

GAO

Report to the Honorable
Nancy L. Johnson, House of
Representatives

April 1994

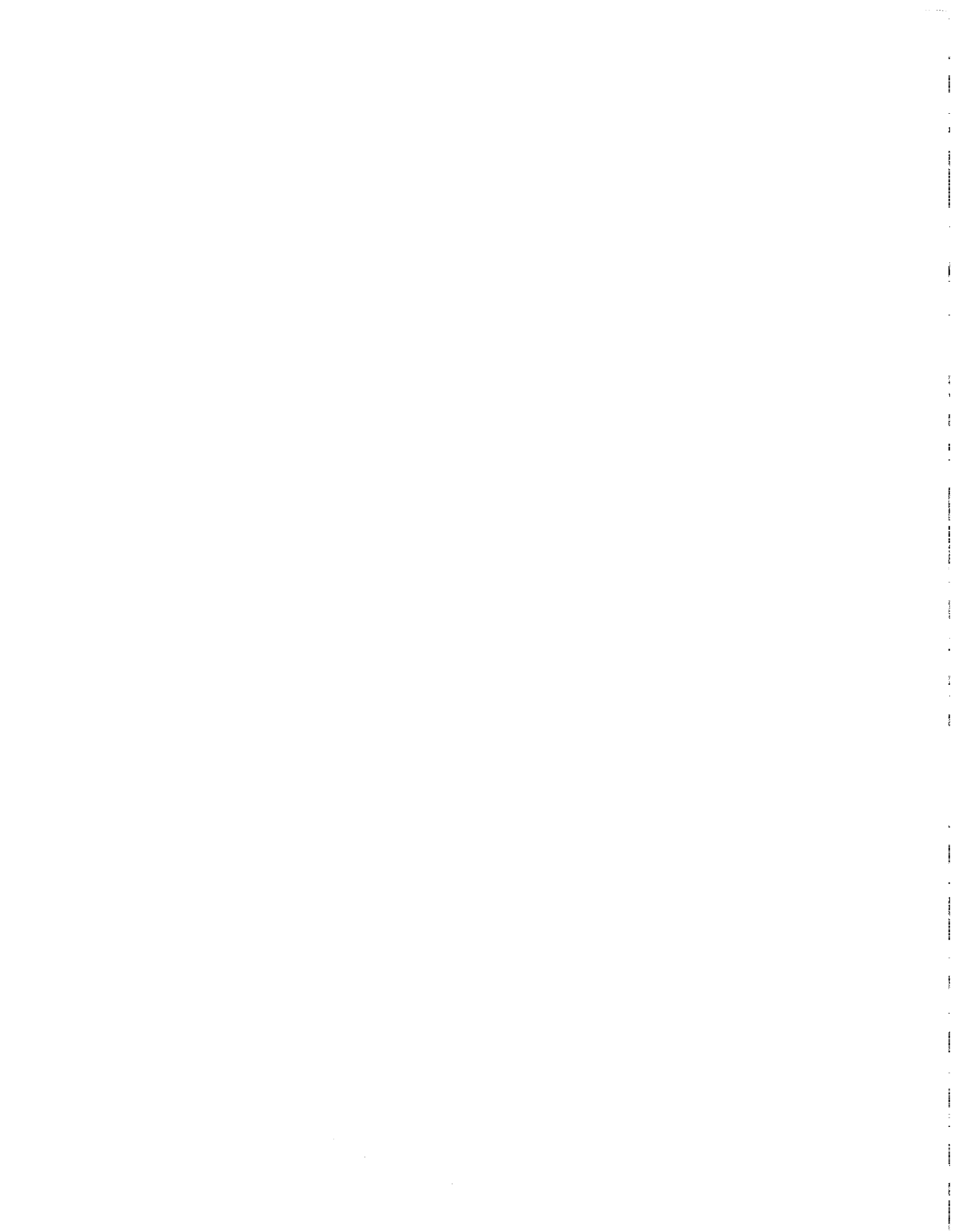
HAZARDOUS WASTE

An Update on the Cost and Availability of Pollution Insurance



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United States
General Accounting Office
Washington, D.C. 20548

**Program Evaluation and
Methodology Division**

B-256573

April 5, 1994

The Honorable Nancy L. Johnson
House of Representatives

Dear Ms. Johnson:

We are submitting this report on the availability of pollution insurance for the owners and operators of hazardous waste facilities in response to your request that we update the information contained in our earlier report on this subject (GAO/PEMD-89-6). In this study, we report on the cost and availability of insurance for the operation of facilities that treat, store, or dispose of hazardous waste. In addition, we discuss the availability of closure and postclosure insurance for these facilities and compare the costs of insurance for land disposal facilities with those we reported in our 1988 report. We also discuss the views of insurance providers and Environmental Protection Agency officials regarding the use of trust funds as an alternative mechanism to provide the financial assurance required under the Resource Conservation and Recovery Act.

As we agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the date of the report. We will then send copies to interested congressional committees, the Administrator of the Environmental Protection Agency, and others who are interested and will make copies available to other persons upon request. If you have any questions or would like additional information, please call me at (202) 512-2900 or Kwai-Cheung Chan, Director of Program Evaluation in Physical Systems Areas, at (202) 512-3092. Other major contributors to this report are listed in appendix III.

Sincerely yours,

Eleanor Chelimsky
Assistant Comptroller General

Executive Summary

Purpose

According to the Environmental Protection Agency (EPA), an estimated 275 million metric tons of hazardous waste are treated, stored, and disposed of annually in the United States, and the volume is growing. The Congress has become concerned about difficulties encountered by some hazardous waste treatment, storage, and disposal facilities in obtaining pollution insurance, one of the financial mechanisms allowed under the Resource Conservation and Recovery Act to meet financial responsibility requirements. Facilities unable to meet these requirements cannot legally continue operation, which raises concerns about the adequate handling of hazardous waste.

To address this issue, Congresswoman Nancy L. Johnson of the Subcommittee on Health and Human Resources of the House Committee on Ways and Means asked GAO to

- determine what insurance companies provide pollution liability insurance and closure or postclosure insurance, the extent of coverage, and the coverage costs for both;
- update its October 1988 report on the cost and availability of pollution insurance to land disposal facilities; and
- determine the implications if state cleanup funds were made available to treatment, storage, and disposal facilities for pollution cleanup and for compensation to victims who have suffered pollution, bodily injury, or property damage.

Background

To address the problem of adequately treating, storing, and disposing of hazardous wastes, the Congress enacted the Resource Conservation and Recovery Act in 1976. The act and its amendments were intended to reduce the generation of hazardous waste and to minimize the present and future threat to human health and the environment.

To comply with EPA regulations promulgated under the act, treatment, storage, and disposal facilities unless specifically exempted must demonstrate that they have the resources necessary to compensate third parties for bodily injury and property damage resulting while the facilities are in operation and after they have closed and no longer process or handle hazardous waste. Under the act, facilities can demonstrate their financial assurance for sudden (accidental) and nonsudden (gradual) damage through liability insurance, financial test (a demonstration of adequate assets), letter of credit, corporate guarantee, surety bond, trust fund, or any combination of these. For closure and postclosure financial

assurance, facilities can use these mechanisms as well as closure and postclosure insurance.

According to EPA, over 4,000 U.S. facilities treat, store, or dispose of hazardous waste. All these except the 445 federal and state treatment, storage, and disposal facilities are subject to the act's financial requirements.

To address the issues raised by Congresswoman Johnson, GAO surveyed 674 treatment, storage, and disposal facilities randomly selected from EPA's nationwide listing and received responses from 76 percent. However, 28 percent of these had never operated as treatment, storage, and disposal facilities, and another 16 percent had ceased operating. GAO based its analysis on the 288 facilities that treated, stored, and disposed of waste in 1990 or 1991. (GAO's further investigation of nonrespondents found no reason to believe in any nonrespondent bias; see appendix II.) In addition, GAO interviewed officials from EPA and state environmental divisions and insurance commissions and representatives of insurance companies providing pollution liability insurance.

Results in Brief

The majority of companies operating treatment, storage, and disposal facilities in 1991 that attempted to obtain pollution insurance found that it was difficult to obtain. GAO identified 24 insurance companies that provided pollution liability insurance in some form. The leading providers of insurance were the National Union Fire Insurance Company and the Planet Insurance Company. Zurich-American Insurance Company, one of the companies in the sample, also informed GAO that it planned to actively market pollution liability insurance in the near future. GAO found that closure and postclosure insurance was available to treatment, storage, and disposal facilities only under exceptional circumstances.

About one third of treatment, storage, and disposal companies that are subject to the financial responsibility requirements of the act use liability insurance to cover accidental occurrences. About one quarter of these are land disposal facilities and are therefore also subject to the gradual coverage requirements. About one third of these, in turn, use liability insurance to meet this requirement. The more recently allowable alternative mechanisms are used substantially less than financial tests and insurance, and surety bonds are extremely rare.

The difficulty experienced by land disposal companies in obtaining pollution insurance in 1991 has not significantly lessened since 1986. In 1991, an estimated 36 percent of companies used pollution liability insurance to cover accidental occurrences. In 1986, 32 percent reported obtaining this coverage. The cost of coverage increased approximately 29 percent during this period.

About 50 percent of all treatment, storage, and disposal facilities reported that they would use state funds for cleanup if such funds were available. Conversely, insurance providers opposed the use of state funds as a financial mechanism for cleanup. One provider indicated that the availability of state funds would constitute direct competition from state governments. According to insurance providers, such competition would result in a reduction or elimination of coverage.

GAO's Analysis

Cost and Availability of Pollution Insurance in 1991

GAO found that the two originally accepted financial mechanisms, pollution insurance and financial test, remain the most frequently used forms of coverage and that more recently allowable mechanisms are used substantially less. For accidental coverage, more companies use insurance, while for gradual coverage, financial tests are more common. Most respondents to the survey reported great difficulty in obtaining pollution insurance, and 44 percent reported being denied insurance at least once over the past decade. In most cases, the reason was that their carriers were no longer underwriting pollution liability.

GAO estimates that pollution insurance policies were issued to 755 facilities operated by 545 companies and that more than three quarters of them were written by one of the 24 insurance providers identified. The median cost of combined accidental and gradual coverage was \$22 per thousand dollars of coverage, and miscellaneous additional costs were approximately \$3 per thousand dollars of coverage. From its sample, GAO found only one instance of closure and postclosure insurance and this was provided through a wholly owned insurance company created by the treatment, storage, and disposal company.

Comparison of Pollution Insurance Cost and Availability in 1991 and 1986

Survey respondents reported as high a level of difficulty in obtaining insurance in 1991 as they had in 1986. Land disposal companies continued to report that insurance companies were decreasing their pollution insurance exposure. GAO estimates that the median cost of combined accidental and gradual insurance coverage has increased from slightly under \$20 to more than \$25 per thousand dollars of combined coverage since 1986. The extension of acceptable financial assurance mechanisms to include other forms has failed to decrease the dependence of land disposal companies on insurance. In addition, more of these companies appear to be opting for fronting policies, which offer little true coverage since they leave the financial burden of third party cleanup with the treatment, storage, and disposal facility.

Implications of Using State Funds

Over 50 percent of all survey respondents indicated that they would use state funds as a financial assurance mechanism if such funds were available. Smaller facilities reported considerably more interest than larger ones. Over 59 percent of facilities with a net worth of \$100 million or less reported that they would use state funds, while only 26 percent of facilities with a net worth greater than \$100 million would use these funds. Some state officials said they believe that state cleanup funds would work if an equitable funding method were developed to assess common fees.

Insurance company representatives, however, indicated that the use of state funds might result in a reduction in policy coverage and higher premiums. One of the three insurance providers interviewed indicated that states should not provide funds because doing so would be providing taxpayer support to private treatment, storage, and disposal facilities. The provider also claimed that states are not qualified to underwrite insurance. Another provider commented that the availability of state funds may drive some pollution liability insurance providers out of business.

Recommendations

GAO is not making any recommendations in this report.

Agency Comments

GAO discussed the report's contents with responsible agency officials and incorporated their comments where appropriate. GAO did not obtain official agency comments on a draft of this report.

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Abbreviations

AIG	American International Group
CGL	Comprehensive general liability
EPA	Environmental Protection Agency
EQD	Equivalent disposal
EQN	Equivalent nondisposal
GAO	General Accounting Office
HWDMs	Hazardous Waste Data Management System
MSD	More stringent disposal
MSN	More stringent nondisposal
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
PCB	Polychlorinated biphenyls
TSD	Treatment, storage, and disposal
UST	Underground storage tank

Introduction

Background

Reports of potentially disastrous accidents involving the treatment, storage, and disposal of hazardous waste have commonly occurred in recent years as the government attempts to deal with ever increasing volumes of waste. Moreover, the growth in the production of waste has not been mirrored by growth in waste management. As a result, concern has emerged about safe handling.

Part of the multipronged approach of the Congress to reducing the threat to human health and the environment posed by toxic substances was the enactment of the Resources Conservation and Recovery Act of 1976, with the objective, among others, of regulating the treatment, storage, transportation, and disposal of hazardous wastes. The act defined hazardous waste as

“a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may . . . cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; . . . or pose a substantial hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.”

In order to accomplish the objectives of the act, the Congress authorized the administrator of the Environmental Protection Agency (EPA) to issue regulations regarding the financial responsibility of treatment, storage, and disposal (TSD) facilities as EPA might find necessary or desirable. To comply with the regulations, TSD facilities have relied on the various allowable financial mechanisms or combination of mechanisms, such as financial test, letters of credit, and pollution liability insurance. However, a 1988 GAO survey disclosed that TSD facilities have had difficulty obtaining insurance coverage for damage caused by hazardous waste. TSD facilities unable to demonstrate adequate financial responsibility cannot legally continue to operate. We concluded from these findings that without such assurances from the TSD facilities, the nation's ability to manage and safely dispose of hazardous waste under the present regulatory system may be seriously jeopardized.

A member of the Subcommittee on Health and Human Resources of the House Committee on Ways and Means asked us to reexamine the availability and cost of pollution liability insurance to TSD facilities and to update the data from our 1988 report on pollution coverage for land disposal facilities. The present report responds to that request and also discusses industry and government officials' views on whether state funds

are a viable option for providing required financial assurances, as they are with underground tanks used to store potentially harmful substances (discussed later in this section).

Liability Requirements for Operating TSD Facilities

When the Congress enacted the Resource Conservation Recovery Act in 1976, it mandated that the administrator of EPA issue regulations that included in its standards for hazardous waste TSD facilities “such additional qualifications as to . . . financial responsibility as may be necessary or desirable.” Under 40 C.F.R. 264.147, these requirements were defined as liability coverage for bodily injury and property damage to third parties resulting from sudden, accidental and nonsudden, gradual occurrences from a facility’s operations. Under regulations promulgated in 1982, this coverage may take the form of a liability insurance policy, a demonstration of assets adequate to provide EPA with assurances of financial responsibility (financial test), or a combination of the two. In 1986, EPA added a third method: a corporate guarantee by a parent company that may be used with insurance. In September 1988, EPA once more expanded the range of financial options by accepting letters of credit, surety bonds, trust funds, and nonparent company guarantees. Any of these mechanisms or a combination may be used to demonstrate financial responsibility.

Under EPA regulations, owners or operators of hazardous waste TSD facilities are required to demonstrate—firm by firm—liability coverage for sudden and accidental pollution incidents (such as tank rupture or explosion) of at least \$1 million per occurrence, with an annual aggregate of at least \$2 million. In addition, owners or operators of land disposal facilities—that is, landfills, surface impoundments, and land treatment facilities—are required to demonstrate coverage for gradual pollution incidents (for example, long-term seepage into a drinking water supply) of at least \$3 million per occurrence, with an annual aggregate of at least \$6 million. Total coverage for land disposal facilities is therefore at least \$4 million per occurrence, with an annual aggregate of at least \$8 million. The amounts of coverage required apply to the owners or operators for all facilities, not separately to each facility.

Financial Assurance Requirements for Closure and Postclosure of TSD Facilities

Financial assurance required under the act for closure and postclosure of facilities is outlined under 40 C.F.R. 264.143, 265.143, 264.145, and 265.145. According to the regulations, owners or operators of hazardous waste TSD facilities must develop plans for closing their facilities. During the closure

period, landfills are covered or capped, and equipment, structures, and soil are disposed of or decontaminated. TSD facilities must provide financial assurance to ensure that possible problems stemming from closure activities can be adequately addressed. The financial assurance options available to them for closure are closure insurance, financial test, trust fund, surety bond, letter of credit, and corporate guarantee or any combination of these. The amount of financial assurance that must be demonstrated is based on the cost estimates for closure at the point in the facility's operating life when closure would be the most expensive.

Postclosure financial assurance applies only to land disposal facilities (for example, landfills, surface impoundments, and land treatments) and is normally for a 30-year period after closure. During this time, monitoring and maintenance activities are conducted by owners and operators to preserve the integrity of the disposal system. The regulations require that owners or operators of disposal facilities must also establish a plan for postclosure and financial assurance for postclosure care. Cost estimates for postclosure monitoring and maintenance are based on projected costs for the entire postclosure period and are adjusted annually for inflation. The options available for postclosure are postclosure insurance, financial test, trust fund, surety bond, letter of credit, corporate guarantee, or any combination.

Underground Storage Tank Program

The underground storage tank (UST) program is similar to the program for hazardous waste TSD facilities in that it is designed to ensure that releases of regulated substances do not threaten human health and the environment.¹ Like the program for hazardous waste TSD facilities, this program allows a variety of mechanisms to be used to meet financial assurance requirements. However, it also makes available the use of state cleanup funds.

The UST program, enacted to control and prevent leaks from underground storage tanks, is broad in scope and encourages states to develop regulatory programs for these tanks. According to EPA, there were about 1.4 million underground storage tanks in 1990, the vast majority of which are used to store petroleum products. Less than 5 percent store hazardous substances. UST regulations permit states to assume liability costs and use their funds for required corrective action, thus providing an additional mechanism to UST owners and operators for demonstrating financial

¹Underground storage tanks regulated under the UST program are defined as tanks that have at least 10 percent of their volume below ground.

responsibility. Unlike other programs under the act, the UST program regulations apply to petroleum products as well as to regulated waste. Program regulations also mandate that underground tanks meet specific corrosion, installation, piping, and overfill prevention requirements.

As of June 1992, 29 states (58 percent) had EPA-approved state cleanup funds for UST programs that reimburse cleanup or pay third party liability claims. These programs are financed by tank registration fees and other fees on gasoline and other petroleum products paid by UST operators and owners into the fund. In general, to qualify for reimbursement of state cleanup funds and liability costs, UST owners and operators must comply with applicable state and federal regulations.

UST requirements are less stringent than TSD facility financial assurance requirements, allowing a broader range of financial mechanisms. Under UST regulations, financial assurance is required to cover both the cost of any required corrective action and compensation for third party liability from accidental releases. Per-occurrence coverage is set at either \$500,000 or \$1 million, depending on the nature of the facility operation and the quantity of the product being handled. Aggregate coverage is set at \$1 million or \$2 million, depending on the number of USTs to be covered.

EPA's regulations divide tank owners into four categories based on the number of tanks they own. Owners of 1,000 or more tanks had to comply with EPA's financial responsibility requirements by January 1989. Owners of at least 100 but fewer than 1,000 tanks had to comply with this requirement by October 1989. Finally, owners of fewer than 100 tanks and most nonmarketers—that is, owners who do not market petroleum products and who have a tangible net worth of less than \$20 million—had until December 31, 1993, to comply. According to an EPA official, EPA had extended this compliance deadline from October 26, 1991.

Owners and operators of underground storage tanks may comply with financial assurance requirements in a number of ways, including all those allowed for TSD facilities. Other allowable mechanisms are risk retention group coverage and state assurance. Risk retention groups are unique in that the individual risks of group members are transferred to a risk pool administered by the group. If state assurance is used, the state agrees to provide the required corrective action and assume liability costs. Owners or operators usually pay a premium to the state for both types of coverage.

Objectives, Scope, and Methodology

The objectives of this report were established by the request of Congresswoman Nancy L. Johnson, committee member of the Subcommittee on Health and Human Resources of the House Committee on Ways and Means. She asked us to obtain information on the following subjects:

1. the number of insurance companies that offer pollution liability insurance;
2. the cost associated with pollution insurance, including premiums, deductibles, co-payments, and the costs of complying with paperwork and other requirements;
3. specific coverage of the policies and whether there are preconditions (for example, environmental site assessment to prove a clean site) for obtaining coverage;
4. differences in the availability of insurance and its cost across different operating facilities and among those seeking closure and postclosure insurance;
5. Changes in the cost and availability of pollution insurance since GAO's 1988 report;
6. the implications for private insurers if state funds were to be considered an allowable mechanism to demonstrate financial responsibility under subtitle C of the act.

To address these subjects, we developed a questionnaire and sent it to 674 randomly selected facilities identified by EPA as sites treating, storing, or disposing of hazardous wastes. This sample was selected from a universe of 3,925 TSD facilities. We also interviewed officials from state insurance commissions in 9 states, state TSD and hazardous waste branches and departments in 8 states, and officials at EPA headquarters and regional offices. Finally, we interviewed officials representing five pollution insurance companies identified most frequently as providing coverage to the TSD facilities in our sample. Two of these were National Union Fire Insurance Company (a member of the American International Group) and Planet Insurance Company (a member of the Reliance Insurance Group). A third provider we interviewed, Zurich-American Insurance Company, does not presently market pollution insurance but planned to actively market it in the near future. The two other company officials we

interviewed indicated that they did not actively market pollution liability insurance. These companies accommodate a few selected policyholders with pollution insurance; however, these are usually firms that carry other types of coverage.

We selected the 9 states on the basis of the number of TSD facilities that EPA identified. First, we ranked the 50 states and the District of Columbia by the number of their TSD facilities. Then we selected the three having the most facilities (California, Pennsylvania, and Texas), the middle 3 states (Colorado, Minnesota, and Mississippi), and the 3 states having the smallest number of facilities (Alaska, Nevada, and Vermont).²

We used a survey of TSD facilities as the basic design for this study because work performed for our 1988 report demonstrated that, although we might obtain useful information from our interviews with industry and government officials, only owners and operators of TSD facilities could provide the data needed to fully address the evaluation questions. To help maximize our response rate, we guaranteed confidentiality to our respondents. We also contacted most of the TSD facilities to verify addresses and to encourage them to respond to the questionnaire. We drew our sample from EPA's listing of 4,370 TSD facilities, having subtracted the 445 state and federal facilities that are exempt from the financial assurance requirements. Then we mailed our questionnaire to a stratified random sample of 674 TSD facilities drawn from the remaining 3,925 facilities.³ Upon receipt of the questionnaire responses, however, we found that EPA's listing at that time overstated the universe of operational TSD facilities by approximately 28 percent.⁴ Therefore, we estimated the actual number of nonstate and nonfederal TSD facilities to be 2,915 and adjusted the estimates in this report accordingly.

We received 512 responses from our sample for an overall response rate of 76 percent. We performed a nonrespondent analysis on the basis of size and type of facility and geographic location. We concluded that

²We initially included the District of Columbia and South Dakota in the bottom 3, but they were eliminated because the District of Columbia does not have any TSD facilities and South Dakota has only one. Including South Dakota, therefore, would have hampered our ability to provide confidentiality.

³The sample was stratified to ensure coverage of states with varying levels of financial assurance requirements and of both land disposal and nonland disposal facilities.

⁴Our TSD list was derived from EPA's Hazardous Waste Database Management System (HWDMS), established in 1980, supplemented with the Resource Conservation and Recovery Information System (RCRIS), the new information system to which EPA was converting. We found similar overestimates of the TSD universe in HWDMS and RCRIS.

nonrespondents do not differ substantially from respondents in these dimensions and that the nonrespondent group contains approximately the same percentage of TSDs as the respondent group. Our questionnaire is reprinted in appendix I. The details of our nonrespondent analysis appear in appendix II.

Analysis of questionnaire information, supported by the information from our interviews, is the basis for chapter 2, which addresses the first four questions on availability and cost of pollution coverage. Chapter 3 provides an update of our 1988 report, and chapter 4 addresses the final question regarding state funds. We conducted our evaluation from July 1991 through October 1992 in accordance with generally accepted government auditing standards.

Limitations of Our Study

We discussed our estimate of the TSD universe size with EPA officials at the conclusion of our data analysis. The conversion to the Resource Conservation and Recovery Information System had been completed by then, and they suggested that if we were to create a new sample based on the updated information now contained in the system, our estimate of the number of facilities would be somewhat larger. We did not independently verify this assertion.

Secondly, our survey attempted to identify the difficulties experienced by TSD operators in obtaining pollution insurance. It does not allow us to estimate to what extent the reluctance of insurers to provide coverage to individual TSDs is based upon legitimate concerns over operating conditions at TSDs or the financial stability of the owner. It is most likely the case that some TSDs that have gone out of business because they could not find insurance were not operating in a manner that provided the assurance of pollution avoidance intended by the Resource Conservation and Recovery Act.

Agency Comments and Our Response

As noted above, we discussed our findings with EPA officials and have included their comments where appropriate. We did not obtain written comments on a draft of this report.

Cost and Availability of Pollution Insurance in 1991

In this chapter, we first discuss the extent to which insurance and the other financial assurance mechanisms allowable under the Resource Conservation and Recovery Act are used by TSD companies. We then focus on the availability of pollution insurance as measured in the terms of the first four evaluation questions: (1) the number of insurers offering pollution liability insurance, (2) the costs of such insurance, (3) the extent of coverage offered, and (4) differences in the availability of insurance for third party liability during operation and for closure and postclosure liability. We also discuss other indicators of insurance availability—namely, how survey respondents characterized the difficulty they experienced in obtaining pollution insurance and how frequently they were unable to obtain insurance. We discuss the questions of insurer supply and insurance cost and coverage first as they relate to coverage for operating TSD companies and then in relation to TSD companies seeking closure and postclosure insurance. Finally, we report on differences in insurance availability between large and small TSD companies.

Our findings are derived from our survey of the sample of TSD companies. In most cases, we report our findings in terms of companies, since financial responsibility requirements fall on the owner or operator company, not the individual facilities. However, where appropriate we report some findings on the facility level.

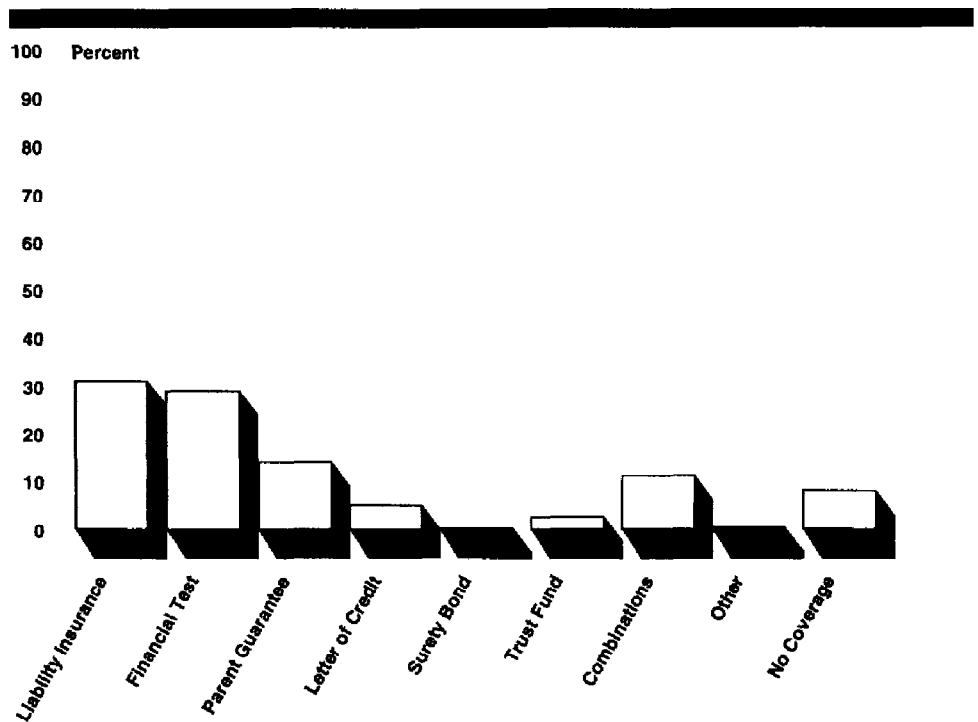
Third Party Liability Coverage for Operating TSD Companies

Financial Assurance Mechanisms Used for Accidental Coverage

Of the seven financial mechanisms allowed under the act to meet financial assurance requirements for accidental coverage, we found that the pollution liability insurance mechanism was the most frequently used for TSD operations, followed by the financial test mechanism. Thirty-one percent of companies used liability insurance alone, and another 7 percent used insurance in combination with other mechanisms. Financial tests were used alone some 29 percent of the time and in combination with other mechanisms another 6 percent of the time. Most of the remaining companies used other assurance mechanisms either singly or in combination to meet financial assurance requirements. Twenty-two

percent of companies made use of the new forms of coverage allowed since 1986.¹ Despite their acceptability to EPA, however, less than 1 percent of companies used a surety bond to meet financial responsibility requirements for accidental coverage.² Almost 8 percent had no liability coverage. Figure 2.1 shows the assurance mechanisms used to demonstrate liability coverage for accidental occurrences.

Figure 2.1: Financial Assurance Mechanisms for Accidental Coverage



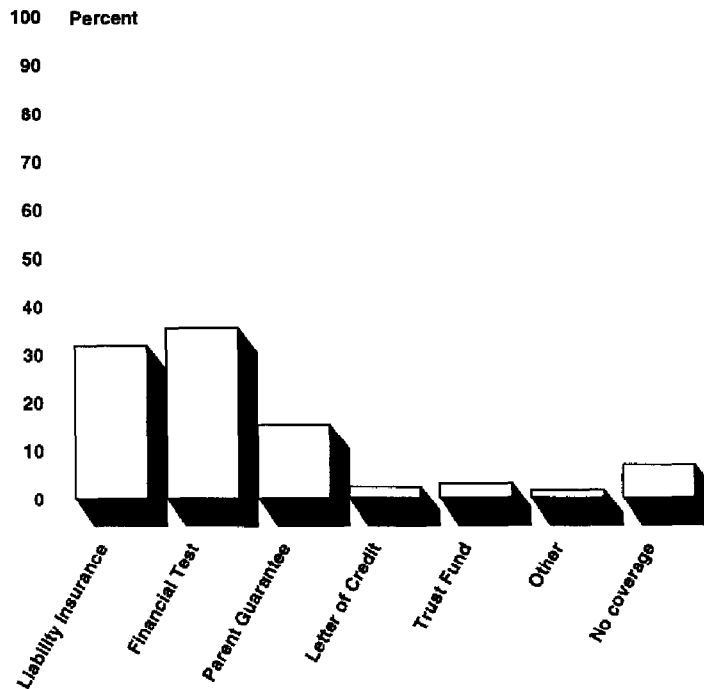
Financial Assurance Mechanisms Used for Gradual Coverage

For gradual coverage, 32 percent of TSD companies used the financial test for the coverage and 35 percent used liability insurance. Twenty percent of companies used the more recently allowable coverage mechanisms, but none used surety bonds. Figure 2.2 shows the assurance mechanisms used to demonstrate liability coverage for gradual occurrences.

¹These include parent company guarantee, letter of credit, surety bond, trust fund, and nonparent company guarantee.

²During our interviews in preparation for our 1988 report, surety officials took the position that pollution liability was inherently unbondable. This position appears to remain essentially unchanged.

Figure 2.2: Financial Assurance
 Mechanisms for Gradual Coverage



Availability of Pollution Insurance

Number of Insurers

A total of 24 insurance companies provided pollution liability coverage to companies operating TSD facilities in our survey. We cannot be sure that all insurers were captured in our sample. Nevertheless, because of the diversity built into our sample design, it is unlikely that any major pollution insurer failed to be represented.³ The coverage offered by these insurance companies included both single and multiple facility coverage. In some cases, it was provided as separate pollution insurance coverage; in others, pollution liability was covered as part of a comprehensive general liability (CGL) policy. In some cases, coverage was provided through “fronting” policies, policies whose coverage is only nominal inasmuch as their deductible amount is equal to the coverage offered.⁴

³Our sample was stratified to ensure representation of land disposal and nonland-disposal TSD facilities from states that maintained different degrees of regulatory stringency.

⁴Fronting policies do not transfer risk from the insured to the insurance companies for this reason. Insurance companies sometimes limit their risk by requiring that the insured company provide a letter of credit equivalent to the coverage.

Table 2.1 shows the number of insurers and the types of coverage they provided to companies operating TSD facilities in our survey.

Table 2.1: Number of Insurers Providing Accidental, Gradual, and Combined Coverage in 1991^a

Type of coverage	Accidental coverage	Gradual coverage	Combined coverage
Single facility	11	0	7
Multiple facility	7	1	5
Comprehensive general liability	8	0	4
Fronting policy	2	2	3

^aSome insurers provide more than one type of coverage.

Despite the number of insurers providing pollution liability coverage, the pollution insurance market is dominated by a very few companies. National Union Fire Insurance Company of Pennsylvania, a member of the American International Group, provides nearly 77 percent of the coverage identified by our survey, and Planet Insurance Company provides another 4 percent. The remaining coverage is spread among the 22 other companies identified by respondents.

Number of Policies

We estimate that pollution liability insurance policies covering 755 TSD facilities operated by 545 companies were issued in 1990-91. The majority of policies combined accidental and gradual coverage, while 196 companies had accidental coverage alone. We found no instances of gradual coverage unaccompanied by accidental pollution insurance.

Costs of Coverage

Premiums and Other Costs

The costs of insurance reported by our respondents varied widely, as would be expected given the varying nature and volume of the hazardous waste they generate and store and the range in size of their operations. The median premiums paid in 1991 for \$1,000 of sudden and accidental, gradual, and combined coverage were \$37.00, \$22.31, and \$22.00, respectively. Few survey respondents reported paperwork or other nonpremium costs of obtaining insurance. Of those who did, the median additional cost reported was \$3.22 for each \$1,000 of annual aggregate coverage.

Deductibles

The deductibles reported by respondents ranged from \$5,000 to an amount equal to that coverage. The latter case represents "fronting coverage,"

which is discussed above. The median policy's deductible was 10 percent of the per occurrence coverage, or \$100,000 of the \$1 million coverage required by the act.

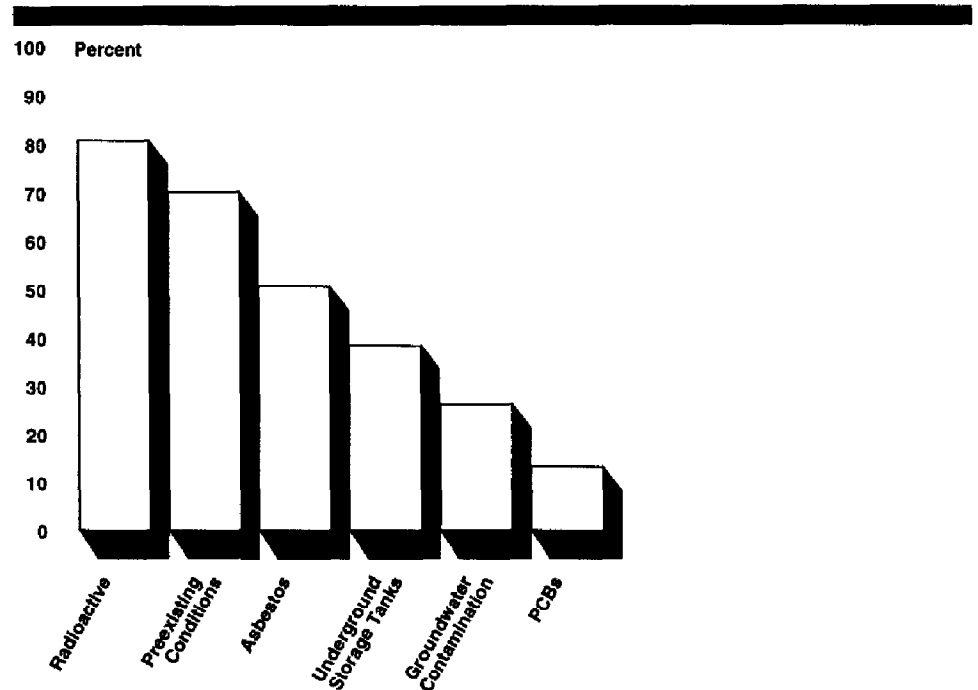
Extent of Coverage

We estimate that the total annual aggregate coverage for 1991 in the United States amounted to \$3.1 billion. The total annual aggregate coverage for the accidental, gradual, and combined policies was \$524,826, \$119,422, and \$3,087,451, respectively.

Insurance policies often include various exclusions to coverage that limit insurance company liability. Insurance companies also often require that insurance applicants submit to preconditions before they are provided pollution liability coverage, such as improved safety and security measures.

The policy exclusions most frequently identified by the facilities that purchased insurance were radioactive and toxic materials (80.7 percent of facilities); preexisting conditions, or pollution conditions that existed prior to the inception of the policy (70.1 percent of facilities); and asbestos (50.6 percent of facilities). Policy exclusions reported by our respondents are outlined in figure 2.3.

Figure 2.3: Exclusions for Accidental and Gradual Coverage

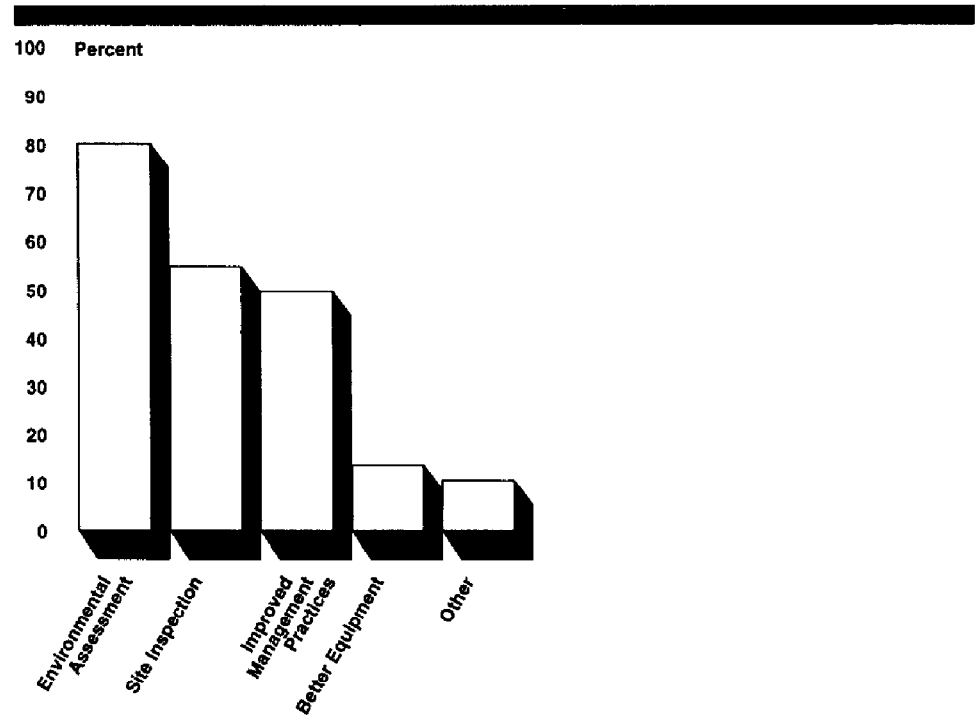


Note: PCBs are polychlorinated biphenyls.

Of the facilities that obtained insurance, the preconditions required most frequently by insurance companies were environmental assessments (80.1 percent of the time), site inspections (54.8 percent of the time), and verification of acceptable management practices such as improving safety and security measures (49.6 percent of the time).⁵ Policy preconditions are shown in figure 2.4.

⁵Environmental assessments are audits generally performed by engineering firms to determine risk associated with coverage.

Figure 2.4: Preconditions for
Accidental and Gradual Coverage



Difficulties Obtaining Pollution Liability Insurance

Our questionnaire responses show that companies had difficulty obtaining pollution liability insurance at a fair price. We estimate that nearly two thirds of TSD companies attempted to obtain pollution insurance between 1982 and 1991 and 44 percent of these were denied insurance at least once. Of our respondents who had been denied insurance during this period, 86.9 percent reported it was very difficult or nearly impossible to obtain the coverage required by the act, and 90.9 percent reported extreme difficulty obtaining an acceptable range of liability coverage (that is, coverage for the various types of activities the facilities are involved in). Figures 2.5 and 2.6 show the degree of difficulty reported by these respondents.

Figure 2.5: Difficulty Obtaining an Adequate Amount of Pollution Liability Insurance Coverage

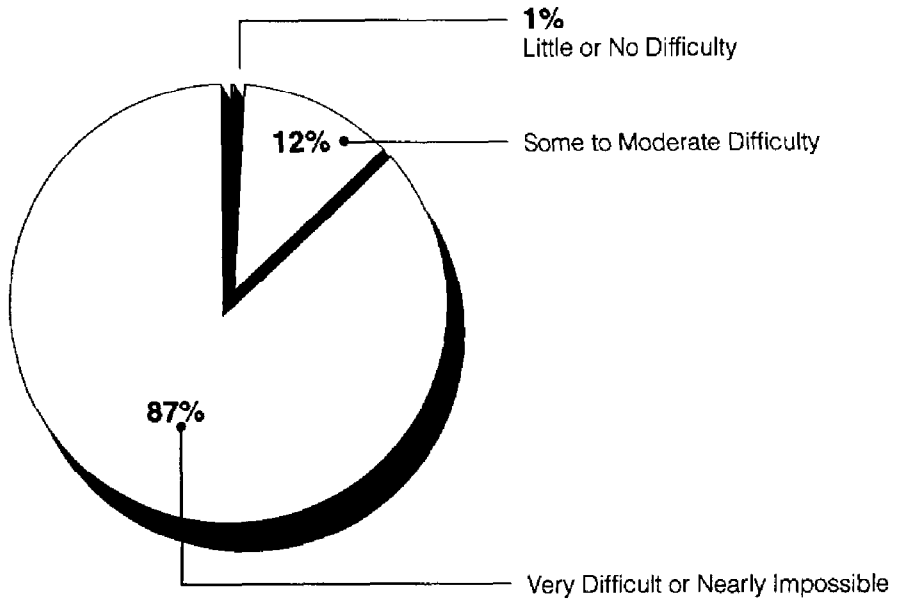
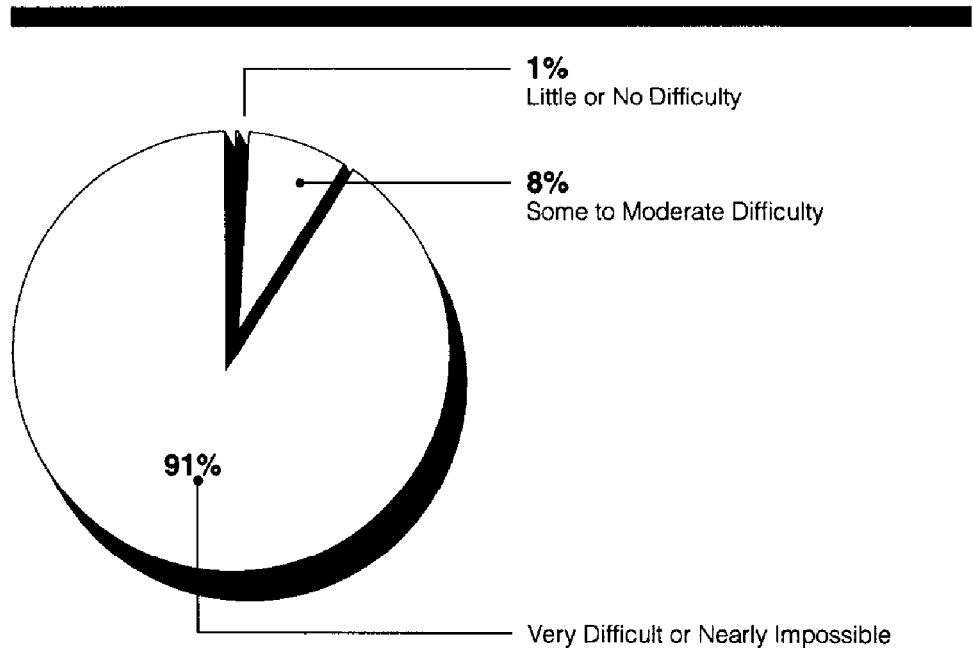


Figure 2.6: Difficulty Obtaining Pollution Liability Insurance With an Acceptable Range of Liability Coverage



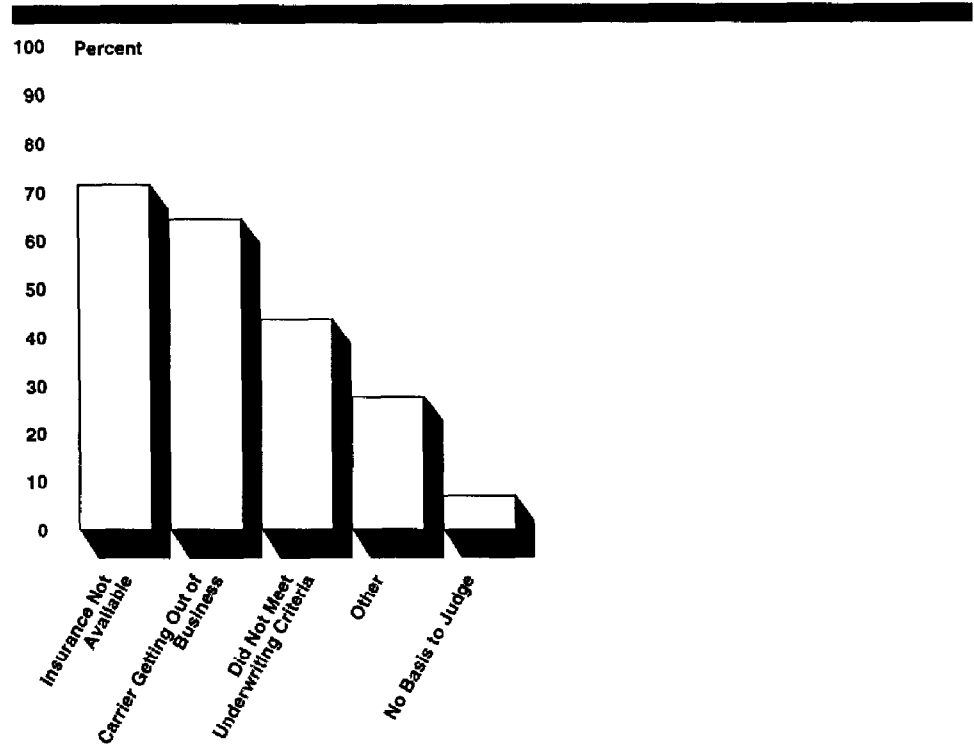
Number of Times Denied Pollution Liability Insurance

We estimate that 308 companies that were operating in 1991 had attempted to obtain pollution liability insurance at some time between 1982 and 1991. These companies were denied coverage almost 1,500 times during this period (an average of about 4.8 times per company). Fewer than half of these companies had pollution insurance in 1991.

Reasons for Difficulty Obtaining Pollution Liability Insurance

The primary reasons that companies reported they had trouble getting pollution insurance or were denied pollution liability insurance were that (1) liability coverage was not available (71.4 percent) and (2) the carrier informed them or their agent that it was getting out of the pollution liability insurance business (64.2 percent). Figure 2.7 shows the reasons cited to TSD companies that had trouble getting insurance or were denied insurance.

Figure 2.7: Reasons for Difficulty Obtaining Liability Insurance



Closure and Postclosure Insurance

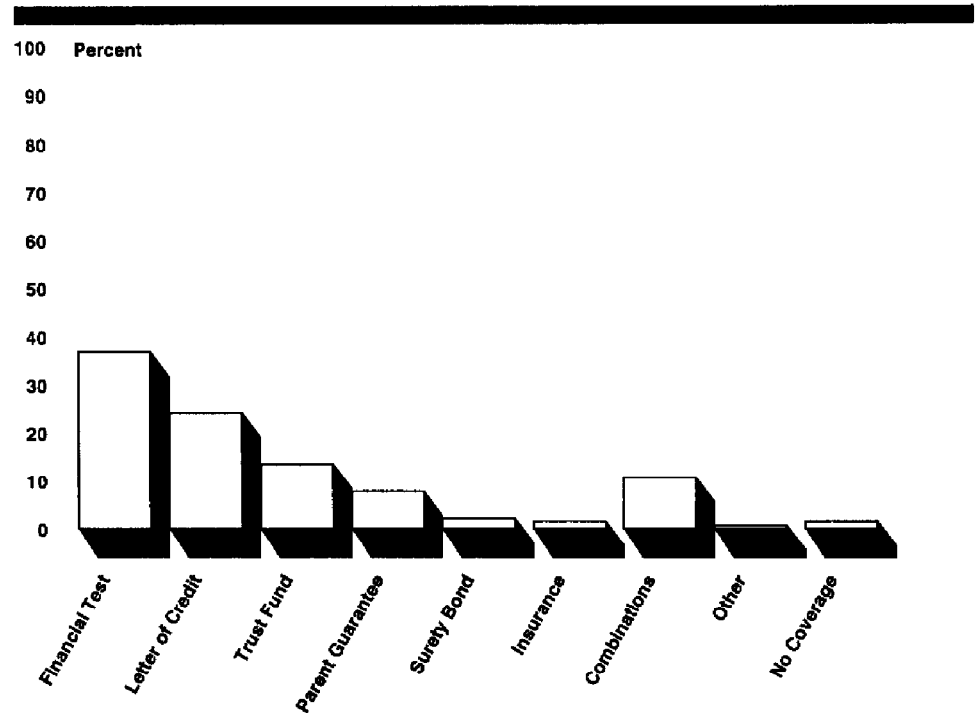
We also collected information on the types of financial assurance mechanisms used by TSD companies to meet the closure and postclosure financial requirements of the act. In this section, we provide our estimates of companies using each allowable closure and postclosure mechanism and the costs and difficulties associated with obtaining closure and postclosure insurance.

Financial Assurance Mechanisms Used for Closure and Postclosure Requirements

About 38.9 percent of TSD companies used the financial test alone or in combination with other mechanisms, 25.3 percent used letters of credit alone or in combination with other mechanisms, and 14.2 percent used parent company guarantees singly or in combination, whereas only 1.5 percent used closure and postclosure insurance to comply with financial responsibility requirements. The remaining respondents used some other mechanism such as surety bonds and trust funds or a combination of mechanisms (excluding closure and postclosure insurance) or had no coverage. Figure 2.8 shows the assurance

mechanisms used singly or in combination to demonstrate closure and postclosure coverage for 1991.

Figure 2.8: Financial Assurance Mechanisms Used to Demonstrate Closure and Postclosure Coverage



Availability of Closure and Postclosure Insurance

Number of Insurers

Our survey identified only one insurance company that provided closure or postclosure insurance. This company did not market such insurance to TSD companies generally. Rather, it had been created by a TSD company as a wholly owned subsidiary to provide pollution insurance only to its affiliated companies. Our interviews with insurance providers reinforced the scarcity of closure and postclosure insurance providers. We asked the leading providers of pollution liability insurance which companies provided closure and postclosure coverage, and none could identify companies that marketed this type of coverage.

Cost and Extent of Coverage

Only 5 active companies reported having obtained closure or postclosure insurance, all with the same insurer. Only 3 of these provided coverage

and premium information, 1 for closure insurance and 2 for combined closure and postclosure coverage. The closure insurance coverage was for \$500,000, at a cost of \$14.73 per thousand. Combined coverage was reported for \$1.5 million and \$1.4 million, at a cost of \$66.67 and \$38.50 per thousand, respectively. From such a small sample, we cannot form reliable estimates of total coverage in the nation or average costs.

Difficulty Obtaining Closure and Postclosure Insurance

Only a few companies even attempted to obtain closure and postclosure insurance, and those that did had little success. Only 20 percent of companies attempted to obtain this coverage; 86 percent reported that it was very difficult to nearly impossible getting adequate amounts of coverage to comply with requirements, and 98 percent reported similar difficulty obtaining an adequate range of coverage. Figures 2.9 and 2.10 show the degree of difficulty these respondents experienced attempting to obtain coverage.

Figure 2.9: Difficulty Obtaining Adequate Closure and Postclosure Insurance

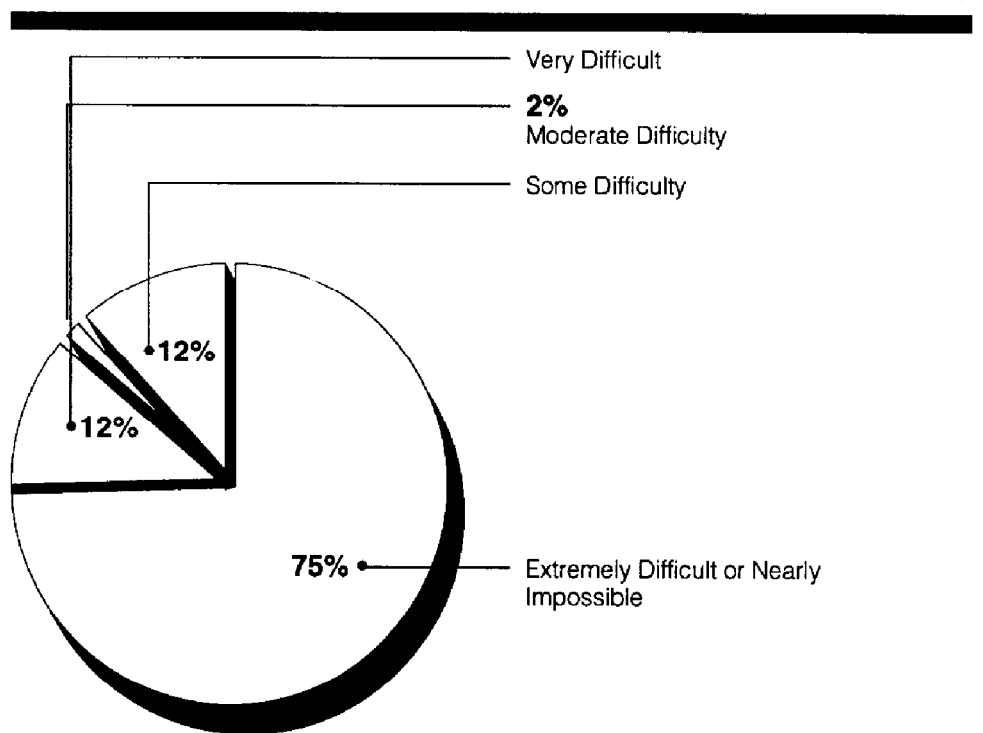
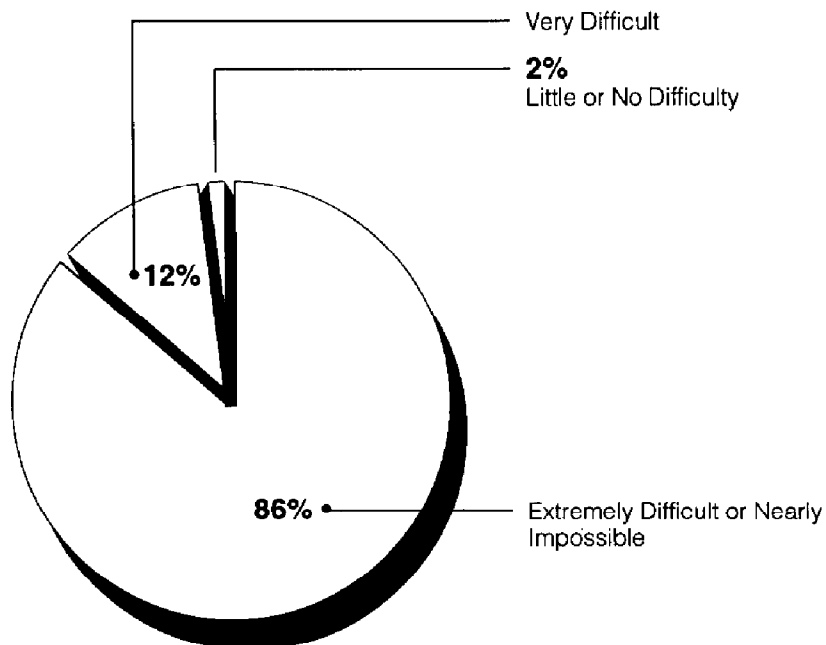


Figure 2.10: Difficulty Obtaining Closure and Postclosure Insurance With an Acceptable Range of Liabilities



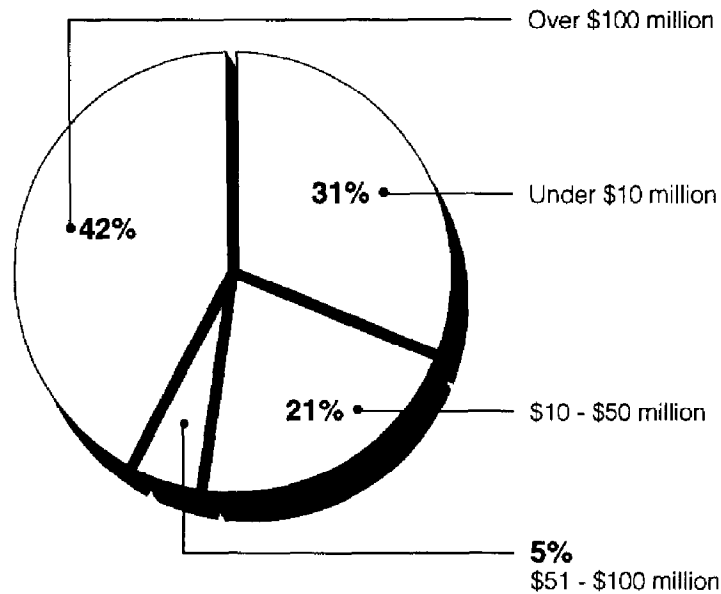
Reasons for Difficulty in Obtaining Closure and Postclosure Insurance

Our respondents reported that the difficulty they encountered in obtaining closure and postclosure insurance resulted primarily because closure and postclosure insurance was simply not available; the insurance companies they contacted no longer provided such coverage, if they ever had.

Company Size and Pollution Liability Coverage

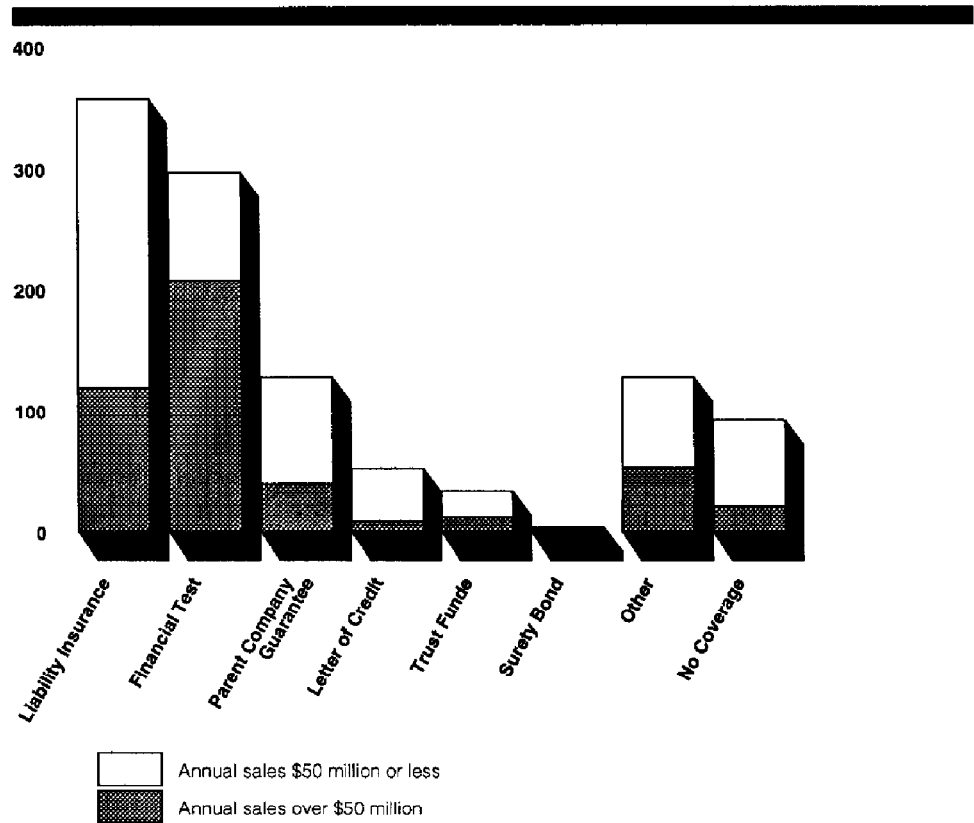
We examined responses we received to our questionnaire for differences related to company size. Nearly half of TSD companies had annual sales over \$50 million during 1990, most of them over \$100 million. Figure 2.11 shows the distribution of annual sales for companies in 1991.

Figure 2.11: Annual Sales of TSD Companies



We found that companies with sales over \$50 million were significantly more likely than smaller companies to meet requirements for operating TSD companies through financial tests. Nearly half of all larger companies used financial tests, while only one seventh of companies with sales under \$50 million did. Smaller companies were more likely to use insurance (representing two thirds of all insurance users), a parent company guarantee (70 percent), letter of credit (85 percent), or trust fund (64 percent) or to have no coverage (77 percent). Figure 2.12 displays the different mechanisms used by large and small companies.

Figure 2.12: Financial Mechanisms Used by Large and Small Companies



Other size-related differences also existed. Smaller companies reported greater difficulty in obtaining an acceptable range of coverage than did larger companies (although both reported great difficulty).

Size differences are also related to whether, when, and why facilities closed. Facilities operated by smaller companies were less likely to have been active at the time of our survey, and to have closed sooner, than those operated by larger companies. Smaller companies were more likely to cite the difficulty of meeting the act's financial requirements as the reason for closing than larger companies and were less likely to cite nonfinancial requirements (such as paperwork) as a reason for closing.

Summary

We found 24 insurers offering some form of pollution liability insurance. Two insurers, however, dominate the pollution insurance market,

providing 81 percent of coverage. We estimate total TSD pollution liability exposure at \$3.1 billion. The average cost of combined accidental and gradual insurance is approximately \$22 per \$1,000 of annual aggregate coverage.

Most respondents to our survey reported great difficulty in obtaining pollution insurance, and nearly half of those who sought insurance over the past decade reported being denied coverage at least once. In most cases, the reason cited for this difficulty was that their carriers were no longer underwriting pollution liability.

For closure and postclosure requirements, most TSD companies use financial tests to meet the legislative requirements. The insurance mechanism is not a real alternative for most companies; less than 2 percent of companies use it.

Finally, coverage availability appears to be related to company size. Only a quarter of small companies use financial tests. The others rely heavily on insurance and, less so, on the more recently allowable financial mechanisms. While nearly all companies reported serious difficulty in obtaining pollution insurance, small companies were significantly more likely to report difficulty than larger companies.

Pollution Insurance Cost and Availability for Land Disposal Companies in 1991 and 1986

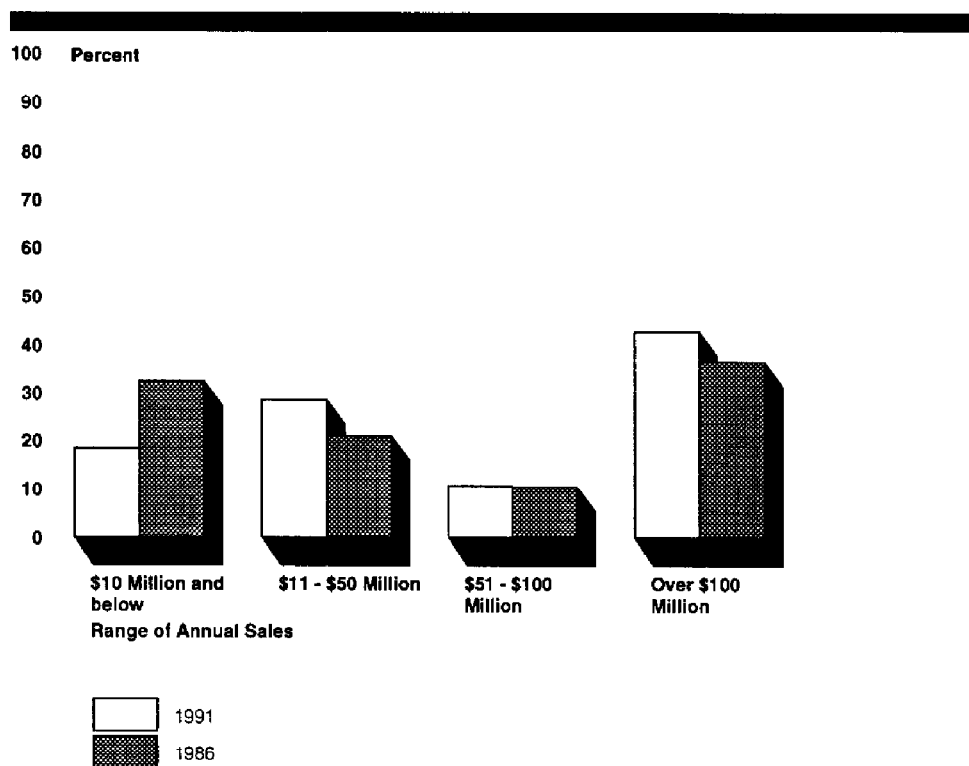
Our 1988 report dealt with the availability of pollution insurance solely for land disposal facilities and was concerned with operational coverage, not with closure or postclosure coverage. The current report responds to a broader request—namely, to examine the availability of insurance for all TSD facilities (not just those categorized as land disposal facilities) and for both types of coverage.¹ In chapter 2, we discussed these issues as they pertain to all TSD companies and, with respect to land disposal companies, we presented the findings from our 1991 survey regarding the cost and availability of gradual pollution insurance, the additional form of coverage required of this group of TSD companies. In this chapter, we compare these findings with the information we developed from our 1986 survey of land disposal facilities. We discuss respondent data on accidental and gradual coverage, including annual sales of land disposal companies, the financial mechanisms used to meet requirements under the Resource Conservation and Recovery Act, number of accidental and gradual policies issued, amount and cost of coverage, use of fronting policies, difficulties facilities have obtaining coverage, and information on exclusions and preconditions to coverage.

Annual Sales for Land Disposal Companies

The size of land disposal companies does not appear to have changed substantially since 1986. About half of the companies in both our surveys reported annual sales below \$50 million, half above that figure. Figure 3.1 presents annual sales of land disposal facilities for 1991 and 1986.

¹For the definition of land disposal facilities and a summary of their more stringent liability coverage requirements, see chapter 1.

Figure 3.1: Annual Sales of Land Disposal Companies



Financial Assurance Mechanisms Used by Land Disposal Companies

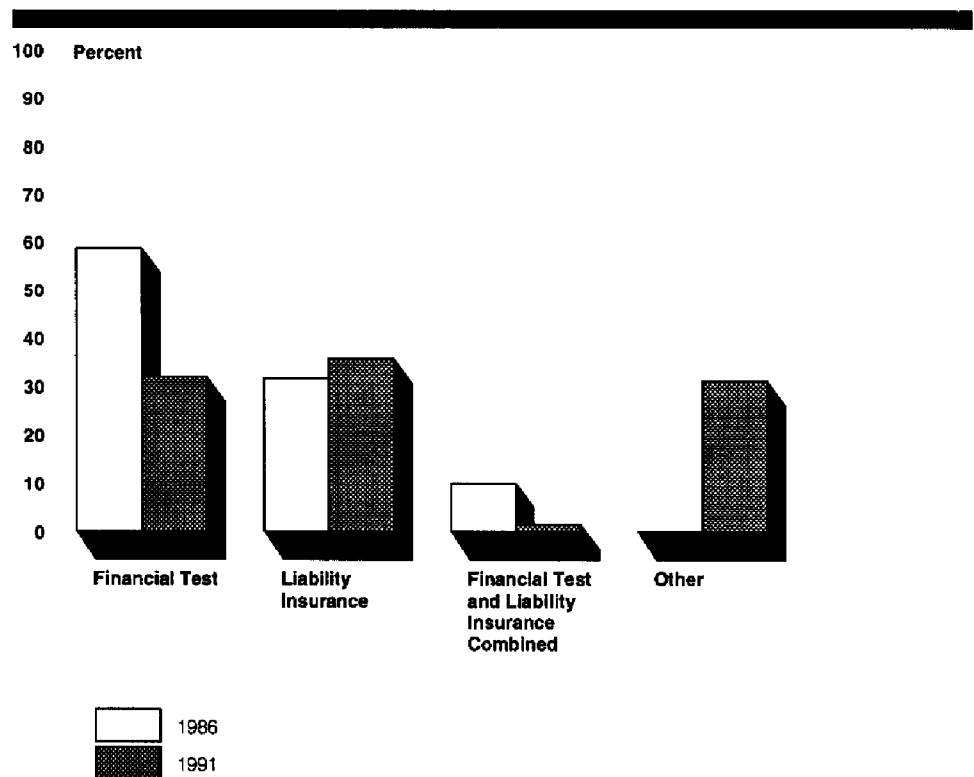
Since our last report, EPA regulations have expanded the range of available financial mechanisms to demonstrate TSD liability coverage. At that time, liability insurance and the financial test were the only mechanisms available to demonstrate coverage. After that time, financial test, liability insurance, parent company guarantee, letter of credit, surety bond, trust fund, and nonparent company guarantee became allowable. At our latest survey, financial test and liability insurance remained the most common financial mechanisms used by land disposal companies to comply with the act, amounting to nearly three quarters of all mechanisms used.

In 1991, the financial test was used for accidental coverage by 31.9 percent of the companies, while liability insurance was used by 35.5 percent, and another 1.5 percent of companies used a combination of the two. Nearly 15 percent used parent company guarantees, and 2 percent used letters of credit for accidental coverage. We found no instances of surety bond use in our sample of land disposal companies. About 7 percent reported having no coverage.

Similarly, for gradual coverage, 35.3 percent used financial tests and 31.6 percent used liability insurance. Some 15 percent of companies used parent company guarantees and about 2 percent used letters of credit.

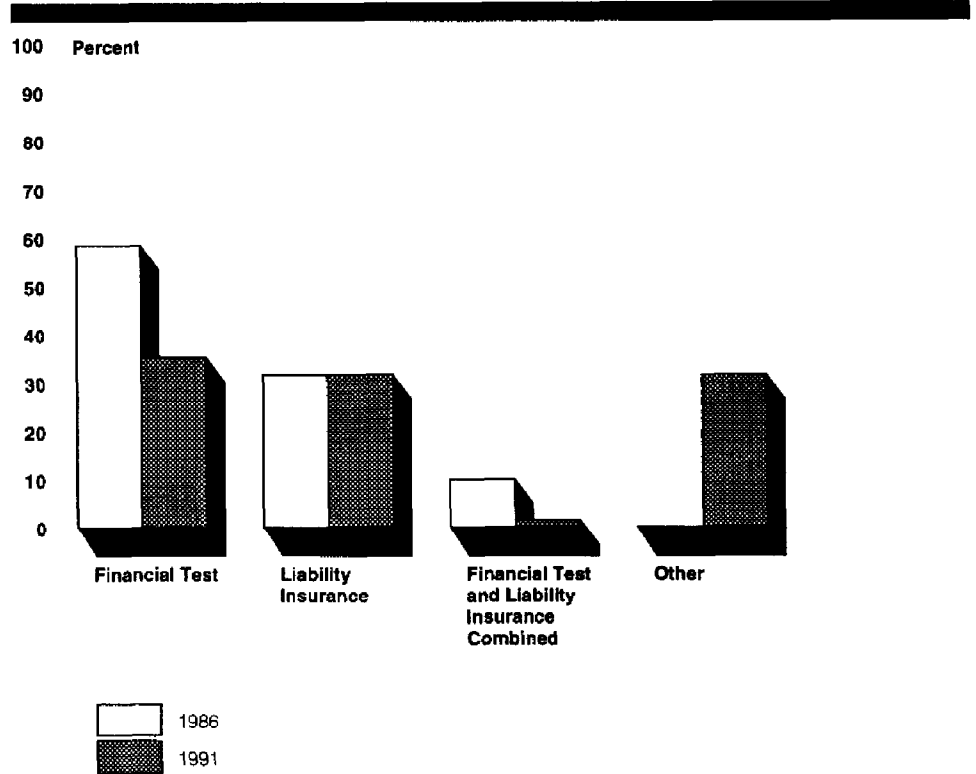
Figure 3.2 depicts the distribution of financial mechanism choices for accidental coverage in 1991 and 1986, and figure 3.3 compares gradual coverage mechanisms for the 2 years. These comparisons suggest that, if allowing the use of other financial assurance mechanisms was expected to alleviate the dependence on insurance, that expectation has been disappointed. The use of the insurance mechanism has remained relatively unchanged or even increased over the 5-year period. It appears that the more recently permissible forms of coverage have replaced financial tests and have not substantially affected the use of insurance.

Figure 3.2: Mechanisms Used by Land Disposal Companies for Accidental Coverage



Note: The 1986 survey did not distinguish between sudden and gradual coverage.

Figure 3.3: Mechanisms Used by Land Disposal Companies for Gradual Coverage



Note: The 1986 survey did not distinguish between sudden and gradual coverage.

Fronting Policies

A higher percentage of land disposal companies in 1991 reported the use of fronting policies to meet the act's requirements for liability coverage than were reported in 1986. We estimate that in 1991, 5.9 percent of land disposal companies used fronting policies to demonstrate coverage for accidental and gradual occurrences. In 1986, we found only 1.6 percent of companies using fronting policies.

Amount and Cost of Coverage

In 1986, 70 policies insuring the companies we surveyed provided aggregate annual accidental coverage of \$1.4 billion. Seventeen policies provided aggregate annual coverage for gradual occurrences of \$212 million, and 57 policies provided a combined aggregate annual coverage of \$1 billion.

We estimate that in 1991, 37 land disposal companies had a total annual aggregate accidental coverage of \$97.4 million. Fourteen companies had separate coverage totaling \$129 million for gradual occurrences, and 160 companies had combined accidental and gradual occurrences of \$1.1 billion. The median cost reported for this insurance was \$25.41 for \$1,000 of annual aggregate coverage, compared with the \$19.63 per thousand we found for 1986.²

Difficulty Obtaining Pollution Liability Insurance

Our analysis suggests that land disposal companies in 1986 encountered similar difficulty in 1991 obtaining pollution liability insurance. We asked both sets of respondents to rank the degree of difficulty they had experienced in obtaining an adequate coverage amount and an acceptable range of coverage on a one-to-five scale representing ascending levels of difficulty. In our recent survey, land disposal companies assigned mean difficulty scores of 4.3 and 4.5 to these dimensions. Five years earlier, our respondents had reported scores of 3.9 and 4.0.

According to respondents, the primary reasons that land disposal companies had trouble getting pollution liability insurance or were denied pollution liability insurance in 1991 were that insurance was not available and that the insurance carrier contacted was getting out of the pollution liability insurance business. In 1986, respondents reported similar reasons for their denial of insurance.

Exclusions and Preconditions

Our survey in 1986 revealed a wide variety of pollution insurance policy exclusions, including preexisting conditions and asbestos. In 1991, the exclusions most frequently identified by land disposal facilities were radioactive and toxic materials, preexisting conditions, and asbestos.

Summary

When we compare the results of our two surveys for the portion of TSD companies made up of land disposal facilities, we find that the availability and cost of pollution liability coverage has not eased since 1986 and may have become somewhat worse. It remains very difficult to obtain and, if available at all, it was in 1991 at least as costly as it had been in 1986. The extension of acceptable financial assurance mechanisms to include other forms has not tended to decrease the dependence of land disposal

²The 1986 costs have not been adjusted for inflation, since they represent the cost for identical amounts of coverage as in 1991. Such an adjustment would make the 1986 and 1991 costs nearly identical but would not represent the diminished value of that coverage in 1991.

Chapter 3
Pollution Insurance Cost and Availability for
Land Disposal Companies in 1991 and 1986

companies on insurance. In addition, more of these companies appear to be opting for fronting policies that offer little true coverage.

Implications of Using State Cleanup Funds

In this chapter, we address our sixth evaluation issue: the implications of TSD facilities using state cleanup funds as a financial assurance mechanism under the Resource Conservation and Recovery Act. As we discussed in chapter 1, the UST program allows the use of such funds to meet its requirements that operators demonstrate their financial ability to clean up pollution damage from storage tank leaks and to pay third party liability claims. This financial assurance mechanism is not currently available to hazardous waste TSD companies.

To address this issue, first we examined the specific provisions of the UST program and the current status of state cleanup fund use. Second, we surveyed TSD facility officials to determine whether they would use state cleanup funds if available to meet the financial assurance requirements. Third, we interviewed officials from 5 insurance companies on the effect state cleanup funds would have on their companies and the industry in general. Finally, we interviewed various state and EPA officials to obtain their views on the feasibility of creating state cleanup funds for use by TSD facilities for complying with the act's financial assurance requirements. In the following pages, we discuss how the states are implementing the state cleanup provisions of the UST program and we compare the relevant characteristics of TSD and UST facilities. Then we discuss the likelihood of TSD companies making use of this mechanism if it were allowed and how insurers and state officials view the desirability and feasibility of applying this UST provision to TSD facilities.

UST Use of State Funds

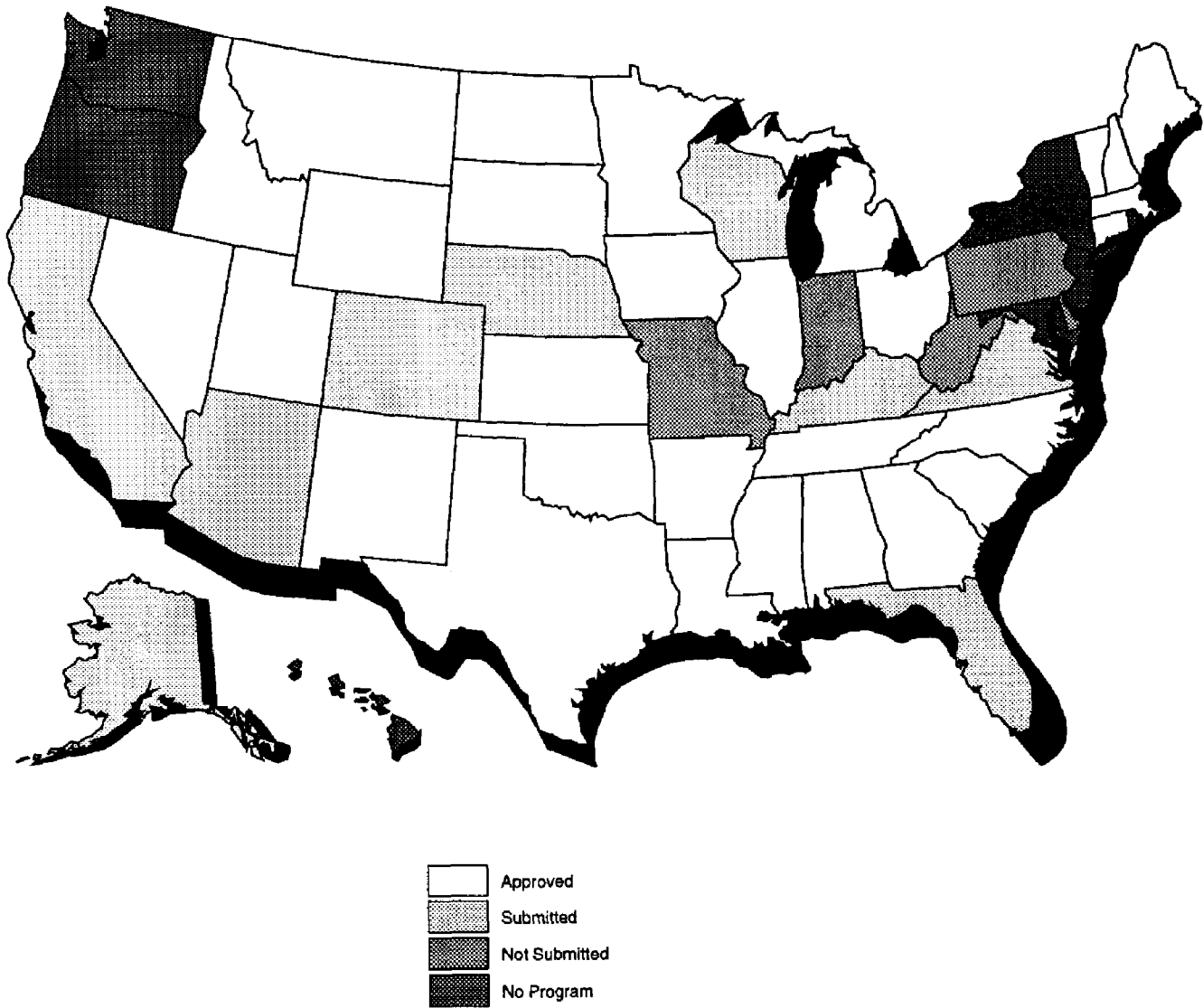
Owners and operators of underground storage tanks must meet federal financial assurance requirements just as for TSD facilities. However, a state cleanup fund is a mechanism made available by EPA to UST owners for demonstrating financial responsibility to cover cleanup and third party claims that is not available to TSD owners and operators. Many different sources can be used to finance a state fund. These include licensing and tank fees, bond issues, and risk-based premiums. The size of cleanup funds varies from state to state. For example, in 1991 Vermont's fund contained \$200,000, whereas Colorado's fund contained \$15 million.

Before a state can use a cleanup fund as an alternative financial assurance mechanism, EPA must approve it. EPA requires the states to submit detailed plans specifying the funding source, the amount of the fund, coverage provided, eligibility for use of the fund, and sunset provisions.

EPA must approve the proposed funds before owners and operators can use them to satisfy federal financial responsibility requirements. However, EPA may approve the state funds on an interim basis before final approval is given. According to EPA, as of June 1992, 29 states had EPA-approved UST cleanup funds to pay for cleanup and third party claims.¹ Figure 4.1 and table 4.1 show the states that have received EPA approval, the states that have submitted plans, those that have not submitted plans, and those that have no program.

¹Some cleanup funds such as that in Texas pay only for cleanup and not third party claims.

Figure 4.1: State Financial Assurance Fund Programs



Chapter 4
Implications of Using State Cleanup Funds

Table 4.1: Status of State Financial Assurance Fund Programs as of June 1, 1992

Approved	Submitted	Not submitted	No program
Alabama	California	Alaska	District of Columbia
Arkansas	Colorado	Arizona	Hawaii
Connecticut	Florida	Delaware	Maryland
Georgia	Kentucky	Indiana	New Jersey
Illinois	Nebraska	Missouri	New York
Idaho	Virginia	Pennsylvania	Oregon
Iowa	Wisconsin	West Virginia	Rhode Island
Kansas			Washington
Louisiana			
Maine			
Massachusetts			
Michigan			
Minnesota			
Mississippi			
Montana			
Nevada			
New Hampshire			
New Mexico			
North Carolina			
North Dakota			
Ohio			
Oklahoma			
South Carolina			
South Dakota			
Tennessee			
Texas			
Utah			
Vermont			
Wyoming			
29	7	7	8

Source: Environmental Protection Agency.

Most states require that a deductible be met before funds are released. UST owners and operators must be in compliance with applicable state and federal regulations, including payment of applicable fees in some states, in order to receive state cleanup funds.

Comparison of TSD Facility and UST Programs

Owners and operators of petroleum USTs may use a number of mechanisms to comply with financial assurance requirements, including all those allowed for TSD facilities: pollution liability insurance, financial test, letter of credit, and so on. Although some similarities exist between TSD facility and UST programs, they are overshadowed by the differences in the facilities regulated (for example, type of facility, population size, and substances handled). Table 4.2 shows the characteristics that make the TSD facility program different and more complex than the UST program.

Table 4.2: Comparison of TSD Facility and UST Programs

	TSD program	UST program
EPA authority	RCRA, subtitle C ^a	RCRA, subtitle I ^a
Population size	About 2,915 facilities that treat, store, and dispose of hazardous waste	1,400,000 tanks that primarily store petroleum products
Types of facilities regulated	Diverse: many different types and sizes that treat, store, and dispose of all hazardous waste	Homogeneous: similar underground tanks that store petroleum and other products
Types of substances handled	All hazardous waste (e.g., PCBs, asbestos, radioactive and toxic waste)	Petroleum products (e.g., gasoline, oil, and many hazardous chemicals)

^aRCRA = Resource Conservation and Recovery Act.

Likelihood of State Cleanup Fund Use by TSD Facilities

Overall, we found that about 50 percent of all TSD facilities would use state cleanup funds if they were available. TSD facilities with a tangible net worth of \$50 million or less are the most likely to use state funds. Of those, 59.1 percent would use state cleanup funds. Of facilities with a tangible net worth between \$51 million and \$100 million, 59.6 percent would use the funds. Of facilities with a tangible net worth greater than \$100 million, only 26 percent would use the funds. By projecting our sample data to the universe of TSD facilities, we estimate that about 1,064 facilities would use the state cleanup fund as a financial assurance mechanism. Moreover, of the 915 TSD facilities projected to use pollution insurance, 554 would probably use state cleanup funds if allowed as a financial assurance mechanism.

Our survey also revealed that smaller TSD facilities (those with annual sales of \$50 million or less) were less likely to use financial tests and more likely to depend on liability insurance and the more recently allowable mechanisms than were larger companies. (See chapter 2.) This finding is

consistent with the comments by some respondents to our survey that state cleanup funds would more likely be used by smaller TSD facilities.

Views of Pollution Insurance Providers

Our survey data show that the two major providers of TSD pollution liability insurance policies to our sample of TSD facilities were National Union Fire Insurance Company and Planet Insurance Company. A third, Zurich-American Insurance Company, recently entered the pollution insurance market and plans to actively underwrite pollution liability insurance. Three of the 5 companies interviewed do not favor the use of state cleanup funds for TSD facilities and believe that states should not implement state cleanup funds for TSD facilities.

According to some insurance company representatives we interviewed, a reduction in policy coverage and higher premiums are potential effects if state cleanup funds are used by TSD facilities. One of the 3 providers indicated that the states should not provide state cleanup funds because a taxpayer-supported fund provides a disincentive for a private market solution to the protection of public health and the environment. The same provider also indicated that the states would be in the position of underwriting insurance and that they are not qualified to do this. Another of the 3 providers claimed that state funds constitute direct competition from the government and may drive some insurance providers out of business. Three of the 5 providers foresee a reduction or elimination of coverage if state funds are used by TSD facilities.

Views of State Environmental Officials

To obtain opinions on the viability of using state cleanup funds for TSD facilities, we selected TSD facility and UST officials from 9 states on the basis of the number of TSD facilities that EPA identified in those states. First, we ranked the 50 states and the District of Columbia by the number of TSD facilities in each state. Then we selected the 3 having the most facilities (California, Pennsylvania, and Texas), the middle 3 states (Colorado, Minnesota, and Mississippi), and the three states having the least number of facilities (Alaska, Nevada, and Vermont).² Some officials believe that state cleanup funds would be feasible if an equitable funding mechanism were developed (for example, a method by which a common fee could be assessed TSD facilities). However, these officials are not clear about how such funds would be collected.

²California does not have authorization from EPA to implement the subtitle C program. Therefore, we obtained information from the EPA Region 10 office.

Four of the 8 TSD state officials we contacted indicated that state cleanup funds would be feasible under the TSD program and would assist smaller facilities in complying with the act's requirements if an equitable method of funding could be developed. According to these officials, some parallels exist between the UST and TSD programs, but a funding mechanism like that used for the UST program might not necessarily work for the TSD program. For example, the size of the UST state cleanup fund varies from state to state, with some states having funds of less than \$15 million. However, according to EPA officials, a TSD facility cleanup fund would have to be considerably larger because one disaster could potentially wipe out the fund and because of the different substances handled by TSD facilities. Because of their limited knowledge about the UST program, three officials did not comment on the feasibility of using state cleanup funds for TSD facilities.

Three of the 9 state UST officials we interviewed commented that state cleanup funds for TSD facilities would be feasible. Although some of these officials were not too familiar with TSD programs, some pointed out that because of common fees that can be levied against all tank owners, it would be easier to administer a state UST program than a more complicated TSD program. For example, under the UST program, although there are about 1.4 million tanks, those tanks generally contain petroleum products such as gasoline and oil. The TSD program, however, encompasses a multitude of facility types that treat, store, and dispose of a variety of substances such as PCBs, asbestos, or radioactive and toxic waste.

Summary and Conclusions

More than half the states currently have EPA-approved state cleanup funds to cover the financial responsibility of UST owners and operators in the case of pollution damage. They are funded from various sources, and their size varies from state to state. Although the financial responsibility aspects of the UST program are in many ways similar to those of the regulations for TSD facilities, the differences among the programs, particularly in the types of facilities and the types of materials regulated, are substantial. For the most part, USTs simply store petroleum products. TSD facilities perform a number of different operations on a wide variety of hazardous wastes.

If a state cleanup fund became an available financial assurance mechanism for TSD facilities, many TSD facilities, particularly smaller ones, would use them. Insurance companies, however, view such a mechanism as inappropriate government intrusion into the private marketplace and

suggest that it would eventually result in the decreasing availability or increased cost of pollution insurance. While some state environmental officials believe that such a mechanism might be feasible and would help small TSD facilities, all agreed that a TSD state cleanup fund program would be much more difficult to design and administer than its UST analogue.

We conclude, therefore, that because of the diverse types of TSD facilities and the wide range of hazardous wastes they treat, store, and dispose of, it will be difficult to establish an equitable funding system and reimburse TSD facilities for cleanup and third party claims. Any cleanup fund would have to take into account the variety of threats posed to public health and to the environment based on the type of contaminant and facility activities (treat, store, and dispose) so that fees would be assessed equitably. However, the development of a funding system would be complex, and its general acceptance within the hazardous waste community and by the general public would entail lengthy consultation and deliberation.

Questionnaire

United States General Accounting Office

GAO

Survey of the Cost and Availability of Pollution Insurance for Hazardous Waste Facilities

PURPOSE OF SURVEY

In the past, the U.S. Congress has received numerous reports about difficulties encountered by hazardous waste facilities in obtaining the insurance coverage required under the Resource Conservation and Recovery Act (RCRA) of 1976. For this reason, the Congress has again asked the U.S. General Accounting Office (GAO) to review this problem. As you know, under RCRA, owners and operators of hazardous waste treatment, storage and/or disposal (TSD) facilities are required to demonstrate their financial ability to compensate a third party for property damage and bodily injury caused by them. State regulations may vary, but this coverage generally takes the form of liability insurance for sudden and nonsudden occurrences and financial assurance for closure and postclosure requirements. The six mechanisms generally allowable to comply with financial assurance requirements are: liability insurance, financial test, letter of credit, surety bond, trust fund, and corporate guarantee.

The purpose of this survey is to obtain information to update the results of a questionnaire previously submitted to a sample of owners and operators of hazardous waste sites on the cost and availability of pollution liability insurance. More specifically, we are surveying a sample of hazardous waste TSD facilities to determine how the cost and availability of pollution liability insurance have affected their operations and to obtain information on the use of financial assurance mechanisms. Our study is aimed at providing the Congress with the information it needs to determine whether fundamental changes should be made to existing or proposed federal environmental legislation. The study will also be beneficial to TSD facilities through the identification of problem areas encountered with RCRA financial requirements. To assess these issues, we need information from current and past owners and/or operators of hazardous waste TSD facilities. A report on the analysis of this information will be sent to the U.S. Congress and to you.

HOW TO COMPLETE THIS QUESTIONNAIRE

If you have owned or operated a treatment, storage, or disposal facility at any time since January 1982, please take the time to complete all of the questions that apply to your situation. Remember, answer only for the facility identified on the cover of this questionnaire; that is, the facility named, addressed, and enumerated with the Environmental Protection Agency (EPA) number on the affixed label. If your company has more than one facility, there is a slight chance that you might receive more than one questionnaire to complete. This is because we are sampling EPA hazardous waste treatment, storage, and disposal (TSD) facilities--and not companies. Consequently, your company's chances of being selected will be increased in proportion to the number of facilities your company owns and/or operates. This questionnaire should be answered by individuals knowledgeable about the history of your organization's response to the RCRA financial assurance requirements. Individuals with this knowledge and with knowledge in the subject matter in this questionnaire tend to be corporate insurance managers, environmental compliance managers and operations managers. If you are unable to answer questions regarding your facility's pollution liability coverage, please contact your insurance agent or broker for assistance. If all the information is readily available, the questionnaire will require perhaps less than an hour to complete, if not it may take a few additional hours depending on the extent to which your business records are centralized and automated. It may also help to read the questionnaire quickly through first so that you will know what information you may have to look up or request before you start to answer.

**Appendix I
Questionnaire**

CONFIDENTIALITY

Because of the sensitive nature of the information we are requesting, your name, the name of this site, and the name of your company will be kept confidential. Also, we will not release any individual site responses to EPA, or any other agency, for enforcement purposes or otherwise.

HOW YOU WERE SELECTED

You were selected as part of nationwide random sample of facilities. The sample was selected from a list of facilities classified by the Environmental Protection Agency (EPA) as a hazardous waste TSD facility. However, since this is a random sample, it is essential that we hear from nearly everyone selected if we are to draw valid industry-wide conclusions from the survey.

Please return the completed questionnaire in the enclosed envelope within 15 days of receipt. If you have any questions, please call Art Gallegos at (303) 572-7368 or James Espinoza at (303) 572-7325. In the event that the enclosed envelope is misplaced, our address is:

U.S. General Accounting Office
Suite 800
1244 Speer Blvd.
Denver, CO 80204
ATTN: Art Gallegos, Project Manager

We thank you for your assistance.

DEFINITIONS

We are asking the owners and/or operators of facilities engaged in the treatment, storage, and disposal of hazardous waste to complete this questionnaire. TSD facilities are defined as carrying out any one of the three following activities:

Treatment: To change the physical, chemical, or biological character of any hazardous waste in order to render it nonhazardous or less hazardous, or to recover and make it safer to transport, dispose of, store, or reduce in volume.

Storage: To hold hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

Disposal: To discharge, deposit, inject, dump, spill, leak, or place any hazardous waste into land, water, or air so that it or its by-products may enter the environment through emission into the air or discharge into any waters, including groundwater.

Appendix I
Questionnaire

PART I: GENERAL INFORMATION

The following questions ask for general information about the operations of this hazardous waste facility; that is, the facility identified by name, address, and EPA ID number on the label affixed to this questionnaire.

1. At any time during the period January 1982 - January 1991, did this facility operate as a hazardous waste treatment, storage, and/or disposal site? (See page 2 for definitions.) (Check one.)
 1. Yes (Continue.)
 2. No (STOP. DO NOT CONTINUE BECAUSE THE REST OF THIS SURVEY DOES NOT APPLY TO YOU. HOWEVER, PLEASE RETURN THE QUESTIONNAIRE IN THE ENCLOSED ENVELOPE. THANK YOU FOR YOUR COOPERATION.)

2. Is this hazardous waste TSD facility owned and/or operated; by private sector parties, by a municipality or local government or by the state or federal government? (Check all that apply.)
 1. Private sector parties (Continue.)
 2. Municipality or local government (Continue.)
 3. State or federal government (STOP. DO NOT CONTINUE BECAUSE THE REST OF THIS SURVEY DOES NOT APPLY TO YOU. HOWEVER, PLEASE RETURN THE QUESTIONNAIRE IN THE ENCLOSED ENVELOPE. THANK YOU FOR YOUR COOPERATION.)

3. Did this facility have to comply with RCRA financial requirements at any time during the period January 1982-January 1991? (Check one.)
 1. Yes (Continue.)
 2. No (STOP. DO NOT CONTINUE BECAUSE THE REST OF THE SURVEY DOES NOT APPLY TO YOU. HOWEVER, PLEASE RETURN THE QUESTIONNAIRE IN THE ENCLOSED ENVELOPE. THANK YOU FOR YOUR COOPERATION.)

4. Is this an active TSD facility (permitted or interim status)?
 1. Yes (Continue.)
 2. No (Skip to 7.)

5. If this is an active TSD facility, how long has it been in operation?
Number of years in operation: _____

Appendix I
Questionnaire

6. If active, what hazardous waste operations are conducted at this facility? (Check all that apply.)

- 1. Treatment
 - 2. Storage
 - 3. Disposal
 - 4. Landfill
 - 5. Surface impoundment
 - 6. Generator
 - 7. Transporter
 - 8. Incinerator
 - 9. Other (Specify.)
-
-

7. Were any or all of the TSD operations at this facility closed or in the process of closing? (Check one.)

- 1. Some/all operation(s) closed or in process of closing
- 2. No operation(s) closed or in process of closing (Skip to 13.)

8. If closed, when was TSD facility or operation closed? Or, if in the process of closing, when was the closing process started? (Please enter the year of the most recent closure; or, if in the process of closing, the year you started the most recent closing. If both, the most recent year.)

Year of closing/year started closing/most recent year, if both: _____

9. What TSD operations were closed and/or what operations are in the process of closing? (Check all that apply.)

- 1. Treatment
 - 2. Storage
 - 3. Disposal
 - 4. Landfill
 - 5. Surface impoundment
 - 6. Generator
 - 7. Transporter
 - 8. Incinerator
 - 9. Other (Specify.)
-
-

Appendix I
Questionnaire

10. Did you close or start the closing process because of (1) RCRA financial requirements, (2) other RCRA nonfinancial regulations, or (3) purely business and/or other reasons? *(Check all that apply.)*

- 1. RCRA financial requirements (Continue.)
- 2. Other RCRA nonfinancial regulations (Continue only if you also checked RCRA financial requirements, otherwise skip to question 13.)
- 3. Business reasons (e.g., market factors, bankruptcy, sale, or transfer of property and/or business, etc.) (Continue only if you also checked RCRA financial requirements, otherwise skip to question 13.)
- 4. Other (Please specify in the space below and continue only if you also checked RCRA financial requirements; otherwise, skip to question 13.)

11. Which, if any, of the following RCRA financial assurance requirements contributed to the closing or initiation of closing of this TSD facility? *(Check all that apply.)*

- 1. Could not locate a carrier that provided pollution liability insurance coverage.
- 2. Could not afford pollution liability insurance premiums.
- 3. Could not obtain required limits of insurance coverage.
- 4. Deductible required by carrier was too high.
- 5. Carrier excluded desired coverage.
- 6. Could not meet RCRA's paperwork requirements.
- 7. Parent/nonparent firm would not provide guarantee.
- 8. Could not pass financial test.
- 9. Unable to afford a trust.
- 10. Unable to afford a surety bond.
- 11. Other *(Specify in the space to the right.)* _____

12. None of the above.

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Questionnaire

12. Which, if any, of the following RCRA financial closure or postclosure requirements contributed to the closing or initiation of closing of this TSD facility or operation? (Check all that apply.)

1. Could not locate a carrier that provided closure or postclosure coverage.
2. Could not afford premiums.
3. Could not obtain required limits of coverage.
4. Deductible required by carrier was too high.
5. Carrier excluded desired coverage.
6. Could not meet RCRA's paperwork requirements.
7. Parent/nonparent firm would not provide guarantee.
8. Could not pass financial test.
9. Unable to afford a trust.
10. Unable to afford a surety bond.
11. Other (Specify in space below.)

12. None of the above.

13. When did your company or municipality or local government organization become the owner and/or operator of this TSD facility?

1. If company operator, year company became operator: _____.
2. If company owner, year company became owner: _____.
3. If municipality or local governmental organization operator, year became operator: _____. (Answer, then skip to 19.)
4. If municipality or local governmental organization owner year became owner: _____. (Answer, then skip to 19.)

**Appendix I
Questionnaire**

14. What was the most recent estimated **tangible net worth** of your facility (e.g., for calendar year 1990) or the last full year of operation under insurance or RCRA assurance? *(Check the tangible net worth value in column 1 and indicate the last full year of operation in column 2.)* (Skip to question 19 if you are not a company; that is, for example, if you are a municipality.)

Range of tangible net worth	Tangible net worth (1)	Last full year of operation (e.g., 1990) (2)
1. Under \$10 million		
2. \$10 - 50 million		
3. \$51 - 100 million		
4. Over \$100 million		
5. Not available		

15. What was the approximate amount of the **annual sales** for your facility for 1990 or for the last full year of operation under insurance or RCRA assurance? *(Check the amount of total sales in column 1 and indicate the last full year of operation in column 2.)*

Amount of total sales	Total sales (1)	Last full year of operation (e.g., 1990) (2)
1. Under \$10 million		
2. \$10 - 50 million		
3. \$51 - 100 million		
4. Over \$100 million		
5. Not available		

16. Does (or did) your company have a **parent company** while it was the owner or operator of this facility? *(Check one.)*

1. Yes (Continue.)
 2. No (Skip to question 19 in Part II, Financial Requirement Coverage and Costs.)

**Appendix I
Questionnaire**

17. If you answered yes to question 16, what was the most recent estimated tangible net worth of the parent company for 1990 or the last full year of operation under insurance or RCRA assurance? (Check the tangible net worth value in column 1 and indicate the last full year of operation in column 2.)

Range of tangible net worth	Tangible net worth (1)	Last full year of operation (e.g., 1990) (2)
1. Under \$10 million		
2. \$10 - 50 million		
3. \$51 - 100 million		
4. Over \$100 million		
5. Not available		

18. If you answered yes to question 16, what was the approximate amount of total annual sales for the parent company for 1990 or the last full year of operation under insurance or RCRA assurance? (Check the amount of total sales in column 1 and indicate the last full year of operation in column 2.)

Amount of total sales	Total sales (1)	Last full year of operation (e.g., 1990) (2)
1. Under \$10 million		
2. \$10 - 50 million		
3. \$51 - 100 million		
4. Over \$100 million		
5. Not available		

**Appendix I
Questionnaire**

PART II: FINANCIAL REQUIREMENT COVERAGE AND COSTS

The questions that follow ask for information on the two types of financial requirements outlined in RCRA. Questions regarding liability coverage for injury and property damage are in section A, and questions regarding financial assurance for closure and postclosure are in section B.

SECTION A: POLLUTION LIABILITY INSURANCE FOR BODILY INJURY AND PROPERTY DAMAGE

A TSD must demonstrate the ability to compensate third parties for bodily injury and property damage resulting from sudden/accidental occurrences due to operations at the facility. For sudden/accidental occurrences, minimum coverage is \$1 million per occurrence with a \$2 million annual aggregate to cover all occurrences. Land disposal facilities (e.g., landfills, surface impoundments, and land treatments) are subject to an additional requirement. They must carry third-party pollution liability coverage for nonsudden accidents at levels of at least \$3 million per occurrence with a \$6 million aggregate, exclusive of legal defense costs. The information you provide will be kept confidential and will not be released to EPA or any other organization.

19. For the last full year that you owned and/or operated this TSD facility, what were the financial mechanisms used, if any, to demonstrate the ability to cover third-party bodily injury and property damage? (Check the financial mechanism used in column 1 and indicate the last full year of operation in column 2.)

Financial mechanism	Financial mechanism used (1)	Last full year of operation (e.g., 1990) (2)
1. Liability insurance		
2. Financial test		
3. Parent company guarantee		
4. Letter of credit		
5. Surety bond		
6. Trust funds		
7. Nonparent firm guarantee		
8. Other (Please specify.) _____		
9. No coverage		

20. Are you (were you) a land disposal facility? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 22.)

**Appendix I
Questionnaire**

21. For the last full year that your company owned and/or operated this TSD facility, what were the financial mechanisms used, if any, for demonstration of nonsudden/gradual coverage? (Check the financial mechanism used in column 1 and indicate the last full year of operation in column 2.)

Financial mechanism	Financial mechanism used (1)	Last full year of operation (e.g., 1990) (2)
1. Liability insurance		
2. Financial test		
3. Parent company guarantee		
4. Letter of credit		
5. Surety bond		
6. Trust funds		
7. Nonparent firm guarantee		
8. Other (Please specify.) _____		
9. No coverage		

22. Did you purchase sudden/accidental and/or nonsudden/gradual pollution liability insurance during your last full year of operation? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 30, section B, on the financial assurance for closure and postclosure.)

23. If yes, please specify the type of coverage obtained for the last full year of operation. (Check one.)

- 1. Sudden/accidental only
- 2. Nonsudden/gradual only
- 3. Both sudden and nonsudden

**Appendix I
Questionnaire**

Liability insurance coverage is available in different forms. Please examine your policy or contact your insurance agent or broker for assistance if you have difficulty answering the questions that follow.

POLLUTION LIABILITY INSURANCE COVERAGE AND COSTS

24. If your insurance policy covered sudden/accidental occurrences and/or nonsudden/gradual occurrences either as a separate policy or as part of a general umbrella policy, please provide a breakout of the coverage and costs. First, list the insurer(s). Then, list the amount of coverage broken out by the amount of coverage per occurrence and in the aggregate. Next, consider the costs. List the annual deductible, copayment and premium costs. Finally, list the paperwork costs and the costs of insurance-related requirements, such as audits and inspections, for the last full year of operation.

1. Insurer(s): _____

Coverage/costs	Type of coverage		
	Sudden/accidental (1)	Nonsudden/gradual (2)	Combined sudden/nonsudden (3)
2. Coverage			
1. Per occurrence			
2. Aggregate per year			
3. Annual costs			
1. Premiums			
2. Deductibles			
3. Copayments			
4. Paperwork			
5. Other (Please specify.)			

Appendix I
Questionnaire

25. Did any of the pollution liability insurance policies you listed above have any significant coverage exclusions (e.g., no coverage for groundwater contamination)? (Check one.)

1. Yes (Continue.)
2. No (Skip to question 27.)

26. If yes to question 25, please indicate the type of exclusion(s). (Check all that apply.)

1. Groundwater contamination
 2. Underground storage tanks
 3. Preexisting conditions
 4. Radioactive/toxic contamination
 5. PCBs
 6. Asbestos
 7. Other (Specify in space below.)
-
-

27. Have any preconditions (e.g., an environmental assessment) been asked of your company in order to obtain the coverage you listed above? (Check one.)

1. Yes (Continue.)
2. No (Skip to question 30, section B, on closure and postclosure coverage.)

28. If yes to question 27, please indicate the type of preconditions. (Check all that apply.)

1. Environmental assessment/audit
 2. Site inspection, at own expense
 3. Additional or better equipment
 4. Acceptable management practices (e.g., preventive or safety measures)
 5. Radioactive/toxic contamination
 6. Other (Specify in space below.)
-
-

**Appendix I
Questionnaire**

29. What was the total estimate of costs incurred by your facility to comply with preconditions?

Total costs: _____.

SECTION B: FINANCIAL ASSURANCE FOR CLOSURE AND POSTCLOSURE

A TSD may use any of six mechanisms to comply with closure and postclosure financial responsibility requirements, any of which can be used in conjunction with the others. Cost estimates for closing are based on the point in the facility's operating life when closure would be the most expensive. Cost estimates for postclosure monitoring and maintenance are based on projected costs for the entire postclosure period. The information you provide will be kept confidential and will not be released to EPA or any other organization.

30. For the last full year that your company owned or operated this TSD facility, what were the financial mechanisms used, if any, for demonstration of closure or postclosure requirements? (Check the financial mechanism used in column 1 and indicate the last full year of operation in column 2.)

Financial mechanism	Financial mechanism used (1)	Last full year of operation (e.g., 1990) (2)
1. Closure/postclosure insurance		
2. Financial test		
3. Parent company guarantee		
4. Letter of credit		
5. Surety bonds		
6. Trust funds		
7. Nonparent firm guarantee		
8. Other (Please specify.) _____		
9. No coverage		

31. Did you purchase closure or postclosure insurance during your last full year of operation? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 33, Part III, Pollution Claims History.)

**Appendix I
Questionnaire**

32. If yes to question 31, please provide a breakout of the following insurance coverage and cost information. First, list the insurer(s). Then, list the amount of coverage. Next, consider the costs. List the annual premiums, deductibles and copayments. Finally, list the paperwork costs and the costs of insurance-related requirements, such as inspections and audits, for the last full year of operation.

1. Insurer(s): _____

Coverage/costs	Type of coverage		
	Closure (1)	Postclosure (2)	Combined closure/postclosure (3)
2. Coverage			
1. Amount of coverage			
Annual costs			
1. Premiums			
2. Deductibles			
3. Copayments			
4. Paperwork			
5. Other (Please specify.)			

PART III: INSURANCE CLAIMS HISTORY

Questions 33 through 38 ask for information on claims under **sudden and nonsudden** pollution liability insurance and closure/postclosure insurance. If you did not submit any claims between January 1982 and the present, skip to question 39, part IV, Availability of RCRA Insurance.

33. Since January 1982, has your company filed any claims with your insurer under your pollution liability policy? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 36.)
- 3. Not applicable (Skip to question 36.)

**Appendix I
Questionnaire**

34. If yes to question 33, list the insurer(s) and the number of filings for each type of claim.

Type of claims filed	Insurer(s) (1)	Total # claims filed (2)
1. Sudden		
2. Nonsudden		
3. Combined		

35. If yes to question 33, for each type of claim filed, please provide the total dollar value of the claims filed, claims settled in court, and claims settled out of court. Finally, of the total value of claims filed, what was the dollar amount of claims paid?

Value of claims	Type of claim filed		
	Sudden (1)	Nonsudden (2)	Combined (3)
1. Total value of all claims filed			
2. Value of claims settled in court			
3. Value of claims settled out of court			
4. Value of claims paid			

36. Since January 1982, has your company filed any claims with your insurer under your closure and postclosure insurance? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 39, part IV, Availability of RCRA Insurance.)
- 3. Not applicable (Skip to question 39, part IV, Availability of RCRA Insurance.)

37. If yes to question 36, list the insurer(s) and the number of filings for each type of claim.

Type of claim filed	Insurer(s) (1)	Total # claims filed (2)
1. Closure		
2. Postclosure		
3. Combined		

**Appendix I
Questionnaire**

38. If yes to question 36, for each type of claim filed, please provide the total dollar value of the claims filed, claims settled in court, and claims settled out of court. Finally, of the total value of claims filed, what was the dollar amount of claims paid?

Value of claims	Type of claim filed		
	Closure (1)	Postclosure (2)	Combined (3)
1. Total value of all claims filed			
2. Value of claims settled in court			
3. Value of claims settled out of court			
4. Value of claims paid			

PART IV: AVAILABILITY OF RCRA INSURANCE

Questions 39 through 47 ask for information on the availability of pollution liability insurance and closure/postclosure insurance. If you did not attempt to obtain pollution liability insurance or closure/postclosure insurance, skip to question 48.

39. To the best of your knowledge, did this facility have problems obtaining pollution liability insurance before you became owner/operator?
(Check one.)

- 1. Yes
- 2. No
- 3. Not applicable
- 4. No basis to judge

40. Of the times you have attempted to obtain pollution liability insurance for this facility, including renewals with the same insurance company between 1982 and 1991, has your company ever been denied or rejected? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 44.)
- 3. Not attempted (Skip to question 44.)

41. If yes to question 40, indicate the number of times your company was denied pollution liability insurance in the space below.

_____ (Number of times)

**Appendix I
Questionnaire**

42. Why do you think you had trouble getting pollution liability insurance or were denied? (Check all that apply.)

- 1. Pollution liability insurance was not available.
- 2. The carrier told you or your agent that it was getting out of the pollution liability insurance business.
- 3. The company failed to meet the carrier's underwriting criteria.
- 4. Other reasons (Please specify.) _____
- 5. No basis to judge.

43. Consider the last time you attempted to obtain pollution liability insurance coverage, at a fair price, for this facility. How difficult, if at all, was it to obtain an adequate dollar amount of coverage and how difficult, if at all, was it to obtain coverage for an acceptable range of liabilities? (Check one column for each row.)

Amount and liability coverage	Level of difficulty				
	Little or no difficulty (1)	Some difficulty (2)	Moderate difficulty (3)	Very difficult (4)	Extremely difficult or nearly impossible (5)
1. Adequate amount of coverage					
2. Coverage for an acceptable range of liabilities					

44. Now consider closure/postclosure insurance rather than pollution liability insurance. Of the times you have attempted to obtain closure or postclosure insurance for this facility, including renewals with the same insurance company, has your company ever been denied or rejected? (Check one.)

- 1. Yes (Continue.)
- 2. No (Skip to question 48.)
- 3. Not attempted (Skip to question 48.)

45. If yes to question 44 (i.e., if your company has been denied), indicate the number of times your company was denied closure or postclosure insurance in the space below.

_____ (Number of times)

**Appendix I
Questionnaire**

46. Why do you think you had trouble getting this closure/postclosure insurance? (Check one.)

- 1. Closure/postclosure coverage was not available.
- 2. The carrier told you or your agent that it was getting out of the closure/postclosure coverage business.
- 3. The company failed to meet the carrier's underwriting criteria.
- 4. Other reasons (Specify.) _____
- 5. No basis to judge.

47. Consider the last time you attempted to obtain closure or postclosure insurance at a fair price at this facility. How difficult, if at all, was it to obtain adequate coverage at an acceptable cost? (Check one column for each row.)

Face amount and cost	Level of difficulty				
	Little or no difficulty (1)	Some difficulty (2)	Moderate difficulty (3)	Very difficult (4)	Extremely difficult or nearly impossible (5)
1. Adequate face amount					
2. Acceptable cost					

Appendix I
Questionnaire

48. Because of the danger to people and the environment posed by leaking petroleum underground storage tanks, the Congress in 1986 required petroleum marketers to carry \$1 million of insurance or otherwise demonstrate financial responsibility for this amount. One of the mechanisms that EPA allows petroleum tank owners to use as a financial assurance mechanism is state cleanup funds.

If EPA was to allow TSD facilities to use state cleanup funds to satisfy the RCRA financial assurance requirements, what effect, if any, would this policy have on (1) the increase or decrease in insurance coverage and (2) the increase or decrease in the cost of insurance premiums?

1. Insurance coverage (Check one.)

1. Reduces or eliminates coverage
2. Little or no effect
3. Increases coverage
4. Other (Specify to the right.) _____
5. No basis to judge

2. Insurance premiums (Check one.)

1. Reduces premiums
2. Little or no effect
3. Increases premiums
4. Other (Specify to the right.) _____
5. No basis to judge

49. Some people believe that state cleanup funds should be allowed as a financial mechanism to make it easier for companies to meet the RCRA financial requirements. Others disagree, citing increased consumer costs as the precedent for shifting responsibilities and risk. The question is: To what extent, if at all, does your company agree or disagree with the policy to use state cleanup funds? (Check one.)

1. Strongly agree
2. Agree more than disagree
3. Agree as much as disagree (or undecided)
4. Disagree more than agree
5. Strongly disagree
6. No opinion

Appendix I
Questionnaire

50. Regardless of your answer to question 49, if state cleanup funds were allowed as a financial mechanism under RCRA, would your company make use of them? (Check one.)

- 1. Yes
- 2. Probably yes
- 3. Undecided
- 4. Probably no
- 5. No

51. If you have any additional comments about the questions asked in this survey, please write them in the space below. You may use additional sheets if necessary.

52. Finally, please complete the following:

EPA ID # _____
Company name _____
Company address _____
Name of contact _____
Phone number _____

Please return the completed questionnaire in the enclosed envelope within 15 days of receipt. If you have any questions, please call Art Gallegos at (303) 572-7368 or James Espinoza at (303) 572-7325. In the event that the enclosed envelope is misplaced, our address is:

U.S. General Accounting Office
Suite 800
1244 Speer Blvd.
Denver, CO 80204

Thank you for your cooperation.

Nonrespondent Analysis

We contacted 106 of the 162 nonrespondents to determine whether nonrespondents were TSD facilities or not. The remaining 56 facilities could not be contacted because of no forwarding addresses, unlisted numbers, and the like. We specifically contacted 68 nonrespondents from disposal and nondisposal facilities from the states having subtitle C regulations equivalent to EPA's. We also contacted 38 disposal and nondisposal facility nonrespondents from states with regulations more stringent than EPA's. EPA and state officials reported that 44 states had regulations equivalent to EPA's and 6 states had regulations more stringent than EPA's. Facilities were assigned the codes of EQD for equivalent disposal, EQN for equivalent nondisposal, MSD for more stringent disposal, and MSN for more stringent nondisposal. Our analysis shows that the nonrespondent data were similar to those for respondents. Thus, the similarities between respondents and nonrespondents make us confident that the nonrespondents would have provided similar data.

Tables II.1 and II.2 show that of the 674 questionnaires mailed, we received 512 responses. Of this number, 368 (71.9 percent) were TSD facilities and 144 (28.1 percent) were not. The data also show that there were 162 nonrespondents. Of this number, we contacted 106 by phone and determined that 74 (69.8 percent) were TSD facilities and 32 (30.2 percent) were not. We were unable to contact the remaining 56 facilities.

Table II.1: Questionnaire Respondents

Stratum	Questionnaires mailed	TSD respondents	Non-TSD respondents	Total
EQN	218	133	44	177
EQD	216	117	41	158
MSN	134	59	39	98
MSD	106	59	20	79
Total	674	368 71.9%	144 28.1%	512

Table II.2: Questionnaire Nonrespondents

Stratum	TSD facilities contacted	Non-TSD facilities Contacted	Facilities not contacted	Total
EQN	22	5	14	41
EQD	26	15	17	58
MSN	15	8	13	36
MSD	11	4	12	27
Total	74 69.8%	32 30.2%	56	162

**Appendix II
Nonrespondent Analysis**

From the 106 facilities, we also analyzed the range of annual sales for 57 of the nonrespondents that provided us with annual sales information. Our analysis shows that about 50 percent of the TSD facility nonrespondents had annual sales of less than \$50 million. This percentage is similar to that reported by TSD facility respondents with annual sales of less than \$50 million.

Table II.3 shows the annual sales for nonrespondents in equivalent states (EQD and EQN) and for more stringent states (MSD and MSN).

Table II.3: Annual Sales of Nonrespondents

Stratum	Less than \$10 million	\$10-\$50 million	\$51-\$100 million	More than \$100 million	Not available	Total
EQD	6	4	1	4	3	18
EQN	6	6	2	5	3	22
MSD	0	2	1	3	0	6
MSN	4	2	1	3	1	11
Total	16	14	5	15	7	57

In addition, we determined the geographic location of respondents and nonrespondents by EPA region. The data show that the highest response rates were from Regions 7 and 8, both of which had a 90-percent or higher response rate. The lowest response rate was from Region 2. Table II.4 shows the geographic distribution of respondents and nonrespondents by EPA region.

Table II.4: Geographic Location of Questionnaire Respondents and Nonrespondents

EPA region ^a	Total questionnaires mailed	Number of responses	Number of nonrespondents	Response rate
1	172	135	37	78.5%
2	80	52	28	65.0
3	111	82	29	73.9
4	68	50	18	73.5
5	109	86	23	78.9
6	49	36	13	73.5
7	26	24	2	92.3
8	10	9	1	90.0
9	35	27	8	77.1
10	14	11	3	78.6
Total	674	512	162	76.0%

^aFor states included in each region, see table II.5.

**Appendix II
Nonrespondent Analysis**

Table II.4: EPA Regions

Region	State
1	Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
2	New Jersey New York Puerto Rico
3	Delaware District of Columbia Maryland Pennsylvania Virginia West Virginia
4	Alabama Florida Georgia Kentucky Mississippi North Carolina South Carolina Tennessee
5	Illinois Indiana Michigan Minnesota Ohio Wisconsin
6	Arkansas Louisiana New Mexico Oklahoma Texas
7	Iowa Kansas Missouri Nebraska
8	Colorado Montana North Dakota South Dakota Utah Wyoming
9	Arizona California Hawaii Nevada
10	Alaska Idaho Oregon Washington

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