against the release of lasting wastes into the environment from disposal sites.<sup>283</sup>

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<sup>281</sup> The Administration and U. S. Senators John Culver and Edmund Muskie introduced bills in the 96th Congress for a separate national trust fund covering damage caused by hazardous waste disposal sites inactive or abandoned prior to Subtitle C regulation. The Administration bill is S. 1341, and the Muskie-Culver bill is S. 1480.

<sup>282</sup> The Randolph bill is titled the Hazardous Waste Post-Closure Liability Act, introduced in the 96th Congress as S. 1325. Michigan has already created a disposal facility trust fund to pay the costs of long term care for disposal facilities after the state's statutory requirement for 15 year maintenance and monitoring post-closure responsibility imposed upon the site owner has ended. The fund will be financed by a charge on each facility for a *pro rata* share of the \$30 million fixed as the ceiling for the fund. No more than \$2 million may be collected annually for the trust fund, collections must stop when it exceeds \$30 million and collections must begin anew when the fund's balance dips below \$20 million. Michigan Hazardous Waste Control Law, 1979 MICH. PUB. ACTS No. 64, § 42 (July 25, 1979).

<sup>283</sup> The intractable, long-lived character of chemical wastes and the inability of disposal

## VI. RCRA FAILS TO REDUCE WASTE GROWTH

Federal policy condones waste growth, which in turn is bound to promote citizen opposition to hazardous waste sites. In addition to their near natural antipathy to waste sites,<sup>284</sup> citizens have been accused of ignorance<sup>285</sup> and selfishness<sup>286</sup> in their opposition to hazardous waste facilities. But strangely enough citizen opposition to waste sites comes closer than federal policy to the paramount objective of RCRA, "to protect the public health and to conserve valuable material and energy resources. . . ."<sup>287</sup> Citizen opposition to waste sites boils down to a tacit critique of waste growth and implicitly dictates that the best and only long-term solution to the hazardous waste problem is the slowing or stopping of its growth.

Two weaknesses in RCRA reduce the Act's effectiveness in dealing with the hazardous waste problem. The first is that the Administration has not meaningfully and ambitiously promoted waste utilization and conservation measures to abate the growth of hazardous wastes. The second is that Subtitle C regulates the disposal rather than the generation of hazardous waste. The cardinal principal of sound pollution control is reduction of pollutants. These two weaknesses in RCRA divert national hazardous waste control away from the reduction of hazardous waste generation.

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sites to lastingly prevent their hazards from coming into contact with people and nature is summarized well by Michael H. Brown:

There is simply no such thing as a totally secure, self-contained landfill, a fact even those in the business admit. "There is no proof a landfill, 100 years from now, won't leach," says Paul Chenard, president of SCA Chemical Waste Services, Inc. He says disposal methods have improved. Pits can be lined with special plastic. Waste-disposal firms can excavate on clay-based soil, compact the ground, install standpipes to pump out leachate, and slope the final cover to minimize rain infiltration. But the state of the art is new and no one issues guarantees.

BROWN, *supra* note 205.

<sup>284</sup> At Senate hearings, Senator John C. Culver observed, "[W]e know no one wants a landfill in their backyard and that communities object to hazardous waste facilities in their midst." SENATE RCRA OVERSIGHT HEARINGS, *supra* note 162, at 2.

<sup>285</sup> Beatrice Tylutki, New Jersey's solid waste administrator, is one state regulatory official who has depicted citizen opposition as founded on ignorance about the safety and security of hazardous waste sites. 9 ENVIR. REP. (BNA) 1406-07 (Dec. 8, 1978.)

<sup>286</sup> *Id.* In castigating citizen opposition to waste sites as narrow and selfish, Sandra Gardenbring, director of Minnesota's Pollution Control Agency, said, "We all share the benefits of hazardous waste manufacturing . . . we therefore must all share the risks."

<sup>287</sup> RCRA § 1003, 42 U.S.C. § 6902 (1976).

A. *Failure to Promote Resource Conservation and Recovery*

Despite its name RCRA has not succeeded in furthering resource conservation and recovery for solid waste in general and certainly not for hazardous waste in particular. RCRA has been hampered in achieving these ends both by its own inherent limitations and by the federal underfunding of the resource conservation and recovery provisions of the Act. In its implementation strategy for RCRA, EPA gave the lowest priority to resource conservation and recovery<sup>288</sup> and this is reflected in the diminutive funding the Administration has been willing to direct toward these activities. Federal emphasis is on the disposal, not the reduction of wastes. The discrepancy between the two is so great that one disgruntled critic suggested that RCRA should more aptly be called DRIP, for Dump Regulatory and Investigatory Planning Act.<sup>289</sup>

Another critic notes that the federal government has turned the resource conservation and recovery measures which were initially so important in RCRA into a "mere stepchild" of the Act.<sup>290</sup> State and local governments lack the resources, expertise, and experience to break down the considerable technological, administrative and economic barriers confronting resource conservation and recovery measures for reducing wastes. Only the federal government has the ability to provide the incentives necessary to launch effective resource conservation and recovery for wastes on a nationwide basis. RCRA and other federal legislation that it complements or superseded, have provided some opportunity for advances in resource conservation and recovery. Unfortunately, these opportunities have been bypassed by the federal government.

The precursor of RCRA is the Solid Waste Disposal Act of 1965, as amended by the Resource Recovery Act of 1970,<sup>291</sup> which initiated the government's first major efforts in waste manage-

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<sup>288</sup> COMPTROLLER GENERAL OF THE UNITED STATES, CONVERSION OF URBAN WASTE TO ENERGY: DEVELOPING AND INTRODUCING ALTERNATE FUELS FROM MUNICIPAL SOLID WASTE 4-6 (Feb. 28, 1979).

<sup>289</sup> Congressional testimony of Jerold Prod, Chairman of the California State Solid Waste Board, in *House Subcomm. on Transportation and Commerce, supra* note 76, at 12-16 [hereinafter cited as *Prod Testimony*].

<sup>290</sup> 9 ENVIR. REP. (BNA) 2114 (March 3, 1979).

<sup>291</sup> Pub L. No. 89-272, 79 Stat. 997 (Oct. 20, 1965) as amended by Resource Recovery Act of 1970, Pub. L. No. 91-512, 84 Stat. 1227 (Oct. 26, 1970).



ment. Major features of this early legislation included grants to public agencies for waste management planning,<sup>292</sup> and federal programs for research, development and demonstration projects for resource conservation and recovery techniques.<sup>293</sup> In addition, other legislation authorized loan guarantees for research and development of resource conservation and recovery measures with energy saving applications.<sup>294</sup>

RCRA could have provided a superb beginning for a national program of resource conservation and recovery for wastes because of the significant programs authorized by the Act. Subtitle D<sup>295</sup> authorizes EPA grants and technical assistance to aid states and sub-state agencies in developing and implementing solid waste management plans. EPA was authorized to provide technical assistance to state, sub-state and local agencies for resource conservation and recovery—including teams of experts formed into resource conservation and recovery panels whose services were to be free.<sup>296</sup> Subtitle G, among other things, authorizes EPA to issue grants and contracts for training supervisory personnel for solid waste disposal and resource recovery.<sup>297</sup> Subtitle H<sup>298</sup> authorizes broad research, development, demonstration and information programs dealing with resource recovery and conservation as they relate to waste management.<sup>299</sup> EPA is authorized to consult and join with the Department of Energy in research on energy recovery from wastes.<sup>300</sup> RCRA establishes the cabinet level inter-

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<sup>292</sup> *Id.* §§ 204, 205, 216.

<sup>293</sup> *Id.* § 204.

<sup>294</sup> The Energy Conservation and Production Act of 1976, Pub. L. No. 94-385, 90 Stat. 1125, authorized loan guarantees to encourage implementation of renewable resource energy measures; for example, fuel derived from refuse. The Department of Energy Act of 1978—Civilian Applications, Pub. L. No. 95-238, 92 Stat. 47, also authorizes loan guarantees to foster a demonstration program for energy derived from wastes.

<sup>295</sup> RCRA §§ 4001-4009, 42 U.S.C. §§ 6941-6949 (1976).

<sup>296</sup> RCRA §§ 2003, 2006(b), 42 U.S.C. §§ 6913, 6916(b) (1976).

<sup>297</sup> RCRA § 7007, 42 U.S.C. § 6977 (1976).

<sup>298</sup> RCRA §§ 8001-8007, 42 U.S.C. §§ 6981-6987 (1976).

<sup>299</sup> RCRA § 8001, 42 U.S.C. § 6981 (1976), authorizes EPA to study, among other things, the economics of resource recovery facility development; RCRA § 8003, 42 U.S.C. § 6983 (1976), directs EPA to disseminate and serve as a clearinghouse for information on waste management and waste reduction subjects; RCRA § 8005(a), 42 U.S.C. § 6985(a) (1976), directs EPA to conduct studies and develop recommendations for administrative and legislative actions on a wide variety of resource conservation and recovery and waste management issues; RCRA § 8006, 42 U.S.C. § 6986 (1976), authorizes EPA to make grants to demonstration projects for resource recovery systems and for new and improved waste management operations.

<sup>300</sup> RCRA § 8001(b), 42 U.S.C. § 6981(b) (1976).

agency Resource Conservation Committee to study resource conservation inducements such as economic incentives and product charges.<sup>301</sup> Subtitle E directs the Secretary of Commerce to stimulate the broader commercialization of proven resource recovery technologies and the development of markets for recovered materials.<sup>302</sup>

Federal spending for resource conservation and recovery programs before and after RCRA's enactment has been inadequate. During the ten years prior to RCRA federal agencies spent \$50 million, an average of \$5 million yearly, on resource conservation and recovery research, development, and demonstration projects.<sup>303</sup> In 1977, the first fiscal year of RCRA, EPA spent no more than \$8.25 million for fifty-three research and development projects and studies relating to resource recovery and waste reduction.<sup>304</sup> EPA has admitted its inability to provide adequate technical assistance to states and local governments through the resource conservation and recovery panels because of underfunding and understaffing.<sup>305</sup> For instance, in fiscal year 1978 EPA's panel budget was \$3.4 million,<sup>306</sup> although Congress authorized \$7.6 million for panel activities.<sup>307</sup> In 1975 EPA instituted grants to state and sub-state agencies to demonstrate proper planning practices and stimulate implementation for resource recovery systems. For that year EPA received 201 applications for grants requesting a total of \$11.7 million, but made only 17 awards totaling \$790,000—simply because that was all the funds it had.<sup>308</sup> No similar grants were awarded between 1975 and 1979 because RCRA, enacted in October 1976, made the grants contingent on the existence of approved state solid waste plans and no plans were likely to be approved before 1980 due to the time required to develop and review them.<sup>309</sup> No appropriations have been re-

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<sup>301</sup> RCRA § 8002(j), 42 U.S.C. § 6982(j) (1976). The EPA Administrator is to serve as chairman of the Resource Conservation Committee, consisting of himself, the Secretary of Labor, the Secretary of Commerce, the chairman of the Council on Environmental Quality, the Secretary of the Treasury, the Secretary of Interior, and a representative of the Office of Management and Budget.

<sup>302</sup> RCRA §§ 5001-5004, 42 U.S.C. §§ 6951-6954 (1976).

<sup>303</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 288, at V-2.

<sup>304</sup> *Id.*

<sup>305</sup> *Id.* at IV-3.

<sup>306</sup> *Id.*

<sup>307</sup> RCRA § 2006(b), 42 U.S.C. § 6916(b) (1976).

<sup>308</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 288, at IV-9.

<sup>309</sup> *Id.*

quested by the Department of Energy or EPA for authorized loan guarantees to energy-related resource conservation and recovery projects.<sup>310</sup>

Of the \$8,000,000 Congress authorized for the activities of the Resource Conservation Committee, only about \$2,000,000 was used.<sup>311</sup> Lack of adequate funding caused the Committee to get off to a slow start and forced it to have much of its work done by staff from the similarly understaffed and underfunded EPA.<sup>312</sup> The Committee has drawn considerable criticism from the waste industry and public interest groups for inferior research and for inattentiveness to several important economic incentives and disincentives for resource conservation and recovery, such as subsidies, severance taxes on natural resources, and discriminatory freight rates favoring recycled materials.<sup>313</sup>

The Commerce Department has also been accused of failing to fulfill its RCRA responsibilities to expand markets and remove barriers for recovered waste materials.<sup>314</sup> Commerce pleads it has been deprived of the necessary funds to carry out its RCRA duties.<sup>315</sup> For instance, Commerce had to abandon a study to determine the most favorable locations for resource and recovery systems after OMB cut from the Department's budget the \$418,000 needed to complete the project.<sup>316</sup>

There are several measures for reducing the amount and haz-ardousness of industrial waste which are preferable to disposal, which every expert declares should be the option of last resort.<sup>317</sup>

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<sup>310</sup> *Id.* at IV-8.

<sup>311</sup> *Id.* at IV-11.

<sup>312</sup> *Id.* at IV-12.

<sup>313</sup> *Id.* at IV-12 to 13.

<sup>314</sup> 9 ENVIR. REP. (BNA) 2371 (April 20, 1979). Edward L. Merrigan, counsel for the National Association of Recycling Industries, severely criticized the Department of Commerce for its failure to fulfill RCRA mandates to designate new markets, or even to identify existing ones, and for not identifying the economic and technical barriers to resource conservation and recovery. Testimony of Edward L. Merrigan, *House Subcomm. on Transportation and Commerce*, *supra* note 76, at 311.

<sup>315</sup> 9 ENVIR. REP. (BNA) 2371 (April 20, 1979).

<sup>316</sup> COMPTROLLER GENERAL OF THE UNITED STATES, *supra* note 288, at IV-14.

<sup>317</sup> In a January 24, 1979 statement, former EPA Region I Administrator William R. Adams said the disposal of hazardous waste "should be the option of last resort." 9 ENVIR. REP. (BNA) 1842 (Feb. 2, 1979). Steffen Plehn, EPA Associate Deputy Assistant Administrator of solid waste, told a March, 1979 solid waste conference in Washington, D.C. that the land disposal of hazardous waste should be the "last alternative" and said the first and preferred choice is no discharge of waste at all. 9 ENVIR. REP. (BNA) 2114-15 (March 16, 1979).

In order of preference these measures are: 1) waste reduction through changes in industrial processes; 2) waste separation and concentration; 3) waste transfer for re-use in other industries; 4) energy and materials recovery; and finally, 5) incineration or treatment to destroy or neutralize the wastes.<sup>318</sup> At present, only 3 to 5 percent of the nation's industrial hazardous waste is recovered,<sup>319</sup> to the extent to which attempts are being made to reduce wastes by altering production processes is unknown. Virtually all the rest of our industrial hazardous wastes are discarded.

Industrial hazardous waste reduction and reutilization has been scanty for four reasons. First, industry has found it cheaper and more practical to use virgin materials and throw away their wastes.<sup>320</sup> Second, federal government policies have long favored and stimulated the intensive use of virgin materials and condoned waste disposal.<sup>321</sup> Third, the federal government has provided few

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<sup>318</sup> EPA DECISION-MAKER'S GUIDE, *supra* note 25, at 27.

<sup>319</sup> DRAFT EIS, *supra* note 11, at V-56.

<sup>320</sup> The past inadequacy of hazardous waste regulation led to routine improper disposal and made the discarding of these wastes considerably cheaper for industry than waste reduction or utilization. Over the years, improper, uncontrolled industrial waste disposal was tantamount to a huge subsidy for industry to pollute, because the cost of resulting environmental damage, injury to people and property, and remedial measures was borne by victims and the general public, rather than by waste generators. Proper hazardous waste disposal in compliance with Subtitle C will cost industry \$750 million more yearly. 9 ENVIR. REP. (BNA) 1502-03 (Dec. 22, 1978). The "subsidy to pollute" which had been extended to industrial hazardous waste generators not only included costs saved due to improper disposal, but also the \$44 billion it could cost to take remedial action against the up to 2,000 waste sites which EPA reports presently pose an imminent danger to health and the environment. See text at note 27, *supra*.

<sup>321</sup> A major obstacle to the widespread application of resource conservation and recovery measures to wastes in general and hazardous waste in particular is a national policy heavily favoring the use of virgin materials and the discarding of wastes:

The federal government has historically played a major role in stimulating natural resource development. Special tax laws relating to mining and forestry and federal subsidies for raw materials exploration, research, and development have all favored virgin raw materials and encouraged a materials-intensive economy. In addition, a number of laws and agency policies have tended to discriminate against recovered or recycled materials and waste reduction measures. Similarly, most state laws have either tended to favor the use of virgin materials or not to have encouraged the recovery and recycling of waste materials. DRAFT EIS, *supra* note 11, V-71 to V-72.

For instance, special tax preferences for mining are equivalent to a direct cash subsidy of from 8 to 12 percent of the value of the output for coal, iron ore and copper mining, and those for logging represent a cash subsidy equivalent to 35 to 43 percent of the value of standing timber. All told, these tax subsidies amount to scores of billions yearly. U. S. TREASURY DEPARTMENT, FEDERAL TAX POLICY AND RECYCLING OF SOLID WASTE MATERIALS at V-71 to V-72 (Feb. 1979).

What few tax incentives there are available to industry for waste recycling and recovery

incentives for industrial waste reduction and utilization.<sup>322</sup> And fourth, there are inherent limitations to the application of recycling and recovery measures for industrial hazardous wastes. Complicating recovery and recycling of industrial hazardous wastes is the fact that their chemical and physical characteristics are nearly as numerous and diverse as the millions of production processes which generate them.<sup>323</sup> Consequently, industrial hazardous waste streams must be specifically suited or adapted for the manufacturing or energy producing activity which recovers or

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will always have a negligible impact compared to the tax breaks for virgin materials extraction and use so long as heavy federal assistance is lacking to develop competitive markets and workable technologies for the various forms of better waste utilization. The National Energy Act provides the latest federal tax concessions for resource conservation and recovery by industry. 9 ENVIR. REP. (BNA) 1265 (Nov. 3, 1978). The Act confers a 10 percent tax credit for equipment used to process certain production materials for recycling and for equipment used to recycle materials for energy conservation.

<sup>322</sup> According to Dr. James G. Albert, vice-president of the National Center for Resource Recovery, Inc., the major pre-conditions for widespread resource conservation and recovery for wastes are the existence of strong markets and the availability of practical and economic technology. 9 ENVIR. REP. (BNA) 1422-26 (Dec. 8, 1978). At present, markets for recycled and recovered industrial wastes are at a primitive stage and unstable. The economics of waste reuse could be boosted by government incentives for this purpose and disincentives on virgin materials use. The National Governors Association issued a policy statement on waste issues which urged the federal government to enact tax incentives for hazardous waste recycling and to issue regulations and tariffs giving the transportation of recycled materials a competitive advantage over virgin materials. 10 ENVIR. REP. (BNA) 648-49 (July 13, 1979).

The failure of the Department of Commerce and the Resource Conservation Committee to carry out their RCRA mandates for studying and promoting measures to expand resource conservation and recovery markets for wastes is hardly an auspicious sign for future federal action. Market development for the sale of industrial waste for use in the production processes of other industries has been impeded by a lack of information and channels for transferring wastes from waste generators to potential users. Industrial waste exchanges are one excellent means for gathering and disseminating information on the types, quantities, and locations of wastes available for sale or for actually conducting waste sale transactions. Waste exchanges operate on the principle that "one industry's waste can be another's feedstock." The two basic kinds of waste exchange are the materials exchange and the information exchange or clearinghouse. 2ND ANNUAL RCRA REPORT, *supra* note 8, at V-5 to V-8. A materials exchange accepts waste, analyzes it, treats it and seeks out markets to sell it at a profit. An information exchange gathers and disseminates data on the types, amount and location of wastes available for sale, or on buyers seeking to purchase wastes. Industrial waste exchanges have done quite well in Europe for some time and at least 70 have opened in the U. S. since 1975, when there were none. In the face of growing interest and the very promising potential of industrial waste exchanges, by 1978 EPA had the equivalent of only one staff person working full-time on promoting waste exchanges for the entire nation. See GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 21.

<sup>323</sup> DRAFT EIS, *supra* note 11, at V-63.

recycles that waste.<sup>324</sup> This is often no easy task.

According to EPA Deputy Assistant Administrator Stephen Plehn it is presently both technologically and economically feasible to recover and recycle much of the nation's industrial wastes.<sup>325</sup> However, the feasibility of the technology for resource conservation and recovery for wastes and the actual widespread availability and use of that technology are two different matters. The industrial technology for waste recovery and recycling lags light years behind the universally used conventional manufacturing and energy generating activities fed by raw and virgin materials.<sup>326</sup> Federal research and development support for reduction and reuse technology for industrial waste is generally insignificant and is nonexistent for industrial hazardous waste.<sup>327</sup> The inadequacy of federal support for waste reduction technology is unfortunate since Thomas Kimball, executive vice-president of the National Wildlife Federation, says it is now economical to recycle 95 percent of the waste generated by the pharmaceutical industry, 66 percent of the petroleum industry's wastes, and 40 percent of the paint industry's wastes.<sup>328</sup>

### *B. Misplaced Regulation of Hazardous Waste Disposal*

By focusing regulation on the disposal of pollutants, Subtitle C deviates from the principal strategy adopted for the major components of federal pollution control legislation<sup>329</sup>—the Clean Air Act<sup>330</sup> and the Clean Water Act.<sup>331</sup> Federal air and water quality legislation attacks pollution at its source, seeking source reduction by imposing discharge restrictions on the generators of pollutants that could be released into the air and water. Federal air and water pollution control legislation fundamentally differs from Subtitle C in that the former two make the reduction of pollutants the inescapable technical, financial and legal responsibility of their generator whereas Subtitle C divorces the generation of pollutants from its treatment and disposal, concentrates on treat-

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<sup>324</sup> *Id.*, at V-63, V-64.

<sup>325</sup> 9 ENVIR. REP. (BNA) 2114-15 (March 3, 1979).

<sup>326</sup> DRAFT EIS, *supra* note 11, at V-73.

<sup>327</sup> See generally GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49.

<sup>328</sup> 9 ENVIR. REP. (BNA) 1411-12 (Dec. 8, 1978).

<sup>329</sup> For a critique of Subtitle C's preoccupation with the disposal of hazardous wastes and inattention to regulating hazardous waste generation, see GOLDFARB, *supra* note 209.

<sup>330</sup> 42 U.S.C. § 1857 (1976).

<sup>331</sup> 33 U.S.C. §§ 1251-1376 (1976).

ment and disposal, and fragments responsibility for the proper care of hazardous waste among generators, transporters, and waste site owners and operators.

Congress' endeavor to control hazardous waste without source reduction operates on certain fallacious biases and assumptions about hazardous waste control. In fashioning Subtitle C Congress disregarded the technology-forcing approach of the Clean Water Act and the Clean Air Act both of which have been reasonably successful in compelling industry to utilize effective pollution discharge equipment and techniques.<sup>332</sup> Instead, Congress continued to embrace the long-held assumption that waste control at the end point of treatment and disposal is amenable to technological solutions, although past and present disposal and treatment technology has a poor record in containing hazardous waste pollution and the new treatment and disposal technology Subtitle C will create is unproven.<sup>333</sup> Anyone familiar with hazardous waste issues knows that "disposal of hazardous waste should be the option of last resort,"<sup>334</sup> ideally to be superseded by attempts to eliminate or reduce discharges in the first place. Past experience with the Clean Water Act and the Clean Air Act is evidence of the effectiveness of reducing pollutants at their source. Nonetheless, Congress chose to forsake producer discharge restrictions for hazardous waste apparently out of faithfulness to the free enterprise ideology that private production decisions are not to be interfered with so long as other less intrusive alternatives for effective pollution control are available.

A fundamental goal of Subtitle C is to compel hazardous waste generators to internalize the cost of proper hazardous waste management. EPA declares that the more stringent control of hazardous waste will increase the costs of storage, treatment and disposal and thereby be an incentive to waste generators to reduce the amount of their hazardous waste by less costly methods of recycling, by materials and energy recovery, or by altered production processes.<sup>335</sup> However, the incentive for waste reduction attributed to increased treatment and disposal costs brought on by Subtitle C control will probably not be sufficient to slow apprecia-

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<sup>332</sup> GOLDFARB, *supra* note 209, at 255.

<sup>333</sup> See text and note at 283, *supra*.

<sup>334</sup> See note 317, *supra*.

<sup>335</sup> DRAFT EIS, *supra* note 11, at S-37.

bly the growth of hazardous wastes.<sup>336</sup>

Subtitle C's strategy of concentrating control on the ultimate treatment and disposal of pollutants through technical precautions and standards is defensive pollution control at best and can do little more than mute the risks of hazardous wastes. Moreover, by leaving the source of these risks untouched, Subtitle C control allows them to grow along with the hazardous waste from whence they originate. One commentator noted that there may be serious consequences in Subtitle C's fragmenting of legal responsibility for hazardous wastes among generators, transporters and facility owners or operators.<sup>337</sup> It is questionable whether Subtitle C imposes upon generators primary legal responsibility for the final, environmentally acceptable disposal of their wastes by waste service firms.<sup>338</sup> Once the hazardous waste generator has followed proper procedures in transferring the wastes to a permitted facility, its statutory responsibility for the waste ends and is succeeded by that of the waste transporter and finally the waste facility. Subtitle C does not offer a solution to the sparse and unsettled case law on the issue of the liability of the hazardous waste generator in management of the wastes by his successors.<sup>339</sup> If not subjected to the fear of inevitable, unfailing regulatory enforcement and legal liability for the final proper treatment or disposal of their hazardous wastes, many industrial generators will probably not engage in proper long-term on-site disposal and care and will not carefully select or scrupulously monitor disposal firms accepting their wastes.<sup>340</sup> This situation could be alleviated by federal legislation imposing continuing responsibility on industrial generators for their hazardous waste regardless of where it is disposed until the waste is no longer hazardous.<sup>341</sup> Proper dispo-

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<sup>336</sup> GAO REPORT—HOW TO DISPOSE OF HAZARDOUS WASTE, *supra* note 49, at 8, 10, 17.

<sup>337</sup> See GOLDFARB, *supra* note 209.

<sup>338</sup> *Id.* at 255.

<sup>339</sup> See SHANNON, *supra* note 238, at 352.

<sup>340</sup> GOLDFARB, *supra* note 209, at 255.

<sup>341</sup> The most recent congressional report on hazardous waste strongly recommended that RCRA be amended to establish eternal generator responsibility for hazardous waste until the waste was no longer hazardous. The report stated:

We further recommend that Congress embody the concept of eternal responsibility for the generators of hazardous waste, i.e., that the generators of waste should be liable for any hazardous waste product they produce whether they continue to have control over the waste or not. We believe this will encourage not only safer on-site activities but also careful selection of private disposal firms. . . . In addition, given the dangers associated with hazardous waste, the generators' liability should be



sal can cost ten to forty times more than improper disposal.<sup>342</sup> The high price of proper disposal has in the past provided an enormous temptation for generators to circumvent proper disposal. That temptation will likewise continue today for treatment and disposal firms to cut costs and hike profits by improper waste management methods.<sup>343</sup> Furthermore, the extremely high cost of environmentally proper disposal, combined with regulatory programs chronically short of staff and funds, may spur many unscrupulous generators to circumvent manifest requirements or pass on their hazardous waste activities either to sham subsidiaries or to friendly companies for cheap and unsound treatment or disposal.<sup>344</sup> By fragmenting regulatory control among various parties and failing to concentrate regulation on source reduction, Subtitle C complicates regulation and aggravates the strains of

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based on the standard of strict liability.

SUBCOMM. ON OVERSIGHT AND INVESTIGATIONS OF THE HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, *supra* note 37, at 59-60.

<sup>342</sup> PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, EIGHTH ANNUAL REPORT 46 (1977).

<sup>343</sup> The profitability of improper disposal by waste service firms and the lack of concern by hazardous waste generators contracting for disposal with these firms is exemplified by one of the activities at a Houston, Texas chemical processing facility owned by Browning-Ferris Industries (B.F.I.). B.F.I. has one of the largest waste management businesses in the country and is widely regarded as a reputable firm. Dupont gave B.F.I. the contract to dispose of about 100,000 gallons of highly toxic nitrobenzene-contaminated oil. At a June 18, 1979 hearing of the House Subcommittee on Oversight and Investigations, it was shown that B.F.I.'s improper disposal of the nitrobenzene was extremely profitable, while various proper disposal methods would have netted the firm a loss or only marginal profits. B.F.I. stood to lose \$562.65 per 4,200 gallon load of waste oil if it was disposed in an approved landfill, and would make only \$290.85 per load for proper deep well injection. B.F.I. chose the much more profitable alternative of improper disposal. B.F.I. could expect a profit of \$1,087.35 per load for oil given away for use as road oil and a profit between \$1,235.85 to \$2,075.85 if the oil was given away for use as fuel. B.F.I. provided the contaminated oil for use on road surfaces in east Texas and gave away thousands of gallons to an unregistered and unpermitted reclaiming business in Louisiana, which used the toxic oil for both asphalt-making and fuel oil. B.F.I. claimed they had no knowledge of what was done to the contaminated oil after it was given away. DuPont, not responsible for B.F.I. actions, apparently did not care what happened to the contaminated oil after paying B.F.I. to dispose of it. The House subcommittee also discovered that B.F.I. could not account for 75,210 gallons of cyanide waste it acquired from DuPont for disposal. 10 ENVIR. REP. (BNA) 664 (July 13, 1979).

<sup>344</sup> For example, New Jersey reports that in large part because of the increasing costs of proper disposal, illegal hazardous waste disposal in the state is rising. 10 ENVIR. REP. (BNA) 656-57 (July 13, 1979). New Jersey can expect nothing else from its new and, at least on paper, tougher regulatory program, which it cannot afford to enforce properly and fully. See note 203, *supra*, regarding criminal penalties authorized by Subtitle C for knowing transportation to an unpermitted facility and unpermitted disposal.

underfunding and understaffing suffered by EPA and the states in carrying out hazardous waste control.

The disturbing paradox of producer-discharge restrictions for hazardous wastes (as well as solid wastes) is that while they appear to be an ideal remedy for halting the growth of industrial wastes their use calls into question and possibly jeopardizes the entire structure of American pollution control. This predicament results from the fact that federal air and water quality legislation has itself contributed largely to the phenomenal industrial growth of solid waste and hazardous waste growth in recent years.<sup>345</sup> It appears that preventing the discharge of growing quantities of industrial residuals into the air and water has resulted in their materialization and accumulation in predominantly solid and liquid forms which require treatment and disposal at land-based waste sites.<sup>346</sup> The growth in industrial wastes indicates that air and water pollution control efforts are ruled by the principles of the conservation of energy and matter.<sup>347</sup> Current air and waste pollution controls neither destroy nor reduce pollution but merely change its form and *situs* when all environmental mediums are considered. Imposing discharge restrictions on industrial hazardous waste generation, like those for air and water pollution, would breed substantial pressures and costs for industry since growing pollution generation could no longer escape and materialize as industrial wastes. The pressures and costs for industry would, no doubt, be immense if discharge restrictions were extended to all industrial waste generation, nonhazardous as well as hazardous.

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<sup>345</sup> It should be kept in mind that the cause of waste growth is not pollution control technology itself, but instead is the growth of polluting materials generated by increasing production, consumption, and population.

A representative illustration of how federal air and water pollution control has boosted industrial hazardous waste growth can be found in four industry groups that are major generators of hazardous waste—inorganic chemicals, paper processing, steel, and oil refining. In the aggregate, waste generated by these four industries grew an astounding 150 percent, from 110 million metric tons in 1972 to 260 million metric tons in 1976. Pollution control residuals accounted for three-quarters of this waste growth. Not all of the industries in the 14 leading industrial groups generating hazardous wastes are expected to experience the same exceedingly high degree of growth in pollution control residuals, but the trend is unmistakable. See note 62, *supra*, for the 14 major industrial hazardous waste generating groups. During the period from 1974 to 1983, total waste generation for all these industries is expected to grow 29 percent. At the same time pollution control residuals will increase 77 percent. HOUSE RCRA MATERIALS, *supra* note 16, at 22-25.

<sup>346</sup> *Id.*

<sup>347</sup> A. KNEESE & B. BOWER, ENVIRONMENTAL QUALITY AND RESIDUALS MANAGEMENT 8 (1979).

Industry resistance to proposals for explicit restrictions on waste generation would, no doubt, be fierce and formidable. Furthermore, it very well might be technologically and financially impractical for industry to reduce pollutants across all environmental mediums while maintaining production at high and growing levels. This sad state of affairs is an "implicit indictment"<sup>348</sup> of the ability of American pollution control policy to reduce successfully the production of pollutants.

Attempts to tackle the problem of national waste growth cut more deeply into the nation's production system and way of life than either air or water pollution control. Much of our solid waste is the actual product of our manufacturing and consumption patterns. Correspondingly, hazardous waste generation represents the by-products of manufacturing itself. The growth of industrial hazardous waste, like nonhazardous waste growth, results from increasing levels of American production and consumption.

The ubiquitous and commonplace use of synthetic substances provides the best example of the influence production and consumption patterns have on hazardous waste generation. The man-made plastics, pesticides, fibers, detergents, and countless other synthetic items are creations of the organic chemical industry, (synonymous with the petrochemical industry because its feedstocks are derived from oil and natural gas).<sup>349</sup> The organic chemical industry generates about one-third of the nation's industrial hazardous wastes, ranking first among fourteen major industrial categories which produce virtually all our industrial hazardous waste.<sup>350</sup> Since the end of World War II synthetic materials have grown from an extremely modest part of our economy to such ascendance that Barry Commoner labels the present the Synthetics Age.<sup>351</sup> The Synthetics Age is simultaneously the Toxic Materials Age, for most synthetic organic compounds are very toxic and

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<sup>348</sup> GOLDFARB, *supra* note 209, at 250.

<sup>349</sup> B. COMMONER, *THE POVERTY OF POWER* 183-84 (1976) [hereinafter cited as COMMONER].

<sup>350</sup> See note 62, *supra*.

<sup>351</sup> Total production of synthetic organic chemicals rose from about 300 million pounds in 1946 to 39 billion pounds in 1974. These statistics only confirm the common experience that the visible products of petrochemistry—plastics, synthetic fibers, detergents, and pesticides—have rapidly penetrated everyday life, flooding upon us in wave after wave of new materials and objects.

COMMONER, *supra* note 349, at 187.

long lived.<sup>352</sup> Nearly 60 percent of all industrial hazardous waste is generated by the chemical industry.<sup>353</sup> Moreover, nearly all the non-biodegradable synthetic products, such as plastics, end up as wastes. Whether synthetics production has improved the quality of life is debatable in light of the wastes such production generates.<sup>354</sup> About 71 percent of the volume of the organic chemical industry's hazardous waste is incinerated,<sup>355</sup> much of it in an environmentally unacceptable manner.<sup>356</sup> About 18 percent of the chemical industry's hazardous waste is land filled, with 2 or 3 percent of the industry's hazardous waste discarded by various other types of land-based methods.<sup>357</sup> Again, nearly all the land-based measures for the disposal of the chemical industry's hazardous

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<sup>352</sup> Life depends on the elaborate interaction of thousands of different natural organic compounds. This network of reactions has evolved over a three billion year period of trial and error and often does not tolerate the intrusion of new man-made substances that have not participated in the harmonizing process of evolution. *This may explain why synthetic organic compounds are so harmful to living things.* For example, in a survey of 835 organic chemicals that represent about two-thirds of the major products of the petro-chemical industry, nearly half of the ones that have thus far been tested for toxicity toward people were listed as having a "high" level of toxicity . . . many synthetic petrochemical products are so different from natural materials that the enzymes which in living things break down organic substances are unable to attack them. They are therefore non-biodegradable and accumulate as trash.

*Id.* at 184-85 (emphasis added).

<sup>353</sup> DRAFT EIS, *supra* note 11, at VI-2.

<sup>354</sup> It might be legitimate to argue that for several kinds of synthetic organic compounds their benefits outweigh the disadvantages of their toxic wastes—for example, in the case of toxic residuals from pharmaceutical production and medical experiments which may result in health-improving or life-saving drugs and serums. However, medical and pharmaceutical wastes comprise a mere fraction of the total industrial hazardous wastes generated annually. For the most part there is no fundamentally superior or special function performed by the vast majority of synthetics, which since World War II have rapidly displaced wood, leather, paper and other naturally derived products for everyday uses. Barry Commoner asks and answers the question:

Are petrochemical products unique in their uses . . . ? A standard work on the chemical industry lists all the end-uses of products that are made from ethylene, the major secondary starting material for petrochemical products. Here, for example, are the end-uses of plastic products, made from ethylene, that are classified as household goods: furniture, upholstery, flooring, wall coverings, curtains (shower and otherwise), tableclothes and place mats. . . . These items are remarkably non-unique. After all even before most plastics were invented, let us say in the 1930's, furniture was upholstered, walls, floors and tables were covered, showers were curtained . . . . All these tasks can be met with materials other than plastics; natural fabrics, leather, paper, wood, and natural rubber, for example.

COMMONER, *supra* note 349, at 190.

<sup>355</sup> DRAFT EIS, *supra* note 11, at D-43.

<sup>356</sup> *Id.*

<sup>357</sup> *Id.*

waste are environmentally unsound.<sup>358</sup> Only 8 percent of the organic chemical industry's waste is subjected to recovery techniques.<sup>359</sup>

Hazardous waste generation is rapidly approaching its growth limits and has become another issue in the debate between environmentalists and industrialists over restricting economic growth in order to abate resource depletion and environmental degradation.<sup>360</sup> We are simply running out of land suitable for the disposal of wastes.<sup>361</sup>

In the final analysis the only truly effective relief from the lasting toxic wastes of synthetics manufacturing and other industries is to cut back on their production. There are some who hope that

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<sup>358</sup> *Id.* at VII-30.

<sup>359</sup> *Id.* at D-43.

<sup>360</sup> Environmentalists and several distinguished economists and scientists have in recent years blamed the distinct character and unbridled growth of our industrial economy for our massive environmental degradation and resource depletion problems. See generally Boulding, *The Economics of the Coming Spaceship Earth*, in ENVIRONMENTAL QUALITY IN A GROWING ECONOMY 3-14 (H. Jaffett, ed. 1971); D. MEADOWS, *et. al.*, THE LIMITS TO GROWTH (1972); E. MISHAN, THE COSTS OF ECONOMIC GROWTH (1967); E. MISHAN, TECHNOLOGY AND GROWTH (1970); B. SCHUMACHER, SMALL IS BEAUTIFUL (1973). The environmental critics of economic growth call for curbs on production and consumption either through direct restrictions or conservation measures. On the other side of the coin are industrialists and conventional economists who defend growth on the basis of private enterprise ideology, self-interest, and the philanthropic argument that growth is necessary to maintain our affluence and alleviate poverty. Growth critics point out that while our economy continues to grow, poverty is still with us and getting worse for the rest of the world, which suffers from the ability of the developed world to control and consume an overwhelmingly disproportionate share of the world's capital and natural resources.

In speaking about the hazards of long-lived nuclear wastes, but just as applicable to non-nuclear hazardous wastes, the late economist B. F. Schumacher sees moral madness in arguments trading supposed prosperity for the perils these wastes pose:

No degree of prosperity could justify the accumulation of large amounts of highly toxic substances which nobody knows how to make "safe" and which remain an incalculable danger to the whole of creation for historical or even geological ages. To do such a thing is a transgression against life itself, a transgression infinitely more serious than any crime ever perpetrated by man. The idea that a civilization could sustain itself on the basis of such a transgression is an ethical, spiritual, and metaphysical monstrosity.

It means conducting the affairs of man as if people did not really matter at all.

B. SCHUMACHER, SMALL IS BEAUTIFUL 145 (1973).

<sup>361</sup> In RCRA Section 1002(b)(6), Congress warned, "Alternatives to existing methods of land disposal must be developed since many of the cities in the United States will be running out of suitable solid waste disposal sites within five years unless immediate action is taken." 42 U.S.C. § 6901(b)(6) (1976). Land in urban areas which is environmentally suitable for waste disposal sites is limited and rapidly diminishing. Many industries now consider the availability of hazardous and non-hazardous waste sites as one of the major determinative factors in locating or remaining in an area, along with other traditional locational criteria such as the availability of adequate water, labor and power.

all industrial hazardous wastes can be destroyed, but that hope seems as elusive as the promise that Subtitle C will result in 100 percent containment of hazardous waste.<sup>362</sup> In view of the persistence and toxicity of many hazardous wastes, our national control policy must go beyond regulating disposal. It must rely more on discharge limitations and consider direct measures for eliminating, altering, or substituting production processes and consumption patterns which create, utilize and discard growing quantities of pernicious materials. Unfortunately, any proposal for discharge restrictions on industrial hazardous waste generation would encounter substantial opposition by American industry. Even stronger industrial opposition, if that is possible, would be mounted against the more radical restrictions on industrial production itself. In recently enacted legislation to implement Subtitle C, Wisconsin made explicit the implicit hands-off policy which Congress adopted for industrial production processes generating hazardous wastes. The Wisconsin Hazardous Waste Management Act<sup>363</sup> emphatically declares as a matter of policy that it "does not interfere with, control or regulate the manufacturing processes which generate hazardous wastes."<sup>364</sup>

The major disability of RCRA and other state and federal actions for industrial waste management is the failure to make waste growth abatement the paramount concern. RCRA does not mandate and the federal government has little interest in a national strategy or plan for reducing waste generation in all its forms—municipal, industrial, hazardous and nonhazardous. The strict, environmentally sound regulation of hazardous waste stor-

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<sup>362</sup> EPA's Associate Deputy Assistant Administrator for solid waste, Gary Dietrich, told a June 21, 1979, meeting of the EPA Science Advisory Board that the agency's Subtitle C program was based on a philosophy of 100 percent containment, destruction or detoxification of hazardous wastes and was not "depending on the surrounding environment in any way to contain or disperse the waste." 10 ENVIR. REP. (BNA) 531 (June 29, 1979). Dietrich's disclaimer that the environment will enjoy complete immunity from hazardous waste pollution under Subtitle C contradicts another Dietrich statement made two months earlier that, perhaps, some permanent hazardous waste pollution will have to be accepted under this control program. See in this regard note 236, *supra*. Dietrich complained to EPA's scientific advisors that public pressure against the siting of industrial hazardous waste facilities will probably push the agency eventually to require the complete destruction of organic wastes, which do not degrade naturally. Dietrich's inference that someday total destruction of hazardous waste will be the national regulatory policy readily conveys the false impression that soon we will have a perfect solution for the problems of the growing output of industrial hazardous wastes.

<sup>363</sup> WIS. STAT. ANN. § 144.60-144.74 (West Supp. 1980).

<sup>364</sup> *Id.* § 144.60(2)(d).

age, treatment, and disposal is absolutely necessary and greatly welcomed. But a self-defeating conflict materializes out of RCRA as it separates waste disposal from waste reduction and does not subordinate the former to a strategy governed by the latter. The federal government's failure to attack waste reduction in a comprehensive, financially well-supported fashion creates an atmosphere in which resource conservation and recovery measures for wastes become halting, *ad hoc*, and incremental reactions to bits and pieces of the waste problem.<sup>365</sup> In these circumstances waste reduction is likely to lose in its competition with waste disposal for what meager federal attention there is for either. This is unfortunate. There is no reason to trade off one for the other, because, as one top state waste management official put it, disposal is a problem while resource recovery and conservation is an opportunity.<sup>366</sup>

## VII. CONCLUSION

There is an inseparability to the problems of hazardous waste buildup in our society and of efforts to obtain more hazardous waste facility sites by overcoming citizen opposition. Generating more hazardous wastes generates the need for more waste sites, which ultimately generates more citizen opposition. It is myopic to view citizen opposition as the major obstacle to effective hazardous waste control. The real impediment to effective hazardous waste control is the absence in national hazardous waste policy of a strategy that places paramount emphasis on the reduction of hazardous waste at its source which is coupled with the stringent disposal regulation which is the promise of Subtitle C. There is additional justification for citizen opposition in the past, current and prospective underfunding of regulatory programs which make them inadequate to protect public health and the environment from serious hazardous waste pollution.

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<sup>365</sup> The latest, largest, and only half-way energetic federal commitment to resource conservation and recovery has been for municipal solid waste. In March, 1978, President Carter asked Congress to appropriate \$15 million for federal grant assistance for urban resource recovery projects in FY '79. 2D ANNUAL RCRA REPORT, *supra* note 8, at V-2 to V-6. Apart from being a pittance of what is really needed to assist the development of municipal waste recovery, the federal government neglects all the other aspects of resource conservation and recovery of wastes, in particular industrial wastes.

<sup>366</sup> See *Prod Testimony*, *supra* note 289.