

GAO

Report to the Chairman, Subcommittee on  
Commerce, Transportation and Tourism,  
Committee on Energy and Commerce  
House of Representatives

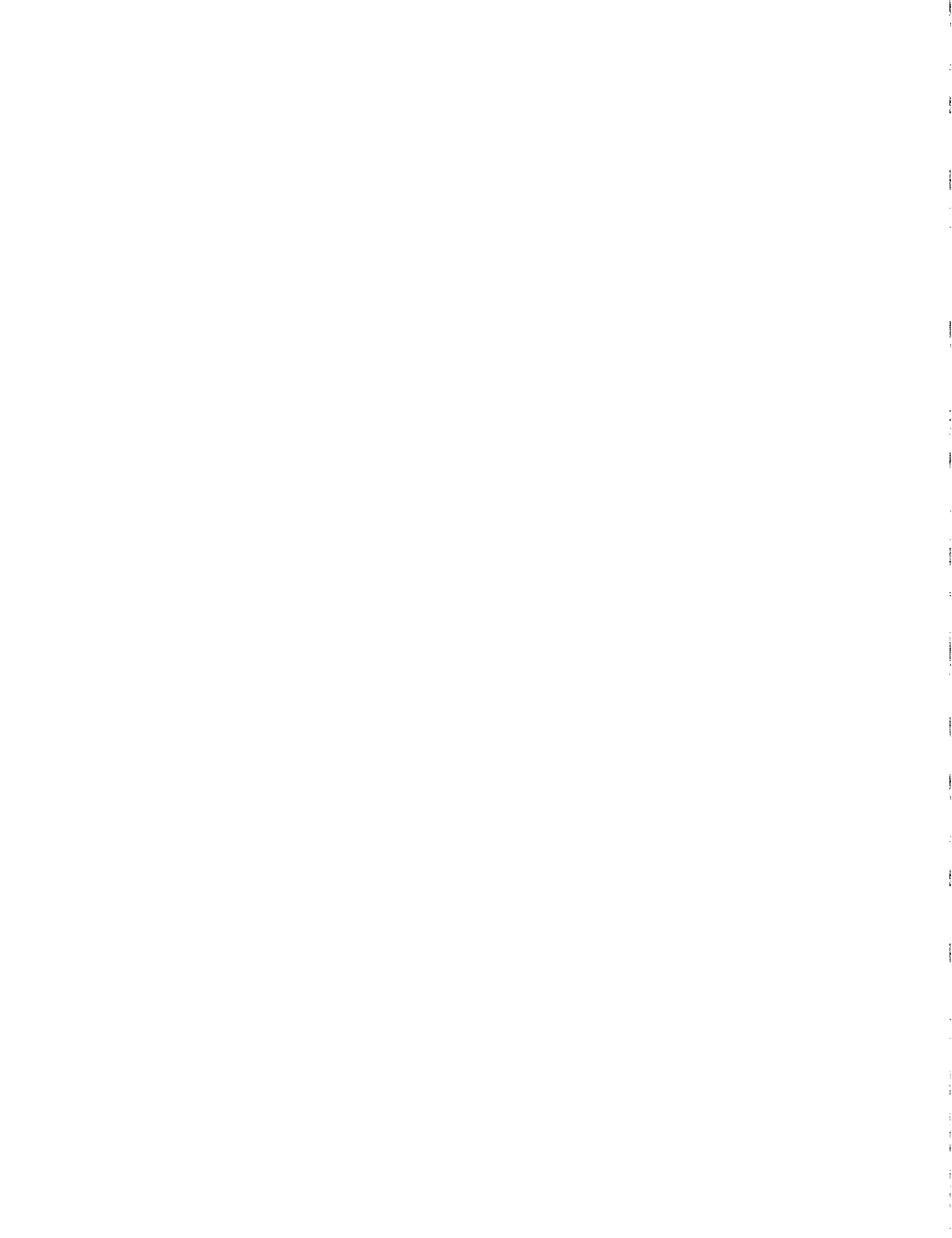
May 1986

# HAZARDOUS WASTE

## Federal Civil Agencies Slow to Comply With Regulatory Requirements



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

Dear Mr. Chairman:

In response to your November 15, 1984, request, this is our report on civil federal agency performance in identifying federal facilities handling hazardous waste materials and in assuring that federal hazardous waste handlers comply with Resource Conservation and Recovery Act requirements and regulations.

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

Sincerely yours,

J. Dexter Peach  
Director

# Executive Summary

Hazardous wastes that are not properly managed may lead to public health and environmental harm, as well as the need for costly cleanup measures. The Department of Energy, for example, estimates that over \$750 million may be required to clean up previously uncontrolled hazardous waste at three of its facilities. To improve waste management practices, the Congress, in the Resource Conservation and Recovery Act of 1976 (RCRA), mandated a hazardous waste regulatory program.

In response to a congressional committee request, GAO reviewed the implementation of RCRA by federal civilian agencies. Specifically, GAO determined whether (1) agencies are identifying and reporting their hazardous waste handlers (generators, transporters, treaters, storers, or disposers) to the Environmental Protection Agency (EPA) and the states, (2) EPA and the states are inspecting federal facilities to ensure that handlers are complying with RCRA requirements, (3) handlers are complying with RCRA regulations, and (4) enforcement actions are being used to compel agencies to correct problems. (A separate GAO report addresses RCRA implementation by the Defense Department.)

## Background

The federal government owns or operates thousands of installations. Within these installations are manufacturing and industrial activities, research laboratories, hospitals, maintenance facilities, and power generation plants. These and other such activities sometimes produce hazardous waste which, if not properly controlled under RCRA, can be very expensive to clean up and bring under control at a future point in time. In 1985, federal facilities handling hazardous waste that had been identified to EPA numbered about 1,800—or 2 percent of the over 69,000 handlers known to EPA nationwide.

Federal agencies, just as private entities, are responsible for controlling and managing their hazardous waste in accordance with RCRA requirements. EPA, as an agency and as a handler of hazardous waste, is subject to the same requirements. However, EPA has a second responsibility in that it is the focal agency in the federal sector responsible for overseeing and assuring that environmental statutes are properly implemented by federal agencies. Under executive order, EPA is to provide advice and assistance to executive agencies and conduct reviews and inspections to monitor their compliance with applicable regulations. EPA has indicated its desire that federal agencies set the example in complying with environmental regulations.

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GAO reviewed the hazardous waste activities of 17 federal agencies in 12 states. Approximately 31 percent of the 800 known civilian agency handlers are located in these states.

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## Results in Brief

Federal agency performance in implementing RCRA has not been exemplary. Agencies have been slow in developing an awareness and understanding of their responsibilities under the act and in establishing programs to carry out the act's requirements. A complete inventory of federal hazardous waste handlers has yet to be developed by the agencies. Over 70 percent of the identified handlers reviewed had not been inspected, and of those that have been inspected, almost half had violations. Agency actions to correct identified problems have taken extended periods of time, and few enforcement actions, other than warning letters, have been used by EPA or the states to elicit greater agency attention to problems. Although attentiveness to RCRA has increased during 1985 with EPA and agencies doing more to comply with the act, agency performance across the federal sector remains varied and inconsistent.

EPA plans to conduct annual inspections of the more significant federal hazardous waste handlers and is encouraging federal agencies to adopt environmental auditing or self-assessment programs to improve compliance of handlers. It is also developing a new federal facility compliance strategy aimed at reducing lengthy noncompliance at federal facilities. This strategy, which proposes specific time frames for taking action to correct hazardous waste violations and elevating unresolved problems to EPA headquarters, is scheduled to be completed in May 1986. In addition to completing its new strategy, EPA needs to review and assess agency efforts to identify and report on new or not yet identified hazardous waste handlers.

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## Principal Findings

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### Handlers Identified

In the states reviewed, 247 hazardous waste handlers had been identified by the 17 federal agencies. The agencies indicated that they were reasonably certain that the larger and more significant hazardous waste handlers, such as treatment, storage, and disposal facilities, in their agencies had been identified and reported to EPA or the states. Only nine,

however, had a moderate to high level of confidence that all their handlers had been identified. Several agencies estimated that hundreds of additional facilities have yet to be evaluated to determine if they handle hazardous waste. Currently, EPA's review of agency identification programs is limited to obtaining lists of agency identified handlers—it does not include reviews or assessments of agency programs and progress in evaluating facilities to determine which are handlers of hazardous waste. (See ch. 3.)

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**Handlers Inspected**

Of the 247 known handlers in the 12 states that GAO visited, 72—or 29 percent—had been inspected by EPA or state environmental authorities to verify that they were complying with RCRA. Although the percentage of inspected handlers is small, all 14 of the major treatment, storage, and disposal handlers that had been identified had been inspected at least once. (See pp. 19-21.)

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**Violations**

Of the 72 inspected handlers, 33, or almost half, were cited for violating one or more RCRA requirements. Moreover, 22 were cited for Class I violations—such as having no groundwater monitoring system or having no emergency contingency plans—which EPA considers to be among the serious violations. (See pp. 21-23.)

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**Enforcement Actions**

Nineteen of the 33 facilities cited for violations remained out of compliance for 6 months or more, and some have been out of compliance for more than 3 years. Facilities remained out of compliance for a number of reasons, including a lack of federal agency emphasis on RCRA and limited agency knowledge and expertise in RCRA requirements. The Departments of Energy and Transportation and the National Aeronautics and Space Administration accounted for 17 of the 19 facilities in lengthy noncompliance. (See pp. 25-27.)

Notices of violation or warning letters have been the primary enforcement actions that EPA and the states have used to compel agencies to correct compliance problems. With such actions, agencies take steps on their own to correct problems. More stringent enforcement actions, such as compliance agreements between EPA and the agencies stating what will be done to correct problems, or administrative or compliance orders in which EPA or the states unilaterally mandate the specific actions agencies must take to correct problems, were used in two instances. (See pp. 29-31.)

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## Increased Agency and EPA Emphasis

Agencies have increased their emphasis on RCRA programs over the past year. Responsibilities for RCRA have been identified at the headquarters and regional levels more clearly, more RCRA guidance is being provided to subordinate activities, and a number of agencies have used environmental auditing as a means of self-assessing the environmental compliance of their organizations. (See chs. 3 and 4.)

EPA has issued a policy statement on environmental auditing for federal agencies and plans to expand its inspection coverage of hazardous waste handlers. EPA is also providing federal agencies with more information on RCRA requirements and is working closer with agencies on their programs. Further, EPA is revising its federal facility environmental compliance strategy—scheduled for issuance in May 1986—in which EPA plans to incorporate specific time frames for issuing compliance orders and elevating problems to EPA headquarters for resolution.

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## Recommendations

GAO recommends that the Administrator, EPA, increase monitoring of agency programs and progress in identifying hazardous waste handlers; and where agency identification programs are found to be deficient, work with agency heads to improve such programs. (See p. 48.)

Because of the importance of resolving compliance problems in a timely fashion, GAO recommends that the Administrator, EPA, assure that the federal agency environmental compliance strategy includes specific time frames for elevating unresolved problems to EPA headquarters, and it is completed on schedule. (See p. 34.)

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## Agency Comments

GAO did not request the agencies to review and comment officially on a draft of this report. The views of directly responsible officials were sought during GAO's review and are incorporated in the report where appropriate.

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**Abbreviations**

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
GAO	General Accounting Office
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
RCRA	Resource Conservation and Recovery Act
TVA	Tennessee Valley Authority
VA	Veterans' Administration
OMB	Office of Management and Budget
RCED	Resources, Community, and Economic Development Division (GAO)

# Introduction

Proper handling and management of hazardous wastes is an issue of national concern. Over the years, improperly handled hazardous wastes have seeped into groundwater supplies, polluted lakes and streams, contaminated land, and escaped into the air with severe consequences. Damage to the environment and adverse human health effects have occurred, and the estimated clean up costs associated with past mismanagement ranges in the billions of dollars.

In responding to these concerns, the Congress enacted the Resource Conservation and Recovery Act (RCRA) in 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980 to regulate and manage hazardous wastes. RCRA provides for the safe management and control of wastes currently being generated, while CERCLA provides for the cleanup and management of hazardous wastes generated in the past which have been abandoned or left uncontrolled. The objectives of both acts are to promote the protection of public health and the environment, and federal agencies are subject to the hazardous waste management requirements of these acts to the same extent as private entities.

Much of these programs' initial focus and attention has been on private industry compliance. Federal facility compliance with CERCLA has recently received more attention by the Environmental Protection Agency (EPA), especially in the Department of Defense (DOD). EPA and DOD have undertaken several joint initiatives since 1983 to improve DOD's program for cleanup and disposal of hazardous wastes at DOD facilities. However, less visibility has been given by EPA and the states to the civilian federal sector's efforts in managing the hazardous wastes generated through day-to-day operations—wastes subject to control under RCRA, according to EPA.

The federal sector produces a substantial amount of hazardous wastes—about 2 percent of the estimated 290 million tons of hazardous wastes generated annually, according to EPA. EPA is responsible for implementing the RCRA regulatory program and overseeing authorized states' programs.

Concerned about how well federal agencies have implemented RCRA at federally owned or operated sites and at activities under their control, the Chairman, Subcommittee on Commerce, Transportation and Tourism, House Committee on Energy and Commerce, asked GAO to review federal agency compliance with RCRA, including how well EPA and the states have monitored federal agency hazardous waste management

activities. The Chairman asked that our review focus on the civil agencies in the federal sector.

## Federal Agency Hazardous Waste Activities

Federal activities that produce hazardous wastes include manufacturing and industrial activities; hospitals; research laboratories; military bases; and fabrication, maintenance, and repair activities. Federal agencies have responsibility for all hazardous waste activities conducted on their lands, including the activities of government contractors and lessees operating on federal properties. In addition, federal agencies are responsible for government activities on nonfederal lands, and if problems occur, the government could be held liable for the cost of corrective actions and cleanup. According to EPA, the federal government owns thousands of buildings and installations spread over 729 million acres of land. Many are technical installations that generate toxic wastes which, if uncontrolled, can cause environmental problems.

Most hazardous waste handlers are in the private sector. Of the more than 69,000 handlers known to EPA as of September 1985, federal handlers—both civilian and defense—accounted for about 1,800.<sup>1</sup> Although the universe of federal handlers is small, mismanaged federal facility hazardous wastes can pose the same problems as mismanaged private entity wastes, and EPA recognizes the potential for significant environmental impact.

Past hazardous waste practices by federal agencies can be costly. For example, the Department of Energy (DOE) has estimated over \$650 million for environmental cleanup at its facilities in Oak Ridge, Tennessee, and about \$134 million for two California facilities. The Department of the Interior has estimated over \$3 million for cleanups in fiscal years 1985 and 1986, and the National Aeronautics and Space Administration (NASA) has estimated more than \$35 million for its hazardous waste cleanup activities. Similarly, the U.S. Coast Guard is estimating \$10 million for the cleanup of one base in Traverse City, Michigan, and the Federal Aviation Administration anticipates about \$5.8 million for cleanup of one of its New Jersey sites. Problems at some DOD hazardous waste sites have brought national attention to DOD's management efforts, with over \$450 million budgeted for DOD hazardous waste cleanup and compliance efforts in the last 3 fiscal years. DOD estimates that up to \$10

<sup>1</sup>We did not verify EPA's data base to specific agency records of reported handlers. EPA is in the process of verifying their records with the agencies.

billion may be required to clean up hazardous wastes that have gone uncontrolled on its installations in the past.

Even small quantity handlers of hazardous wastes are becoming of increasing concern to the Congress and the public. Prior to 1984, most hazardous waste handlers dealing with 1,000 kilograms or less of wastes each month were not nationally regulated by RCRA. The 1984 amendments to RCRA, however, lowered this exclusion to only those handling 100 kilograms or less. The result of the change is that hazardous waste handlers involved with between 100 and 1,000 kilograms of wastes each month that were previously not under RCRA regulatory control will now be subject to RCRA requirements. Many previously unregulated handlers are predicted to come under regulation now.

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## EPA and State Roles in Implementing RCRA

Under RCRA, hazardous waste handlers are grouped into four categories, as follows:

- generators;
- transporters;
- treatment, storage, and/or disposal facilities; and
- small quantity generators.

EPA's regulatory program, promulgated under the act, includes reporting, recordkeeping, and performance and operating standards for each of the approximately 56,000 generators, 12,500 transporters, and 5,000 facilities that treat, store, or dispose of hazardous wastes. Once identified and reported to EPA as a hazardous waste handler, RCRA also prescribes a set of regulatory requirements that handlers must adhere to in managing and controlling their hazardous wastes. Some requirements are common to all categories of waste handlers, such as recordkeeping and reporting, contingency planning, and personnel training. However, the requirements for treatment, storage, and disposal facilities are more extensive than those for generators and transporters of hazardous wastes. For example, treatment, storage, and disposal facilities must take appropriate steps to ensure that wastes are contained within their facilities and do not seep or leak into underground water supplies or outside the boundaries of their facilities. As noted previously, small quantity generators producing or handling 100 kilograms or less of hazardous wastes per calendar month are generally exempt from RCRA regulation. Appendix I provides more information on the specific requirements handlers must meet under RCRA.

RCRA provides that after authorization by EPA, states may administer their own hazardous waste programs while working toward final program authorization. RCRA does not allow any state to impose any requirements that are less stringent than the federal requirements, although states may adopt more stringent measures. If state requirements are more stringent than federal requirements, then federal agencies must meet the state requirements. As of January 1986, 51 of 56 states and territories have either been authorized or are working toward final authorization to administer their hazardous waste programs. Authorized activities include permitting, inspection, enforcement, and technical assistance.

RCRA also authorizes the EPA Administrator to issue compliance orders and assess penalties of up to \$25,000 per day for noncompliance with program requirements. The Administrator may initiate civil actions to obtain appropriate relief for violations of any RCRA requirement, including temporary or permanent injunctions. Where hazardous waste handlers knowingly handle hazardous waste without a proper permit, or knowingly make false statements, criminal actions may also be initiated. States also enforce their RCRA programs through the use of compliance orders, civil and criminal penalties, and other enforcement actions. EPA's enforcement policies relative to federal hazardous waste handlers are discussed in chapter 2.

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## Federal Agency Requirements Under RCRA

EPA expects federal agencies to set the example in complying with RCRA. Executive Order 12088, issued on October 13, 1978, requires the head of each executive federal agency to ensure that all necessary actions are taken for the prevention, control, and abatement of environmental pollution at federal facilities and at activities under the control of the agency. Consistent with this order, and with section 6001 of RCRA, which makes federal agencies responsible for compliance with state and federal requirements respecting control of hazardous waste, the head of each agency is responsible for assuring that RCRA requirements are complied with in their respective agencies. The order also directs EPA to provide technical assistance to federal agencies sufficient to ensure their cost-effective and timely compliance with environmental statutes. Such assistance would include assistance in understanding and implementing EPA's hazardous waste handler identification process.

Under RCRA, as implemented by EPA, all hazardous waste handlers were required to notify EPA or authorized states of their hazardous waste activities by August 18, 1980, including

- the location of the hazardous waste activity,
- a general description of the type(s) of activities producing hazardous wastes, and
- the specific hazardous wastes handled.

In order to determine who should notify, EPA published a three-step facility hazardous waste analysis process in the May 19, 1980, Federal Register and required that all potential handlers of wastes perform the process to determine if their facility waste is subject to RCRA regulation. These requirements, which are discussed in more detail in chapter 3, applied to both the private and federal sectors.

Consistent with the requirements for handlers to (1) notify the appropriate authorities of their hazardous waste activities and (2) comply with RCRA hazardous waste management regulations, EPA and the states are to oversee waste handler activities, primarily through inspections and, if violations are found, ensure that corrective actions are taken.

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## Objectives, Scope, and Methodology

Our review was requested in a November 15, 1984, letter from the Chairman, Subcommittee on Commerce, Transportation and Tourism, House Committee on Energy and Commerce. In accordance with the request, and as modified by subsequent discussions with the Chairman's office, our specific objectives were to determine

- what efforts have been made to assure that federal handlers of hazardous wastes have been identified and reported to EPA,
- to what extent have EPA and authorized states provided timely inspection of federal handlers,
- to what extent have federal handlers complied with RCRA hazardous waste requirements, and
- has there been any reluctance or delay in taking enforcement actions to compel federal handler compliance with RCRA hazardous waste requirements.

In addition to these four objectives, we included the following objective in our review:

- To what extent have federal agencies used environmental auditing to evaluate or assess their hazardous waste activities?

As discussed in chapter 4, an environmental audit is an agency's systematic self-assessment of a facility's operations and practices in terms of

meeting environmental requirements. Environmental auditing is reported by EPA and others to be a productive, cost-beneficial technique for assessing the environmental conditions of organizations.

To accomplish these objectives, and in accordance with agreements with the Chairman's office, we performed work at EPA headquarters, 4 EPA regional offices, 12 states, and 17 civilian federal agencies as shown in tables 1.1 and 1.2. All 12 states in our review were either fully or partially authorized to administer their RCRA programs, or performed inspections under a cooperative arrangement with EPA. At the Chairman's request, we concentrated our review on the civil agencies in the federal sector.

**Table 1.1: EPA Regions and States  
Included in GAO's Review**

<b>EPA region</b>	<b>States</b>
Region II, New York	New Jersey New York Puerto Rico (U.S. territory) <sup>a</sup>
Region IV, Atlanta	Alabama Florida Tennessee
Region V, Chicago	Illinois Michigan Ohio
Region IX, San Francisco	Arizona California Nevada

<sup>a</sup>For presentation purposes, Puerto Rico is included as a state in the list of states we visited and counted as such in our analyses and is subsequently referred to as a state in the report.

Table 1.2: Federal Agencies Reviewed

1.	Department of Agriculture
2.	Department of Commerce
3.	Department of Energy
4.	Department of Health and Human Services (HHS)
5.	Department of Housing and Urban Development (HUD)
6.	Department of the Interior
7.	Department of Justice
8.	Department of Labor
9.	Department of Transportation
10.	Department of the Treasury
11.	Environmental Protection Agency
12.	General Services Administration (GSA)
13.	National Aeronautics and Space Administration
14.	Tennessee Valley Authority (TVA)
15.	U.S. Postal Service
16.	U.S. Army Corps of Engineers (Civil Works) <sup>a</sup>
17.	Veterans' Administration (VA)

<sup>a</sup>The Army Corps of Engineers is in the Defense Department. We included the Corps in our selection of agencies because of its civil works functions and thus limited our review of the Corps to only those activities. Hereafter, where the term federal agency is used, it does not, except for the Corps' civil work functions, include Defense Department handlers.

The states included in our review contain approximately 31 percent of the known 800 civilian federal waste handlers and about 69 percent of the potential federal land disposal sites. These states were judgmentally selected to include a significant number of federal agencies and land disposal facilities and also to provide for geographical distribution in our work. The selection of states was coordinated with the Chairman's office.

To address the first objective, we interviewed EPA, state, and federal agency officials and obtained documents, where possible, describing the efforts made by these groups to identify RCRA hazardous waste handlers on federal properties or at activities under federal control. With these individuals, we discussed (1) the universe of activities on their lands and under their control, (2) which of these might be handling hazardous wastes, (3) their rationale for excluding others, (4) their potential liability if RCRA wastes were mishandled, and (5) the existing headquarters and field office organization and support structure for monitoring the environmental actions of component and field activities. Additionally, we asked these officials to review their agency's actions since 1980 and to self-assess their agency's level of assurance that all their hazardous



waste handlers had notified the appropriate regulatory authority. Additionally, we discussed ongoing and future agency plans related to the objective. To supplement this effort, we also reviewed information EPA had on the known universe of potential hazardous waste handlers on federal agency lands or under their control. The information on efforts made to identify federal handlers is contained in chapter 3.

To address the second, third, and fourth objectives dealing with inspection, compliance, and enforcement issues, we interviewed EPA, state, and federal agency officials and obtained documents, where possible, describing (1) EPA and state inspection findings, (2) federal agency compliance efforts, and (3) the enforcement tools used to compel compliance at inspected handlers found in violation of RCRA. We examined EPA and state files and records on federal agency handlers identified to us in the states selected for review and summarized the results on data collection instruments to assure consistency in the data sought and collected.

Where violations were identified and compliance was not achieved promptly, we discussed the results with federal facility managers and EPA officials charged with program oversight (i.e., state inspectors and RCRA program managers). We used 180 days, or about 6 months, as the cutoff for determining when compliance was not promptly achieved, although EPA had no criteria for determining promptness at the time many of the violations were identified. We used 180 days because EPA's recently established policy on enforcement calls for escalating action at this point. According to the policy, for any Class I violation (the more serious violations), if the initial enforcement action does not result in compliance within 90 days—or an agreement to an enforceable compliance schedule—then EPA or the authorized state may take up to another 90 days, or 180 total days, to issue an order or refer the case for judicial complaint. The information obtained on inspection, compliance, and enforcement issues is contained in chapter 2.

To address the environmental auditing objective, we provided EPA's draft environmental auditing policy statement dated December 31, 1984, to state and federal agency officials to obtain their comments on this concept, including any concerns they had in implementing this concept within the federal government. The information obtained on environmental auditing is contained in chapter 4.

Our work was conducted from December 1984 through November 1985. For analytical purposes, we used EPA and state data that reflected their inspections and other activities as of December 31, 1984. We selected

this date to allow time for EPA or state enforcement actions to take place on identified violations. Only in selected cases did we analyze data after that date. For example, we did update the compliance status of facilities that had long-standing RCRA violations to reflect their status as of September 30, 1985. It should be noted that the agencies with the more active RCRA programs normally had more data for us to analyze and critique. Agencies with lesser programs had lesser amounts of data for us to review and thus in many cases receive less prominence in the analyses presented throughout the report.

We performed our review in accordance with generally accepted government auditing standards. The views of EPA and federal agency officials directly responsible for hazardous waste programs discussed in the report were sought during our review and are incorporated into the report where appropriate. In accordance with the wishes of the Chairman's office, we did not request EPA nor the agencies included in our review to comment officially on a draft of the report.

Two other recently issued GAO reports, among other topics, address compliance with hazardous waste regulations at Department of Energy installations. They are entitled Environment, Safety, & Health: Information on Three Ohio Defense Facilities (GAO/RCED-86-51FS, Nov. 29, 1985) and Environment, Safety, & Health: Environment and Workers Could Be Better Protected at Ohio Defense Plants (GAO/RCED-86-61, Dec. 13, 1985). In addition, we have ongoing hazardous waste related work at the Departments of Energy and Defense. While the specific objectives vary, these reviews generally address what a particular agency has done, or could do, to improve compliance with hazardous waste or other environmental requirements. In contrast, this report covers a number of federal agencies and generally focuses on what actions EPA and state regulatory agencies have taken or could take to improve compliance.



# Inspection, Compliance, and Enforcement Activities at Federal Hazardous Waste Handlers

In the states we reviewed, 247 federal activities had been identified as handling hazardous wastes. Of these, 72, or 29 percent, had been inspected by either EPA or the states in which they were located to determine if the activities were complying with RCRA hazardous waste management regulations. Thus, the compliance status of most of the federal activities in our review is unknown. According to EPA, resource constraints have limited EPA and state inspection activities.

Of the 72 activities inspected, 33, or almost half, were cited for violating RCRA requirements. Twenty-two facilities were cited for Class I violations—defined by EPA to be among the most serious problems because they generally represent conditions that are a serious potential threat to the environment. More than 6 months have been required to correct problems at 19 of the facilities cited for Class I violations; 3 were out of compliance for more than 3 years. The Departments of Energy and Transportation and NASA accounted for 17 of the 19 facilities in lengthy noncompliance.

The more frequently cited reasons agencies gave for facilities not being in compliance with RCRA requirements when inspected—and for taking lengthy periods of time to bring facilities into compliance after being inspected—were the absence of agency emphasis on RCRA and limited agency knowledge and expertise in what is required under RCRA and how to meet the requirements.

Enforcement actions to compel compliance at facilities with RCRA violations have been primarily notices of violation or warning letters, which are characterized as informal enforcement actions. Formal enforcement actions such as administrative or compliance orders which require compliance by a certain date were used in two instances. In seven cases neither informal nor formal action was taken against the noncomplying facilities.

EPA and the agencies have increased their emphasis on RCRA since January 1985. EPA is revising its strategy for achieving federal facility compliance with RCRA requirements. The strategy—scheduled for issuance in May 1986—will provide for specific time frames for follow-up and enforcement actions for RCRA violators. Consistent with the 1984 RCRA amendments, EPA is also increasing its inspection coverage of the more environmentally sensitive federal hazardous waste handlers. Implementation of these two initiatives should result in more aggressive enforcement actions to bring federal handlers into compliance with RCRA.

Agencies have also increased their emphasis on RCRA programs. Responsibilities for RCRA have been identified at the headquarters and regional levels more clearly and more guidance on RCRA requirements is being provided to field activities and installations.

### Small Number of Federal Handlers Inspected

As of December 31, 1984, 247 hazardous waste handlers had been identified by the federal agencies in the 12 states included in our review. According to agency records, about 29 percent of the 247 federal handlers—or about 1 of every 3 handlers—had been inspected by EPA or the states through December 31, 1984. Table 2.1 shows the number of inspected handlers by agency and also groups the agencies to show the agencies having the largest number of handlers. As shown, the Departments of Transportation and Energy and the Tennessee Valley Authority (TVA) accounted for 140 of the handlers.

**Table 2.1: Federal Hazardous Waste Handlers Inspected in 12 States Reviewed**

Agency	Number of handlers	Number inspected	Percent inspected
TVA	55	9	16
Transportation	49	18	37
DOE	36	20	56
<b>Total</b>	<b>140</b>	<b>47</b>	<b>34</b>
VA	17	2	12
Agriculture	15	3	20
GSA	15	2	13
Interior	14	2	14
EPA	14	6	43
NASA	11	5	45
<b>Total</b>	<b>86</b>	<b>20</b>	<b>23</b>
Justice	6	0	0
Postal Service	4	1	25
HHS	3	2	67
Treasury	3	0	0
Army Corps of Engineers	2	1	50
Commerce	1	0	0
HUD	1	0	0
Labor	1	1	100
<b>Total</b>	<b>21</b>	<b>5</b>	<b>24</b>
<b>Total</b>	<b>247</b>	<b>72</b>	<b>29</b>

**Inspection Performance**

According to EPA, limited EPA and state<sup>1</sup> resources prevent inspections of all handlers annually, making it necessary to develop an inspection priority scheme which generally targets those handlers with the greatest potential for environmental or public health harm for more frequent inspections. EPA's targeting scheme has been to place handlers into two categories for inspection purposes—major handlers and nonmajor handlers.

Major handlers, for the most part, are the land disposal facilities in the treatment, storage, and disposal classification of handlers. Major handlers are required to be inspected at least once each year. Nonmajor handlers generally consist of generators and transporters of hazardous wastes and those treatment, storage, and disposal facilities that pose a lesser threat to the environment. According to EPA's 1985 guidance, 25 percent of the nonmajor treatment, storage, and disposal facilities and 10 percent of the generators and transporters are to be inspected each year.

We could not determine whether federal handlers had been inspected in accordance with EPA's criteria because (1) EPA's definition of a major facility changed three times between the program's inception in 1980 and December 31, 1984, (2) EPA and states in some cases had different lists of major handlers early in RCRA's implementation, and (3) some major handlers moved on and off the major handlers list from year to year. The 72 handlers that were inspected are grouped in table 2.2 by type and classification of handlers—as they were categorized on December 31, 1984.

**Table 2.2: Summary of Handlers Inspected**

Category	Inspected	Not inspected	Total
<b>Major handlers</b>			
Treatment, storage, and disposal facilities	14	0	14
<b>Nonmajor handlers</b>			
Treatment, storage, and disposal facilities	21	26	47
Generators	37	149	186
<b>Total</b>	<b>72</b>	<b>175</b>	<b>247</b>

<sup>1</sup>Through grant agreements EPA provides funds to states on a matching basis to administer their RCRA programs—which include inspections of federal hazardous waste handlers.

As shown in table 2.2, 14 of the 247 handlers were classified as major handlers. We found that all 14 of the major handlers had been inspected at least once during the 4 years of the program and that 5 had been inspected 4 times or more. Of particular note are the 26 nonmajor treatment, storage, and disposal handlers that had not been inspected. The 1984 amendments to RCRA mandate that in the future all federal treatment, storage, and disposal facilities be inspected at least once each year. This requirement, which became effective in November 1985, will change EPA's inspection scheme in that federal nonmajor treatment, storage, and disposal facilities will now be inspected annually rather than every 4 years.<sup>2</sup> According to EPA enforcement officials, EPA plans to inspect each federal treatment, storage, and disposal facility with its own resources rather than require the states to make these inspections. EPA views this legislative requirement as mandating EPA to perform these inspections. According to EPA's Federal Facilities Program Manager, generators of hazardous wastes will probably continue to receive low inspection priority due to EPA's and states' resource limitations, and these handlers may remain in unknown compliance status for some years. As will be discussed in chapter 4, federal agencies could reduce the risk of severe compliance problems by these handlers with environmental auditing programs.

## Inspections Have Identified Serious Violations

Of the 72 hazardous waste handlers inspected, 33, or almost half, were cited for violating one or more RCRA requirements. Moreover, 22 of these were cited for Class I violations—among the more serious violations according to EPA. EPA defines a Class I violation as a violation that results in a release or serious potential threat of release of hazardous waste to the environment. Class I violations also include the failure to assure that groundwater will be protected, that proper closure and post-closure of hazardous waste activities will be undertaken, or that hazardous wastes will be destined for and delivered to permitted hazardous waste handling facilities. In some cases facilities reporting as only generators of hazardous waste and subject to less regulatory control under RCRA were found to be conducting treatment, storage, or disposal activities, which are subject to more extensive regulation. Table 2.3 shows the agencies where violations were noted in the states visited.

<sup>2</sup>Consistent with this change, in July 1985, EPA discontinued the use of the major handler and nonmajor handler inspection categories.

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Table 2.3: Federal Handlers With RCRA  
 Violations

Agency	Inspected Number	Handlers with violations	
		Number	Percent
DOE	20	14	70
Transportation	18	5	28
TVA	9	2	22
EPA	6	4	67
NASA	5	5	100
Agriculture	3	0	0
GSA	2	1	50
HHS	2	1	50
Interior	2	1	50
VA	2	0	0
Labor	1	0	0
Postal Service	1	0	0
Army Corps of Engineers	1	0	0
<b>Total</b>	<b>72</b>	<b>33</b>	<b>46</b>

As shown in table 2.3, 33 of the 72 handlers inspected— 46 percent— were found to be in violation of RCRA requirements. According to the EPA Federal Facilities Program Manager, the seemingly high rate of federal facilities found to be in violation of one or more RCRA requirements is similar to that experienced by private industry during the initial 4 years of RCRA's implementation. In two prior GAO reports, we found that 53 and 65 percent of the inspections performed, respectively, cited firms for violations, supporting the Program Manager's statement.<sup>3</sup>

Table 2.4 shows those agencies having handlers with one or more Class I RCRA violations. As shown in table 2.4, three agencies—DOE, Transportation, and NASA—had 19 of the 22 handlers with Class I violations.

<sup>3</sup>Interim Report on Inspection, Enforcement, and Permitting Activities at Hazardous Waste Facilities (GAO/RCED-83-241, Sept. 21, 1983).

Inspection, Enforcement, and Permitting Activities at New Jersey and Tennessee Hazardous Waste Facilities (GAO/RCED-84-7, June 22, 1984).



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Table 2.4: Classification of RCRA  
 Violations

Agency	Number of handlers with violations	Classification of violations	
		Number with Class I <sup>a</sup>	Number with Class II only
DOE	14	10	4
Transportation	5	5	0
NASA	5	4	1
<b>Total</b>	<b>24</b>	<b>19</b>	<b>5</b>
EPA	4	2	2
TVA	2	0	2
GSA	1	1	0
HHS	1	0	1
Interior	1	0	1
<b>Total</b>	<b>9</b>	<b>3</b>	<b>6</b>
<b>Total</b>	<b>33</b>	<b>22</b>	<b>11</b>

<sup>a</sup>Includes Class I violators also having Class II violations.

Reasons for Violations  
 Occurring at Federal Sites

Officials of agencies and facilities that have been inspected attributed their compliance problems to several factors. The reasons most often given were (1) lack of emphasis on RCRA compliance, (2) lack of or limited onsite knowledge and expertise in RCRA requirements, or (3) belief that their operations were not regulated by RCRA. Specific agency examples illustrative of these problems identified in the 12 states we reviewed are discussed as follows.

The Transportation Department's Federal Aviation Administration (FAA) Technical Center in New Jersey did not emphasize RCRA compliance before 1984. The state field inspector, when inspecting this facility in July 1984, found that

"Up until about two weeks prior to this inspection, there was no centralized office or authority handling the RCRA program for the facility. Hazardous waste handling and disposal practices were left to the various departments, agencies, and even buildings that generated it."

This approximately 5,000-acre facility, which had notified EPA as being only a hazardous waste generator, was found in violation of 23 RCRA requirements. The violations included operating a treatment, storage, and disposal facility without proper authority; improperly discharging hazardous waste to the environment, resulting in soil contamination;

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and failure to perform most of RCRA's operational, procedural, and documentation requirements. Officials at the facility did not know that they were other than a generator of hazardous wastes until the facility was inspected. As discussed in chapter 1, hazardous waste handlers are required to determine if they treat, store, or dispose of hazardous waste and comply with appropriate permitting and other regulatory requirements.

While NASA headquarters had emphasized RCRA to its field activities, three NASA facilities we reviewed had violations identified because local officials had not understood RCRA's applicability to their operations or because they lacked onsite knowledge of RCRA requirements. For example, in one case the facility understood the RCRA requirements but had assumed that it produced less than 1,000 kilograms of waste per month and believed it was a small quantity generator and not subject regulation. NASA Lewis Research Center's Chief, Environmental Health and Chemical Analysis Branch, said that the Center was aware of RCRA requirements, but thought the Center was a small quantity generator and exempt from RCRA regulations. It was not until after a December 11, 1984, inspection, which cited the facility for 11 Class I RCRA violations, that Center personnel realized they were a fully regulated handler. The inspector found the site generated more than 1,000 kilograms of hazardous waste per month, stored the waste for almost a year in violation of RCRA storage requirements, exercised "very little control" over drums of hazardous waste stored behind research buildings, and failed to carry out other administrative and operational requirements.

Officials of DOE's Oak Ridge Operations Office told us that, similar to other DOE offices, their initial interpretation of RCRA was that it did not apply to their operations. The basis for this belief was Section 1006 of RCRA, which states that RCRA does not apply to activities subject to the Atomic Energy Act (42 U.S.C. 2011), if implementation of RCRA would be inconsistent with the requirements of the Atomic Energy Act. Based on their interpretation of this provision in RCRA, DOE decided that RCRA did not apply in any form to its nuclear facilities. This belief was held by DOE activities until April 1984, when the U.S. District Court for the Eastern District of Tennessee ruled that RCRA does apply to atomic energy facilities. The essence of the ruling was that nonradioactive hazardous wastes produced by DOE facilities are clearly subject to RCRA.

Subsequent to the court ruling, DOE notified EPA that 16 of the Oak Ridge Y-12 nuclear weapons complex's 34 production activities would be RCRA-regulated consistent with the court's ruling. A January 1985 inspection

of these Y-12 production activities found, according to the state inspector's report, DOE in violation of RCRA's basic management standards. The remaining 18 Y-12 activities handle a mixture of hazardous and radioactive wastes. DOE and EPA have not yet resolved their differences as to RCRA's applicability to these DOE mixed wastes—which was not addressed in the district court ruling.

As will be discussed in the next section of this chapter, after an inspection pointed out RCRA deficiencies, some handlers have required more than 6 months to correct problems.

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### **Violations Often Go Uncorrected for Lengthy Periods of Time**

Our review of the corrective actions taken to bring the 33 facilities cited for violations into compliance with RCRA requirements showed that lengthy periods of time were often required to correct the problems. We found that about 42 percent of the handlers corrected their problems within a 6-month time period. Other handlers—19, or 58 percent, of the facilities with violations—took longer. These handlers are listed in table 2.5. Three of these have been out of compliance more than 3 years, and 10 others remained out of compliance as of September 30, 1985. Most of the violations have centered on (1) groundwater monitoring requirements, (2) emergency contingency plans, (3) training of staff, and (4) improper waste analyses.

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Table 2.5: Hazardous Waste Handlers With Lengthy Noncompliance

Agency	Handlers name	Inspection date	No. of RCRA violations	Months in noncompliance	Status as of 9/30/1985
<b>DOE</b>					
1.	Brookhaven National Lab, Upton, New York	09-26-84	4	9.1	
2.	Knolls Atomic Power Lab, Niscayuna, New York	02-25-83	3	31.6	
3.	Oak Ridge Y-12 Plant, Oak Ridge, Tennessee	05-27-82	1	11.8	
4.	Oak Ridge K-25 Site, Oak Ridge, Tennessee	06-27-84	5	15.3	
5.	Oak Ridge National Lab, Oak Ridge, Tennessee	05-15-84 10-05-84	1 11	16.1 11.2	
6.	Pinellas Plant, Largo, Florida	05-01-81 01-04-83	1 4	20.4 33.2	
7.	Feed Materials Production Facility, Fernald, Ohio	03-16-84	8	18.8	
8.	Portsmouth Uranium Plant Portsmouth, Ohio	03-13-84	7	18.9	
9.	Lawrence Livermore National Lab-Site 300, Livermore, California	09-22-81 04-21-83	8 15	49.0 36.1	
10.	Lawrence Livermore National Lab-Main Site, Livermore, California	11-09-84	9	10.8	
<b>TRANSPORTATION</b>					
11.	Federal Aviation Administration Technical Center, Atlantic City, New Jersey	07-12-84	23	14.8	
12.	U.S. Coast Guard Base Miami Beach, Miami Beach, Florida	11-30-81 11-15-84	17 20	46.7 10.6	
13.	U.S. Coast Guard Base Mayport, Mayport, Florida	09-04-84	4	13.0	
14.	U.S. Coast Guard Base Buffalo, Buffalo, New York	10-15-84	4	10.0	
<b>NASA</b>					
15.	Santa Susana Field Lab, Simi Hills, California	07-21-82 06-10-83	1 7	38.9 28.1	
16.	Marshall Space Flight Center, Huntsville, Alabama	08-13-81 05-07-82 08-01-84	9 8 5	17.8 8.9 13.6	
17.	Lewis Research Center, Cleveland, Ohio	12-11-84	12	9.8	

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Agency	Handlers name	Inspection date	No. of RCRA violations	Months in noncompliance	Status as of 9/30/1985
<b>EPA</b>					
18.	Centerhill Solid Waste Lab, Cincinnati, Ohio	06-12-84	4	10.3	I
<b>GSA</b>					
19.	Rough and Ready Island Facility, Stockton, California	03-15-84	18	18.8	O

"I" means a handler was in compliance as of 9/30/85; "O" means the handler was out of compliance with one or more deficiencies identified in the corresponding inspection.

**Reasons for Lengthy  
Noncompliance Periods**

The reasons for lengthy noncompliance at the facilities included in table 2.5 are, to a great extent, linked to the reasons the facilities were found to be out of compliance when initially inspected. For example, in the preceding section we reported that the lack of agency emphasis on RCRA, the lack of awareness of or limited agency expertise in RCRA requirements, and the belief that certain agency activities were not regulated under RCRA were the major causes for the noncompliance found at agency facilities. In discussing the causes for the lengthy amounts of time to correct identified problems, agency officials indicated that the lack of agency emphasis on RCRA and limited RCRA expertise continued to impact efforts to bring facilities into compliance. In a number of cases, additional questions of how best to meet RCRA's technical requirements have added to the noncompliance time periods. The time periods have also been extended, particularly at Transportation Department facilities, as a result of the need to contract with private contractors to correct problems.

NASA's Marshall Space Flight Center is an example of agency uncertainty as to specifically what must be done to meet RCRA regulations. The Environmental Protection Officer for the center, located in Huntsville, Alabama, told us that he was aware of RCRA but had not fully understood what actions were required of them from early inspections. Inspected seven times since 1981, this facility has been in and out of compliance at various times, most recently with RCRA's groundwater monitoring requirements. An August 1, 1984, comprehensive groundwater monitoring inspection found Marshall's well system to be inadequate. The inspector found that Marshall had not understood the groundwater well installation requirements and had installed wells that would not provide accurate groundwater readings primarily due to their inadequate locations. This inspection was part of an EPA-contracted study of facilities requiring groundwater monitoring and, due to the time required for

the contractor to prepare an overall report, Marshall was not officially notified that it was not in compliance until April 30, 1985. According to the facility's Environmental Protection Officer, this noncompliance was rectified with the installation of seven new wells in July 1985.

GSA's Stockton, California, facility illustrates continuing problems regarding agency emphasis on RCRA and also uncertainties over what is required to meet RCRA requirements. According to the Distribution Facilities Branch Chief in Stockton, they had very little guidance from GSA headquarters on proper handling procedures and very little knowledge of how they should be handling their wastes and, until a March 1984 inspection identified 18 RCRA violations, believed they were handling things properly. He said that, subsequent to the inspection, they had difficulty understanding how to correct the violations identified and had to meet with California Department of Health Services officials to determine exactly what they were in violation of and what they should do to correct it. The GSA Branch Chief said that there was a need within GSA for technical assistance and training of facility managers in hazardous waste management and disposal. Of the 18 violations cited, 16 had been corrected by September 30, 1985.

On September 3, 1985, GSA contracted for technical assistance in developing a hazardous waste management program that may mitigate the branch chief's concerns. According to the scope of work, "... recent discovery of improper disposal of hazardous waste at certain GSA facilities indicates potential problems of similar nature may exist elsewhere." In addition to a comprehensive review of GSA's operations, the contractor will counsel GSA professionals in hazardous waste management, with particular focus on RCRA.

According to DOE's Oak Ridge Operations Office Program Manager, once the question of RCRA's applicability to DOE's operations was settled, comprehensive evaluations of DOE wastes potentially subject to RCRA requirements took time. For example, DOE's Y-12 complex occupies about 600 acres in eastern Tennessee, performs nuclear weapons production and other activities in more than 230 buildings, and handles solid, hazardous, radioactive, mixed, and special wastes. A comprehensive evaluation of this site's 137 waste streams<sup>4</sup> took more than 5 months, according to the Oak Ridge Program Manager. DOE's headquarters environmental compliance officer said that many DOE field activities have

<sup>4</sup>Waste streams include hazardous solids, liquids, and sludges that occur or are produced as a result of manufacturing and other processes.

experienced similar difficulties in characterizing their waste streams for RCRA regulation.

Both the Department of Transportation and DOE have used contractors to help them correct their problems—which has lengthened the period of noncompliance. Environmental officials at FAA's Technical Center in New Jersey said that it takes time to properly advertise and award a federal contract to correct environmental problems. Although not in full compliance as of September 30, 1985, 19 of 23 violations have been corrected, according to center officials. FAA plans to spend about \$1.1 million for RCRA spill prevention and control measures and about \$5.8 million on cleanup and decontamination at the facility. Both FAA and New Jersey officials said that good progress was being made at the center, but the lack of onsite RCRA knowledge and expertise and the complexity of the federal contracting process for large projects, such as this one, caused their noncompliance period to be lengthy. Obtaining and evaluating bids and selecting qualified contractors took more than 9 months for this site.

Similar to FAA's contracting experience, 7 of the 10 DOE facilities in lengthy noncompliance had to install groundwater monitoring wells. According to DOE's Oak Ridge Program Manager, this is an expensive, complex task which required DOE to contract for technical assistance to avoid improperly designing or locating wells in such a manner that accurate samples would not be obtained.

## Actions to Compel Compliance Limited

EPA has two basic approaches it can follow in working with federal agencies and private entities to correct noncompliance problems. The first is an informal approach which is characterized by EPA, or the states, issuing warning letters or notices of violation to an entity that is in noncompliance. This approach assumes that the entity will take action to correct the problems without further EPA or state involvement. The second approach is a formal approach whereby (1) EPA and the entity may enter into a formal compliance agreement that specifies what will be done to correct identified problems, including time frames for accomplishment or (2) EPA may unilaterally issue an administrative or compliance order directing the entity to take certain actions by specific dates.

Under the formal approach, EPA and the states also have the option to take judicial action through the courts to compel private entities to correct noncompliance problems. The Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce,

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has questioned whether federal agencies in violation of RCRA requirements should also be subject to judicial action. The Justice Department's position on this issue is that the legality of one federal agency taking judicial action against another federal agency is not clear and raises a number of constitutional issues. Justice also notes that there are processes available within the executive branch to settle disagreements between federal agencies and that it would be a waste of federal resources to debate agency conflicts in the courts. In view of these factors, Justice has taken the position that environmental issues between agencies should be handled administratively rather than through the judiciary. Thus, if a federal agency chooses not to comply with a RCRA compliance order, EPA's recourse for compliance is through administrative procedures within the executive branch.

In our previously mentioned 1983 and 1984 reports, we reported that enforcement actions for the overall regulated community—private, public, and federal—had not been extensive. Our review of EPA and state enforcement actions against federal hazardous waste handlers shows a similar situation. Enforcement actions in response to the violations identified at the 33 federal handlers in our review shows that informal enforcement actions—warning letters and notices of violation—have been the primary approaches used to get agencies to correct RCRA violations. As shown in table 2.6, formal enforcement actions—such as compliance orders—were used in 2 of the 33 federal agency facilities cited for violations in our review. In seven cases, no action was taken by EPA or the states.

**Table 2.6: Enforcement Actions Taken on RCRA Violations**

Agency	Handlers with violations	Enforcement actions		
		Formal	Informal	None
DOE	14	0	12	
Transportation	5	1	4	
NASA	5	0	3	
EPA	4	0	3	
TVA	2	0	2	
GSA	1	1	0	
HHS	1	0	0	
Interior	1	0	0	
<b>Total</b>	<b>33</b>	<b>2</b>	<b>24</b>	

EPA's federal facilities compliance program encourages EPA and state inspection and enforcement officials to work with handlers informally



by using warning letters, notices of violation, and technical assistance to educate and inform hazardous waste handlers rather than use a formal approach involving compliance or administrative orders to achieve compliance actions.

In our June 1984 report, we reported that EPA had not established a policy on the type and timing of follow-up and enforcement actions to be taken in response to RCRA violations. EPA has now issued such a policy that is referred to as EPA's Enforcement Response Policy. The policy was issued in December 1984 and became effective in October 1985. (RCRA grants to states become effective each October.) According to the policy, for any Class I violator, if the initial action does not result in compliance within 90 days or an enforceable compliance agreement, then EPA or the authorized state should within the next 90 days, or 180 total days, issue an order or refer the matter to the Justice Department or the appropriate state attorney general.<sup>5</sup> A violator with the less severe Class II violations, according to the policy, will normally receive a warning letter as the initial response. If the initial response does not result in expeditious compliance, normally within 60 days, the issuance of an order should be considered.

### Federal Compliance Strategy to Be Changed

In January 1984, prior to the issuance of EPA's Enforcement Response Policy, EPA's Office of Federal Activities issued a multimedia, overall strategy for achieving compliance at federal facilities. This strategy provides for either informal or formal administrative approaches for obtaining compliance at federal facilities and, according to EPA's National Federal Facilities Program Manager, reflects consideration of the following:

- The Department of Justice's position not to take judicial action on EPA's behalf against another federal agency over environmental compliance problems.
- Presidential directives in Executive Orders 12088 and 12146 that provide for a nonadversarial approach to problem resolution within the federal sector. These orders provide that resolution of federal agency compliance problems should be pursued through specific administrative procedures within the executive branch.

<sup>5</sup>The policy allows EPA and the states flexibility in responding to violations. For example, compliance orders can be written or judicial action taken sooner than the time frames noted above. On the other hand, the time to obtain compliance could be lengthened if a violator fails to comply with a compliance order and the case has to be later referred for judicial action. The 180-day sequence of action presented above is the most likely chain of events expected to be encountered, according to EPA.

This strategy has time frames for escalating actions that are not in concert with the RCRA Enforcement Response Policy issued in December 1984. For example, EPA's RCRA Enforcement Response Policy requires formal action if the noncompliance is not corrected within 180 days or an agreeable schedule for correction reached. Yet EPA's Federal Facility Compliance Strategy only requires immediate notification of RCRA violations to the noncomplying federal facility and a meeting within 10 days of a violation discovery. It does not contain specific time frames for further actions. According to EPA's Federal Facilities Program Manager, this strategy is being revised to more closely reflect the time frames for action provided in EPA's Enforcement Response Policy. An October 1985 draft of the revised strategy, expected to be completed by May 30, 1986, proposes that administrative compliance orders be issued to any federal facility failing to correct identified hazardous waste violations or reach agreement on a mutually acceptable schedule for compliance within 180 days. Noncompliance situations unresolved after 180 days are to be referred to EPA headquarters where EPA officials will pursue compliance with federal agency heads. If necessary, the strategy proposes escalation of problems to the Office of Management and Budget (OMB) for resolution. While the strategy provides time frames for escalating problems to EPA headquarters, it does not include specific time frames for escalation to higher levels within the executive branch once referral is made to EPA headquarters staff.

We asked EPA officials why time frames for escalating problems after they reach the EPA and agency headquarters levels were not included in the new strategy. Although time frames for moving the problems from the field levels to headquarters levels are appropriate for resolving issues as quickly as possible, these efforts can become lost if they are not aggressively pursued at higher levels. The EPA Federal Facilities Program Manager told us that since this is a new requirement, there is no experience to date to determine if time frames are needed to ensure escalation of problems after they reach the headquarters level. According to the manager, time frames on a case-by-case basis may be appropriate in the future, but generic time frames, absent any implementation experience, do not seem appropriate at this time.

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## Conclusions

Although EPA expects federal agencies to set the example in complying with hazardous waste requirements, federal agency performance in implementing RCRA has been less than exemplary. For example,

- about 71 percent of the hazardous waste handlers in the states we reviewed had not been inspected by EPA or the states to determine if they were complying with RCRA,
- almost half—46 percent—of the handlers that had been inspected were found to be violating RCRA requirements, and
- in 19 cases identified violations have gone uncorrected for more than 6 months.

The major factors that have impeded the implementation of RCRA in the federal sector, according to agency officials we contacted, are

- an absence of agency emphasis on RCRA,
- uncertainty and questions regarding the applicability of RCRA to certain federal activities, and
- limited agency knowledge and expertise in RCRA requirements.

Federal agencies and EPA are increasing their efforts and emphasis on RCRA. A major impact on the program is the 1984 RCRA amendments mandating annual inspections of all federal treatment, storage, and disposal facilities. EPA has interpreted this provision as requiring EPA to conduct these inspections, which it plans to do, although states are not precluded from also inspecting federal handlers.

EPA is also in the process of revising its Federal Facility Compliance Strategy for meeting RCRA requirements to incorporate specific time frames for issuing compliance orders and escalating compliance issues and problems to EPA headquarters. In view of the lengthy periods of noncompliance found in our review, we believe these time frames are important if federal sector compliance with RCRA is to be improved. The strategy also provides for the escalation of unresolved compliance problems to agency heads and to OMB, if necessary, for resolution, although these actions are not linked to specific time frames. This increased emphasis—coupled with the resolution of problems regarding RCRA's applicability and technical requirements that should come about as EPA and the agencies work through these issues—should lead to an improved federal sector RCRA compliance profile in the future. Key to this continued emphasis, however, is the issuance of EPA's revised Federal Facility Compliance Strategy for ensuring timely and appropriate responses to federal sector compliance problems. Future experiences at the EPA-agency headquarters levels in resolving compliance problems could lead to a need for EPA to again revise its strategy to include milestones for escalating problems at these higher levels. Whether or not

this will be necessary will depend on experience gained in implementing the strategy.

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## **Recommendation**

Because of the importance of resolving compliance problems in a timely fashion, GAO recommends that the Administrator, EPA, assure that the federal agency environmental compliance strategy includes specific time frames for elevating unresolved problems to EPA headquarters, and is completed on schedule.



# Federal Agencies Unsure That All Hazardous Waste Handlers Have Been Identified

About half the agencies included in our review—9 of 17—had a moderate or high level of confidence that they had identified all their hazardous waste handlers. The remaining eight were less confident—two of these expressing serious reservations—that their inventory of hazardous waste handlers was complete. Although the levels of confidence that all handlers had been identified varied across the agencies, headquarters environmental officials of the agencies and EPA's Federal Facilities Program Manager said they believed that the larger and more environmentally significant handlers had been identified.

We found that the overall reason for federal agencies' slow progress in assuring that their inventory of handlers was complete was a lack of agency headquarters attention and emphasis in implementing the RCRA program. Most headquarters offices were not fully aware of or had not understood their RCRA identification and assurance responsibilities, with 10 agencies providing little or no guidance to their field activities and 6 others not following up to ascertain that the requirements were understood or being complied with. In addition, EPA, as the central federal agency responsible for assuring environmental compliance, provided little direction and oversight to these agencies prior to February 1985.

As discussed in chapter 1, the Congress enacted amendments to RCRA in 1984 which, among other things, required regulation of previously exempted small quantity generators of hazardous wastes—those handling from 100 to 1,000 kilograms per month. As EPA implements this requirement, many more handlers, including federal handlers, are expected to come under RCRA regulation, increasing the importance of federal agencies' efforts to make sure that hazardous waste activities on their lands or under their control are identified and reported to EPA.

Initial efforts by the agencies we reviewed indicate that the agencies are doing more to assure adequate implementation of this 1984 identification requirement within the federal sector than was done to implement the 1980 RCRA requirement. Also, EPA is working more closely with the federal agencies in understanding and fulfilling this mandate. Monthly roundtable meetings have been held with agencies to discuss their RCRA and other environmental responsibilities since February 1985.

Whether these increased efforts will be enough to close the gap in identifying federal hazardous waste handlers is too soon to judge. In the meantime, however, EPA needs to closely monitor these activities and periodically assess agencies' progress in achieving RCRA objectives.

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## Agency Responsibilities in Identifying Hazardous Waste Handlers

As noted in chapter 1, the initial step in the RCRA compliance process is performing EPA's three-step waste determination process. By subjecting potential hazardous waste handlers to this process, federal agencies can develop an inventory of their activities that handle hazardous wastes, determine the amount and types of wastes handled, and establish what the specific regulatory requirements are for each activity.

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## Three-Step Process for Identifying Handlers

In a May 19, 1980, Federal Register notice, EPA notified both the public and private sectors of their responsibilities under RCRA to evaluate their waste-handling activities and report these activities to EPA and the authorized states where the activities are located. Realizing that many would suspect, but would not be sure, that their activities may be subject to RCRA controls, EPA included guidelines in its notice to help those unfamiliar with the hazardous waste control program determine their responsibilities under the act. All persons, including federal agencies, who handled solid waste were required to determine if their waste is hazardous and subject to regulation by performing the following three-step process:

- (1) Determine if the waste is specifically excluded from regulation by virtue of its source or amount.<sup>1</sup>
- (2) If not specifically excluded, determine if the waste handled is one of the approximately 485 listed hazardous wastes.
- (3) If not specifically excluded or listed, determine if the waste handled is hazardous because it meets certain characteristics or contains certain contaminants.

EPA provided for the last determination to be made based on an entity's knowledge of the hazardous characteristics of the waste or as the result of testing the waste according to EPA-approved methods. The target date for completing the identification and notification of hazardous waste handlers was August 18, 1980.

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<sup>1</sup>For example, domestic or household wastes were excluded from regulation by virtue of their source, and handlers of less than 1,000 kilograms per month of most wastes were exempt from regulation; however, 107 acutely hazardous wastes were regulated to the 1-kilogram level.

### Importance of the Notification Requirement

According to EPA's Federal Facilities Program Manager, in addition to the Congress' increasing concern about smaller quantities of hazardous wastes, federal agencies should be concerned about having a complete inventory of hazardous waste handlers since unidentified handlers (1) usually have higher levels of noncompliance when first found and inspected, (2) have a greater chance of being held liable for environmental cleanup costs and possible third-party damages, and (3) may be an unnecessary risk to public health and the environment and also a risk to worker health and safety. GSA's Acting Director, Environmental Affairs Staff, agreed. He said GSA, like other federal agencies, has a responsibility to manage its operations in an environmentally acceptable manner, which means proactive headquarters involvement in assuring that all hazardous waste handlers have properly identified themselves to EPA, rather than have handlers identified through a pollution incident, a citizen's complaint, or state or EPA inspections.

### Agencies Not Sure All Waste Handlers Identified

We did not attempt to systematically verify that all the federal hazardous waste handlers in the states we reviewed had been identified. We did, however, ask each agency to review their actions since May 1980, to assess their respective RCRA programs in view of these actions, and based on these assessments, to comment on how confident they were that all their hazardous waste handlers had been identified. From these self-analyses, we found that 9 of 17 agencies were moderately or highly confident that all their hazardous waste handlers had been identified. Of these nine agencies, EPA, NASA, and TVA expressed a strong degree of confidence that all their hazardous waste handlers had been identified. The other eight agencies were less confident, with the Departments of Commerce and Labor expressing the greatest reservations. This level of confidence applied to agency facilities nationwide and not just to the facilities in the states we reviewed. Although differing levels of confidence existed among agencies regarding whether or not all handlers had been identified, there was consensus among the agencies—which was concurred with by EPA—that the larger and more environmentally significant facilities had been identified. Table 3.1 summarizes the conclusions of headquarters environmental officials in the agencies we reviewed.



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Federal Agencies Unsure That All Hazardous  
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**Table 3.1: Level of Federal Agency  
Confidence That All Handlers Have  
Been Identified**

Agency	Opinions <sup>a</sup>				
	Extremely confident	Very confident	Moderately confident	Somewhat confident	Little or no confidence
EPA		X			
NASA		X			
TVA		X			
DOE				X	
Justice				X	
Transportation				X	
HUD				X	
Treasury				X	
Postal Service				X	
Corps of Engineers					X
Interior					X
GSA					X
HHS					X
Agriculture					X
VA					X
Commerce					X
Labor					X
<b>Total</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>2</b>

<sup>a</sup>The table reflects the opinions of agency officials at the time we were conducting our review.

Although we discussed agency identification efforts with agency environmental officials responsible for RCRA compliance matters, their lack of awareness and understanding of RCRA's requirements often impacted their confidence levels as did their lack of information about the hazardous waste activities of their field operations. For example, since 1980 RCRA has required that handlers of over 100 acutely hazardous wastes manage, control, and report to EPA any of these wastes handled in excess of 1 kilogram per month. Discussion of this requirement led 12 agency headquarters environmental officials to state that they did not know the extent to which their field operations handled these smaller quantities of regulated hazardous wastes. Additionally, environmental officials of 10 agencies—Corps of Engineers, GSA, Justice, HUD, Treasury, Postal Service, Agriculture, Commerce, Labor, and VA—said that they were not aware that any hazardous wastes had been regulated to the 1-kilogram level.

**Estimates of Potential  
Hazardous Waste Handlers**

Because of the uncertainty expressed by the agencies in having complete inventories of their hazardous waste handlers, we asked headquarters environmental officials to estimate the number of potential handlers under their control. Many were hesitant to make such an estimate because of insufficient information available to them to make these judgments. However, several agencies indicated that a large number of potential handlers upon closer evaluation may be handling hazardous waste, although agencies were unsure of the types and amounts handled. For example, GSA owns about 1,700 facilities that could handle hazardous waste, including stockpile installations, vehicle maintenance garages, depots, warehouses, laboratories, and buildings. Of these facilities, however, a majority are occupied by other federal agencies which, according to GSA's Acting Director, Environmental Affairs Staff, presents special problems in managing these facilities. For example, GSA must assure itself that the federal agencies occupying these facilities have reviewed their operations to determine if they are handling hazardous waste and, where appropriate, have reported their activities. If they have not done so, GSA is responsible for performing this task. A GSA environmental official told us that he believes that the 75 facilities that GSA operates on its own are predominantly sporadic and small quantity generators, although the agency has not conducted waste analyses of all these activities. EPA's records show that 26 GSA facilities have notified EPA that they handle RCRA-regulated hazardous wastes. Similarly, Department of Agriculture officials estimated that they may have as many as 700 potential handlers, although currently only 64 Agriculture facilities have been reported as regulated handlers.

Table 3.2 illustrates the number of field activities that 11 agency headquarters environmental officials estimated could potentially handle hazardous waste and the number reported to EPA, according to EPA's Hazardous Waste Data Management System. The other six agencies were either reluctant to provide us estimates or were confident that all their activities had been identified.

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**Table 3.2: Agency Estimates of Potential Hazardous Waste Handlers**

<b>Agency</b>	<b>Estimated number of potential handlers</b>	<b>Number reported to EPA as of Oct. 1985</b>
GSA	1,700	26
Interior	1,600	55
Agriculture	700	64
HHS	470	17
Transportation	460	115
Postal Service	350	21
Justice	190	18
VA	180	44
Labor	75	2
Corps of Engineers	60	16
Commerce	50	11

As shown in table 3.2, the second largest estimate was from the Department of the Interior—over 1,600 potential handlers. According to Interior officials, a large percentage of these are maintenance-related facilities on public lands that were initially excluded from RCRA requirements because they fell into the small quantity generator category of waste handlers. Since the small quantity generator regulatory threshold has been lowered from 1,000 kilograms per month of waste to 100 kilograms, many of these facilities may no longer be excluded from regulation and will have to notify EPA and the states that they are hazardous waste handlers.

**Indications That Additional Federal Handlers May Exist**

Supporting the opinions of the agencies that not all waste handlers had been identified is the fact that agencies have continued to report additional waste handlers after the August 1980 reporting deadline in large numbers compared with those that initially reported. Initially, about 120 handlers in the 12 states we reviewed reported that they were handling hazardous waste. As of December 1984, the number had grown to 247—over a 100-percent increase from the number initially reporting.

We recognize that handlers notifying EPA or authorized states after the August 1980 date are not necessarily late notifiers. However, agency officials believe that 10 of the handlers identified during our review, as shown in table 3.3, should have notified EPA or authorized states earlier. Four of the handlers did notify EPA or an authorized state of their waste handling activities in 1985. Agency environmental officials said that

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they would obtain more information on the remaining six handlers to determine whether they should notify. The officials said that these handlers had probably not notified previously because they were either unaware or did not understand the RCRA notification requirements.

**Table 3.3: Potential Handlers Identified to GAO During Review**

Agency	Handler name	Date notified
Commerce	National Marine Fisheries Service Laboratory, Beaufort, North Carolina	July 1985
Interior	Yosemite National Park, Mariposa County, California Pinnacles National Monument, San Benito County, California	
Justice	Alderson Federal Correctional Institution, Alderson, West Virginia	February 1985
Transportation	U.S. Coast Guard Support Center, Kodiak, Alaska	May 1985
GSA	Quality Control Laboratory, San Francisco, California	
HHS	Food and Drug Administration Laboratory, San Juan, Puerto Rico	
Treasury	Alcohol, Tobacco, and Firearms Western Region Laboratory Center, San Francisco, California	
Agriculture	Foreign Animal Disease Diagnostic Laboratory, Plum Island, New York	January 1985
Postal Service	Vehicle Maintenance Facility, Miami, Florida	

Our review of agency records and discussions with field activity officials generally confirmed these beliefs. For example, Transportation's U.S. Coast Guard Support Center, Kodiak, Alaska, had not notified EPA, although it has been a generator and storer of hazardous wastes for years, according to the U.S. Coast Guard Environmental Compliance Chief. A Coast Guard waste management survey conducted in August 1984 showed that base officials lacked understanding and training with respect to the notification requirement and that the responsibilities for hazardous waste compliance were vague or unassigned. According to the survey report, major weaknesses at the facility included accumulation of large quantities of hazardous wastes under unsuitable storage conditions and failure to label and segregate hazardous wastes. The base had about 850 unlabeled 55-gallon drums of hazardous wastes. According to the report, about 15 percent of the drums were leaking and a large number were structurally unsound. The base has since notified EPA that it is a hazardous waste handler.

Similarly, a Commerce environmental official told us that he was not surprised that its Beaufort, North Carolina, National Marine Fisheries Laboratory had not notified the state of its hazardous waste activities

before July 1985. The agency, he said, has not developed hazardous waste policies or procedures at headquarters or informed its facilities of the RCRA requirements because no one has been in charge of this responsibility.

According to an August 1985 Inspector General report, the laboratory had accumulated an inordinate amount of waste materials over the past 10 years. In addition to accumulating over 1,000 gallons of formaldehyde waste—some in rusted drums and some under improper conditions—the laboratory also had stored low-level radioactive waste in unlabeled and improper containers such as cardboard boxes. The Acting Chief said that the laboratory disposed of a majority of the hazardous waste in late July 1985 and has contracted for disposal of the radioactive waste.

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## Reasons for Slowness in Identifying Handlers

The agencies we reviewed gave several reasons for their slowness in identifying hazardous waste handlers under their control, including (1) they were not aware of the RCRA identification requirement, (2) they did not understand how the regulations applied to their agency's operations, and (3) they had only limited monitoring of component organizations and field activities' operations.

Also, the agencies provided underlying reasons for the conditions cited above, including

- lack of an environmental office at the agency headquarters level, and/or authority of the headquarters offices, to assure RCRA compliance within the agency (10 agencies);
- no organizational directive to carry out a comprehensive hazardous waste program (14 agencies); and
- reliance on component organizations and field activities to comply with requirements (16 agencies).

In summarizing these reasons, it appears that the lack of agency attention and emphasis in implementing RCRA is the major reason that agencies lack complete inventories of hazardous waste handlers years after RCRA's inception. For example, we found that

- 10 of 17 agencies did not alert their component organizations or field activities of RCRA's notification requirements or provide other RCRA guidance to them and

- 6 of the 7 agencies that did alert their component or field organization did not follow up to ensure that these organizations complied with the requirements.

EPA's implementation of the identification requirement within its own activities and facilities is typical of how agencies responded to the requirement. EPA, although charged with overseeing the hazardous waste activities of other federal agencies, is also a hazardous waste handler. However, a March 1985 EPA study of its own environmental compliance status noted that EPA, like other federal agencies, needed headquarters direction to assure that its facilities are aware of and complying with rapidly evolving environmental requirements. The study further noted that EPA lacked an overall comprehensive program to achieve this end. According to a December 21, 1984, memorandum from EPA's Assistant Administrator for External Affairs, this lack of assurance was because EPA had no office to oversee its own compliance with environmental laws. In the RCRA area this had already resulted in a number of problems with hazardous waste shipments, according to the memorandum. The March 1985 study concluded that headquarters direction was needed to make sure that all facilities are aware of, and complying with, rapidly evolving federal and state environmental regulations. As a result, in May 1985 an environmental compliance program was established in EPA's Office of Occupational Health and Safety Staff

Environmental officials of four agencies said that they only recently became aware of and understood the RCRA identification requirements and their related responsibilities. For example, Postal Service and Department of Labor environmental officials said that meetings with EPA's Federal Facilities Program Manager in November 1984 (Postal Service) and August 1985 (Labor) informed them of their need to comply with the hazardous waste regulations; otherwise they might still be unaware and unknowledgeable of the requirements. These agencies have now begun efforts to determine the types of wastes their field activities handle.

Environmental officials of the other two agencies, Commerce and Agriculture, said that our recent hazardous waste reviews<sup>2</sup> have raised the agencies' awareness of environmental requirements and their need to assure compliance, which had been lacking. Both agencies are also taking steps to assure compliance.

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<sup>2</sup>We also conducted a review of civilian federal agency compliance with CERCLA between February and September 1984.

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## EPA's Administration of the Notification Requirement May Have Contributed to Agencies' Lack of Assurance

EPA's Federal Facilities Program Manager said that EPA had probably contributed to agencies' poor performance in implementing the RCRA requirement to identify handlers. He said that EPA's 1980 approach had been one of minimal involvement with federal agencies' headquarters officials. For example, in 1980 EPA mailed notification requirements and notification forms to businesses, trade associations, potential handlers, and federal agencies. Afterwards, the Program Manager said that EPA spent significant amounts of time advising private sector hazardous waste handlers of the notification requirement, including conducting seminars with various industries. EPA did not, however, meet individually with federal agencies until February 1985 when EPA held its first federal roundtable meeting.

According to Executive Order 12088, EPA is to provide technical assistance to agencies in meeting environmental requirements and also is to review and monitor agency activities to assure compliance with these requirements. However, EPA's monitoring of agency programs has been limited to receiving reports or lists of hazardous waste handlers from federal agencies. EPA has not monitored agency programs and progress in identifying federal hazardous waste handlers.

EPA has changed the way it communicates with federal agencies since we began our review. In February 1985, EPA began conducting monthly roundtable meetings to better communicate RCRA and other environmental regulations to federal agencies. EPA and the federal agencies said that they viewed this change in EPA's approach as a positive step in assisting the agencies in achieving greater awareness and understanding of complex technical environmental requirements such as RCRA.

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## Plans to Identify New Group of Small Quantity Handlers

As discussed in chapter 2, one of the 1984 amendments to RCRA requires regulation of a new group of small quantity hazardous waste handlers. Although EPA could not identify the number of federal agency handlers that will be impacted, it estimates that the new RCRA amendments will increase the total number of regulated handlers, both public and private, from between 65,000 to well over 150,000. A March 1985 EPA survey suggested that more than half of the small quantity generators that now will be regulated will fall into five categories: (1) vehicle maintenance, (2) manufacturing and finishing metals, (3) printing, (4) photography, and (5) laundries and dry cleaning. Other facilities involved in laboratory operations, road building, pesticides application, construction, and hospital operations may also come under regulation.

Our review of the ongoing and planned actions the agencies are taking to identify the new group of small quantity handlers that are regulated indicates that the federal sector is approaching this requirement in a more conscientious manner than was followed in implementing the 1980 identification requirement. We found that all 17 agencies reviewed had either planned or had ongoing efforts to compile an inventory of their hazardous waste handlers. These efforts included environmental audits and agencywide surveys to establish the types and quantities of hazardous wastes handled by federal activities. In addition, these agencies planned greater dissemination of RCRA regulatory agency activities potentially subject to the small quantity handler requirements as well as followup and monitoring of field activities efforts. The basic improvements in implementing this later requirement is that (1) all the agencies are providing guidance to their organizational units on the requirement and (2) all agencies (as opposed to one agency in 1980) have plans to follow up on the requirement.

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#### EPA's Planned Actions

According to EPA's small quantity generator project manager, initially EPA provided little assistance to federal agencies for implementing the new small quantity handler requirement. For example, we found that private sector handlers, including trade association representatives, were provided guidance on the small quantity handler requirements prior to the requirements taking effect in August 1985. EPA, again, had not targeted federal agencies for any of the guidance provided to the private sector. The EPA manager responsible for implementing this requirement told us that they had overlooked federal agencies somewhat. Later, the EPA staff met with federal agencies at a November 21, 1985 federal roundtable meeting. Because of the interest expressed at the meeting, the EPA manager said EPA would be providing federal agencies with additional guidance on the new requirement. After that, according to the manager, EPA will continue to work with federal agency environmental coordinators by using the federal roundtable forum as a means of direct communication to agency officials charged with overseeing environmental compliance within their agencies.



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## The 1984 RCRA Amendment Should Impact Federal Identification Efforts

A 1984 amendment to RCRA requires all federal agencies to compile, publish, and submit to EPA an inventory of information on their hazardous waste storage, treatment, and disposal sites. The requirement covers both active facilities and areas where wastes have been disposed of in the past. This requirement is similar to the 1980 reporting requirement; however, it is more comprehensive since it requires that far more information be submitted on agency facilities and sites than under the earlier requirement. For example, the information to be submitted on each facility/site includes

- a description of its hydrogeology and its proximity to surface water;
- an identification of the type of activity;
- the amount, nature, and toxicity of waste;
- the nature and extent of any environmental contamination; and
- whether or not environmental monitoring is being conducted.

This initial inventory of treatment, storage, and disposal facility information was to be submitted by January 31, 1986, and updated and resubmitted every 2 years thereafter. Because of time constraints, we did not assess the progress federal agencies have made in compiling their inventories. EPA officials told us, however, that they have received some submissions. This requirement should lead to increased agency efforts to identify treatment, storage, and disposal handlers. The requirement does not include generators of hazardous waste; therefore, it is difficult to predict its impact on identifying federal hazardous waste generators.

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## Conclusions

More than 5 years after the effective date of EPA's hazardous waste regulations, nearly half the federal agencies we reviewed are uncertain whether they have an accurate inventory of their hazardous waste handlers. Only 9 of the 17 agencies in our review had a moderate or higher level of confidence that they had identified all their hazardous waste handlers. The remaining eight were less confident that their inventory of hazardous waste handlers was complete.

The overall reason for federal agencies' slow progress in assuring that their inventory of handlers was complete appears to be a lack of agency headquarters attention and emphasis in implementing the RCRA program. Ten agencies provided little or no guidance to their field activities in implementing RCRA's identification requirements, and 6 others did not follow up to ascertain that the requirements were understood or complied with. In addition, EPA, as the central federal agency responsible for

assuring environmental compliance, provided little direction and oversight to these agencies prior to February 1985.

Initiatives by federal agencies and EPA since February 1985 indicate that more attention is being directed toward identifying hazardous waste handlers in the federal sector. Whether these efforts will be enough to identify all handlers is difficult to judge at this time. The first test of the adequacy of these initiatives will be federal agencies' efforts to identify those handlers that are no longer excluded from RCRA regulation as small quantity handlers.

Because of the potential impact to public health, the environment, and the taxpayer, and because smaller quantities of hazardous waste are of increasing concern to the Congress, we believe that federal agencies should know who their hazardous waste handlers are and the amount and types of wastes they are handling. We support EPA's recent efforts to work with federal agencies' headquarters to assure their proper understanding of hazardous waste regulations and to establish focal points within each agency with authority and accountability for RCRA matters, especially as these agencies undertake new efforts to compile a complete inventory of their hazardous waste handlers.

At the same time, however, we are concerned that EPA's monitoring of agency programs to identify hazardous waste handlers is not sufficient to assure that the identification of federal handlers within agencies will continue to receive emphasis. EPA's current monitoring is limited to receiving reports from agencies on identified handlers—which are then included in EPA's data base. To assure that agency identification programs are yielding the desired results, EPA, under its mandate in Executive Order 12088 and as the focal point in the federal sector responsible for the enforcement of environmental statutes, should increase its monitoring of agency programs to identify hazardous waste handlers.

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## **Recommendations**

To ensure that federal agencies adequately identify their hazardous waste handlers, we recommend that the Administrator, EPA, increase monitoring of handler identification programs. Such monitoring should include, but not be limited to, periodic reviews or assessments of agency progress in identifying handlers. Where deficiencies are found, the Administrator should work with agency heads to implement needed improvements.



# Environmental Auditing Could Help Identify Handlers and Improve Compliance

Environmental auditing is a systematic, documented, objective internal evaluation of a facility's operations and practices related to existing and foreseeable environmental conditions and requirements. If properly implemented, EPA and state officials believe that environmental auditing programs could help identify hazardous waste handlers and improve compliance with environmental requirements.

Federal agencies are not required to establish environmental auditing programs, although as noted in chapter 3, they are required to take all necessary steps to ensure compliance with environmental requirements. Three of the 17 agencies reviewed, and component organizations of 2 others, have used environmental auditing to varying degrees to assess the environmental conditions of their facilities. EPA has budgeted \$250,000 for environmental audits of its own activities to begin in fiscal year 1986.

All 17 civilian federal agency headquarters environmental officials we contacted said that environmental auditing is a good concept, but two issues—cost and concern that the uncontrolled release of their audit reports may lead to unrealistic or impractical demands for corrective actions—have limited its use to date. Agency environmental coordinators' cost concerns include the costs associated with performing environmental audits and the costs of corrective actions. Some believe that securing the funds to conduct an extensive environmental auditing program at federal facilities will be difficult, if not impossible, and some fear that environmental inadequacies discovered through audits may lead to demands that problems be immediately corrected without due regard to other concerns, costs, or budget priorities.

In view of the potential cost of cleaning up uncontrolled waste sites later on, EPA believes that environmental auditing programs can be cost beneficial for federal agencies in the long run. In an effort to encourage environmental auditing, EPA issued an environmental auditing policy statement in November 1985 which attempts to mitigate some federal agencies' concerns regarding the release of environmental audit reports. According to the policy, EPA would provide help to federal agencies in seeking cost-effective solutions to environmental problems surfaced through audits and would refrain from routinely requesting audit reports.

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## Objectives of Environmental Auditing

According to EPA documents, environmental auditing is a systematic, documented, periodic, and objective internal review of a facility's operations and practices related to meeting environmental requirements such as RCRA. Environmental audits can be multimedia in approach in that they may address a number of environmental concerns, including air and water quality, hazardous wastes, toxic substances control, and sewage disposal. They serve as a quality assurance check to help improve the effectiveness of basic environmental management by verifying that management practices are in place, functioning and adequate, and in concert with statutory and regulatory requirements. In short, environmental auditing enables an entity or agency to find and correct problems, or to identify potential problems, before they get out of hand.

According to EPA, environmental auditing can

- help communicate effective solutions to common environmental problems,
- focus facility managers' attention on current and upcoming regulatory requirements,
- generate protocols and checklists which help facilities better manage themselves, and
- result in improved facility environmental performance.

Going beyond strict regulatory compliance, environmental auditing can also identify environmental needs that should be considered in future facility design, construction, or operational decisions.

According to EPA, environmental audits are not a substitute for direct regulatory compliance activities, such as obtaining permits, installing controls, monitoring compliance, reporting violations, and keeping records. They do not in any way replace regulatory agency inspections. However, they can improve compliance by complementing conventional EPA, state, and local oversight.

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## Environmental Auditing in the Private Sector

We did not examine any private sector companies' environmental auditing programs during our review. According to EPA, several hundred major firms in diverse industries now have environmental auditing programs, although they are often known by other names, such as environmental assessments, surveys, reviews, or appraisals. Environmental auditing has developed within the private sector for sound business reasons, particularly as a means to help regulated entities manage pollution control affirmatively over time instead of reacting to crises, according to

EPA. As noted by the Director, Center for Environmental Assurance, Arthur D. Little, Incorporated, in a February 1984 environmental auditing conference sponsored by EPA, environmental auditing is used by hundreds of companies as a risk management tool to reduce potential future expenditures for hazardous waste problems.

## Environmental Auditing in the Federal Sector

Four of the 17 agencies we reviewed have used, or have plans to use, environmental auditing in their agencies—TVA, NASA, DOE, and EPA. In addition to these four agencies, the U.S. Coast Guard, in the Department of Transportation, and the National Institutes of Health, in the Department of Health and Human Services, have also used environmental auditing. TVA, the agency with the most experience with environmental auditing, established its program in 1980. The other agencies' experiences with the concept, as shown in table 4.1, are more recent. As such, many of the agency problems discussed in chapters 2 and 3 occurred before environmental auditing was used in these agencies. These agencies' experiences with environmental auditing are discussed in the following sections of this chapter.

**Table 4.1: Federal Agencies Using Environmental Auditing**

Agency	Estimated environmental audit cost per facility (average)	Date implemented
TVA	\$14,000	December 1980
NASA	\$30-50,000 (range)	August 1984
Transportation <sup>a</sup>	\$6,000	August 1984
HHS <sup>b</sup>	\$6,500	May 1985
DOE	\$70,000	September 1985
EPA	\$13,300	January 1986

<sup>a</sup>Environmental auditing has been used in one Transportation component organization only—the U.S. Coast Guard—and only for RCRA environmental requirements.

<sup>b</sup>Used in one HHS component organization only—the National Institutes of Health. The cost shown is only for RCRA environmental requirements.

## Environmental Auditing at TVA

The TVA, which employs over 37,000 people and operates 60 power generating facilities, started its environmental auditing activities in 1980 as a means to ensure follow-up on its environmental commitments. Since its inception, TVA's environmental auditing program has conducted 80 formal audits of major TVA facilities and public use areas at an average cost of \$14,000 per facility. The audits are comprehensive in nature, covering air, water, hazardous and solid waste, and toxic substances compliance activities at each facility. As warranted, certain activities

are selected for more intensive investigation when there are indications of problems or changes in environmental policies or requirements have occurred.

Of 43 TVA facilities handling hazardous waste in Tennessee, 8 had been inspected for RCRA compliance by the State Division of Solid Waste Management through December 31, 1984. Seven of the eight inspected TVA handlers had no RCRA violations when initially inspected. TVA's General Manager attributed TVA's compliance record to TVA management's commitment to environmental matters, its informed staff, and its environmental auditing program.

### NASA's Environmental Auditing Activities

According to NASA's Environmental Compliance Officer, like many other government agencies, NASA has become aware of an increasing need to ensure compliance with environmental regulations. In response to this need, NASA initiated an environmental audit at one of its operating facilities in August 1984. Performed from August through December 1984, the audit assessed environmental hazards and compliance of a representative NASA facility—Goddard Space Flight Center in Greenbelt, Maryland—and provided recommendations for addressing problem areas. The audit generally concluded that

- a single focal point for environmental management does not exist at the Center, and the lack of coordination inherent in this position is probably the root cause of most deficiencies observed during the audit and
- most of the personnel at the Center are unaware of their responsibilities under the various environmental regulations applicable to the Center.

While Center personnel believed the facility was a small quantity generator, the audit showed that it was both a regulated generator and storer of hazardous wastes. The facility had deficiencies in many areas, including no waste analysis, inadequate labeling, no personnel training, improper storage and mixing of wastes, lack of emergency equipment at three drum storage areas, and poor recordkeeping.

As a result of these findings, NASA plans to conduct an environmental audit at all of its 9 major installations to include the associated 22 component facilities in an effort to ensure that environmental risks from NASA's operations are minimized, according to the Environmental Compliance Officer. He said that the agency's goal is to complete audits at all NASA facilities by August 1986, at an estimated cost of \$30,000 to \$50,000 per facility. The cost will vary depending on several factors,

such as size of the facility and laws reviewed. He further commented that continued use of this technique will depend to a great extent on the results of these audits. However, the compliance officer believes that it is cost beneficial in the long run to protect NASA from future environmental problems that could be much more costly to clean up and correct.

### U.S. Coast Guard Environmental Auditing Efforts

In response to federal and state emphasis on hazardous waste activities at federal facilities, the U.S. Coast Guard tasked the Hazardous Materials Technical Center with conducting RCRA hazardous waste surveys of Coast Guard units. Surveys were conducted at 18 units in 1984, selected to represent a cross-section of Coast Guard activities, sizes, locations, and missions at an average cost of \$6,000 per facility. Although not termed an environmental audit, the surveys were similar to environmental audits in terms of scope and purpose.

Coast Guard officials told us that all 18 facilities were found to be in noncompliance with RCRA, however, none of the violations posed an immediate threat to human health or the environment. Most units, according to the Center's 1984 report, were unaware of, or unresponsive to, their specific regulatory responsibilities for managing hazardous waste. Major weaknesses included: (1) failure to notify state and/or federal agencies of hazardous waste generation activities, (2) failure to identify, label, and segregate hazardous wastes properly, (3) storage of hazardous wastes under unsuitable conditions and without necessary storage permits, and (4) improper disposal practices.

As a result of these surveys, the Coast Guard was able to develop a generic profile of its hazardous waste activities which could alert other facilities without having to inspect all facilities. The profile provided those units not surveyed, as well as district and headquarters personnel with information regarding the types of potential hazardous wastes generated from Coast Guard activities, an understanding of regulatory requirements, and recommendations for ways that wastes could be handled in a more cost-effective manner. Coast Guard officials told us that they plan to continue their RCRA hazardous waste surveys.

### National Institutes of Health's Program

In its search for a risk reduction and environmental quality assurance program, NIH had initiated an effort in March 1983 to pilot test the environmental auditing concept at two of its biomedical research facilities in Maryland. The developmental stage of the project took approximately 18 months and cost about \$200,000. A comprehensive set of



audit procedures and protocols for conducting audits resulted from this pilot.

In May 1985, a multimedia audit began at these Maryland facilities using the procedures and protocols that were developed. The tentative results of the audits thus far have provided greater management attention and interest in environmental auditing by the other NIH facilities, according to NIH officials. NIH officials stated that their purpose in using environmental audits is to assure compliance with environmental protection regulations, enhance the organization's ability to prevent public health emergencies, and improve its ability to achieve and maintain environmental quality. In addition, NIH wants to identify which currently unregulated operations have the potential for being environmentally sensitive, and thus allow NIH to establish a set of "best practices" to guide such operations.

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### DOE's Environmental Compliance Efforts

The Department of Energy established an Office of Environmental Audit and Compliance in September 1985. At that time, the Secretary of Energy also established an Assistant Secretary for Environment, Safety, and Health, thus consolidating in DOE oversight responsibilities for the Department's environmental matters. Prior to this time, according to the Secretary, oversight responsibility for environmental matters had been scattered among the program assistant secretaries.

As a first step, the office will conduct baseline, multimedia evaluations (surveys) of DOE's potential environmental problems. DOE has about 16,500 employees and is responsible for the operations of another 100,000 contractor employees at laboratory, nuclear weapons production, and other operations throughout the United States. According to the Deputy Director, Office of Environmental Audit and Compliance, the surveys are a one-time effort, to begin about June 1986, will take about 2 years to complete, and cost in excess of \$70,000 per facility. He said that the information provided from these surveys will be beneficial to the agency as it restructures its appraisal program, which is the name DOE uses for its environmental auditing program. As part of this effort, the Deputy Director said that the Department is drafting guidance on how to carry out an appraisal program which will rely more on headquarters staff involvement in reviewing the operations of its contractor facilities. He also said that this approach, hopefully, will improve the information needed to make decisions. Past appraisal program efforts, he said, were carried out by various organizational entities, were implemented inconsistently across DOE, lacked independence, often excluded

detailed reviews of contractor operations, and generally resulted in an uneven picture of the agency's compliance status.

### EPA's Environmental Auditing Program

EPA's Director, Occupational Health and Safety Staff, said that EPA has budgeted \$250,000 to conduct environmental audits at 15 laboratories in fiscal year 1986. Of this amount \$50,000 has been budgeted to develop audit protocols and procedures. The goal of the program will be to audit the largest facilities first and eventually review all EPA laboratories by the end of fiscal year 1988. He said that the cost per facility will vary depending on numerous factors, including the size and complexity of operations and the number of media that need to be audited, but would be cost beneficial in the long run.

### Barriers to Establishing Environmental Auditing Programs

Cost and concern that audit reports may result in demands for impractical or premature corrective actions have limited the establishment and use of environmental auditing to date, according to agency environmental officials. At an EPA-sponsored environmental auditing conference in February 1984, federal agencies cited, among other concerns: (1) their difficulties in securing initial management support, funds, expertise, and personnel and (2) their uncertainties about funds to address problems discovered through environmental audits as reasons they did not have environmental auditing in their agencies. Concern over EPA's use of internal environmental audit reports was also identified as a barrier to the establishment of effective programs.

### Cost Concerns

All 17 civilian federal agency headquarters environmental officials we contacted said that environmental auditing is a good concept, but 16 of them also told us that the greatest drawback to their agency implementing these programs was cost. They noted that the long-term cost implications would create budget problems on already limited funds. Headquarters environmental officials of the six agencies involved with environmental auditing told us that their activities, in their opinions, were or would be economically justified in the long run. They reasoned that identifying a problem or potential problem before a crisis happens reduces the potential cost of health and environmental damages and provides the public with a sense of security that the federal government is minimizing the risks of damages or harm from its operations. As NASA's Environmental Compliance Officer pointed out, environmental auditing will demonstrate that NASA is managing the environment in a business-like manner instead of reacting to a series of crises.

Similarly, EPA officials said, given EPA's limited resources and current inspection schedule, that internal environmental assessments could provide more timely protection of the environment and could be cost beneficial. EPA's Region IV RCRA Branch Chief said that environmental auditing for hazardous waste problems was analogous to fire prevention programs that assure that fire codes are observed. He reasoned that hazardous waste cleanups can be so costly that a hazardous waste prevention program is justified on economic grounds, given the long-term consequences that can be associated with improper management.

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#### Use of Environmental Audit Information

A second barrier appears to be the concern that agencies will not be able to control the release of their environmental audit reports to EPA or to state environmental agencies. Agencies expressed concern that widespread visibility of the environmental problems at a facility could result in demands for immediate corrective action which, although appropriate in concept, may be impractical or premature given other agency priorities and funding constraints.

In a June 1985 joint memorandum to the EPA Administrator, the EPA Assistant Administrators for Enforcement and Compliance Monitoring and for Policy, Planning, and Evaluation noted that the issue of EPA's request and use of internal environmental audit reports had been identified "as a major barrier to the spread of effective audit systems." This concern had also been identified at the February 1984 conference.

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#### EPA's Efforts to Encourage Environmental Auditing

EPA has taken several steps to encourage environmental auditing in federal agencies. It has endorsed the use of environmental auditing in an EPA policy statement which includes a set of criteria for effective auditing programs, attempted to allay agencies' fears regarding requests for environmental audit reports, and pledged its assistance in finding cost-effective solutions to agency environmental problems. These initiatives address requirements under all environmental statutes and regulations and are not limited to RCRA requirements only.

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#### Policy Statement

EPA issued a policy statement in November 1985 strongly supporting the use of environmental auditing by regulated entities. According to the policy,

"... ultimate responsibility for the environmental performance of the facility lies with top management, which therefore has a strong incentive to use reasonable

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means, such as environmental auditing, to secure reliable information on facility compliance status."

EPA also encouraged states to adopt a similar policy. EPA noted, however, that the use of audits would not reduce an entity's statutory and regulatory obligations to monitor, report violations, keep records, or conduct other compliance activities required by law. Further, because EPA has an obligation to periodically assess compliance independently, EPA noted that audits could not be substituted for EPA or state inspections.

Included in EPA's policy is a list of criteria that EPA believes is necessary for effective environmental auditing programs. These include:

- (1) Top management support and commitment to follow up on audit findings.
- (2) An environmental auditing function independent of audited activities.
- (3) Adequate audit team staffing and auditor training.
- (4) Explicit audit program objectives, scope, resources, and frequency.
- (5) A process which collects, analyzes, interprets, and documents sufficient, reliable, relevant, and useful information, including periodic testing and sampling to confirm compliance.
- (6) Specific documented procedures to promptly prepare and report audit findings to managers with authority for corrective action.
- (7) Quality assurance procedures to assure the accuracy and thoroughness of environmental audits.

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**Other EPA Actions to  
Encourage Environmental  
Auditing**

In responding to federal agencies' concerns over cost and the control and release of their audit reports to others, EPA pointed out that confidentiality concerns should not stop agencies from establishing environmental auditing programs and using these self-evaluations as management tools to improve the agency's environmental operations. If problems exist, they will be discovered later anyway, EPA noted, and managing for compliance would be much better for agencies than reacting to crises.

In an effort to encourage such programs, according to the EPA policy, EPA will (1) refrain from routinely requesting internal audit reports, (2) provide technical assistance to help federal agencies design and initiate self-assessment programs, and (3) assist federal agencies in designing cost-effective action plans where pollution abatement projects are necessary to correct problems discovered through the environmental audit.

### EPA Concerns With the Future of Environmental Auditing Programs

We discussed the information that we obtained from agencies regarding their environmental auditing activities with EPA officials. EPA, while being encouraged by the efforts of these agencies, expressed concern as to the future of environmental auditing in the federal sector—especially in view of the emphasis on reducing the federal budget deficit. EPA officials told us that agencies' ability to continue and expand their programs could very well be curtailed as agencies look for areas to cut spending. Since the environmental auditing concept is new in the federal sector, and the cost-effectiveness of environmental auditing is difficult to determine in the short range, it may be difficult to retain these programs during times of limited agency budgets. Likewise, the shortage of funding may delay or preclude additional federal agencies adopting and implementing environmental auditing programs.

### States Also Encourage Environmental Auditing

State officials in the 12 states reviewed also encouraged the implementation of environmental audit programs within federal agencies to assure compliance with environmental laws such as RCRA. As noted by an environmental official of the New York Department of Environmental Conservation, the environmental audit provides a systematic evaluation of compliance activities and, as such, is an excellent tool to identify problems and potential problems before they become violations. He said that he would encourage use of the process by any regulated hazardous waste handler.

Similarly, Tennessee's Director, Division of Solid Waste Management said agencies need to perform some sort of self-assessment. In his opinion, it is a necessity for federal agencies, although the size, scope, and organization of the program could vary dramatically depending on the amount, type, and methods of handling wastes.

### Conclusions

Federal agencies need to know how well they are complying with RCRA and be able to measure and assess their progress in meeting RCRA requirements. In addition, as discussed in chapter 1, Executive Order

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12088 and Section 6001 of RCRA require federal agencies to take necessary actions to prevent pollution by federally owned or controlled activities. Our review has shown that, to date, federal agencies have generally not performed well in meeting these objectives.

Environmental auditing is a technique that could be used by federal agencies in fulfilling their RCRA responsibilities. We believe that such a technique, if implemented properly, could result in better program results than experienced to date. Two issues—cost and the confidentiality of audit reports—have been identified as barriers to federal agencies' establishment of effective environmental auditing programs. The costs of implementing environmental auditing are difficult to estimate because of differences between federal facilities and lack of experience using these programs to date. However, the retroactive cleanup of environmental problems has proven to be costly for both private and federal hazardous waste handlers.

Federal agencies also have included the cost of correcting problems identified through an environmental audit as a part of the environmental audit cost. These costs should not, in our opinion, be viewed as an environmental audit cost but as a cost of bringing facilities into compliance with RCRA. Absent an audit, these same problems would in time be identified and require an expenditure of funds for corrective action. We recognize that the potential costs of correcting problems identified through an environmental audit cannot be ignored. Yet, an overriding issue would seem to be whether agencies can make informed management decisions regarding their compliance posture without the type of information that would be developed through environmental audits. Earlier problem identification could result in less corrective action costs if a condition is prevented from worsening. EPA believes that environmental auditing has developed in private industry largely for this reason, especially in view of the potential problems with hazardous wastes and the costs of dealing with these wastes later.

EPA has developed a policy that it perceives as attempting to strike a balance between its need to know facility specific environmental information and an agency's ability to investigate and candidly report on its own operations. In our view, while EPA may say that it will refrain from requesting environmental audit reports, it will be difficult for EPA to carry out this policy if it is to keep abreast of the environmental conditions in the federal sector. Even if EPA did not request these reports, agencies might have to comply with requests for sensitive information

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from the private sector. Whether EPA's policy will lessen agency concerns over the confidentiality of audit reports is unclear at this time. However, we do not believe this issue is a sufficient reason to forego environmental audits.

In our opinion, environmental auditing is one workable technique for providing agency managers with the information needed to make informed decisions. We support EPA's efforts to encourage RCRA environmental auditing programs within the federal government. However, applying the technique in each agency should be tailored to its operations, handling practices, and potential for harming the environment and public health. EPA, as the focal point in the federal sector for environmental protection, should continue to work with other agencies in developing environmental auditing programs, or similar programs having the same objective that provide agency managers with an accurate environmental profile.

# RCRA Hazardous Waste Regulatory Requirements

**Table I.1: Summary of RCRA Hazardous Waste Regulatory Requirements to Be Met by Generators and Treatment, Storage, and Disposal Facilities**

RCRA requirements	Generators	TSD facilities <sup>a</sup>
Perform a hazardous waste determination using EPA's 3-step process	X	X
Notify EPA if RCRA wastes are handled and obtain identification number	X	X
Personnel training in hazardous waste management procedures and emergency response	X	X
Preparedness and prevention measures to minimize potential releases	X	X
Contingency planning and emergency procedures to mitigate unplanned releases	X	X
Periodic inspections of facility operations, structures, and equipment for deterioration or malfunction	X	X
Manifest system for tracking waste	X	X
Recordkeeping and reporting on hazardous waste operations	X	X
Physical security to prevent unknowing entry or exposure, or unauthorized entry		X
Proper use and management of containers, tanks, impoundments, landfills, and other operating areas		X
Groundwater monitoring, including periodic sampling and analysis		X
Closure and postclosure care to eliminate or minimize future escape of hazardous waste		X
Financial responsibility sufficient to full pay for closure and post-closure care		X
Adequate design and operation of waste handling areas		X <sup>b</sup>

<sup>a</sup>Treatment, storage, or disposal (TSD) facilities in operation on or before November 19, 1980, could continue operating under "interim status" until a hazardous waste permit is issued, at which time the facility must be in compliance with the final permit regulations. The final permit regulations incorporate the interim status requirements and also include additional technical, design, construction, and operating requirements. Under the 1984 RCRA amendments, all facilities operating under interim status were required to submit an application for a final permit by November 8, 1985, or cease operations.

<sup>b</sup>This includes the design and operation of tanks, surface impoundments, waste piles, land treatment facilities, landfills, incinerators, and injection wells.