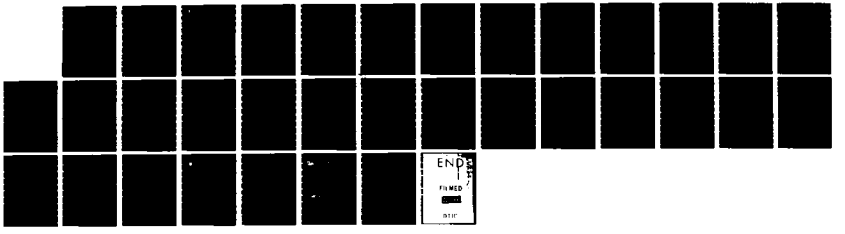
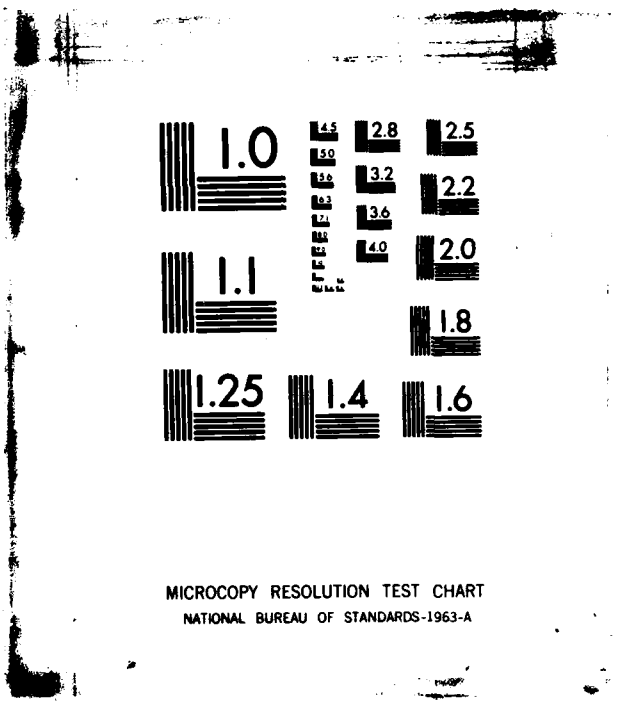
AD-A137 481 INFORMATION ON DISPOSAL PRACTICES OF GENERATORS OF SMALL QUANTITIES OF HAZARDOUS WASTES(U) GENERAL ACCOUNTING OFFICE WASHINGTON DC RESOURCES COMMUNITYAA.. 1/1

UNCLASSIFIED 28 SEP 83 GAO/RCED-83-200 F/G 13/2 NL





(2)

AD A137481

REPORT BY THE U.S.

General Accounting Office

Information On Disposal Practices Of Generators Of Small Quantities Of Hazardous Wastes

The Federal Government and most States impose less stringent requirements on firms that generate small amounts of hazardous wastes than on those that generate large amounts. This report provides information on Federal and State efforts to control disposal practices of these small quantity generators and provides data on the actual disposal methods used by 48 small quantity generators in Rhode Island, Connecticut, Texas, and Louisiana. It also discusses the extent to which occupational safety and health and ground water contamination problems are caused by the disposal of hazardous waste by small quantity generators.

GAO/RCED-83-200
SEPTEMBER 28, 1983

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-204242

The Honorable James J. Florio
Chairman, Subcommittee on
Commerce, Transportation and Tourism
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

On January 11, 1983, you requested that we review the problems caused by the disposal of hazardous waste into solid waste landfills by small quantity generators of such waste. As agreed with your office, we obtained information on (1) the Federal and State resources and authority directed at controlling small quantity hazardous waste generators, particularly with respect to the impact of reduced Federal funding on State solid waste activities, (2) the extent to which small quantity generators use local solid waste facilities for hazardous waste disposal and the nature of the occupational safety and health problems associated with this practice, (3) alternative disposal methods used by small quantity generators, (4) whether small quantity generators are dumping their wastes into municipal sewer systems and the potential impact of this practice, and (5) the degree to which land disposal of small quantity generator wastes will contaminate ground water.

Overall, we found that:

--Although Federal grants for State solid waste programs were eliminated in fiscal year 1982, solid waste officials in three of the four States we visited indicated that they were able to increase State funding or make other program adjustments necessary to limit the impact on their programs. A Texas solid waste official, however, said that elimination of Federal funds had significant negative impact on the State programs. (See app. III.)

--The District of Columbia and 42 States have added additional restrictions to the Federal regulations on the disposal of hazardous waste in solid waste landfills. Little information was available, however, in the States we visited or at the Federal level as to the number of small quantity generators in each State, the volume of hazardous waste they generate, and their disposal methods. (See app. IV.)

--Of the 48 small quantity generators in our survey, 9 said that they disposed of some or all of their waste in solid waste landfills, 23 indicated that they relied on recycling or sent their waste to hazardous waste disposal facilities, and 11 said that they dispose of their waste into municipal sewer systems. State and local officials believe that the low volume of sewer disposal in the cases that we reviewed did not pose a major problem; however, sewer disposal of hazardous waste overall may be a potential problem. (See app. V.)

--The presence of hazardous waste in solid waste landfills has resulted in few documented occupational safety or health problems being reported to State or Federal agencies. A national solid waste association, however, has identified 46 cases of such problems. (See app. VI.)

--Two of the four States we visited were experiencing ground water contamination at some of their solid waste landfills. Officials in one of the these States did not believe that small quantity generators caused the contamination, while officials in the other State were uncertain of the cause. State officials' opinions varied as to whether such disposal of small quantity generator hazardous waste may cause contamination in the future. (See app. VII.)

Each of the above points is discussed in detail in appendixes III through VII.

AGENCY COMMENTS AND OUR EVALUATION

The Environmental Protection Agency (EPA) stated that the information in this report is well presented and that the sources of all qualitative data or observations appear to be adequately referenced. It added that the report reinforces the need for the Office of Solid Waste to complete its small quantity generator study in order to provide a substantive base for developing regulations for small quantity generators of hazardous waste. EPA plans to have preliminary results from this study by the spring of 1984. (See app. VIII.) We agree that EPA's survey of 50,000 small quantity generators will constitute the most comprehensive effort to date to determine where such generators dispose of their waste and what are the related potential problems.

The four States in our study were provided with a draft of this report. Rhode Island stated that the report is accurate with respect to the State of Rhode Island. It had no other comments.

(See app. IX.) Connecticut had several minor corrections or clarifications which have been taken into consideration in preparing the final report. (See app. X.) The Texas Department of Water Resources provided oral comments and the Texas Department of Health provided written comments. (See app. XI.) Both departments pointed out clarifications that have been considered in preparing the final report. Louisiana did not provide official comments.

- - - -

In obtaining the information you requested, we performed work at the EPA headquarters, EPA regions I (Boston, Massachusetts) and VI (Dallas, Texas), and in four States--Connecticut, Rhode Island, Texas, and Lousiana. We also visited 48 small quantity generators to determine where they dispose of their hazardous waste. Our work was conducted from January 1983 through May 1983, and we made our review in accordance with generally accepted government audit standards. More specific information on our objectives, scope, and methodology can be found in appendix I.

As arranged with your office, unless you publicly release its contents earlier, we plan no further distribution of this report until 30 days from the date of its issuance. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

J. Dexter Peach
Director

Contents

ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
NSWMA	National Solid Waste Management Association
RCRA	Resource Conservation and Recovery Act
TDH	Texas Department of Health
TDWR	Texas Department of Water Resources

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to obtain information on the issues contained in your January 11, 1983, letter, as modified by subsequent discussions with your office.

To accomplish this objective, as agreed with your office, we performed our work at the Environmental Protection Agency (EPA) headquarters, EPA regions I (Boston, Massachusetts) and VI (Dallas, Texas), and in four States--Connecticut, Rhode Island, Texas, and Louisiana. These States provided a contrast in small quantity generator disposal requirements. Rhode Island and Louisiana were listed by the Office of Technology Assessment as having no small quantity generator exemption--all hazardous waste must be disposed in a hazardous waste facility--whereas Texas and Connecticut were listed as following the Federal exemption which allows 1,000 kilograms (kg) of hazardous waste to be disposed in solid waste landfills.

We also visited 48 small quantity generators (12 in each State) to determine where they dispose of their hazardous waste. We randomly selected these generators, for the most part, from classified telephone directories or the State's Directory of Manufacturers based on State guidance as to the types of businesses generally regarded as small quantity generators. A State or city environmental inspector accompanied us on all our visits to these small quantity generators, and we used a standard set of questions to assure uniformity in the information obtained.

Because of the limited scope of our review, the information obtained in the four States and at the 48 small quantity generators that we visited can not be projected to any of the other 46 States or to the Nation as a whole.

To obtain information on the Federal and State resources and authority directed at controlling small quantity hazardous waste generators and on the impact of the elimination of Federal funds on State solid waste activities, we interviewed EPA officials at headquarters and in regions I and VI. We also interviewed solid and/or hazardous waste officials in the four States visited and reviewed the documents regarding the award of Federal funds to those States. We also reviewed the States' solid and hazardous waste regulations, policies, and procedures. We contacted solid or hazardous waste officials in 46 other States and the District of Columbia to determine their small quantity generator exemption policy. We were unable to contact Hawaii State officials.

APPENDIX I

To obtain information on the extent to which small quantity generators use local solid waste facilities for hazardous waste disposal and on the control exercised by these facilities over what was disposed there, we visited the 48 small quantity generators and 11 landfills. We also sought the opinions of representatives from the Association of State and Territorial Solid Waste Management Officials, Office of Technology Assessment, the American Electroplaters Society, Manufacturing Jewelers and Silversmiths of America, and four solid waste transporters.

To determine the extent and nature of the occupational health and safety problems associated with small quantity generator disposal of hazardous waste in local solid waste facilities, we met with representatives of the National Solid Waste Management Association at its Washington, D.C., headquarters; solid waste trade associations and occupational safety and health and workman's compensation units in each of the four States we visited; the Occupational Safety and Health Administration; and the National Institute of Occupational Safety and Health.

To obtain information on alternative disposal methods available to (and used by) small quantity generators, we interviewed representatives at the 48 small quantity generators that we visited. We also interviewed representatives from George Mann and Company and T.H. Bayliss and Company (chemical suppliers), whose companies pick up and recycle hazardous waste from their small quantity generator clientele. Finally, we contacted the New York Environmental Facilities Corporation--an operator of a waste exchange.

To determine whether small quantity generators are dumping their waste into municipal sewer systems and the potential impact of this practice, we interviewed officials at the 48 small quantity generators that we visited. In those instances where we found the small quantity generator using the sewer system for disposal, we interviewed the applicable municipal sewer system officials. We also talked to officials at EPA headquarters and regions I and VI about this practice and the potential problems.

To obtain information on the degree to which small quantity generator disposal of hazardous waste into solid waste facilities will create future sites of ground water contamination, we interviewed State solid and hazardous waste officials, representatives of Lee Pare Associates (a consulting engineer for landfill design), and analyzed the data obtained from our visits to small quantity generators.

APPENDIX II

APPLICABLE FEDERAL AND STATE ROLES AND RESPONSIBILITIES

The Resource Conservation and Recovery Act (RCRA) of 1976 (as amended, 42 U.S.C. §§ 6901 et seq. (1976 & Supp. IV 1980)), outlines the Federal and State roles for managing hazardous and nonhazardous (solid) waste. Subtitle C of the act creates a "cradle-to-grave" control system for managing hazardous waste. EPA is to manage the hazardous waste control program until those States that desire to administer their own programs can demonstrate that their programs are substantially equivalent (and will ultimately be fully equivalent) to EPA's program. As of April 19, 1983, 36 States had received authorization to administer at least parts of their own hazardous waste programs. Subtitle D of the act makes State and local governments responsible for administering State nonhazardous waste programs, although it requires EPA to provide guidance and technical and financial assistance.

The Federal/State roles are important to the regulation of small quantity generators of hazardous waste because EPA exempts from most subtitle C regulations all generators that generate or accumulate in any given calendar month less than 1,000 kg (about 2,200 pounds) of hazardous waste per site (40 CFR § 261.5).[1] The act, however, permits States to adopt more stringent requirements than those imposed by Federal regulations (42 U.S.C. § 6929). Seventeen States have set lower exemption levels while 26 States indicate that they follow the Federal 1,000 kg exemption. But in practice these 26 require all small quantity generators to meet some or most of the regulatory standards established for larger quantity generators. In the remaining seven States that impose only Federal standards, small quantity generators can dispose of their waste in solid waste landfills. These landfills normally come under the jurisdiction of State or local solid waste programs, while hazardous waste landfills and other hazardous waste treatment, storage, or disposal facilities (required to be used by larger quantity hazardous waste generators) generally come under the jurisdiction of EPA or EPA-authorized States.

---

[1]The exception to this is generators of acutely hazardous waste, defined in EPA regulations at 40 CFR §261.33(e), which have an exemption limit of 1 kg (100 kg if it is a residue resulting from the cleanup of a spill of acutely hazardous waste).

APPENDIX II

EPA requires large quantity generators, among other things, to:

--Use a prescribed method to determine whether a waste is a hazardous waste.

--Obtain an EPA identification number.

--Prepare a manifest of their wastes if the wastes are to be transported to an offsite treatment, storage or disposal facility. (A manifest is a document that lists the type, volume, origin, routing, and destination of waste to be transported and it must accompany the waste to its destination.)

--Comply with appropriate labeling requirements.

--Include in the manifest the EPA identification numbers of the generator; the transporter; the designated treatment, storage, or disposal facility; and an alternate facility, if any.

--Conduct an inquiry if they have not received a return copy of the manifest within 35 days from the treatment, storage, and disposal facility and file an exception report with the State or EPA if a copy is not received within 45 days.

--Comply with the storage facility and permit requirements if wastes are to be stored for more than 90 days.

--Comply with recordkeeping requirements and submit annual reports to EPA.

In contrast, EPA exempts small quantity generators of hazardous waste from most of these requirements. EPA only requires small generators to:

--Use a prescribed method to determine whether a waste is a hazardous waste.

--Dispose of their waste in an EPA- or State-approved hazardous waste facility, in a solid waste facility approved by the State to manage municipal or industrial wastes, or in a facility which recycles the wastes.

--Accumulate no more than 1,000 kg of hazardous waste in storage (or more than allowable quantities of acutely hazardous waste).

APPENDIX III

FEDERAL AND STATE RESOURCES DEVOTED TO SOLID WASTE ACTIVITIES

Although Federal grants to States and EPA's resources for solid waste programs were largely discontinued in fiscal year 1982, solid waste officials in Louisiana, Rhode Island, and Connecticut said that they were able to increase State funds or make other necessary adjustments to lessen the impact on their programs. A Texas solid waste official, however, identified several program reductions caused by the loss of Federal funds. EPA stated in its 1982 budget justification that by eliminating the solid waste grants, it was only accelerating a planned phase-out of its solid waste activities. EPA also states that it expected the States to be self-reliant in funding their solid waste management plans. The table on page 7 shows the Federal solid waste grants provided to the States we visited and State funding for fiscal years 1980-83.

The Administrator of the Solid Waste Management Division of Louisiana's Department of Natural Resources said that the elimination of Federal funds had no impact on the State's Solid Waste Program because additional State funds were made available to offset the loss of Federal grant funds.

The Supervisor of solid waste activities in Rhode Island's Division of Air and Hazardous Materials stated that the impact of the loss of Federal funds on the State's solid waste program has not been significant. He said that members of the Air Quality Control Unit, instead of solid waste staff, received the necessary training and now inspect solid waste facilities. He also said that since the Federal cuts, State personnel sample ground water wells less frequently to verify the quarterly test results submitted by each landfill operator. He added that neither of these changes has lowered the quality of the State's solid waste program.

The Director of Connecticut's Solid Waste Management Unit said that the major impact from the loss of Federal funds is that the State makes fewer inspections of solid waste facilitites, and therefore, landfill operators may become more lax in complying with State regulations. He added that a lesser impact is the lack of State staff to take ground water samples. The State relies on the landfill operator to do the sampling. This requires additional State effort to follow up on those operators that are delinquent in providing the required sample results.

APPENDIX III

The Chief of the Texas Department of Health (TDH), Bureau of Solid Waste Management, said that the elimination of Federal funds had significant consequences on the State's waste programs. It resulted in eliminating (1) the Open Dump Inventory (a federally funded State inventory of landfill facilities to determine if they meet EPA criteria) and (2) regional and local solid waste management planning activities and resource recovery planning activities. He added that only about 10 percent of the State's solid waste facilities had been inventoried under the Open Dump Inventory. Without Federal funds he said that the remainder of the facilities will not be inventoried and may continue to operate even though they do not meet EPA's criteria. Without regional and local planning activities he said he will be unable to determine (1) how regional and local officials intend to manage their solid waste programs and (2) resource recovery of solid waste may be hampered in Texas.

The Association of State and Territorial Solid Waste Management Officials also believes that the elimination of Federal funds has adversely affected State solid waste programs. The association's President testified before the Senate Subcommittee on Toxic Substances and Environmental Oversight on February 16, 1983, that all Open Dump Inventory activity ceased in 21 States and enforcement of solid waste regulations and surveillance of solid waste landfills has decreased.

After fiscal year 1981, EPA not only discontinued grants to States, but also sharply reduced funding for its own solid waste activities. Currently, most of EPA's solid waste activity involves reviewing and approving solid waste management plans for States. (As of July 8, 1983, 22 States had fully approved plans). The table on page 8 shows the funds devoted by EPA to solid waste activities for fiscal years 1980-83, by region. The EPA Director, Office of Management Information and Analysis, told us that reduced EPA activity in the solid waste area is in keeping with EPA's policy of expecting States to be self-reliant in managing solid wastes.

APPENDIX III

FEDERAL AND STATE RESOURCES DEVOTED TO SOLID WASTE ACTIVITIES

State	Fiscal year 1980	1981	1982	1983 (estimated)
	(thousands)			
Rhode Island				
Federal	$63	$40	$ -	$ -
State	63	83	137	70
Total	$126	$123	$137	$70
Connecticut				
Federal	$196	$ 89	$ 23[a]	-
State	361	468	300	$381
Total	$557	$557	$323	$381
Texas				
Federal	$687	$519	$ 40[a]	$165[a]
State	555	439	621	625
Total	$1,242	$958	$661	$790
Louisiana				
Federal	$283	$ 76	$ 207[a]	$ 98[a]
State	20	355	333[b]	700
Total	$303	$431	$540	$798

[a]Carryover from fiscal year 1981 grant.

[b]An additional $1.7 million was also devoted for statewide study of solid waste facilities.

APPENDIX III

EPA FUNDS DEVOTED TO SOLID WASTE ACTIVITIES[a]

(000 omitted)

Region	1980	1981	1982	1983
	- - - - - - (000 omitted) - - - - - -			
I	$ 116.5	$ 84.2	$14.0	-
II	147.3	166.7	-	-
III	104.8	81.5	-	-
IV	194.7	100.1	-	-
V	153.4	69.4	-	-
VI	197.4	155.8	15.6	-
VII	105.6	142.1	-	-
VIII	135.1	112.2	10.4	-
IX	94.7	90.9	-	-
X	59.3	59.2	13.2	-
Headquarters	2,808.0	2,082.0	-	-
Total	$4,116.8	$3,144.1	$53.2	

[a]These figures represent funding for EPA's solid waste activities. State grants are not included.

SMALL QUANTITY GENERATOR REQUIREMENTS AND STATE EFFORTS TO INVENTORY SMALL QUANTITY GENERATORS

EPA exempts from hazardous waste regulation generators that generate or accumulate (at any one site) in any given calendar month less than 1,000 kg of hazardous waste, 1 kg of acutely hazardous waste, or 100 kg of residue resulting by acutely hazardous waste spills (40 CFR § 261.5). The District of Columbia and 42 States, including the 4 we visited, have more stringent requirements. None of the four states we visited, however, place a high priority on determining who their small quantity generators are, the type and volume of waste they generate, or how and where their wastes are disposed.

Louisiana and Rhode Island go beyond the Federal requirements and regulate all generators of hazardous waste--regardless of volume. Both States require that all hazardous waste be disposed of in a hazardous waste facility. In addition, both States require all generators to obtain an EPA identification number, prepare a manifest of the hazardous waste, use a licensed hazardous waste transporter, and obtain a State permit to store any amount of hazardous waste for more than 90 days. Louisiana also requires all generators to submit quarterly reports of hazardous waste generated.

Connecticut has the same 1,000 kg exemption as the Federal Government, but it does not allow hazardous waste to be disposed of in solid waste landfills without prior State and landfill operator approval. It does exempt generators of 1,000 kg or less per month from paperwork requirements such as preparing a manifest. Those who generate between 100 and 1,000 kg per month must file annual reports with the State.

Two State agencies, the Texas Department of Water Resources (TDWR) and the Texas Department of Health (TDH), oversee hazardous waste management in Texas. TDH, which manages municipal waste, allows a 1,000 kg per month exemption but requires its approval and that of the landfill operator before disposal in a solid waste landfill. TDWR, which manages industrial waste, allows no exemption but it does allow disposal in solid waste landfills on a case-by-case basis. Factors considered in approving or rejecting such requests include the characteristics of the waste, the geologic characteristics of the landfill, and the overall threat of ground water contamination. In such cases, the generator must receive prior written approval from TDWR, concurrence from TDH, and the approval of the landfill operator.

APPENDIX IV

In addition to the 4 States we visited, 38 other States and the District of Columbia have more stringent small quantity generator requirements than the Federal Government. Only seven States have the same requirements as the Federal Government. The table on page 11 is a listing of State requirements. We were unable to contact officials in Hawaii.

Although the four States visited had more stringent requirements than the Federal Government and could identify some of their small quantity generators, none had developed a complete inventory that included the volume and types of hazardous waste generated and the disposal methods used. The Supervisor of solid waste activities in the Rhode Island Division of Air and Hazardous Materials said that the State had not inventoried or routinely inspected small quantity generators because they were not causing major disposal problems and because priority had to go to monitoring large quantity generators. In addition, the Chief, Solid Waste Section/Permits Division, TDWR; the Chief of the Bureau of Solid Waste Management, TDH; and Louisiana's Administrator of the Hazardous Waste Division all said that they had devoted their efforts to identifying large quantity generators and did not have the resources to further inventory or inspect small quantity generators.

Connecticut, based on a 1979 legislative mandate, is inventorying all manufacturers in the State as resources permit, to determine what wastes they are generating. As of March 1983, about one-half of the manufacturers had been contacted. Upon completion of this inventory, an informational summary report will be issued to the legislature.

APPENDIX IV

STATE SMALL QUANTITY GENERATOR EXEMPTIONS

1,000 kg exemption

Arkansas	Idaho	Montana	Wisconsin
Georgia	Indiana	New Mexico	

1,000 kg exemption plus additional requirements[a]

Alabama	Florida	New York	Texas
Alaska	Iowa	North Carolina	Utah
Arizona	Kentucky	North Dakota	Virginia
Colorado	Maryland	Ohio	
Connecticut	Mississippi	Oklahoma	
Delaware	Montana	Pennsylvania	
District of Columbia	Nebraska	South Dakota	
	Nevada	Tennessee	

1 to 200 kg exemption

Illinois	Michigan	New Hampshire	South Carolina
Kansas	Missouri	New Jersey	Vermont
Massachusetts	Maine	Oregon[b]	Washington[b]

No exemption

California	Minnesota	West Virginia
Louisiana	Rhode Island	

[a]States either do not allow hazardous waste disposal in sanitary landfills or require prior approval. In Texas, two State agencies split responsibility for managing wastes. TDH has a 1,000 kg exemption, while TDWR has no exemption. Both agencies, however, have additional requirements or exceptions.

[b]These States have a variable exemption based on the type of hazardous wastes.

SMALL QUANTITY GENERATOR DISPOSAL METHODS

We visited a total of 48 companies in the four States which State officials believed were small quantity generators of hazardous waste. Our purpose was to determine what hazardous waste they were generating and what disposal methods they were using. Of these 48 companies, 43 were generating some hazardous waste. The most frequent method of disposal (used by 23 generators) was recycling or arranging for the waste to be picked up by a hazardous waste transporter or a chemical supplier for recycling or disposal at a hazardous waste facility. Pouring the waste into the sewer system was the next most frequent method of disposal (11 generators). Disposing of the hazardous waste at a solid waste landfill was third most frequent method (9 generators), but the amount of hazardous waste going to landfills was very small except in one case. The one exception was 2,990 kg of oil soaked dirt, a hazardous waste by the State's standards but not by Federal standards. The table on page 17 contains a breakdown of the method of disposal used by these companies and the volume of hazardous waste generated each month.

We also talked with four solid waste transporters. They do not believe that small quanity generators of hazardous waste are using solid waste landfills for disposal to any great extent because there have not been any hazardous waste related accidents to haulers or landfill employees. Additionally, although they do not routinely check all their truck loads for hazardous wastes, these transporters have not found any significant amount of hazardous waste in their loads. The transporters further told us that they would not knowingly handle hazardous waste because it is not worth the risk to their employees and equipment.

Studies by two organizations have provided conflicting evidence as to whether small quantity generators are disposing of hazardous waste in solid waste landfills. The Los Angeles County Sanitation District in California recently inspected truckloads of residential and commercial waste at two of its landfills. The district officials concluded that insignificant amounts of hazardous waste were being disposed of there and that the health hazards posed by these hazardous materials were also insignificant. In contrast, in March 1983, the Chamber of Commerce of the United States telephoned a limited number (40) of small quantity generators and found that 87 percent were disposing of their hazardous waste in sanitary landfills.

The largest attempt to survey small quantity generator disposal practices is now in progress. In October 1982, EPA announced that it was undertaking a 2-year study of alternative methods for regulating small quantity generators of hazardous waste. The study will evaluate the environmental problems posed by small quantity generators, analyze the types and quantities of waste generated, identify current waste management practices of small quantity generators, and compile the various State strategies for controlling waste generated by small quantity generators. The study will be based on a questionnaire to be sent to 50,000 small quantity generators. EPA expects preliminary results from the survey by spring 1984. Because of the large number of small quantity generators to be surveyed, the results of this study could help shed more light on how small quantity generators dispose of their waste.

ALTERNATIVES TO LAND DISPOSAL OF SMALL QUANTITY GENERATOR WASTE

Interviews with representatives at 48 small quantity generators indicated that some small quantity generators are using alternatives to the landfilling of hazardous waste. Eight of the companies have some or all of their hazardous waste picked up by the original suppliers of the product. For example, George Mann and Company's Vice President for Operations said that his company, a Rhode Island supplier, picks up about 300 drums a year of reclaimable wastes such as chlorinated solvents. T.H. Bayliss Company's Hazardous Waste Coordinator said that his company, another Rhode Island supplier, picks up about 29 drums a year from six small quantity generators. These companies do not charge their customers for this service if the waste can be reclaimed. If the waste cannot be reclaimed, the customer pays the disposal cost.

We also spoke with an industrial waste program analyst with the New York Environmental Facilities Corporation, an organization which operates, among other things, a hazardous waste exchange for eight Northeast States. The exchange lists the wastes companies want to dispose of as well as the wastes other companies are looking for. The representative said that, while small quantity generators of hazardous waste participate in the exchange's activities, the exchange did not have data showing the number participating or the savings produced.

DISPOSAL OF SMALL QUANTITY GENERATOR WASTES INTO MUNICIPAL SEWER SYSTEMS

Our visits to 48 small quantity generators also disclosed that 11 small quantity generators were dumping hazardous waste into the municipal sewer systems. In one of these cases, a determination must be made as to whether the waste was actually hazardous. In another case, no action will be taken because a reinspection by the sewer authority indicated that the wastes were no longer being poured into the drain. In six other cases, the generators were diluting their wastes prior to disposal. While generally not an acceptable pretreatment process, sewer officials told us that it was tolerated in these cases because it lowered the wastes' acidity to an acceptable level.

In the remaining three cases of sewer disposal, local sewer officials believed that city ordinances were being violated. The cases involved a printing firm that was dumping 24 gallons a month of isopropyl alcohol; a university laboratory that was dumping 9 gallons a month of hydrochloric, sulphuric, and nitric acids; and a chrome plating firm that was dumping 150 to 250 gallons a month of alkali. Although these cases were believed to be violating local ordinances (according to EPA regional pretreatment coordinators, none of the three were violating existing Federal pretreatment standards), local sewer officials indicated that no action would likely be taken because enforcement priority must go to larger quantity polluters also disposing of their wastes into the sewer systems. The associate director of one local sewer authority told us that these larger quantity polluters are in some cases adversely affecting the operation of sewage treatment plants.

Even though the cases of sewer disposal we found were not considered by sewer officials to be major problems, the disposal of hazardous waste into municipal sewer systems overall is a recognized potential problem. EPA exempts from hazardous waste regulations mixtures of domestic sewage and other wastes that pass through a sewer system to a publicly owned sewage treatment works (40 CFR § 261.4(a)(I)(ii)).[2] Under authority granted by the

---

[2]The exemption represents EPA's interpretation of the RCRA definition of solid waste, "* * * which does not include solid or dissolved material in domestic sewage * * *" (42 U.S.C. § 6903(27) (1976)). The EPA cited its pretreatment program as insurance against the dumping of environmentally problematic wastes by users of publicly owned sewage treatment systems (45 Fed Reg. 33097 (May 19, 1980)).

Clean Water Act (Public Law 95-217, as amended, 33 U.S.C. §§ 1257 et seq.), however, EPA is developing pretreatment standards that set limits on the types of pollutants that can be discharged to sewer systems. According to EPA, as of March 11, 1983, pretreatment standards had been published in final form for 14 of the 25 industrial categories for which EPA expects to promulgate such standards.

Whether pretreatment standards will cover all of the hazardous wastes regulated under RCRA that need to be covered is, however, a question that needs to be resolved. Section 11 of Senate Bill 431 introduced on February 3, 1983, to amend and to authorize funds for the Clean Water Act would require EPA to study and report on (1) the types and quantities of hazardous wastes currently exempted by regulation, (2) whether the regulations applicable to the exempted hazardous waste (i.e., pretreatment standards) are adequate to protect human health and the environment, and (3) whether regulation of such wastes under hazardous waste regulations is necessary. An assistant to the EPA Assistant Administrator for Water said that EPA recognizes that a potential problem may exist and EPA is working with appropriate committees in the House and Senate to develop amendments requiring that the issue be studied.

The following chart shows the disposal methods used by the small quantity generators we contacted and the total amount of hazardous waste generated each month. A generator may use more than one disposal method so the figures may not total under each category of generator. The various disposal methods are defined as follows:

Solid waste--the hazardous waste was disposed of in a solid waste landfill.

Sewer--the hazardous waste was poured into a municipal sewer system.

Store--the hazardous waste has never been disposed of, the generator stored it onsite.

Hazardous waste transporter--the hazardous waste was picked up at the generator site by a licensed hazardous waste transporter.

Recycle--the hazardous waste was recycled or reused by the generator onsite.

APPENDIX V

Generator's supplier--the hazardous waste was picked up at the generator's site by the company who originally sold the products to the generator.

Incinerator--the hazardous waste was disposed of through incineration.

Other--the hazardous waste was either (1) picked up at the generator's site by a waste oil hauler, (2) dumped into the generator's septic tank, or (3) picked up at the generator's site by relative or business associate for use as heating fuel (waste oil).

No hazardous waste--company did not generate any hazardous waste.

The conversions of gallons and pounds to kilograms, as shown on the chart, were at the following rates: 3.773 kilograms per gallon and 0.453 kilograms per pound.

WASTE DISPOSAL METHODS OF 48 POTENTIAL SMALL QUANTITY GENERATORS INTERVIEWED IN FOUR STATES

Type of company	Number	Waste Disposal Method								
		Solid waste	Sewer	Store	Hazardous waste transporter	Recycle	Generators' supplier	Incinerate	Other	No hazardous waste
Platers	13	1	6		2	2	3			
Machine shops	8			4	2	1	1		2	1
Printers	6	4	3		1	1	3		1	
Cleaners	4	2				2				1
Electronic components	4	1	1	1		1	1			
Miscellaneous manufacturing	3					1				2
Auto body/painting	2								2	
Laboratory	2			1					1	
Fabricator	2								1	1
University	1	1	1							
Hospital	1							1		
Metal engraver	1				1					
Chemical cleaning svc	1	—	—	—	1	—	—	—	—	—
Total[a]		9	11	6	7	8	8	1	7	5
Total waste quantity generated in kilograms		139[b]	1,837+[c]	117	11,100	37,757+[d,e]	1,158	Unknown	15,549[f]	-

[a]Of the 43 companies that were generating hazardous waste, 12 generated more than one type of hazardous waste and used more than one disposal method. Accordingly, the totals may appear inconsistent with the numbers in the report.

[b]Excludes 2,990 kilograms of oil soaked dirt considered hazardous by the State's standards but not by the Federal Government's. Includes 27 kilograms of scrap metals.

[c]Amount of hazardous waste generated by six companies was unknown.

[d]Amount of hazardous waste generated by three companies was unknown.

[e]36,240 kilograms represents lead from battery casings.

[f]Includes 15,092 kilograms of waste oil burnt as a fuel by a waste oil transporter.

APPENDIX V

OCCUPATIONAL SAFETY OR HEALTH PROBLEMS

In the four States we visited, State solid waste officials could not identify any cases of occupational safety or health problems caused by hazardous waste disposal at solid waste landfills. In addition, solid waste trade associations in two of the four States, as well as the 11 landfill owners or operators we visited, identified no such problems. In the four States, we also contacted the occupational safety and health and the workman's compensation units in the respective State Departments of Labor. Officials of these organizations also could not provide us with documented cases of such problems.

On a national basis we contacted representatives from the National Solid Waste Management Association (NSWMA), the Occupational Safety and Health Administration, and National Institute of Occupational Safety and Health. None of the three organizations systematically collects such information, but NSWMA was able to provide us with 11 examples where small quantities of hazardous waste caused occupational safety or health problems. Of the 11 examples NSWMA provided, however, only 4 had identifiable dates. These four cases involved worker contact with splashed hazardous wastes such as acids and resulted in various burns or other injuries, but no fatalities. In some cases, it appeared that the hazardous wastes came from residential users who are exempt from Federal regulation, rather than from small quantity hazardous waste generators. Subsequent to our discussions with NSWMA, it polled its members and identified an additional 35 cases where hazardous waste is believed to have caused occupational safety or health problems. NSWMA had incomplete or imprecise information, however, concerning the dates and locations of the occurrence and the source of the wastes.

GROUND WATER CONTAMINATION

Ground water contamination existed at some solid waste landfills in Rhode Island and Connecticut. No such contamination was found in Texas and Louisiana. Rhode Island officials believe this contamination cannot be attributed to small quantity generators, whereas Connecticut officials did not know the extent to which small quantity generators contributed to the problem. With regard to possible future ground water contamination caused by small quantity generators, State officials' opinions varied.

Of the four States we visited, Rhode Island identified 5 solid waste landfills that have ground water contamination, and Connecticut identified 12. In Rhode Island, all landfills have ground water monitoring wells, while in Connecticut about half of the landfills have such wells. In Texas and Louisiana very few of the solid waste landfills have ground water monitoring wells. The Chief of the Solid Waste Section, Permits Division, TDWR; the Director of the Hazardous Waste and Resource Recovery Management Division, TDH; and the Administrator of Louisiana's Solid Waste Management Division, Department of Natural Resources, all believe that most of their landfills do not present a current risk of ground water contamination because of geological or hydrological conditions.

The Supervisor for solid waste activities in the Rhode Island Division of Air and Hazardous Materials attributed current ground water contamination problems to the dumping of large generator hazardous wastes prior to regulation of such generators rather than to small quantity generator wastes. The Director of Connecticut's Solid Waste Management Unit indicated that prior dumping of industrial wastes (not necessarily hazardous waste) may be causing current ground water contamination, but he had no information as the exact source of contamination.

With regard to possible future ground water contamination problems, the Supervisor in Rhode Island's Division of Air and Hazardous Materials and the Administrator for Louisiana's Solid Waste Management Division both believe that under current regulations small quantity generators of hazardous waste are not a threat. In contrast, the Chief of the Bureau of Solid Waste Management, TDH, said that he believes that small quantity generators of hazardous waste may cause ground water contamination at solid waste landfills in the future. He said that he had not inventoried small quantity generators or identified the types and quantities of wastes produced or the disposal methods used.

APPENDIX VII

However, he believes that many of the estimated 20,000 to 40,000 small quantity generators in Texas may be disposing of hazardous waste in solid waste landfills. The Director of Connecticut's Solid Waste Management Unit would not comment on possible future sources of contamination.

APPENDIX VIII

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 3 1983

OFFICE OF
POLICY AND RESOURCE MANAGEMENT

Mr. J. Dexter Peach
Director
Resources, Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

This letter is in response to your letter of July 15, 1983, transmitting the General Accounting Office draft report entitled "Information on Small Generator Disposal of Hazardous Waste" (GAO/RCED-83) for the Environmental Protection Agency's (EPA's) review and comment. The appropriate offices at the Agency have reviewed the draft report and we have prepared the following comments.

The GAO report provides well presented information and the sources of all qualitative data or observations appear to be adequately referenced. As the GAO report acknowledges, "Little information was available, however, in the States we visited or at the Federal level as to the number of small generators in each State, the volume of hazardous waste they generate, and their disposal methods." The report, which of necessity was limited to four states and 48 small quantity generators, partially addressed several major issues, such as the risks from exempted small quantity generators, the cost of disposal for small quantity generators, the administrative and enforcement resource impact on the States and EPA of alternative regulatory approaches, and the impact on Subtitle D facilities (sanitary landfills) of the current small quantity exemption.

In our judgement, the draft report reinforces the need for the Office of Solid Waste to complete its small quantity generator study in order to provide a substantive base for developing regulations for small quantity generators of hazardous waste. We plan to have preliminary results from the EPA survey, which we expect to include tens of thousands of small quantity generators, by spring of 1984. It will be necessary to compile data, conduct analysis, prepare proposals, and provide for public comment, before EPA can prepare a final rule. These efforts should take an additional two years.

APPENDIX VIII

In addition to these comments, we are enclosing technical comments and questions that the draft report has generated.

We appreciate the opportunity to review and comment on this draft report prior to its issuance.

Sincerely yours,

John M. Campbell
Acting Associate Administrator
for Policy and Resource Management

Enclosure

APPENDIX VIII

Technical Comments and Questions

1. Page 9. The sentence "EPA exempts from hazardous waste regulation those small generators which in a given calendar month generate less than 1000 kg of hazardous waste..." should be revised as follows: "EPA exempts from hazardous waste regulation generators which generate or accumulate in any given calendar month less than 1000 kg of hazardous waste or 1 kg of acutely hazardous waste."

2. Page 12. This section mentions that transporters have not found any significant amount of hazardous waste in their loads. However, the report states that data from Los Angeles and the U.S. Chamber of Commerce show that small quantity generators (SQGs) are sending their hazardous waste to sanitary landfills. This raises the question whether transporters routinely check their loads for hazardous waste. If not, how would they know whether they are transporting hazardous waste if the generator did not notify them or label the waste as hazardous?

3. Did the General Accounting Office (GAO) study address the manner in which sanitary landfills handle hazardous waste (i.e., do these facilities routinely handle hazardous waste from SQGs in the same manner as municipal waste or is there some preferential treatment of these wastes)?

4. It would be helpful if the appendices contained a copy of the survey questions GAO used. This would more clearly define the scope of the study.

5. Page 13. The sentence "The EPA officials responsible for the study told us that progress has been slower than they would like, primarily due to problems in identifying small generators, and that no meaningful data would be available until January 1984" should be revised as follows: "EPA expects preliminary results from the survey by spring 1984."

6. The term "small generators" should be changed to "small quantity generators" since the term "small generators" can be interpreted as small businesses. Some small businesses are large quantity generators of hazardous waste.

7. The limited scope of this study precludes extrapolation of the results to the entire country. The Office of Solid Waste expects that data gathered from its ongoing two-year study of SQGs will provide additional depth and scope needed to develop regulatory alternatives for controlling hazardous waste from SQGs.

GAO note: Page numbers have been changed to correspond with final report.

APPENDIX IX

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
OFFICE OF THE DIRECTOR
83 Park Street
Providence, R. I. 02903

25 July 1983

Mr. J. Dexter Peach, Director
United States General Accounting Office
Resources, Community & Economic Development
Division
Washington, DC 20548

Dear Mr. Peach:

Please be advised that my staff has completed a review of the report to the Chairman of the House Subcommittee on Commerce, Transportation and Tourism entitled "Information On Small Generator Disposal Of Hazardous Waste." My staff members have informed me that the report is accurate as it relates to activities within the State of Rhode Island. We, therefore, have no comments or recommendations concerning the content of the report.

Thank you for the opportunity to review this draft report before its release.

Very truly yours,

Robert L. Bendick, Jr.
Director

RLB/kz

APPENDIX X

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

August 4, 1983

Mr. J. Dexter Peach, Director
Resources, Community & Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

I have reviewed the draft of your report, "Information on Small Generator Disposal of Hazardous Waste" and have relatively few comments.

1. In the third paragraph of page 9 and again in the second full paragraph of page 10, it is stated that small generators are not being visited. However, in Connecticut, as noted in the third full paragraph of page 9, we are trying to locate these small generators as manpower and money permit.

2. In the section subtitled "Ground Water Contamination" on page 19, there may be some confusion because of the wording. Insofar as we know, all solid waste landfills are contaminating groundwater but this is, of course, with the leachate from the garbage, etc. found in any solid waste landfill. The 12 sites in Connecticut were landfills that received industrial wastes (not necessarily hazardous waste). Leachate from these 12 landfills showed groundwater contamination with the usual solid waste leachate plus other material that presumably originated with the industrial waste.

3. There are several minor typos where "alkaline" should be "alkaline cleaners" or perhaps "alkali," etc.

Very truly yours,

Stephen W. Hitchcock, Director
Hazardous Materials Management Unit

SWH:ml

GAO note: Page numbers have been changed to correspond with final report.

Phone:
(203) 566-4924
165 Capitol Avenue • Hartford, Connecticut 06106

APPENDIX XI

Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner
Professional Services

Hermas L. Miller
Deputy Commissioner
Management and Administration

AUG 10 1983

Mr. J. Dexter Peach, Director
Resources, Community, and Economic Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

On behalf of the Texas Department of Health, we are responding to your letter of July 15, 1983, with which you forwarded a draft report concerning disposal of waste from "small quantity" generators. The proposed report is being prepared for the congressional subcommittee on Commerce, Transportation and Tourism, chaired by the Honorable James Florio. Our comments were previously delivered in a phone conversation on August 5, 1983, between Mr. Glendon D. Eppler of my office and Mr. Vic Rezendes of your office. We thank you for the opportunity to comment. Our comments are enclosed.

Sincerely,

Jack C. Carmichael, P.E., Chief
Bureau of Solid Waste Management

GDE:cm
Enclosure

cc: Mr. David P. Marks
U.S. General Accounting Office

Response to U.S. General Accounting Office
Concerning Draft of a Proposed Report Related to
Disposal of Waste from Small Quantity Generators

Bureau of Solid Waste Management
Texas Department of Health
August 5, 1983

Comment Number 1

Page 9 (fourth paragraph), and Appendix IV, page 11 all refer to Texas as having a 1,000 kg/month generator exclusion. This statement is true. However, special requirements are placed on "small quantity" generators that are not placed on non-hazardous waste generators. For example, the Texas Department of Health (TDH) includes waste produced by small quantity generators in a category called "special wastes" and requires site specific approval for a facility to accept such waste. The Texas Department of Water Resources (TDWR) includes waste produced by small quantity generators in a category called "Class I Industrial Waste" and requires such waste to be manifested to a facility which is approved to accept Class I Industrial Waste. Details are partially explained on page 11.

Comment Number 2

Page 9 (fourth paragraph) explains the unusual division of solid waste regulatory responsibility in Texas. We suggest the word "household" be dropped from the description of the waste sector regulated by TDH. The municipal waste stream includes waste from community, commercial, institutional, and recreational activities and includes much more than household waste.

Comment Number 3

Page 9 (fourth paragraph). The statement concerning prior approval and concurrence prior to disposal of "small quantity" hazardous waste is either unclear or incomplete as stated. The TDH requirements are more properly stated as follows:

Small quantity hazardous municipal waste may go into a municipal (TDH) landfill that is not a permitted hazardous municipal waste landfill, if prior approval is secured from TDH and the landfill operator. Small quantity hazardous municipal waste may also go into a TDWR-regulated landfill if prior written concurrence is received from both agencies.

Small quantity hazardous industrial waste may go into an industrial (TDWR) landfill that is not a permitted hazardous waste landfill, if prior approval is secured from TDWR. Small quantity hazardous industrial waste may go into a TDH regulated landfill if prior approval is received from both agencies."

GAO note: Page numbers have been changed to correspond with final report.

(089243)

END

FILMED

02 — 84

DTIC