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House of Representatives

February 1986

HAZARDOUS WASTE:

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GAO

United States
General Accounting Office
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Resources, Community, and
Economic Development Division

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February 11, 1986

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

Dear Mr. Chairman:

In your April 30, 1984, letter and in subsequent discussions with your office, you requested that we examine several issues, including the extent to which (1) owners and operators of hazardous waste facilities have declared bankruptcy and avoided closure and postclosure costs, (2) financial assurance requirements ensure that sufficient funds will be available to properly clean up and close hazardous waste facilities and provide for adequate postclosure care, (3) EPA and states conduct inspections of facility closures, and (4) EPA and states bring enforcement actions for violations of financial assurance and closure/postclosure requirements. This report addresses these issues.

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

Sincerely yours,

J. Dexter Peach
Director

Executive Summary

Hazardous waste facilities that are not closed properly when their operations cease may lead to future public health and environmental harm as well as expenditure of public cleanup funds. EPA expects that many facilities will close rather than meet costly new regulatory requirements, and that some will declare bankruptcy. Concerned about whether such facilities are being closed properly, the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, requested that GAO determine the extent to which

- owners/operators of hazardous waste facilities have declared bankruptcy and thereby avoided paying closure and postclosure costs,
- financial assurance requirements ensure that sufficient funds will be available to close and provide postclosure care at these facilities,
- facilities that cease operations are inspected for compliance with closure requirements, and
- EPA and the states are taking enforcement action for violations of those requirements.

Background

The Resource Conservation and Recovery Act of 1976 (RCRA) regulates the management and disposal of hazardous waste. Under the act, EPA, since 1981, has required owners/operators of hazardous waste facilities to prepare closure plans and cost estimates for removing or securing wastes, decontaminating equipment, and other activities in the event they cease operations. Plans and cost estimates for these postclosure activities must also be prepared.

To assure that funds will be available for these plans, EPA also requires owners/operators to provide financial assurance by passing a financial test (using financial ratios and other measures), establishing trust funds, obtaining insurance, or using other methods. While EPA has overall responsibility for implementing the act, it has authorized most states to administer all or part of the hazardous waste program.

GAO's review was conducted in four of EPA's ten regions and in six states.

Results in Brief

In three of the eight bankrupt facilities GAO reviewed that had closed or were closing, the courts restricted EPA and state efforts to force owners/operators to properly close them.

Financial assurance requirements may not ensure that financially troubled or bankrupt firms pay closure and postclosure costs because of

potential weaknesses with EPA's financial test and trust fund—the two most widely used financial assurance mechanisms—and noncompliance with the financial assurance requirements in general.

Of the 176 closed facilities GAO reviewed, 109 (about 62 percent) had been inspected by EPA or the states during or after closure.

GAO found that EPA or the states were taking enforcement actions against most facilities violating financial assurance or closure requirements. These actions, however, were not always as strong as called for in EPA guidelines.

Principal Findings

Bankruptcy

Although precise nationwide data are not available, according to state and territorial officials, 74 hazardous waste facilities have filed for bankruptcy. While the bankruptcy law allows for the enforcement of environmental regulations over creditor claims, under judicial decisions, EPA and state environmental interests have not always prevailed but have merely been given equal status with other unsecured creditors, thus hindering governmental efforts to force owners/operators to properly close their facilities.

Eight of the 17 bankruptcy cases occurring in the states GAO visited involved facilities that were closed or closing. About $4.2 million in government funds had been spent thus far at four of these facilities. Although two of the four facilities were not subject to the financial assurance requirements because they declared bankruptcy prior to the regulations' taking effect, the other two that were had not provided assurance. The bankruptcy courts restricted EPA or state efforts to obtain proper closures in three cases. The remaining nine facilities were either continuing to operate under bankruptcy provisions or state officials did not know their closure status.

Financial Assurance

The financial test, used by about 75 percent of the facilities GAO reviewed, allows firms to demonstrate through financial ratios and other measures that they are financially strong and can pay closure and postclosure costs without setting aside money. If the financial strength of these facilities changes rapidly, however, adequate funds may not be

available. The trust fund, used by about 7 percent of the facilities, allows a pay-in period of up to 20 years. If the facility closes early in the pay-in period, however, sufficient funds will not have been set aside. On the basis of these potential weaknesses, nine states and one territory have adopted stronger versions of the financial test and/or trust fund, or require that other methods be used.

Because EPA's and the states' financial assurance requirements are new, there was insufficient experience to evaluate their adequacy. Nevertheless, due to the potential for increased federal liability should these requirements prove insufficient, it is important for EPA to monitor and periodically reevaluate the effectiveness of the financial test and trust fund.

GAO also found that states, in assessing the financial condition of a firm using the financial test, may not always be aware of hazardous waste facilities in other states owned or operated by that firm that are also covered by the same financial test. Thus it is difficult for the states to know whether such firms have enough assets to pass the test for all of their covered facilities nationwide. To assist the states, EPA should provide centralized information on multistate firms.

EPA officials agree that monitoring financial assurance requirements and providing centralized information on multistate firms is important, but resource constraints may prevent their implementation.

Inspection of Closed Facilities

Because of changing priorities, EPA's inspection requirements for the 176 closed facilities GAO reviewed have varied from not requiring inspections of closing facilities to requiring that they all be inspected. As a result, 67 facilities were not inspected. Of the 109 facilities (62 percent) that had been inspected either during or after closure, 37 (about 34 percent) had violations. The states GAO visited have recently adopted policies to inspect all closing facilities to assure they close properly.

Compliance and Enforcement

Of the 1,434 hazardous waste facilities in the six states reviewed, state officials could identify only 657 (46 percent) that had submitted financial assurance documents. This occurred either because EPA allowed states to delay implementing the requirements, facilities had not submitted the required documents, or the states did not know if the documents had been submitted. In addition, of 434 documents that were submitted and reviewed, the states found that 34 percent were deficient.

In addition, of the 149 facilities reviewed that had financial assurance or closure violations, enforcement actions were not taken in 13 cases. In the 136 cases where enforcement actions were taken, they were not as strong as EPA policy and guidelines called for in 122 cases, and were not always effective in obtaining timely compliance. EPA is taking steps to strengthen enforcement actions, but more needs to be done to assure that its regional offices consistently implement the guidance.

Recommendations

GAO recommends that the Administrator, EPA, monitor and periodically reevaluate the use of the financial test and trust fund to assure that they provide adequate financial assurance.

GAO is also making recommendations to EPA aimed at (1) improving state capability to evaluate financial test mechanisms submitted by firms with facilities in more than one state and (2) assuring consistency among EPA's regions and the states in enforcing the financial assurance and closure requirements. (See ch. 3.) If resource constraints prevent EPA from implementing these recommendations, GAO recommends that EPA establish resource needs and provide such information to appropriate congressional committees.

Agency Comments

GAO did not obtain official comments on this report. The views of responsible officials were obtained during our work and are incorporated into the report where appropriate.

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Abbreviations

EPA	Environmental Protection Agency
GAO	General Accounting Office
RCRA	Resource Conservation and Recovery Act of 1976

Introduction

National concern has grown in recent years over the proper control and disposal of hazardous waste. As the public has become more aware of the threats hazardous waste poses to human health and the environment, there has been a corresponding increase in demands that such waste be strictly controlled and disposed of in an environmentally safe manner. Such concerns extend to assuring that hazardous waste treatment, storage, and disposal facilities are properly closed when they cease hazardous waste operations and maintained after closure if the wastes are to be left in place.

The Resource Conservation and Recovery Act of 1976 (RCRA), as amended, was enacted to, among other things, regulate the management of hazardous waste, improve waste disposal practices, and reduce land disposal of hazardous waste. Under the Environmental Protection Agency's (EPA's) regulatory program, standards have been established for reporting, recordkeeping, performance, and facility operations for each of the 54,371 generators, 12,422 transporters, and 4,910 facilities that treat, store, or dispose of hazardous waste.

RCRA requires that any person or company owning or operating a facility where hazardous waste is treated, stored, or disposed of comply with regulations requiring contingency planning and emergency procedures; a manifest system for tracking waste; recordkeeping and reporting; groundwater monitoring; facility closure and postclosure care; financial responsibility requirements; the use and management of containers; and the design and operation of waste storage tanks, surface impoundments, incinerators, and underground injection wells. In addition, the regulations include general requirements for waste analysis, security at facilities, inspection of facilities, and personnel training.

RCRA provides that after authorization by EPA the states may administer their own hazardous waste programs.[1] The act also allows the states to obtain interim authorization from EPA to administer their own hazardous waste programs while working toward final program authorization.[2] The states are required to qualify for final authorization by January 31, 1986. As of October 3, 1985, 26 states and the District of Columbia had been granted final authorization, while 17 of the remaining 24 states

[1]RCRA requires that a state program not be authorized unless it is equivalent to the federal program, is consistent with the federal or other state programs applicable in other states, and provides for adequate enforcement.

[2]Interim authorization will be granted only if the state program is substantially equivalent to the federal program.

and two of the five territories had interim authorization. Most of the remaining states without authorization are carrying out various aspects of the hazardous waste program for EPA under cooperative arrangements, although EPA retains overall responsibility.

Through authorization or cooperative agreements, the states are primarily responsible for implementing the program, including inspection, enforcement, and permitting activities. Regulations promulgated by an EPA-authorized state may not impose any requirements that are less stringent than the federal requirements, but states are free to adopt more stringent measures. A total of $44 million and $48.5 million in EPA grant funds were provided to the states in fiscal years 1984 and 1985, respectively, and $54.5 million was allotted for fiscal year 1986.

Overview of Closure, Postclosure and Financial Assurance Requirements

As part of the regulation of hazardous waste under RCRA, EPA has developed standards for: proper closure of hazardous waste treatment, storage, and disposal facilities; postclosure care and monitoring at land disposal facilities (landfills, surface impoundments, waste piles, and land treatment facilities); and assuring the availability of funds for closure and/or postclosure activities.[3] These standards require the owner/operator of a hazardous waste facility to develop plans for closure and (if applicable) postclosure, to prepare cost estimates to cover expenses to implement those plans and, finally, to demonstrate the ability to pay for closure and/or postclosure. Most of the closure and postclosure regulations became effective in November 1981. The financial assurance regulations became effective in July 1982.

The ability to pay for closure and/or postclosure must be demonstrated by using one or more of the financial assurance mechanisms. The mechanism may be a trust fund, surety bond, letter of credit, insurance, or financial test or corporate guarantee that demonstrates the firm's ability to pay for the cost of closure and, if required, postclosure care and maintenance, and that meets the regulatory specifications for the mechanism chosen.

The closure, postclosure, and financial assurance regulations apply to both the owner and the operator of a hazardous waste facility. EPA considers both parties responsible for carrying out the requirements and

[3]Closure refers to the period during which all facility equipment and structures are properly disposed of or decontaminated by removing all hazardous waste and residues. Postclosure is the 30-year period after closure at land disposal facilities during which monitoring, reporting, and maintenance are performed.

leaves it up to the parties themselves to undertake, share, or divide the actual provision of financial assurance. Federal- and state-owned and/or -operated facilities are exempt from financial assurance regulations but not from those pertaining to closure and postclosure.

Additional financial assurance requirements were imposed by the 1984 Hazardous and Solid Waste Amendments to RCRA.[4] Effective November 8, 1984, all owners/operators were required to (1) identify all hazardous and nonhazardous waste management units at the facility, (2) identify any releases that have occurred or are occurring from those units, (3) take appropriate corrective measures to clean up those releases, and (4) demonstrate financial assurance for those corrective measures. The amendments also instruct the EPA Administrator to establish requirements for financial assurance for corrective action as may be necessary or desirable. The status of EPA's efforts to implement these new requirements is discussed in appendix I.

Enforcement Options and Guidance

The enforcement tools available to EPA and the states to obtain compliance include warning letters or notices of violation, administrative or compliance orders, and civil and/or criminal litigation. Warning letters or notices of violation are used to notify facility owners/operators of violations and may specify the date by which a violator must achieve compliance. They are generally used for minor violations where voluntary compliance is expected. Compliance or administrative orders require compliance by a certain date, may assess penalties, and are enforceable through administrative or judicial action. Civil actions (and in certain cases criminal litigation) may be pursued through the courts. Fines or penalties may be sought through these actions.

RCRA authorizes the EPA Administrator to issue compliance orders and assess penalties of up to $25,000 per day for each violation of program requirements. The Administrator may initiate civil actions for appropriate relief for violations of any RCRA requirement, including temporary or permanent injunctions. Where the noncompliance knowingly endangers the public health, criminal actions may also be initiated.

[4]The Hazardous and Solid Waste Amendments are referred to as the 1984 RCRA amendments throughout this report.

Objectives, Scope, and Methodology

Our objective was to respond to the issues reflected in an April 30, 1984, letter from the Chairman, Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce. The Chairman expressed concern about implementation of regulations governing closure and postclosure of RCRA facilities and the adequacy of RCRA's financial assurance requirements. Specifically, the Subcommittee requested that GAO determine the extent to which

- owners/operators of hazardous waste facilities have declared bankruptcy and thereby avoided closure and postclosure costs,
- financial assurance requirements ensure that sufficient funds will be available to close and provide postclosure care at hazardous waste facilities,
- facilities that cease operations are inspected for compliance with closure requirements, and
- EPA and the states are taking enforcement actions for violations of these requirements.

As agreed with the Subcommittee, we performed our review in the following six states and their respective EPA regional offices: Arizona and California, Region IX; Illinois and Ohio, Region V; New York, Region II; and Pennsylvania, Region III. These states were selected on a nonrandom basis considering the number of bankruptcies, number of closed facilities, volume of hazardous waste generated, and geographic dispersion. The six states provided coverage of approximately 23 percent of the bankruptcies filed nationwide, 20 percent of the closures, and 30 percent of the hazardous waste generated annually. Although this selection was not intended to be representative of nationwide conditions, it does provide significant coverage of hazardous waste facility conditions, operations, and regulations.

Our general approach to achieving our objectives entailed reviewing EPA and state policies and procedures, statistical reports, oversight activities, and compliance and enforcement activities in the areas of closure and postclosure, financial assurance, and bankruptcy. We interviewed hazardous waste officials at EPA headquarters, EPA regions II, III, V, and IX, and state environmental agencies, including the Arizona Department of Health Services, California Department of Health Services, Illinois Environmental Protection Agency, New York State Department of Environmental Conservation, Ohio Environmental Protection Agency, and Pennsylvania Department of Environmental Resources. Most of our work was performed in the state agency headquarters and field offices

because the states have been delegated primary responsibility to conduct the RCRA regulatory program.

To achieve our first objective, related to bankruptcy, we reviewed the applicable legislation and legal cases to determine if facility owners/operators have used the bankruptcy law to avoid paying closure and postclosure costs. We contacted all 50 states, the District of Columbia, and the five territories to determine the number of bankruptcies nationwide as of August 1985. Also, we prepared case studies for all RCRA bankruptcies in the six states[5] visited by reviewing EPA regional and state files and by interviewing EPA regional and state hazardous waste officials and attorneys. In some cases we also contacted state attorney general staff attorneys and bankruptcy courts. The information obtained on bankruptcy is contained in chapter 2.

To achieve our second objective, related to financial assurance, we collected or developed information on the degree of compliance with the requirement to obtain financial assurance, as well as the viability of the financial mechanisms allowed. We contacted all 50 states, the District of Columbia, and the five territories to determine which had implemented the financial assurance requirements, and we reviewed their financial assurance regulations. For the four of the six states visited that had implemented the financial assurance requirements (Pennsylvania and New York had not), we collected or developed statistics on the types of mechanisms that were used, the number of financial assurance documents that had been reviewed for adequacy, and the results of these reviews. We also analyzed state procedures for reviewing the documents. We contacted EPA headquarters and regional officials, state officials, and representatives from 18 environmental, industry, and intergovernmental groups to obtain their opinions on the strengths and weaknesses of the federal mechanisms. The information obtained on financial assurance is contained in chapter 3.

As agreed with the Chairman's office, we obtained information from EPA headquarters hazardous waste officials concerning EPA's plans and progress in implementing the November 1984 RCRA amendments, which require (1) financial assurance for corrective action before a facility can be given a permit when a facility is experiencing continuing releases of hazardous waste and (2) financial assurance for corrective action as EPA

[5]Four of six states we reviewed had facilities in bankruptcy—Illinois (8), New York (5), Ohio (3), and Pennsylvania (1).

deems necessary or desirable for facilities, regardless of whether releases have been detected. This information is included in appendix I.

To achieve our third objective, determining the extent of EPA and state monitoring of facility closures and those in postclosure care and maintenance, we reviewed state and EPA files on 176 facilities that were closed between November 19, 1981, and December 31, 1984. This file review was necessary because limited summary data were available from the states or the regions to determine the extent of closure and postclosure monitoring activities. In order to identify the most complete universe of closed facilities in each of the six states, we obtained and compared lists from the responsible EPA region, state headquarters, and each state field office. We collected data on the number, timing, and results of closure inspections using a pro forma data-collection instrument. These data were obtained to show the extent of closure monitoring. We also observed a closure inspection in each state except Pennsylvania,[6] including two land disposal facilities. The information obtained on closure monitoring is presented in chapter 4.

To achieve our fourth objective, related to enforcement actions for violations of closure, postclosure, and financial assurance requirements, we developed and analyzed data during our closed facility file reviews on the number, type, and effectiveness of enforcement actions resulting from closure inspections. We developed and analyzed statistics on financial assurance enforcement on the basis of our review of standardized compliance monitoring and enforcement log forms. The information obtained on enforcement actions is contained in chapters 3 and 4 with the other information obtained on closure and postclosure monitoring and financial assurance.

Our work was conducted from August 1984 through October 1985 and was performed in accordance with generally accepted government auditing standards. As requested by the Chairman's office, we did not obtain official agency comments on the report; however, we did discuss its substance with EPA headquarters and regional staffs, as well as with state officials responsible for hazardous waste programs. Their comments have been incorporated in the report where appropriate.

[6]A closure inspection was not observed in Pennsylvania because none was performed during the period of our field work in that state.

Bankruptcy Has Allowed Avoidance of Closure/Postclosure Costs by Owners/ Operators of Hazardous Waste Facilities

The bankruptcy law is designed to give debtors a fresh start by relieving them from most of their debts while providing a fair and orderly distribution of the debtor's assets to the creditors. As stated in chapter 1, RCRA was enacted to protect the public health and environment by regulating the proper control and disposal of hazardous waste, including the proper cleanup and closure of a hazardous waste facility. When owners/operators of hazardous waste facilities file for bankruptcy, several provisions of the bankruptcy law may conflict with federal and state environmental interests in obtaining proper cleanup and closure at these facilities. Governmental attempts to assure that these facilities are cleaned up and closed may be frustrated by the automatic stay provision (a legal bar to bringing a lawsuit), or by giving the government's cleanup claim a priority only as an ordinary unsecured claim to be paid along with other unsecured creditors. As a result, when the debtor's assets are distributed, insufficient funds may be available to pay cleanup and/or closure costs, and the responsibility for cleaning up, closing, and monitoring the facility will fall to federal or state authorities. Also, until a recent Supreme Court decision, the trustee's abandonment (transfer of the property) back to the bankrupt debtor had interfered with the ability of states to obtain cleanup at a bankrupt facility.

Although precise nationwide statistics were not available on the number of hazardous waste facilities that have filed for bankruptcy, state and territorial officials indicated that 74 such cases have occurred. In the six states we reviewed, the states identified 17 bankrupt facilities, 8 of which were closed or closing. About $4.2 million in public monies had already been expended to clean up or close four of the eight bankrupt facilities that were closed or closing. The remaining four bankrupt facilities were closed or closing at owner/operator expense without public monies. Nine facilities were either continuing to operate under bankruptcy provisions or their closure status was unknown.

Faced with increasing costs of complying with the hazardous waste regulatory requirements, EPA officials, including the Assistant Administrator for Solid Waste and Emergency Response, predict that many more facilities will close. It is likely that federal and state authorities could increasingly be required to provide the environmental safeguards needed at these sites unless (1) more facility owners/operators provide financial assurance that money will be available to pay the costs of cleanup and closure (see ch. 3) or (2) changes are made in the treatment of environmental claims in bankruptcy proceedings.

Federal and State Funds Spent to Clean Up Bankrupt Facilities

We found, on the basis of data provided by the six states reviewed, that owners/operators of 17 facilities in four of the six states we visited had filed for bankruptcy as of January 31, 1985, and eight of the bankrupt facilities had closed or were closing. (See table II.1 and app. II). Federal and/or state cleanup funds had been expended at four of the eight bankrupt facilities in the amount of $4,176,068 to clean up the sites because the facilities posed imminent hazards to public health and the environment. About two-thirds of this amount had been paid by state governments and one-third by the federal sector. In three of these four cases the facilities have been cleaned up, but additional expenses are expected to be incurred to close them properly.

Owners/operators were in the process of paying or had paid the closure costs at the other four closed or closing bankrupt facilities. Of the remaining nine bankrupt facilities not known to be closed or closing, seven were continuing to operate under the bankruptcy laws, and it had not been determined at two facilities if they would be closing or who would pay the closure costs.

Table 2.1: Federal and State Expenditures to Close Bankrupt Facilities

State	Number of bankruptcies	Number on which federal funds expended	Number on which state funds expended	Amount of federal funds expended	Amount of state funds expended	Total funds expended
Arizona	0	•	•	•	•	•
California	0	•	•	•	•	•
Illinois	8	2	2	$1,321,698	$ 354,370	$1,676,068
New York	5	0	1[a]	0	2,500,000[a]	$2,500,000
Ohio	3	0	0	0	0	0
Pennsylvania	1	0	0	0	0	0
Total	**17**	**2**	**3**	**$1,321,698**	**$2,854,370**	**$4,176,068**

[a]City of New York funds.

None of the four facilities where public funds were expended had established financial assurance demonstrating that the costs of closure would be paid. Two of the four bankrupt owners/operators filed for bankruptcy prior to the effective date of the financial assurance regulations. In the other two cases, the bankruptcies were filed less than 5 months after the effective date of the regulations and the owners/operators did not provide financial assurance. Federal and state efforts to get the owners/operators to clean up and close the facilities were restricted by the courts in three of these cases. The specific environmental hazards

posed by these facilities, as well as the arguments made by EPA and the states to obtain cleanup funds and an analysis of the court decisions, are discussed later in this chapter. In the fourth case, both EPA and Illinois funds were expended. An EPA region V attorney told us that no legal action was taken by EPA against the owner/operator because of insufficient assets and because EPA was able to obtain full reimbursement ($161,000) from the generators of the waste.

As of August 1985, 74 RCRA facilities had filed for bankruptcy, according to state and territorial officials. The EPA Financial Responsibility Program manager expects that as a result of the increasing regulatory requirements and their costs imposed by the 1984 RCRA amendments, more bankruptcies will occur. The 1984 RCRA amendments require changes in facility design and operating requirements that will add substantial operating costs. In addition, the amendments require cleanup of any contamination, no matter when the contamination occurred, even for those facilities that are closing (see app. I). Cleanup costs are estimated by EPA to range between $2 million and $4 million per land disposal facility. A July 1984 EPA study indicated that in 50 years, 23 to 30 percent of the firms owning land disposal facilities will go bankrupt either because of routine business failures or failures induced by the cost of correcting contamination problems.

An indicator of the large number of facilities that will likely close as a result of the amendments is the number of land disposal facilities responding to the act's requirements that owners/operators either certify compliance with groundwater monitoring and financial responsibility requirements by November 8, 1985, or go out of business. This amendment was enacted in response to widespread noncompliance with such requirements. As of December 1985, nearly two-thirds of the estimated 1,500 land disposal facilities nationwide did not comply with the certification requirements and, therefore, must close.

Applicable Provisions of Bankruptcy Law

Congress enacted the Bankruptcy Code[1] to provide a fair distribution of a debtor's funds among creditors and to give debtors a fresh start by relieving them from most of their debts.

Owners/operators of hazardous waste facilities regulated under RCRA can be the subjects of proceedings under two of the main chapters of the

[1]In 1978, Congress revised and codified the existing bankruptcy law by enacting the Bankruptcy Reform Act of 1978, commonly referred to as the Bankruptcy Code.

act, chapter 7 and chapter 11.[2] A Chapter 7 action is for liquidation and is the most common type of bankruptcy. In such a proceeding, a bankruptcy trustee is appointed to gather the property of the debtor that is not exempt from the proceedings, convert the property to cash, and have the available proceeds distributed to the creditors. A chapter 11 filing is intended to reorganize the debtor's assets according to a court-approved plan of rehabilitation so that the debtor can continue in business. Unlike chapter 7, the creditors are seeking to be repaid not out of the debtor's present property, but out of future earnings. The debtor generally remains in business during this bankruptcy action, retains his/her property, and pays the creditors from earnings over time.

According to EPA guidance on pursuing closure and postclosure costs in bankruptcy, EPA's concerns will depend on whether the facility will continue in operation. If the facility will be closed, as in chapter 7 and some chapter 11 proceedings, the guidance specifies that EPA and the states should be concerned that proper closure occurs, or seek recovery from the debtor of public funds expended for closure. If the facility continues to operate, EPA and the states will want to seek adequate financial assurance. Three key provisions of the Bankruptcy Code have affected EPA's and the states' ability to obtain proper cleanup and closure when bankruptcies occur: (1) the automatic stay, (2) the abandonment of property, and (3) priorities of claims.

Court Decisions Involving Bankruptcy Cases Differ

Court decisions involving the relationship between bankruptcy provisions (such as the automatic stay and priority of claims) and hazardous waste handlers differ, depending on the facts of the cases. The bankruptcy files we reviewed in the states visited, as well as several other recent bankruptcy and federal court decisions, demonstrate that federal and state environmental interests do not always prevail over creditors' interests. In most cases, although the facilities had been found to be a threat to public health and the environment and were in several cases known to be contaminating the environment, the creditors' interests under the Bankruptcy Code prevailed over the federal and state environmental interests in cleaning up the sites. Each of these provisions, and cases to illustrate the application of these provisions by the courts, are presented in the following section of this chapter.

[2]Bankruptcy can also be filed under chapter 13, which deals with debtor rehabilitation. According to EPA, few, if any, RCRA facility owners or operators will likely be eligible to file for bankruptcy under this chapter. It is only available to individuals with unsecured debts below $100,000 and secured debts below $350,000. Most owners/operators would probably exceed these amounts in a bankruptcy action.

Automatic Stay

Filing a bankruptcy petition automatically stays (suspends) most legal actions against the debtor. The general purpose of the automatic stay is to grant the debtor temporary relief from creditors' actions and to preserve the estate for orderly distribution of the debtor's assets to creditors. The stay is against all entities, including a governmental unit.

However, the Bankruptcy Code expressly allows an exemption from the automatic stay for a governmental unit to begin or continue a proceeding to enforce its police or regulatory power, or to carry out a court judgment (other than a money judgment) to enforce its police or regulatory power. If EPA and the states can successfully argue that the environmental proceedings fall within this exception to the stay, they can take action in state court or in federal district court while the bankruptcy proceedings continue. If they are unsuccessful in avoiding the automatic stay, they must pursue the claim in the bankruptcy court, along with other creditors.

The automatic stay provision was a key component of the Bankruptcy Reform Act. (Formerly, a stay could be granted only on application to the court.) The legislative history of the Bankruptcy Reform Act is ambiguous regarding the scope of the exception to the automatic stay for enforcement of police or regulatory power. The Senate and House reports accompanying the legislation describe it broadly and contemplate that an action seeking money damages for violation of environmental laws should not be subject to the stay. However, subsequent floor statements made in both houses of Congress suggest that the stay should apply in environmental matters when the environmental enforcement action is essentially seeking money from the debtor or his estate in bankruptcy. The following statement was made on both the Senate and House floors:[3]

"This section is intended to be given a narrow construction in order to permit governmental units to pursue actions to protect the public health and safety and not to apply to actions by a governmental unit to protect a pecuniary interest in property of the debtor or property of the estate."

This interpretation is consistent with the statutory language, which exempts "the enforcement of a judgment, other than a money judgment," and attempts to balance the protection of the debtor's property with the protection of the public.

[3]124 Cong. Rec. 33,995 (Oct. 5, 1978) (statement of Sen. Dennis DeConcini); 124 Cong. Rec. 32,395 (Sept. 28, 1978) (statement of Rep. Don Edwards).

Although the legislative history has provided some guidance to the courts, judicial rulings have varied, depending on the specific facts of each case. The key to when a court will permit an environmental action to avoid application of the automatic stay is how the court defines the phrase "money judgment." Some enforcement actions are not easily categorized, and courts still must decide which should be favored when both a health and safety interest and a money interest are present. Four court decisions involving the automatic stay provision are summarized below.

American Incineration was one of the four bankrupt facilities in our review where public funds were used to close the facility. The other three cases discussed were not included in our listing of 17 hazardous waste sites but are presented to show how courts decide whether environmental actions are money judgments subject to the stay, or are regulatory actions and therefore exempt. Kovacs, decided by the U.S. Supreme Court, is the leading case in which a proceeding to enforce hazardous waste laws against a bankrupt facility was stayed; Thomas Solvent illustrates a bankruptcy court's decision to stay an environmental action even though the debtor remained in possession and continued to operate its business. In Penn Terra, a federal appeals court ruled that the environmental enforcement action should not be stayed. Although Penn Terra did not deal with a hazardous waste facility, the principles in the case would be applicable to enforcement of hazardous waste laws as well.[4]

American Incineration (Formerly Alburn, Inc.)

Cal-Harbor, the owner of Alburn Inc., a commercial storage and incineration facility, filed for bankruptcy in Illinois on September 4, 1981. In January 1983, Alburn, Inc., was turned over to Professional Construction Company in a separate suit filed against Alburn and its parent corporation, Cal-Harbor. Professional Construction Company created a new operating company called American Incineration and on May 18, 1983, filed for bankruptcy under chapter 11.

Although no more waste was brought to the American Incineration site after Professional Construction Company gained possession, two drums

[4]Although Penn Terra and Kovacs involved companies in two of the six states visited, these bankruptcies were not included in our sample because Penn Terra involved coal mining wastes, which are not regulated by RCRA, and the Kovacs bankruptcy was filed prior to RCRA.

of hazardous waste exploded on July 5, 1983. EPA performed an emergency site cleanup to address the immediate and significant environmental threats. From July 1983 through February 1984, EPA spent $1,160,698 in its cleanup efforts. During the cleanup all of the tanks, as well as the buildings and incinerator, were removed. However, Illinois still has some question as to whether there is a need for further action at the site. According to Illinois, this would probably involve testing and removing soil or capping the site.

On April 12, 1984, EPA took an administrative action to force Professional to close, but Professional obtained a stay from the bankruptcy court preventing EPA from closing the facility. EPA appealed the bankruptcy court injunction. According to EPA, Professional sought to delay closure because it wants to sell the facility to a waste disposal contractor. The district court vacated the order, and the case was remanded to the bankruptcy court which, for the second time, stayed EPA's attempt to close the facility. EPA again appealed the bankruptcy court injunction, and the dispute was still pending in the district court as of August 1985. As a result, EPA was prevented from terminating the facility's operations for at least 16 months after it determined that the facility did not meet federal standards.

EPA is currently negotiating with several hundred generators whose waste was disposed of at the facility for reimbursement of the funds already expended, as well as for the further costs to close the facility properly, according to an EPA attorney.

William Kovacs/Chem-Dyne

In 1976 the state of Ohio sued Kovacs and his wholly owned corporation, Chem-Dyne, operators of a hazardous waste disposal site, in state court for water pollution, nuisance, and violations of state environmental laws. The suit was settled in July 1979, enjoining Kovacs and Chem-Dyne from causing further pollution, requiring them to remove specified wastes from the property, and ordering payment of $75,000 to compensate the state for injury to wildlife.

The cleanup of the site did not proceed as required by the court order. Within two months of the order a large fire engulfed part of the Chem-Dyne site, and a large chemical spill was discovered on the site. In January 1980, rather than finding the inventory of drums on site reduced to 7,500, as required, Ohio EPA found that Kovacs had doubled the number of drum-equivalents on site to almost 30,000.

In February 1980 a receiver was appointed by an Ohio state court at the state's request and was directed to supervise the implementation of the 1979 order. The receiver took possession of the assets, but before he could complete the cleanup, Kovacs filed a petition for personal bankruptcy.

Ohio filed a motion in state court to seek information about Kovacs' post-bankruptcy income and assets for the purpose of attaching Kovacs' wages to clean up the site, but the bankruptcy court stayed these proceedings. The district court and the Court of Appeals for the Sixth Circuit affirmed the bankruptcy court's decision. The Sixth Circuit reasoned that the automatic stay barred governmental units from collecting money in their enforcement efforts.[5] Ohio appealed the Sixth Circuit decision to the Supreme Court. The Supreme Court vacated the decision and turned the case back to the Sixth Circuit for further consideration because Ohio had subsequently argued (as discussed below) that the claims against Kovacs were not claims under bankruptcy law at all and therefore were not subject to the stay.[6]

Ohio's second attempt to collect from Kovacs took the form of another suit in the bankruptcy court, seeking an order that Kovacs' liability under the Ohio injunction was not dischargeable in bankruptcy because it was not a "debt" as defined in the bankruptcy statute. If the state was right, then it could proceed against Kovacs without regard to the automatic stay or other provisions of the Bankruptcy Code.

On appeal, the Supreme Court upheld lower courts' rulings that the cleanup order constituted a claim that the debtor may be released from under the Bankruptcy Code and agreed that Kovacs' duty under the Ohio injunction was in essence a monetary obligation. The court reasoned that after the state receiver was appointed and in control of the site, Kovacs was not in a position to personally take charge of and carry out the removal of waste; the only performance sought from Kovacs thereafter was the payment of money to cover the cost of cleanup. Essentially, under the court's reasoning, the cleanup order had been converted from an order to take some action to an action seeking money—a dischargeable debt.[7]

[5]In re Kovacs, 681 F.2d 454 (6th Cir. 1982) (Kovacs I).

[6]103 S. Ct. 810 (1983).

[7]Ohio v. Kovacs, 105 S. Ct. 705 (1985).

Thomas Solvent Co.

On January 12, 1984, Michigan brought suit in a Michigan state court against Thomas Solvent, which operated a wholesale chemical and solvent storage and distribution business. The complaint alleged that improper storage of toxic chemicals was polluting groundwater and that the contaminated water was moving toward nearby drinking water supplies. The state court found that the groundwater beneath Thomas Solvent's facilities contained levels of contaminants that posed an immediate threat of potentially irreparable harm to the health and well-being of people in the area. The court ordered Thomas Solvent to take certain action to purify and protect the groundwater, at an estimated cost of $2 million.

Subsequently, Thomas Solvent filed a petition for reorganization and continued to operate. Thomas Solvent filed a complaint in bankruptcy court to enjoin the state from proceeding with the state court action and from enforcing any order entered by that court that would require expenditure of assets of the estate. Thomas Solvent claimed that the action of the state should be stayed because it was to enforce a money judgment. The state argued that Thomas Solvent must take the action ordered by the state court and that the assets of Thomas Solvent, estimated to be of a value far below the costs of the ordered action, be used for this purpose until completely depleted. The bankruptcy court decided in Thomas Solvent's favor, holding that the automatic stay applied; the court stated that it was bound by the Sixth Circuit's decision in Kovacs (subsequently affirmed by the Supreme Court). The court reasoned that the automatic stay applied since compliance with the order would require the expenditure of funds. Unlike Kovacs, however, the debtor remained in possession and continued to operate its business. The court stated that if Thomas Solvent continued to operate without liquidating, the court would lift the automatic stay.[8]

Penn Terra, Ltd.

In May 1982 Pennsylvania obtained an injunction in state court against Penn Terra, Ltd., a bankrupt coal mining company, to compel Penn Terra to correct violations of several Pennsylvania environmental laws. The violations included failure to backfill areas affected by strip mining; failure to maintain backfilling equipment on the site; failure to revegetate areas affected by the strip mining operation; and failure to seal a deep mine opening at the strip mining site. Pennsylvania also sought to enforce an earlier agreement that legally bound Penn Terra to correct these violations.

[8]In re Thomas Solvent Co., 44 B.R. 83 (W.D. Mich. 1984).

Penn Terra filed a petition in bankruptcy court, contending that the state proceeding violated the automatic stay provision of the Bankruptcy Code. The bankruptcy court found that the state actions were actions to enforce a money judgment and enjoined Pennsylvania from enforcing the order it had received from the state court; the district court affirmed the decision.

On appeal, the Third Circuit Court of Appeals reversed the district court's decision and held that the automatic stay provision did not apply. The Third Circuit determined that the state court order was not a money judgment because the action was brought to compel the performance of remedial acts. The Third Circuit adopted a traditional definition of "money judgment." This decision affirmed Pennsylvania's power to protect the health and safety of its citizens from environmental hazards as against the competing interests of the bankrupt company and its creditors.[9]

Abandonment of Hazardous Waste Sites

A bankruptcy trustee may petition the bankruptcy court to allow abandonment of any property that is burdensome or of inconsequential value to the estate. Such abandonment may be to any person with an ownership interest in the property, including the debtor. This provision had in the past affected the ability of EPA and states to enforce environmental laws but a recent Supreme Court decision has resolved this issue by prohibiting such abandonment.

The filing of a bankruptcy petition creates an estate that generally consists of all of the debtor's property. The trustee, charged with administering the bankrupt estate, might be prompted to abandon a hazardous waste facility to the prior owner, the debtor, if the cost of cleanup exceeded the value of the property. Having no other assests, the debtor would be unable to clean up the site, creating a continuing danger to public health and safety.

In a January 1986 Supreme Court decision concerning Quanta Resources Corporation, a waste oil storage and reprocessing business, the Supreme Court ruled that the trustee could not abandon two hazardous waste facilities in violation of state laws designed to protect public health and safety. Because earlier decisions of the bankruptcy and district courts had allowed abandonment, public monies were required in the cleanup and closure of the Quanta facility in New York, which was one of the 17

[9]Penn Terra Ltd. v. Dept. of Environmental Resources, 733 F.2d 267 (3d Cir. 1984).

bankruptcies included in our list of reviewed sites. The Quanta cases are briefly summarized below.

Quanta Resources Corporation

Quanta Resources Corporation has facilities in Long Island City, New York; Edgewater, New Jersey; and Syracuse, New York. Quanta filed for reorganization under the Bankruptcy Code on October 6, 1981 (later converted to a liquidation proceeding).

The trustee sought to abandon the Long Island City, New York, and the Edgewater, New Jersey, facilities (to Quanta), asserting that the substantial expenditures to guard, repair, clean up, and dispose of the waste would render the property a burden on the estate. Both facilities contained waste oil and other chemicals that were being managed in violation of provisions of state environmental laws. New Jersey and New York considered both facilities to be in a bad state of repair and had found that the waste oil and sludge on-site was contaminated with PCBs (polychlorinated biphenyls). New Jersey and New York objected to the trustee's abandonment, contending that because Quanta had no assets, the abandonment would in effect be a disposal of hazardous wastes under New Jersey and New York law. In addition, the states argued that the abandonment of facilities in such a state of disrepair would create a continuing violation of state and local hazardous waste storage laws.

The bankruptcy court allowed the abandonment, as did the district court, but the Third Circuit Court of Appeals reversed it. The Third Circuit refused to permit abandonment, holding that Congress did not intend that the trustee's abandonment power be unrestricted by public health and safety laws. The court balanced the policies of the opposing interests involved and found that abandonment would contravene state law, with a serious impact on public health and safety. The Third Circuit accorded the interest in protecting public health greater weight than the policy to preserve the estate for distribution to creditors. The court stated that allowing trustees to dispose of hazardous waste under the cloak of the abandonment power would transform citizen compliance with environmental protection laws into governmental cleanup by default.[10] In a ruling issued January 27, 1986, the Supreme Court agreed with the Third Circuit ruling that a trustee may not abandon property in contravention of a state law or regulation that is designed to protect

[10]Matter of Quanta Resources Corp., 739 F.2d 912 (3d Cir. 1984); In re Quanta Resources Corp., 739 F.2d 927 (3d Cir. 1984).

public health and safety from identified hazards such as those posed by hazardous waste.[11]

The Quanta cases leave several open questions, however. New York had already expended money—$2.5 million—to partially clean up the facility located there and sought reimbursement of its cleanup expenses as an administrative expense. The Third Circuit had remanded this issue for resolution by the bankruptcy court, did not order Quanta to complete the cleanup at the site, and did not offer guidance about what source of funds would pay for the cost of cleanup. The Supreme Court also expressly stated that it was not addressing these issues. Therefore, the effect of this decision on other creditors and the amount of funds the states will receive for environmental cleanup is uncertain.

Priorities of Claims

If EPA or a state is unsuccessful in avoiding the automatic stay and therefore has to pursue its environmental protection claim in bankruptcy along with other creditors, it may attempt to obtain priority status for cleanup costs—that is, request that claims for cleanup, closure, and postclosure care be given priority over other creditor claims. The level of priority given the claim determines the likelihood that the claim will be paid. Secured claims (by a lien on property) are accorded the highest priority in a bankruptcy proceeding. The highest priority for unsecured claims is administrative expense status. Administrative expenses include necessary costs and expenses of preserving the estate incurred after filing of the bankruptcy. Claims in this category are normally paid after secured claims.

In order to obtain the highest priority for their claim, EPA and the states may argue that they are entitled to a lien under federal or state law and recover cleanup costs under this lien. If they are unable to obtain a lien upon the bankrupt estate, EPA and states might attempt to obtain first priority among unsecured creditors by asserting that their claim for reimbursement of expenses falls into the administrative expense category as necessary costs to preserve the estate.

Priority status does not necessarily guarantee payment of the debt. For example, if the property of the estate is valueless, all claims will be left unpaid, including those that are secured. Even if assets are available,

[11] Midlantic National Bank v. New Jersey Dept of Envtl. Protection, 54 U.S.L.W. 4138 (U.S. Jan.27, 1986).

after satisfying secured claims, little or no funds may be left to pay administrative expenses.

One of the 17 bankruptcy cases in our review, Parsons Casket Hardware Company, involved an unsuccessful attempt by Illinois to have cleanup costs declared administrative expenses. Parsons Casket Hardware Company, a storage facility, filed for bankruptcy liquidation on August 7, 1982. The state filed a motion with the bankruptcy court that, among other things, the trustee be required to expend funds to abate the environmental violations at the site. The state wanted to classify the expenditure as an administrative expense. The bankruptcy court denied the state's motion for cleanup as an administrative expense. On May 2, 1985, the district court affirmed the decision. Administrative status was denied on the basis that, under Illinois law, the trustee was not "managing or operating" the debtor's business and that given the condition of the site, the trustee's responsibility was to reduce the debtor's estate to money and distribute it fairly among the creditors. The state's claim as an unsecured creditor was still pending in the bankruptcy court as of September 1985.

On October 2, 1984, while this suit was pending, Illinois determined that the site was releasing a hazardous substance into the environment and was threatening to release additional quantities of hazardous waste. Illinois cleaned up a major portion of the site from October 1984 through February 1985 using $350,000 of Illinois hazardous waste cleanup monies, but more funds are expected to be required to close it properly. A portion of the site, a building, was sold on condition that the new owner clean up the inside of the building. The state also filed suit against the parent company in state court to obtain cleanup on the basis that it had disposed of waste at the Parsons facility and, therefore, was liable as a generator. The state and Parsons agreed to a settlement of $13,834, along with a $500 penalty, on August 14, 1985. The state is currently in the process of taking action against the other generators for reimbursement of cleanup costs.

Conclusions

The bankruptcy law allows room for varying legal interpretations regarding the redress of environmental concerns when hazardous waste facilities file for bankruptcy. The bankruptcy cases we reviewed and several other recent bankruptcy and federal court decisions demonstrate that neither protection of public health and the environment nor creditors' interests have consistently prevailed. Given these conditions, federal and state governments are vulnerable to paying the costs to

clean up or close bankrupt hazardous waste facilities. Although thus far 74 hazardous waste facilities nationwide have been involved in bankruptcy, the potential exists for an increasing number in the next few years as costly new RCRA amendments are implemented. Correspondingly, the number of facilities requiring public funds to close them properly may increase.

To mitigate the potential public liability, the Bankruptcy Code could be revised to prove that the automatic stay does not apply to enforcement of environmental cleanup (whether by injunctions, money judgment, payment, reimbursement, or any other manner). The Bankruptcy Code could also be revised to provide that cleanup and closure costs have priority status as a secured lien[12] or as administrative expenses.

Such options and the ramification of the Supreme Court's ruling on abandonment raise broad policy questions beyond the scope of this report. While RCRA was enacted to protect the public health and the environment, this purpose comes into conflict with the bankruptcy law providing for fair distribution of assets to creditors. For example, if creditors' claims were always given lower priority than environmental cleanups, the creditors may, in effect, suffer a disproportionate burden of the cost of such cleanups. The public interest may dictate that these costs be shared on a broader scale, such as would take place if cleanups were publicly funded. Such changes may also lessen the ability of facility owners/operators to obtain credit, which may, in turn, adversely affect the development of needed hazardous waste treatment, storage, and disposal capacity.

To ensure that facility owners/operators—even those financially troubled or bankrupt—will have adequate funds to properly close their facilities, EPA requires owners/operators of all hazardous waste treatment, storage, and disposal facilities to establish some form of financial assurance. None of the bankrupt facilities we reviewed that required the expenditure of public funds had financial assurance because the requirements had not been implemented or had been implemented

[12]The current administration, House, and Senate versions of the proposed Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) [commonly called Superfund] Amendments include a provision to establish a lien for any federally incurred cleanup costs, with the amount of the lien to be limited to the value of the property. Superfund was enacted in 1980 to provide liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. If enacted, it is unclear what impact the federal lien amendment will have on recovery of Superfund monies. We mention this proposed provision, however, to show that there is already some support for giving cleanup expenses priority as a lien.

shortly before the bankruptcy was filed. However, even when implemented, financial assurance requirements may not always provide the intended assurances. EPA and state implementation of the financial assurance requirements is discussed in the following chapter.

Financial Assurance Requirements Do Not Assure That All Facilities Have Sufficient Funds for Closure and Postclosure Costs

RCRA requires that owners/operators of hazardous waste facilities provide financial assurance that funds will be available to pay for proper closure of their facilities and postclosure care and maintenance when required. The purpose of the financial assurance requirements is to increase the likelihood that owners/operators—and not the public—will pay these costs. The financial assurance requirements, however, may not always provide the intended assurance. We found (1) inherent weaknesses in two of the financial assurance mechanisms used by the majority of facilities nationwide that may result in insufficient funds being set aside, (2) delayed implementation of the requirements by two of the states visited, and (3) compliance and enforcement problems in the other four states.

Financial Assurance Requirements

Financial assurance requirements are designed to assure that when hazardous waste facilities cease operations, their owners/operators will have adequate funds for closure and postclosure activities. The closure and postclosure plan and funding must provide for such routine operations as removal and transportation of all hazardous waste and contaminated soil. In addition, sampling, testing, and monitoring both contaminated and uncontaminated areas within and adjacent to the site may be required during site closure and for up to 30 years after closure. According to EPA, the costs of these activities can run into millions of dollars. Mechanisms used to demonstrate a firm's ability to pay these costs are listed and defined below.

- Trust Fund: an agreement with an authorized bank or other institution to act as trustee of payments made by the facility owner/operator. Release of these funds may be directed only by EPA or the states.
- Financial Test: a method of demonstrating adequate resources to cover closure and postclosure costs. An owner/operator may demonstrate that he does not need to set aside funds in a trust or make other arrangements to pay closure and/or postclosure costs by passing at least one of two financial tests.
- Surety Bond: a contract with a qualified surety company that guarantees payment for or performance of closure and/or postclosure if the owner/operator is unable to do so.
- Letter of Credit: a letter issued by an authorized bank or other institution in which payment of closure and/or postclosure costs is guaranteed by the issuer if the owner/operator is unable to do so.
- Insurance: insurance issued by a licensed company to pay closure and/or postclosure costs for the owner/operator, with payment limited to the face value of the policy.

- State Mechanisms and State Guarantees: states may allow other mechanisms that provide equivalent assurance to that of the mechanisms specified in the federal regulations, or they may guarantee payment.

Weaknesses of the Trust Fund and Financial Test

Because of weaknesses in the trust fund and financial test—the two most widely used financial assurance mechanisms—funds may not always be available to close facilities properly and provide for postclosure care.

We solicited comments from EPA headquarters, EPA regional, and state officials, and 18 environmental or industry groups concerning the strengths and weaknesses of all five federal mechanisms. They expressed concerns about two mechanisms: the trust fund and the financial test. These mechanisms are used by about 82 percent of RCRA facilities nationwide, according to EPA estimates. In the states we visited that had implemented financial assurance requirements, 75 percent of the facilities used the financial test and 7 percent used the trust fund. The comments we received are summarized in the following paragraphs. Information on which states and territories do not allow these mechanisms or allow them with more restrictive terms is also provided.

Trust Fund

One way to fulfill the financial assurance requirements is to establish a trust fund at an authorized bank or other institution whose trust activities are examined and regulated by a state or federal agency. Nationally, there are about 4,000 institutions with such qualifications.

The trust fund is to be funded by annual payments that ultimately amount to the total closure and/or postclosure cost estimate. The pay-in period varies but has a maximum of either 20 years or the remaining operating life of the facility, whichever is shorter. According to EPA, a pay-in trust fund was allowed to provide a mechanism affordable to owners/operators with limited resources who might not be able to afford or qualify for the other mechanisms.

EPA regional and state financial assurance coordinators commented that the trust fund does not provide enough assurance that, during the early years of the pay-in period, sufficient funds will be available to pay for closure and/or postclosure costs if the facility closes sooner than expected. They suggested that the pay-in period be shortened and/or that an accelerated payment schedule with higher payments in the early years be required.

When considering what financial assurance mechanisms it should allow, New York commissioned a consultant to study the various mechanisms and three reports were issued. In addressing the trust funds, the consultant's March 1984[1] report noted that trust funds have weaknesses, particularly for commercial hazardous waste firms that depend on their hazardous waste operations for a major source of their revenues. The report noted that such firms operate in a highly uncertain environment and could close prematurely, well before any sizable amount of money is set aside in a trust fund. The consultant recommended that commercial facilities using the trust fund be required to fully fund their trust fund when established, with no pay-in period allowed.

On the basis of our review of financial assurance regulations for all states, the District of Columbia, and three of the five territories,[2] we found that Pennsylvania, Tennessee, and Guam exclude use of the trust fund in their financial assurance regulations. Maine, New York, and Wisconsin allow the trust fund with modifications. Maine requires an initial payment of 25 percent of the estimated closure and postclosure costs, requires complete funding within 5 years, and places additional restrictions on types of investments allowed. New York's regulations require new facilities and certain types of existing facilities defined as "revenue-oriented"[3] to fully fund the trust fund within 1 year. Wisconsin also requires the trust fund to be fully funded at the time it is established. Michigan plans changes to its existing trust fund regulations to make them more stringent and require full funding of the trust fund with no pay-in period allowed.

Financial Test

To use the financial test option, a facility owner/operator must demonstrate financial soundness by passing one of two financial tests. Both alternatives require the owner/operator to have a tangible net worth and U.S. assets equal to at least six times the sum of closure and postclosure care cost estimates and a minimum tangible net worth of $10 million. The financial test option is attractive to many large domestic

[1] Analysis of Financial Viability Standards for Guaranteeing Financial Responsibility in the State of New York, ICF Incorporated.

[2] No responses were received from American Samoa and the Virgin Islands.

[3] A "revenue-oriented" facility means any company for which a majority of both its operating revenues and profits after taxes for the prior three years and for the current and next year have been and are expected to be attributable to the transportation, storage, handling, disposal, treatment, or management of hazardous waste or related activities or the ownership of or leasehold or other interest in any persons, facilities, or other assets engaged in or used for such activities.

firms in a strong financial position because the direct cost to the firm will almost certainly be less than the costs of alternative assurance options, since the firm is neither building a fund nor paying a risk premium, such as an insurance policy would require. There is no need for third-party involvement, and no funds need to be set aside in anticipation of future costs. To pass this test, the owner/operator must submit data each year from his independently audited financial statements, including: (1) a special report from an independent auditor and (2) a copy of the standard auditor's report accompanying the annual financial statements. Qualifications in the auditor's opinion may be grounds for disallowance.

If an owner/operator's parent corporation passes the financial test, the parent's guarantee of closure or postclosure costs may be used as financial assurance. The guarantee must be from a parent firm that directly owns at least 50 percent of the owner/operator's voting stock.

As mentioned in the previous section, the financial test is the most commonly used mechanism; it is also probably the least costly mechanism for owners/operators. If the owner/operator or the parent company already has audited financial statements, the only additional expense involved is the auditor's charge for the special report comparing the financial data submitted to EPA with data in the financial statements. According to a June 1983 consultant's report[4] prepared for New York, the cost averages approximately $300 annually.

EPA's first proposed financial assurance regulations did not allow the use of the financial test. After receiving public comments that it be allowed, however, EPA evaluated different forms of financial tests and selected one that in its judgment would best minimize both public and private costs to properly close facilities. In selecting this test, however, EPA acknowledged that it may not work in every case. EPA estimated that using the financial test chosen, about 2.5 facilities per year would go bankrupt without having sufficient funds to close, even though these facilities had passed the financial test earlier. This estimate is based on the assumption that a number of facilities that failed the financial test 2-3 years prior to going bankrupt would be able to provide alternative financial assurance. However, this assumption may be optimistic. Specifically, financial institutions and insurance companies may be reluctant to offer financial assurance to such facilities if there is any

[4]Analysis of Alternative Methods of Guaranteeing Pre-Closure, Closure, and Post-Closure, ICF Incorporated.

indication of financial distress. It is also unclear how such facilities could manage the insurance premiums, bank fees, or trust fund payments.

Our review of bankrupt facilities, discussed in chapter 2, also indicates that EPA's estimate may be low because even though the number of bankrupt facilities we reviewed was small and financial information often not available, we found that one corporation that owned 3 of the 17 facilities reviewed could have passed the financial test in each of the three years preceding the year in which bankruptcy was filed.

EPA regional and state financial assurance coordinators commented that they do not believe that the financial test provides sufficient assurance that the owner/operator will be able to pay the costs of closure and, where applicable, postclosure. The reasons cited were that no funds are specifically set aside for this purpose and that the financial position of companies can change rapidly.

As previously stated, New York commissioned a consultant to study various financial assurance mechanisms. In a May 1983 report,[5] the consultant surveyed ten states regarding the financial test. The most repeated opinion was general dissatisfaction; many state officials said that, should a facility fail, protection of public health and the environment is unduly dependent on public funds.

Other criticisms were directed toward excessive complexity, lack of clarity, and discrimination against small firms. Finally, although states are free to modify the test, modification is both expensive and difficult (in one case, it required a 2-year legislative process).

In the previously mentioned March 1984 New York consultant's report, the consultant identified several problems with the financial test. He suggested strengthening the financial test and not allowing it for commercial facilities because

(1) Commercial firms operate in a highly uncertain economic and regulatory environment, and any change could quickly and adversely affect the operations and financial performance of a commercial firm.

[5]Analysis of Use of the Financial Test for Guaranteeing Financial Responsibility in the State of New York, ICF Incorporated.

(2) The financial test is not itself an instrument of financial assurance and does not guarantee ready access to funds; a firm is not required to set any funds aside or to make a written commitment that funds will be available when needed.

(3) The performance of the financial test, especially its ability to detect those firms likely to be unable to meet their financial obligations, remains untested for commercial firms.

On the basis of a survey of financial assurance requirements in all states, the District of Columbia, and three of the five territories, we found that Pennsylvania, New Jersey, Massachusetts, and Guam do not allow use of the financial test. Louisiana, Missouri, New York, and Wisconsin allow use of a modified financial test. Louisiana prohibits use of the financial test by commercial land disposal facilities. New York does not allow facilities that it defines as revenue-oriented to use the financial test. Missouri requires owners/operators to have a tangible net worth of at least $50 million as compared with the $10 million required by the federal regulations. Wisconsin's financial test is available only to landfill disposal facilities, and the financial requirements to pass the test are more stringent. Michigan plans to modify its existing financial test regulations to make them more stringent, including requiring (1) either total assets in Michigan of at least $50 million or total assets in Michigan that are at least six times the sum of the approved closure and postclosure estimate, whichever is larger, or (2) tangible net worth of $20 million.

Multistate Financial Tests Are Difficult to Review

In addition to the potential weaknesses in the financial test discussed above, problems exist in determining the adequacy of the test when companies operate in more than one state. Since the financial test must cover the total estimated costs of closure or postclosure care for all facilities for which the financial test is being used, many tests can cover facilities in more than one state. In California, Arizona, Illinois, and Ohio, for example, there were a total of 220 multistate financial test submittals, each of which requires review by a minimum of two states. One test covered 157 facilities in 41 states, which required 41 separate reviews by state officials of the same test. This makes it difficult for the individual states to determine if the owner/operator successfully passes the financial test. Under the current system, it is difficult, if not impossible, for the individual states reviewing the financial tests to verify that all facilities owned by the owner/operator, for which financial assurance is to be provided by the financial test, have been identified by

the owner/operator, as required. In addition, for any out-of-state facilities covered by the test, the individual states must contact the respective state environmental agencies to verify that the closure and/or postclosure cost estimates covered by the test are current and accurate. The current system also results in duplication of effort because a staff person in each state must review the financial test computation as well as verify each cost estimate amount.

Nationwide statistics were not available from EPA on the number of multistate financial tests. In the four states included in our review, the multistate financial test was being used by 50.5 percent of the RCRA facilities subject to financial assurance regulations, as shown in table 3.1.

Table 3.1: Usage of Multistate Financial Test

	Number of multistate tests	Facilities using multistate test	Facilities subject to financial assurance regulations	Percentage of facilities using multistate financial test
California	63	129	360	35.8
Arizona	11	15	35	42.9
Illinois	85	174	351	49.6
Ohio	61	174	228	76.3
Total	**220**	**492**	**974**	50.5

Due to the effort that would be required to verify that all out-of-state facilities covered by the test are listed and the cost estimate amounts are accurate, California, Arizona, Illinois, and Ohio check only in-state facilities. State financial assurance coordinators emphasized that they do not have time to contact other states to check the completeness of the list of facilities and the accuracy of closure and postclosure cost estimates for facilities located in other states. In these four states the 220 multistate financial tests included 4,303 out-of-state facilities. By not checking, the states did not know if out-of-state closure and postclosure costs totalling about $1.5 billion included current cost estimates for all facilities, and these states could not determine if the test had actually been passed.

EPA had already identified two financial test submissions that included different closure costs for two facilities. According to a memorandum from an EPA region V official, this problem is potentially widespread

because companies may be understating their total closure costs by submitting different lists of facilities covered and different closure cost estimates to the EPA regions and/or states and thus making it easier to pass the financial test. The two differing financial test cost estimates identified varied by $11.1 million.

EPA regional and state financial assurance coordinators strongly support a centralized nationwide approach to review multistate financial tests in order to determine that all facilities covered are listed, to check the accuracy of the amount of closure and postclosure cost estimates, and to reduce the duplication involved in reviewing the financial test submissions. In 1982 EPA region V and region VIII offices conducted a pilot test to centralize and automate the financial test review. EPA concluded that the automated financial test pilot project was successful and estimated that an automated (versus manual) system would save government and the private sector $1 to $1.3 million annually and reduce the administrative burden. Federal and state costs would be reduced an estimated $75,000 to $130,000 annually, depending on who administered the program. However, as of October 1985, EPA had not completed development of this automated financial test or taken any other action to develop a centralized approach. Resources allocated to the project for fiscal year 1985 were redirected to implementation of the 1984 RCRA amendments. According to the chief of EPA's Financial Responsibility and Assessment Branch, EPA does not expect to fund the project in fiscal years 1986 or 1987 because, although it is important, it is of lower priority than developing regulations to implement financial responsibility for corrective action and other new requirements imposed by the 1984 RCRA amendments.

Monitoring of Effectiveness of Mechanisms Is Needed

We noted that despite the potential weaknesses of the trust fund and the financial test, EPA has no plans to monitor and periodically reevaluate the effectiveness of these two mechanisms—or the other allowed mechanisms—during actual closures to provide information for use in determining if these mechanisms should be eliminated or modified. According to the Deputy Director of EPA's Permits and State Programs Division, it is important that the effectiveness of the mechanisms be monitored; the division considered evaluating the effectiveness of the mechanisms in fiscal year 1986, but decided against doing so because of lack of resources.

The weaknesses described earlier, along with the absence of EPA plans to monitor the effectiveness of the mechanisms, are of special concern

because these same mechanisms are being required to cover other types of facilities or costs. For example, in May 1984 EPA published final regulations requiring that owners/operators of underground injection wells provide financial assurance for closing costs, including plugging and abandonment, using the same mechanisms. The 1984 RCRA amendments imposed additional financial assurance requirements, specifying that these same mechanisms be used, with the specific terms of the mechanisms to be established by EPA. The amendments require hazardous waste facility owners/operators to provide financial assurance for corrective action in case of contamination, as discussed in appendix I. In addition, owners/operators of underground storage tanks (there are at least 3 million tanks nationwide) are required to use these mechanisms to provide financial assurance for corrective action and third-party liability, should leaks occur. Many of the underground injection well and tank owners/operators may already be using the financial test to provide financial assurance for closure and/or postclosure at any treatment, storage, or disposal facilities they also own.

Many Facilities Do Not Have Financial Assurance

Overall, of the 1,434 facilities[6] in the six states reviewed, state officials were aware of only 657 (46 percent) that had financial assurance (see table 3.2). The primary reasons that owners/operators of fewer than half of the facilities provided such assurance were:

- EPA allowed states to delay implementing the financial assurance requirements,
- owners/operators did not submit financial assurance documents (although required), and
- one state did not know if most owners/operators submitted the required financial assurance documents.

[6]Federal and state hazardous waste facilities were excluded because EPA regulations specifically exempt them from compliance with the financial assurance regulations.

Table 3.2: Facilities in Six States With Financial Assurances

		Facilities	Percentage
Reason facility may not have financial assurance:			
Not required by state	425[a]		
Owner/operator failed to submit	109		
Status unknown	243[b]		
Facilities either without financial assurance or status unknown		777	54
Facilities with financial assurance		657	46
Total		**1,434**	**100**

[a]Although not required, some facilities in Pennsylvania and New York may have voluntarily provided financial assurance.

[b]California did not know the number of facilities that had financial assurance.

Where financial assurance documents were submitted and reviewed, the states found deficiencies in 147 (34 percent). In addition, state enforcement has not always been effective in obtaining compliance.

EPA Allowed States to Delay Implementing Financial Assurance Requirements

The federal financial assurance regulations became effective on July 6, 1982. Rather than requiring facilities to provide financial assurance by a specified date, as is done for the requirements contained in most other new hazardous waste regulations, EPA chose to allow the states until the time they received interim authorization for permitting activities to implement these requirements. EPA expected that all states would receive such authorization by the January 1985 deadline originally required by RCRA. However, this deadline was extended to January 1986 by the 1984 RCRA amendments.

As a result of EPA's approach, two of the six states we visited, New York (with 284 facilities subject to these regulations) and Pennsylvania (with 141) had neither adopted their own financial assurance regulations nor implemented the federal regulations until October and September 1985, respectively—over 3 years after the requirements became effective.[7] According to a New York solid waste management specialist, the New York General Assembly had directed New York to review the federal financial assurance requirements before developing their own. New York's financial assurance regulations were first promulgated in January 1984 and were repromulgated in October 1984 as a result of substantial negative comments on the initial proposal. Final regulations

[7]As of August 1985 all 44 other states, the District of Columbia, and three of the five territories indicated that they had either adopted their own financial assurance regulations or implemented the federal regulations.

became effective in July 1985, and all hazardous waste facility owners/operators had until October 1985 to comply. Pennsylvania did not adopt its financial assurance regulations until March 1985, and all hazardous waste facility owners/operators had until September 1985 to comply. These regulations were only recently enacted because the state's regulatory process requires legislative passage of regulations, which in this case took 2 years.

Many Facilities Have Not Submitted Financial Assurance Mechanisms

According to state records, owners/operators of 17 percent of the facilities subject to the financial assurance requirements in Arizona, Illinois, and Ohio had not submitted financial assurance documents. Table 3.3 shows, by state, the number of operating facilities that were subject to the financial assurance requirements as of September 30, 1985, and number of facilities that had submitted financial mechanisms. As discussed above, neither Pennsylvania nor New York required financial assurance until September and October 1985, respectively. California reviewed financial assurance documents from all of its 117 major[8] facilities, but did not know how many of its 243 nonmajor facilities had submitted documents.

Table 3.3: Statistics on Financial Assurance Submissions As of September 30, 1985

	Facilities subject to requirements	Facilities that submitted documents	(%)	Facilities that did not submit documents	(%)
Arizona	34	29	(85%)	5	(15%)
Illinois	390	296	(76%)	94	(24%)
Ohio	225	215	(96%)	10	(4%)
Total	**649**	**540**	**(83%)**	**109**	**(17%)**

State financial assurance coordinators told us that the primary problems with financial assurance compliance were nonsubmission and late submission. Some facility owners/operators, they said, lack familiarity with the requirements, while others find compliance financially burdensome.

Many facilities that had not submitted a financial document have closed or are closing, as shown in table 3.4. This is of concern because, as noted in chapter 2, owners/operators of 17 closed facilities in the six states visited had already declared bankruptcy and public monies were expended for cleanup in four of these cases. Table 3.4 presents a range

[8]According to EPA's definition in use during fiscal year 1985, major facilities include all land disposal facilities, incinerators, and other selected treatment and storage facilities, the total of which is to comprise approximately 10 percent of all facilities in a particular state.

for the number of closed facilities, rather than a specific figure, because for many facility closures where no closure plan was submitted, we could not determine if the facility closed before or after the effective date of the financial assurance regulations. Since the basic intent of the financial assurance requirements is to increase the likelihood that owners/operators will have sufficient funds to close properly, the high number of facilities closing without financial assurance could potentially result in it being necessary to expend public funds to close many of these facilities properly.

Table 3.4: Number of Facilities That Were Closed or Were Closing As of 12/31/84 and Had Not Submitted a Financial Assurance Document

	Closing facilities	Closed facilities
Arizona	2	3
California	7	0-14
Illinois	25	23-39
Ohio	17	9-11
Total	**51**	**35-67**

Many Financial Assurance Documents Have Deficiencies

Table 3.5 shows that when financial documents are submitted and reviewed, many are found to be deficient. Of 434 documents reviewed during 1984 in Arizona, Illinois, and Ohio, 147 (34 percent) had deficiencies or violations of regulatory requirements. California did not know the specific extent of compliance with financial assurance requirements, although the California financial assurance coordinator estimated that approximately 17 percent of the total number of facilities in the state were in violation. All of California's 117 major facilities were reviewed for compliance, and 11 of these were found to be in violation. The state financial assurance coordinators told us that cost estimates on which the amount of financial assurance coverage was based were frequently not for the current year, had not been updated for inflation, or were incomplete because the total closure/postclosure estimates did not include estimates for all facilities covered. They also stated that many financial assurance documents contained incorrect wording or clerical errors that may affect their enforceability.

Enforcement Actions Have Not Always Been Effective

EPA compliance and enforcement guidelines, established in October 1982, state that violations of the financial responsibility requirements pose direct and immediate harm or threat of harm to the public health or the environment and are to be addressed by issuing compliance orders. These violations can include failure to establish financial assurance for

closure and postclosure care or failure to use the exact wording required for the financial assurance option chosen. Compliance or administrative orders were specified as the initial type of enforcement action to be taken because they require compliance by a certain date, may assess penalties, and are enforceable through administrative or judicial action, as compared with notices of violation, that are generally to be used for very minor violations where voluntary compliance is expected, according to EPA.

Since the states did not maintain statistics on financial assurance enforcement actions, we developed them where possible on the basis of our review of state reporting forms. The fiscal year 1984 grants for Arizona, Illinois, and Ohio required the states to review all major facilities for compliance with the financial assurance requirements and to prepare standardized compliance monitoring and enforcement log forms for each review. Statistics could not be developed for California, because this requirement was not in its 1984 grant and the logs were not prepared. The requirement was specifically added in California's fiscal year 1985 grant. The results of our review of these forms is shown in table 3.5.

Table 3.5: State Enforcement Actions Based on Financial Assurance Violations Identified During Fiscal Year 1984

	Number of facilities			
	Arizona	**Illinois**	**Ohio**	**Total**
Number of facilities reviewed	32	92	46	170
Number of facilities with violations	19 (59%)	69 (75%)	24 (52%)	112 (66%)
No enforcement action	1	3	0	4
Total facilities with enforcement actions	**18**	**66**	**24**	**108**
Notice of violation				
1 notice	17	35	12	64
2 notices	•	13	6	19
3 notices	•	3	3	6
Compliance Order	0	0	1	1
One or more notices of violation and referral to state attorney general and/or EPA	0	14	2	16
Referral to EPA	1	1	0	2
Facilities with violations brought into compliance by 1/31/85[a]	15	40	9	64
Facilities still out of compliance as of 1/31/85[a]	4	29	15	48

[a]Based on GAO's review of state records.

Table 3.5 shows that state enforcement actions were generally notices of violation rather than compliance orders, as called for in EPA guidance. Where compliance was not achieved and more than one enforcement action was taken, the states generally issued additional notices of violation rather than taking escalated enforcement action, such as issuing compliance orders.

As of January 31, 1985,[9] 45 of 108 facilities (42 percent) found in violation during fiscal year 1984 where enforcement actions were taken were still in violation. Of the 63 facilities brought into compliance by January 31, 1985, 23 had already been out of compliance 3 or more months. Table 3.6 shows the elapsed time between enforcement action and compliance for facilities brought into compliance. Table 3.7 shows time elapsed since enforcement action for facilities still not in compliance as of January 31, 1985. Although statistics were not available on California's enforcement actions involving financial assurance, overall enforcement action statistics provided by EPA for California showed that few compliance orders were issued in fiscal year 1984. The state made extensive use of notices of violation (309), as compared with compliance orders (22).

Table 3.6: Number of Months Between the First Enforcement Action and the Date of Actual Compliance for Facilities Brought Into Compliance by January 31, 1985

	Less than 3 mos.	3-6 mos.	6-9 mos.	9-12 mos.	Total
Arizona	14	0	0	1	15
Illinois	21	12	5	1	39
Ohio	5	2	2	0	9
Total facilities	**40**	**14**	**7**	**2**	**63**

Table 3.7: Number of Months Between Enforcement Action and January 31, 1985 for Facilities Out of Compliance As of January 31, 1985

	Less than 3 mos.	3-6 mos.	6-9 mos.	9-12 mos.	Over 12 mos.	Unknown	Total
Arizona	1	0	0	1	0	1	3
Illinois	0	3	7	16	0	1	27
Ohio	0	0	2	9	4	0	15
Total facilities	**1**	**3**	**9**	**26**	**4**	**2**	**45**

[9]We reviewed compliance monitoring and enforcement logs through January 31, 1985 in order to capture any enforcement actions taken in early fiscal year 1985 related to the fiscal year 1984 record reviews. We established this date as a cut-off to be consistent among all states visited. We began our fieldwork in the first state in February 1985.

None of the states had specific enforcement policies for financial assurance violations. However, Illinois', Ohio's, and Arizona's general enforcement policies called for less stringent enforcement action than specified in EPA's enforcement guidance. Illinois' and Arizona's policies called for issuing one or more notices of violation in noncompliance cases without regard to the severity of the violation. Those policies also required issuance of a compliance order, or referral to the state attorney general's office or EPA for prosecution if facilities did not respond to the notices of violation. Ohio's policy allowed issuance of notices of violation or compliance orders, but according to the manager of Ohio's Division of Solid and Hazardous Waste, notices of violation are generally used because they are effective. For facilities that failed to take action, compliance orders are issued or the case is referred to the attorney general's office. The Arizona compliance unit manager, the Illinois manager of the Division of Land Pollution Control, and the Ohio manager of the Division of Solid and Hazardous Waste told us that they think that it is more appropriate to issue a notice of violation rather than a compliance order as the initial enforcement action for financial assurance violations.

Another reason Illinois did not use compliance orders as the initial type of enforcement action for financial assurance violations, according to the manager of the Division of Land Pollution Control, was because the Illinois Environmental Protection Agency does not have authority to issue compliance orders. All financial assurance cases would have to be referred to the Illinois Attorney General if compliance orders were to be issued. The manager of the Division of Land Pollution Control told us that the Illinois business community does not always take notices of violation seriously. Legislation authorizing the state EPA to issue compliance orders was submitted to the Illinois state legislature in the late 1970s but was not enacted. Illinois plans to repropose such legislation at a later legislative session.

Although California's enforcement policy was consistent with EPA's, it was not followed; notices of violation were routinely used as the initial enforcement action. The chief of enforcement in California during our review considered enforcement actions other than issuance of notices of violation unwarranted when enforcement action is taken against a facility solely for financial assurance violations. He stated that he preferred to issue compliance orders only in cases where other violations were involved. A new California chief of enforcement, hired in mid-1985, told us that financial assurance violations are more serious than they appear and require more enforcement activity. The chief plans to

refer these cases to the district attorneys since the California environmental agency does not have authority to issue compliance orders with penalties. The chief of enforcement said, however, that the district attorneys have been reluctant to pursue financial assurance violations because they do not involve evidence of a health danger, and that he is working on an agreement with one district attorney to promote these cases by assigning them to the district attorney while the California environmental agency maintains the administrative responsibility. He estimated that 80-90 percent of the owners/operators will bring themselves into compliance after receiving a compliance order with penalty and that further prosecution will not be necessary.

Prompted by concern of significant noncompliance with hazardous waste regulations in general, EPA in December 1984 issued a more stringent enforcement policy that addresses the type and timing of enforcement actions, including guidance on the appropriate time to take more stringent enforcement actions. The new policy was optional in fiscal year 1985 but mandatory for fiscal year 1986. EPA regions are to make the policy a part of state grant or enforcement agreements. The policy states that financial assurance violators are to be treated as "high-priority violators," and specifies that within 90 days of discovery, states should issue such violators a compliance order with penalty and a schedule for returning to compliance. If the violator fails to comply, the state must refer the case for judicial action within 90 days of discovery, or request that EPA issue a compliance order with penalty.

We noted that EPA region IX did not include this requirement in the Arizona grant because, according to the EPA project officer for Arizona, EPA region IX considers Arizona's enforcement record to be "fairly good," making inclusion of this requirement unnecessary. EPA region V did not include this requirement in the Illinois grant because, according to the EPA chief of RCRA enforcement for Illinois, the Illinois environmental agency lacks authority to issue compliance orders and would have to refer each case to either the state attorney general's office or EPA region V, which have authority to issue them. This policy is included in the California, New York, Ohio, and Pennsylvania fiscal year 1986 grants. The EPA headquarters director of RCRA enforcement told us that he was not aware that the regions had not included the new enforcement policy in all state grants as required—and that they should have.

Conclusions

Financial assurance requirements may not provide the intended assurance that owners/operators—rather than the public—pay all costs of

facility closure and postclosure because of (1) inherent weaknesses in the trust fund and financial test, which are used by about 82 percent of the approximately 4,900 facilities nationwide; (2) the difficulty that regulators have in reviewing the adequacy of multistate financial tests; (3) delayed implementation of the requirements in at least two states; (4) noncompliance with the financial assurance requirements; and (5) lack of strong enforcement action against noncomplying facilities. As the corrective action provisions of the 1984 RCRA amendments are implemented, these problems will probably become more acute if facilities are allowed to use the same mechanisms for financial assurance to pay the costs of corrective action.

To address these problems, EPA needs to closely monitor closing facilities or those implementing corrective actions to determine if the financial test and trust fund provide adequate financial assurance. If such facilities fail to provide adequate funds to meet their responsibilities, EPA should reconsider the use of these mechanisms. EPA also needs a centralized and more efficient approach to verifying the accuracy of out-of-state closure and postclosure cost estimates supporting financial tests submitted by companies with facilities in more than one state. If states had access to a centralized data base containing cost estimates for multistate firms, the effectiveness of their regulatory reviews could be increased and verification costs and duplication of effort reduced. In addition, EPA needs to assure that all of its regions and the states implement existing enforcement guidance that calls for strong enforcement against facilities in violation of financial assurance requirements.

Recommendations

We recommend that the Administrator, EPA:

- Monitor and periodically reevaluate hazardous waste facility closures and implementation of corrective action activities to assure that the trust fund and financial test are providing adequate assurance that funds will be available.
- Develop and implement a system for providing a centralized review of all multistate financial tests.
- Direct EPA regional offices to ensure that all state grant or enforcement agreements include a requirement for states to issue compliance orders for all violations of financial assurance requirements as initial enforcement actions and closely oversee state implementation of this requirement.

With the current emphasis on reducing government spending, we recognize that it may be difficult to obtain the additional staff or funds needed to monitor the effectiveness of the trust fund and financial test and to develop a centralized system to review multistate financial tests. We believe both of these activities are important. If, however, resources are not available because of higher priority requirements, we recommend that EPA determine the additional needs of the program and provide such information to the appropriate congressional committees for their consideration.

Monitoring of Facility Closures

EPA regulations require that owners/operators of hazardous waste treatment, storage, and disposal facilities that cease operating close their facilities, in accordance with an EPA or state-approved closure plan. After closure, the owner/operator and an independent professional engineer must certify that the facility was closed in accordance with the plan. The facility may also be inspected by an EPA or state inspector during or after closure. Because of changing priorities, EPA's inspection requirements for itself and the states have varied from requiring no inspections of closing facilities to requiring inspections for all such facilities. EPA currently requires inspections of all closing land disposal facilities, but not storage and treatment facilities.

In the states reviewed, 109 of the 176 facilities that had closed as of December 31, 1984 (about 62 percent) had been inspected by EPA or the states. The reasons that not all facilities were inspected include a lack of a requirement to inspect all closing facilities and reliance on the professional engineer certification to assure that the facility closed properly. Each of the states reviewed, however, has recently adopted policies or commitments to inspect all closing facilities.

The inspections disclosed violations at 37 (34 percent) of the 109 facilities inspected. In reviewing these violations, we found that the enforcement actions taken by EPA or the states were generally not as strong as specified in EPA guidance and were not always timely or effective in correcting the deficiencies. EPA has recognized this problem and, as discussed in chapter 3, is implementing a new response policy designed to strengthen enforcement.

Closure Procedures

RCRA regulations require owners/operators of closing hazardous waste treatment, storage, and disposal facilities to submit a closure plan to EPA or the state for approval. Upon receipt of the plan, EPA or the state is required to publish a notice for public review, allowing a 30-day comment period. EPA or the state must approve, modify, or disapprove the plan within 90 days of receiving it. If the plan is approved, the owner/operator has 90 days to complete all treatment, storage, and disposal activities or to remove waste from the site. All other closure activities must be completed within 180 days, including decontaminating or disposing of all equipment and structures.[1] The final step in closure is submission of certifications to EPA and/or the state from both the owner/

[1]The regulations allow the EPA Administrator to approve extending the 90- and 180-day periods.

operator and an independent professional engineer certifying that the facility was closed in accordance with the approved plan.

Owners/operators of land disposal facilities where waste will remain on site after the facility is closed must also have a postclosure plan identifying the activities to be carried out for 30 years after closure. The plan must, at minimum, include (1) the provisions for groundwater monitoring and reporting, (2) the planned maintenance activities to ensure the integrity of the final cover or containment system and the functioning of monitoring equipment, and (3) the identity of the persons to be contacted about the facility during postclosure.

Proper Closure Is Important

According to EPA, proper closure of hazardous waste facilities is important because, in many cases, it is the last time such facilities come under regulatory scrutiny. EPA also notes that lack of attention to environmental problems at the time of closure may lead to an increase in the number of Superfund[2] cleanup sites several years in the future. As of September 1985, EPA had identified 58 RCRA facilities that will need Superfund cleanup action.

Proper closure of facilities is increasingly important because of the growing number of facilities closing or expected to close. According to the deputy director of EPA's Permits and State Programs Division, 50 percent or more of the approximately 4,900 RCRA facilities nationwide will eventually close rather than obtain final permits. EPA generally classifies hazardous waste facilities into three types: land disposal, incinerator, and storage/treatment; it has issued separate regulations for each type. According to EPA, land disposal facilities and incineration facilities pose the highest risk of harm to the public health and the environment through surface and groundwater contamination and air pollution. As of August 1985, EPA reported that a total of 1,105 RCRA facilities had closed: 171 land disposal facilities, 42 incinerators, and 892 storage/treatment facilities.

In the six states reviewed we identified a total of 176 RCRA facilities that had closed as of December 31, 1984, including 19 land disposal facilities, 4 incinerators, and 153 storage/treatment facilities. Some of the 176 closures were partial closures of facilities that contained more than one hazardous waste management unit. An example of partial closures

[2]As noted in chapter 2, Superfund refers to EPA's program for cleaning up sites contaminated by hazardous waste or other substances.

would be the owner/operator of a facility with a number of storage ponds closing one pond. Data by state and type of facility are shown in table 4.1.

Table 4.1: Closed RCRA Facilities in Six States As of December 31, 1984

	Land disposal	Incinerator	Storage/ treatment	Total
Arizona	6	0	2	8
California	4	2	32	38
Illinois	1	1	45	47
New York	3	0	17	20
Ohio	2	1	42	45
Pennsylvania	3	0	15	18
Total	**19**	**4**	**153**	**176**

None of the 19 closed land disposal facilities in the six states reviewed were subject to the 30-year postclosure maintenance and monitoring provisions of RCRA because, according to state hazardous waste officials, the facilities totally removed all waste and contaminated soil from the sites. In that regard, an EPA study issued in March 1985[3] found that 75 percent of land disposal facilities close by removing wastes from the facility. According to the study, this approach may remove the need to permanently cover the disposal facilities or perform postclosure groundwater monitoring. The study also found that, partly as a result of the waste removals, few postclosure plans have been submitted for approval and few postclosure permit applications have been requested or received.

The six states also identified 226 additional facilities that have already indicated their intent to close or are in the process of closing. The closing facilities included 99 land disposal, 2 incineration, and 125 storage/treatment facilities. The closure of land disposal facilities often requires more time than other facilities, according to state permitting officials, because the closure plan approval process is more complicated and little EPA guidance exists on the extent to which owners/operators must clean up land disposal facilities. In addition, for example, once the closure activities begin, it may become apparent that more contaminated subsoil must be removed than originally anticipated, which takes more time.

[3]Study of Closure/Postclosure Implementation at Land Disposal Facilities, EPA Office of Solid Waste, Permits Branch, March 1, 1985.

The number of closing land disposal facilities may, in fact, be much larger in the near future. In an August 27, 1985, memorandum, the EPA Assistant Administrator for Solid Waste and Emergency Response stated that EPA is expecting an unprecedented number of land disposal facilities to close during the coming months as a result of the recent RCRA amendments requiring owners/operators to certify compliance with applicable groundwater monitoring and financial responsibility requirements by November 8, 1985. As discussed in chapter 2, about two-thirds of the estimated 1,500 land disposal facilities nationwide did not submit certifications and therefore must close.

EPA Inspection Requirements Have Varied

Prior to fiscal year 1985 EPA had no inspection requirements for closing or closed facilities. In its fiscal year 1985 RCRA Implementation Plan, which provides guidance to EPA regions and the states, EPA called for inspection of all facilities that closed during fiscal year 1984 that had not been inspected and all facilities closing in fiscal year 1985. EPA deleted this inspection requirement in April 1985 to free EPA and state resources to implement provisions of the 1984 RCRA amendments. In fiscal year 1986 EPA is specifically requiring inspections of all closed land disposal facilities within 1 year of closure. There is no fiscal year 1986 requirement to inspect closing treatment, storage, or incineration facilities. The Director of EPA's RCRA Enforcement Division told us that requiring inspections of these facilities after they have closed would be desirable but would require additional resources. Within resource constraints, he said, priority should go to the more environmentally significant land disposal facilities and to meeting other inspection requirements, such as those mandated by the 1984 RCRA amendments.

Extent of Inspections in States Reviewed

Of the 176 facilities that had closed in the states reviewed as of December 31, 1984, 109 (62 percent) had been inspected. Table 4.2 summarizes inspection statistics for closed facilities in the six states reviewed. Arizona and Pennsylvania had informal policies to inspect closed facilities at least once and had inspected all but two facilities. The state permitting unit chiefs for California, New York, and Ohio, and the Illinois chief enforcement attorney, however, told us that the reasons many closed facilities were not inspected were that the state did not have a policy to inspect all closed facilities, the state preferred to inspect facilities during the closure plan approval process, and/or because the state relied on the integrity of the professional engineer certifications.

Table 4.2: Summary of Inspection Statistics for Closed Facilities in the Six States Reviewed As of December 31, 1984

State	Total	Inspected	Not inspected	Percentage not inspected
All Closed Facilities				
Arizona	8	6	2	25
California	38	15	23	61
Illinois	47	31	16	34
New York	20	17	3	15
Ohio	45	22	23	51
Pennsylvania	18	18	0	0
Total	**176**	**109**	**67**	38
Land Disposal				
Arizona	6	5	1	17
California	4	4	0	0
Illinois	1	1	0	0
New York	3	3	0	0
Ohio	2	1	1	50
Pennsylvania	3	3	0	0
Total	**19**	**17**	**2**	11
Incinerators				
Arizona	0	0	0	0
California	2	2	0	0
Illinois	1	1	0	0
New York	0	0	0	0
Ohio	1	1	0	0
Pennsylvania	0	0	0	0
Total	**4**	**4**	**0**	0
Storage/Treatment				
Arizona	2	1	1	50
California	32	9	23	72
Illinois	45	29	16	36
New York	17	14	3	18
Ohio	42	20	22	52
Pennsylvania	15	15	0	0
Total	**153**	**88**	**65**	42

The number and timing of closure inspections varied. Of the 109 facilities inspected, 73 were inspected once and 36 were inspected two or more times. There was no clear pattern regarding the point in time in the closure process when the inspections were performed. Violations

requiring corrective action before closure was considered to have been acceptably performed were detected at 37 (about 34 percent) of the closed/closing facilities. Violations were detected at 6 land disposal facilities, 1 incinerator, and 30 treatment and storage facilities. Examples of the types of deficiencies disclosed at the 37 facilities include:

- facility closed without an approved closure plan,
- no owner/operator or professional engineer certifications were submitted,
- not all hazardous waste was removed from site,
- groundwater was contaminated,
- soil was contaminated,
- contaminated equipment remained on site,
- surface impoundments were improperly closed, and
- no financial assurance existed.

We noted that serious violations—such as soil contamination, closure without a closure plan, and corroded and leaking containers left on-site—occurred at storage and treatment facilities. We also noted that violations were discovered in four of the eight cases where inspections were conducted after the professional engineer certifications had been made. These violations included rusted drums left on-site, improperly installed containment liners, and decontamination activities not performed.

All of the states we visited have policies or have made commitments beginning in fiscal year 1985 to inspect all closed facilities. The inspection criteria generally call for one inspection, regardless of type of facility, to be performed at varying times during the closure process. Under procedures adopted in December 1984 and January 1985, both Ohio and Illinois now require an inspection of closed facilities after the last closure certification has been received. Arizona and California established policies in April 1985. Arizona's policy is to inspect all closed facilities after decontamination is complete and sometimes during the cleanup phase, as appropriate. California now requires that all closing facilities be inspected at least once between closure plan approval and owner/operator certification to ensure that the closure is performed in accordance with the approved plan. Beginning in October 1985, Pennsylvania's financial assurance regulations require that, after closure is complete, the state initiate an inspection of the facility to verify that closure has been effected in accordance with the approved closure plan. The New York permit section supervisor told us that New

York has committed itself to inspecting all closed facilities in conjunction with both the fiscal year 1985 and 1986 EPA grants.

Enforcement Actions for Closure Violations Have Not Always Been Effective

Enforcement is critical to adequate protection of public health and the environment. As noted in a joint memorandum from the EPA Assistant Administrator for Solid Waste and Emergency Response and the Assistant Administrator for Enforcement and Compliance Monitoring:

"Improper hazardous waste disposal carries with it the potential for significant harm to health and damage to the environment. Rapid and decisive enforcement action is needed to protect public health and the environment against imminent hazards and against significant violations of existing regulatory standards. Enforcement actions must be sufficient, frequent, visible, and forceful to provide an effective deterrent, so that the regulated facilities recognize that it is in their own interest to comply."

Based on the enforcement data available from the 37 closed facilities with violations, our analysis indicates that, like the enforcement actions for violations of financial assurance requirements discussed in chapter 3, enforcement actions for closure violations were not always effective in obtaining compliance and could be improved in terms of appropriateness of initial type of enforcement action. In addition, improvements could be made in the timeliness of the action and in taking further timely enforcement action if compliance is not achieved based on the initial enforcement action.

EPA's general compliance and enforcement guidelines, issued July 7, 1981, and in effect during the period of our review, stipulated that closure violations, like financial assurance violations, should generally be addressed with a compliance order. Our analysis of the enforcement actions taken against the 37 closed facilities with violations revealed that EPA and the states generally did not issue compliance orders as the initial type of enforcement action, as specified by EPA in 1981. Of the 37 facilities with violations, no enforcement action was taken in 9 cases (23 percent). Warning letters were issued as the initial enforcement action in 17 cases (61 percent). Compliance orders or referral to the state attorney general or EPA for legal action were the initial actions taken in only 11 of the cases (39 percent). Even for the seven more environmentally significant closed land disposal and incineration facilities, the initial enforcement action taken was the issuance of a warning letter in four of the seven cases. Additional escalated enforcement actions were taken in only three cases after the issuance of notices of violation did not achieve compliance.

Some violations remained uncorrected for long periods of time. At the time of our review, 22 of the 37 facilities still had uncorrected violations, according to state records and as shown in table 4.3.

Table 4.3: Statistics on Facilities With Uncorrected Deficiencies

State	Facilities inspected	Having deficiencies	Deficiencies corrected	Uncorrected deficiencies
Arizona	6	1	1	0
California	15	4	3	1
Illinois	31	14	3	11
New York	17	10	5	5
Ohio	22	8	3	5
Pennsylvania	18	0	0	0
Total	**109**	**37**	**15**	**22**

Table 4.4 shows the length of time deficiencies had been uncorrected at the 22 facilities with uncorrected deficiencies as of January 31, 1985.

Table 4.4: Duration of Noncompliance for Uncorrected Deficiencies, As of January 31, 1985

Number of months between detection of violation and January 31, 1985	Number of facilities
0 - 6 months	4
6 - 12 months	1
12 - 18 months	7
18 - 24 months	1
24 - 36 months	4
36 - 48 months	4
48 - 60 months	1
Total	**22**

The following examples illustrate problems with both the type and effectiveness of enforcement actions at some of the 22 facilities.

- A closed Illinois storage/treatment facility was inspected on November 18, 1982, and found to be in violation because a closure plan had not been submitted and lead contamination was found in the ground. A notice of violation was issued January 27, 1983 and, after continued noncompliance, the case was referred to the Illinois Attorney General on January 1, 1984. No other enforcement action had been taken as of March 6, 1985—28 months after the violations were detected. According to an Illinois Enforcement Division attorney, a notice of violation was initially issued rather than a compliance order because the Illinois Environmental Protection Agency does not have authority to issue

compliance orders. Such action has to be taken by the state attorney general. He could not explain why further, more serious enforcement action was not taken or why the case was not referred to the Illinois Attorney General sooner.

- A closed New York land disposal facility was inspected on March 27, 1984, and found to be in violation because, among other violations, no closure plan had been submitted, surface impoundments were closed improperly, hazardous waste was left on-site, and equipment was contaminated. A notice of violation was issued on April 27, 1984; no other enforcement action had been taken as of July 30, 1985. The New York permits section supervisor said New York has not taken further action because it has been working with the owner/operator to develop an acceptable closure plan. The supervisor said, however, that the state is planning to issue a compliance order because of continued noncompliance.
- An Ohio storage/treatment facility indicated its intent to close on July 6, 1984, and was found to be in violation because the owner/operator had not submitted an adequate closure plan. A notice of violation was issued by the Ohio Attorney General's Office on March 15, 1985; three additional notices of violation were issued between this date and September 1985. An Ohio Assistant Attorney General explained that the attorney general's office was handling the case because it was referred by the Ohio Environmental Protection Agency. The Attorney General, however, does not have authority to issue a compliance order. Although the Ohio Environmental Protection Agency has such authority, the attorney general's office does not normally return cases to the responsible agency once referred. The issuance of a notice of violation rather than a compliance order in this case seems even more inappropriate because, at the time the state learned of the facility closure, the state had already issued several notices of violation for violations of operating standards.

As discussed in chapter 3, EPA has recognized that swifter and stronger enforcement is needed. Under EPA's Enforcement Response Policy issued in December 1984, violators of closure/postclosure requirements are generally to be treated as high priority violators and must, within 90 days of discovery, receive a compliance order. Such violators are also to be assessed a fine and be given an expeditious schedule for obtaining compliance. States that do not have administrative penalty authority should take judicial action to compel compliance and issue a fine, or ask EPA to take action. This policy was an optional part of state grant or enforcement agreements in fiscal year 1985, but it was mandatory in fiscal year 1986. Also as discussed in chapter 3, however, EPA regions V

and IX did not include this requirement in the Illinois or Arizona fiscal year 1986 grants.

Conclusions

It is important that owners/operators of hazardous waste facilities close their facilities properly so that public health and the environment are protected and so that public funds do not have to be spent to clean up and close the facilities. Because of changing priorities, EPA's inspection requirements to assure that facilities are closed properly have varied, ranging from no required inspections to required inspections of all closed facilities. EPA currently requires inspections of closed or closing land disposal facilities, but not of storage and treatment facilities. We noted, however, that some closed storage and treatment facilities that were inspected had serious violations. In the six states we reviewed, 62 percent of the 176 facilities that had closed by December 31, 1984, had been inspected. Each state has recently gone beyond EPA's requirements and adopted policies to inspect all closing or closed facilities. We recognize that EPA must set priorities for the use of limited inspection resources and that priority should go to inspecting the more potentially environmentally significant land disposal facilities. However, storage and treatment facilities can also pose environmental threats if not closed properly, and the actions taken by the states we visited to also inspect these facilities are appropriate.

Where inspections were conducted and violations found, our analysis shows that the enforcement actions taken were not always in accordance with EPA enforcement guidelines and were not always effective in obtaining timely compliance. EPA has recognized this problem and, as discussed in chapter 3, is implementing a new enforcement response policy designed to strengthen enforcement actions for closure-related violations.

Status of EPA Efforts to Implement Requirements for Financial Assurance for Corrective Action

Two sections of the Hazardous and Solid Waste Amendments of 1984 impose requirements dealing with financial assurance for corrective action when hazardous waste is or may be released into the environment. EPA has interpreted corrective action to mean cleanup of releases to all media such as groundwater, air, surface water, and soils. Section 3004(u) of the act (section 206 of the amendments) requires corrective action and financial assurance for completing such corrective action for releases that are occurring or have occurred (continuing releases) at RCRA facilities seeking a permit and was effective on the date of enactment (Nov. 8, 1984). Section 3004(a) of the act (section 208 of the amendments) adds to the standards applicable to owners/operators of treatment, storage, and disposal facilities the requirement to maintain financial responsibility for corrective action for releases that may occur as the EPA Administrator deems necessary or desirable. EPA has concentrated its efforts on implementing the requirement for financial assurance for corrective action at facilities where releases are now occurring.

Section 3004(U)—Corrective Action for Continuing Releases

One of the most important provisions of the Solid and Hazardous Waste Amendments of 1984, according to EPA, is the new requirement for corrective action for continuing releases. The amendments state that:

> "Standards promulgated under this section shall require, and a permit issued after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in such unit. Permits issued under section 3005 shall contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action."

The intent of Congress in establishing this new permit requirement was to correct the perceived shortcoming in the existing RCRA regulations, which allow operating permits to be issued to facilities at which environmental contamination is occurring or has occurred, without the permit addressing that contamination in any way. EPA has interpreted the new provision to mean that all permit applications must now (1) identify all solid waste management units at the facility, (2) identify any releases that have occurred or are occurring from those units, (3) take appropriate corrective measures to clean up those releases, and (4) demonstrate financial assurance for those corrective measures

To demonstrate financial assurance the owner/operator must identify the necessary corrective measures and develop a cost estimate for the planned activities. Section 3004(t) of the act (section 205 of the amendments) lists the mechanisms that may be used to demonstrate financial assurance for corrective action, including surety bonds, letters of credit, insurance, and the financial test. This section omitted trust funds and state-required mechanisms (which are currently allowed by EPA regulation to be used to demonstrate financial assurance for meeting closure and postclosure costs) from the list of instruments that may be used for financial responsibility. EPA considers this to be an inadvertent omission, since nothing in the legislative history suggests the intentional omission and intends to continue to allow all six mechanisms in its regulations for closure and postclosure activities. Under EPA regulations, the states and the federal government are exempt from the requirements for financial assurance for corrective action. The initial implementing regulations were published July 15, 1985. Further clarifying regulations, according to the EPA Financial Responsibility Program manager, will be promulgated in September 1986, and the final regulations promulgated in September 1987.

Section 3004(A)—Financial Assurance for Corrective Action

In addition to the requirement for financial assurance for corrective action at facilities that are experiencing releases, financial assurance for corrective action may be required at facilities regardless of whether releases necessitating corrective action have been detected. As of August 6, 1985, EPA had not yet begun to develop implementing regulations, according to the EPA Financial Responsibility Program manager. EPA plans to publish the proposed regulations in March 1988, and the final regulations in January 1989.

RCRA Bankruptcies Reviewed by GAO

Table II.1: RCRA Bankruptcies Reviewed by GAO

Name of facility	State	Type of facility	Payment of closure costs: Operating	Payment of closure costs: Closure status unknown	Payment of closure costs: Owner/ operator expense	Public monies	Public monies expended
American Incineration, Inc.	Illinois	Storage/ incineration				X	$1 160,698.00
Recycoil	Illinois	Storage/ treatment		X			
Taracorp, Inc.	Illinois	Storage		X			
Liquid Dynamics	Illinois	Storage/ treatment				X	165,370.00[a]
Parson's Casket Hardware Co.	Illinois	Storage				X	350,000.00
Barker Chemical	Illinois	Storage			X		
Mika Timber Co.	Illinois	Storage/ disposal	X				
Unichem Corp.	Illinois	Storage			X		
Northway Environmental Services	Ohio	Storage			X		
Marion Steel Corp.	Ohio	Storage	X				
Ironton Coke Co.	Ohio	Treatment/ disposal			X		
Majestic Weaving Co.	New York	Land disposal	X				
Quanta Resources Corp.	New York	Storage/ treatment				X	2,500,000.00
Revere Copper & Brass Products, Inc.	New York	Storage					
Seneca St., Rome facility			X				
Railroad St., Rome facility			X				
Balaird Rd., Middletown facility			X				
Whitmoyer Laboratories, Inc.	Pennsylvania	Storage	X				
Total: 17			**7**	**2**	**4**	**4**	**$4,176,068.00**

[a]EPA has already received reimbursement of the $161,000 it expended to clean up the site from the generators who had disposed of hazardous waste at the site.

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