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HAZARDOUS WASTE

**Impediments Have Delayed
the Closing and Cleanup of
Land Disposal Facilities**

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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss the progress made by the Environmental Protection Agency (EPA) in closing and issuing post-closure permits to hazardous-waste land disposal facilities, its inspection and enforcement efforts to ensure compliance with closure and post-closure requirements, and impediments that delay the closure and issuance of post-closure permits.

In December 1987, we testified before this Subcommittee on the progress that EPA and the states had made in completing closure at the facilities that decided to cease operating and close rather than comply with new operating requirements.¹ In my testimony today, I will be commenting on the progress that EPA and the states have made since then, as described in our May 1991 report as well as in our April 1992 report that is being released to the public today.²

In summary, little progress has been made in closing facilities or issuing post-closure permits since 1987. As of October 1991, only 31 percent of the 1,395 closing facilities had certified closure, and only 11 percent had been issued post-closure permits. This situation exists primarily because until recently, EPA chose to focus its resources on higher priority activities such as issuing permits to those facilities seeking to continue operations. Interestingly enough, as we reported in May 1991, EPA was not even aware of the small number of facilities certifying closure. As a result of our finding, EPA has strengthened its monitoring requirements for facility closures. In addition, to ensure that the agency is focusing its resources on those facilities posing the greatest threat to human health and the environment, EPA has developed national criteria for scoring all hazardous waste facilities, both operating and closing, to determine which facilities should be given the highest priority for issuing permits or, if appropriate, for taking corrective action. To ensure that the scoring system is working under these criteria, EPA has begun to monitor how regions are implementing the system.

Inspection and enforcement play critical roles in EPA's hazardous waste regulatory program. They are to ensure that

¹Hearing before the Environment, Energy, and Natural Resources Subcommittee, House Committee on Government Operations, on "Delays and Weaknesses in EPA's Program to Ensure Proper Closure of Hazardous Waste Sites," Dec. 15, 1987.

²Hazardous Waste: Limited Progress in Closing and Cleaning Up Contaminated Facilities (GAO/RCED-91-79, May 13, 1991) and Hazardous Waste: Impediments Delay Timely Closing and Cleanup of Facilities (GAO/RCED-92-84, Apr. 10, 1992).

violations are detected and that action is then taken to bring facilities into compliance. However, we found that while inspections are detecting violations that can delay or prevent closure and the issuance of post-closure permits, EPA has recently relaxed its inspection requirements, which could allow some violations to go undetected for longer periods of time. Once violations are detected, the enforcement actions taken do not always comply with EPA's guidelines for timely and appropriate action. Even so, the type of enforcement action taken seems less critical to successfully closing facilities and issuing post-closure permits than ensuring that facilities install adequate groundwater monitoring systems. Without these systems, facilities are unable to close or receive post-closure permits, and EPA is not fully aware of potential contamination. Despite the importance of adequate groundwater monitoring systems, EPA does not know how many facilities lack them.

In addition to the lack of groundwater monitoring systems, other factors delay closure and the issuance of post-closure permits. Once enforcement actions are initiated, lengthy negotiations and appeals can delay final resolution. A lack of guidance on when post-closure permit applications should be required can add further delays. In addition, owners/operators of closing facilities, which are not generating revenues, have fewer incentives to spend funds to install costly groundwater monitoring systems, properly cover disposal units, or maintain financial assurances to care for the sites. Some owners/operators simply cannot afford the costs of closure and post-closure care. EPA, however, has yet to fully assess which facilities will not properly close and obtain post-closure permits or to establish the best means to close these facilities. As a result, contamination may continue to spread, increasing environmental and health risks and, ultimately, the costs of closure and cleanup.

Before I discuss these issues in more detail, let me present some background concerning closure, inspection, and enforcement.

BACKGROUND

Land disposal facilities for hazardous waste are regulated by EPA under the Resource Conservation and Recovery Act (RCRA), as amended. While EPA has overall responsibility for implementing RCRA, 45 states, the District of Columbia, and Guam have been authorized to administer the program under EPA oversight.

RCRA required that owners/operators of land disposal facilities for hazardous waste operating in the early 1980s apply for operating permits by November 1985 or close their operations. In November 1985, 837 of the nation's 1,538 land disposal facilities were required to close because they were unable or unwilling to meet new operating requirements under RCRA. These closing facilities were required to certify closure by January

1987, unless they obtained extensions. Closure involves removing all hazardous waste or, if the waste is left in place, installing a cover to contain the waste. Closure is carried out in accordance with an EPA- or state-approved closure plan, which includes a description of how the facility will be closed and milestones for completion. When closure is completed, both a professional engineer and the owner/operator must certify that it was conducted in accordance with the approved closure plan.

Facilities that close by leaving waste in place must obtain from either an authorized state or EPA a post-closure permit, which formalizes facility-specific requirements for post-closure care. Established because of land disposal facilities' potential for environmental problems after closure, the requirements for post-closure care include conducting maintenance activities and groundwater monitoring for 30 years. EPA believes that most closing land disposal facilities will close with waste in place and have contaminated groundwater. Hence, the facilities will be required to comply with post-closure care requirements. Post-closure permits currently serve as a primary mechanism for cleaning up contamination and correcting current and future releases of hazardous waste at facilities.

EPA's guidelines also provide for the state or EPA to inspect all land disposal facilities to determine if they have complied with regulatory requirements, including closure requirements, promulgated under RCRA. If violations are found, timely and appropriate enforcement actions are to be taken to bring facilities into compliance. Under EPA's enforcement policy, high-priority violators, including those with the most serious, or Class I, violations (such as the failure to install and operate an adequate groundwater monitoring system) are to be issued administrative orders with penalties within 135 days of an inspection. Alternatively, states can refer cases to EPA or to their attorneys general or other appropriate legal authorities for enforcement action within 135 days.

Now, let me discuss our major findings in more detail.

PROGRESS IN CLOSING FACILITIES AND ISSUING POST-CLOSURE PERMITS

EPA has made limited progress in closing the 837 land disposal facilities that, in November 1985, were unwilling or unable to comply with RCRA's requirements for operating facilities. These facilities should have certified closure by January 1987 and received post-closure permits by November 1988. However, only 257 facilities, or 31 percent, had certified closure as of September 1991. Furthermore, only 89 facilities, or 11 percent, of the 837 facilities had received their post-closure permits.

In addition to these 837 facilities, as of October 1991, according to EPA, 558 additional land disposal facilities were closing, for a total of 1,395 closing facilities. In all, only 434 of these, or 31 percent, had certified closure as of October 1991, and 151, or 11 percent, had been issued post-closure permits.

Even though completing closure is critical to halting the spread of contamination at facilities, EPA historically has assigned a lower priority to closing facilities and has focused its regulatory resources on issuing permits to operating facilities. For example, until fiscal year 1991, issuing post-closure permits was not considered a high priority. In addition, as we reported in May 1991, EPA was not aware of the relatively low number of land disposal facilities that had certified that closure was completed. As a result of our finding, EPA has strengthened its requirements for monitoring facility closures.

Recognizing the environmental concerns at closing land disposal facilities, EPA chose to classify the issuance of post-closure permits as a high-priority activity for fiscal year 1991. Specifically, EPA stated that targets for issuing post-closure permits would be established to hold regions and states accountable and to track their progress. However, EPA did not place a similar priority on closure certification. As a result, in our May 1991 report, we recommended that the agency establish similar targets for closure certification.

In its response to this recommendation, which we received last week, EPA agreed with the concept, but did not agree that establishing targets for closure certifications was the best approach for addressing risks at closing facilities. Instead, EPA stated that its new priority-ranking system is a more effective approach for controlling contamination. This system is intended to ensure that hazardous waste facilities posing a serious environmental threat, regardless of whether they were operating or closing, are identified and prioritized for issuing permits and taking corrective action. However, in recognition of the size of the universe of closing land disposal facilities and the likely associated risks, EPA has instructed its regions to give special consideration to these facilities, such as by putting facilities with post-closure needs high on the list of facilities scheduled for ranking, and by making it one of EPA's top priorities to take action at such facilities to prevent and reduce risks. Also, EPA has put into place additional reporting requirements to help it track program progress better, including obtaining closure certification.

In May 1991, we also reported that EPA had not ensured that facilities were being accurately categorized under its priority ranking system, as it existed at that time. We found that each of the four EPA regional offices we visited used its own methods for prioritizing facilities. These methods had weaknesses that

precluded three of the four regions from identifying their worst facilities; the three regions either (1) did not rank all facilities or (2) did not use a single method for ranking all facilities.

We pointed out in our May report that EPA recognized these problems and announced, in February 1991, that in order to determine which facilities should be acted on first for permits and corrective action, EPA would establish national criteria and a uniform scoring system for evaluating the environmental threat that facilities pose. Because of EPA's actions at that time, in our May 1991 report we recommended that the agency monitor the implementation of the new approach to ensure consistent interpretation and application and determine whether further guidance was needed. In its May 1992 response, EPA said it does not believe that additional guidance is needed at this time. However, by examining regional plans and end-of-year reports, EPA stated that it will determine whether additional guidance is necessary to ensure that its revised prioritization system is being consistently used.

INSPECTION AND ENFORCEMENT PERFORMANCE

Inspection and enforcement are especially critical at closing facilities to ensure that they properly close and that the facilities receive post-closure permits, which provide for long-term care. In reviewing inspections conducted over a 5-year period (fiscal years 1986 through 1990) at 20 of the 97 closing facilities in three states for our April 1992 report, we found that the three states generally complied with EPA's guidelines by conducting annual inspections to determine facilities' overall compliance with RCRA and by conducting triennial inspections to determine whether facilities' groundwater monitoring systems adequately characterize the nature and extent of groundwater contamination. We found that 96 percent of the inspections to evaluate overall compliance were conducted annually. Similarly, 89 percent of the inspections of groundwater monitoring systems were conducted every 3 years. More importantly, inspections at the 20 facilities identified that 19 of them had Class I violations of requirements concerning groundwater monitoring, closure/post-closure, or financial assurance. This situation is comparable to the situation nationwide. As of September 1991, 88 percent of the 837 facilities that decided in November 1985 to close had Class I violations in one of the three categories, according to information provided by EPA; 77 percent of the facilities had groundwater violations.

As important as inspections are, however, EPA has revised its guidance by decreasing the number of required inspections because of resource constraints at the federal and state levels. Beginning in fiscal year 1991, EPA's inspection guidance has directed that compliance inspections be conducted annually only at those facilities that have outstanding Class I violations and that were

not inspected during the previous fiscal year. In addition, EPA's fiscal year 1992 inspection guidance eliminated the provision for conducting any groundwater monitoring inspections. An EPA official said that the changes, in effect, provide regions and states with discretion to determine when inspections should be conducted. However, such revisions could allow violations to go undetected entirely or for longer periods of time, thus increasing potential health and environmental risks and possibly delaying closure and the issuance of post-closure permits. After our April 1992 report was issued, EPA reinstated the 3-year requirement for conducting groundwater monitoring inspections for fiscal year 1993.

Although inspections were identifying noncompliance over the 5-year period, the three states and EPA were not always following EPA's enforcement policy. Rather than issuing administrative orders with penalties or referring cases to EPA or state attorneys general within 135 days following an inspection, the three states often issued informal notices of violation which carry no penalties. States did so either because of state policies to meet with owners/operators prior to issuing formal notices, or because of, in the case of one state agency, a lack of authority to issue formal notices. EPA, rather than taking independent action when a state did not conform with EPA policy, frequently chose to take no action either because it perceived that the state was making reasonable progress and any action by EPA would be duplicative or because it was concerned that independent action would threaten a good working relationship with the state. In addition, when violators were referred by the states to EPA, the agency did not always issue administrative orders with penalties or refer cases to the Department of Justice within 90 days, as specified in the enforcement policy.

While we believe that states as well as EPA should issue administrative orders with penalties, the type of enforcement action taken seems less critical to the states' success in obtaining closure certifications and issuing post-closure permits than does the states' success in ensuring that facilities install adequate groundwater monitoring systems. While none of the three states conformed fully with EPA's enforcement policy, we found that all 23 land disposal facilities being closed in one state had installed adequate groundwater monitoring systems. Of these 23 facilities, 19 had certified that closure was completed, and 16 had been issued their post-closure permits. In contrast, half of the 52 land disposal facilities being closed in another state had yet to install approved groundwater monitoring systems. Of these 52 facilities, only 12 had certified that closure was completed, and only 1 had been issued a post-closure permit. Unless the remaining facilities install adequate monitoring systems, they will be unable to close or receive post-closure permits. EPA has not, however, determined how many land disposal facilities being closed nationwide have no groundwater monitoring systems or inadequate

systems, and it acknowledges that without such systems in place, complete knowledge of the threat from contamination is not known.

OTHER IMPEDIMENTS DELAYING CLOSURE AND ISSUANCE OF PERMITS

Like the lack of adequate groundwater monitoring systems, other factors can contribute to delays in closing facilities and issuing post-closure permits, even when inspections are conducted and enforcement actions taken. For example, federal and state judicial systems provide owners/operators opportunities to negotiate and appeal enforcement orders for long periods, which can delay when facilities comply with closure and post-closure requirements. In addition, EPA's emphasis on issuing permits for operating rather than for closing facilities has resulted in the lack of guidance or time frames for when post-closure permit applications should be requested from owners/operators and processed by the states or EPA. Because of the delays in requests for permit applications and processing, many facilities may have delayed installing the groundwater monitoring systems necessary to provide information on their applications.

While some of these factors may result in temporary delays, other factors may result in more long-lasting delays. For example, some owners/operators whose facilities are not generating any revenue may lack incentives to spend funds for installing costly groundwater monitoring systems, properly covering disposal units, or maintaining financial assurances to care for the sites. In addition, EPA regional and state officials told us that many facility owners/operators will be financially unable to install groundwater monitoring systems, close properly, or care for the units for 30 years. According to EPA officials, the cost of installing a groundwater monitoring system ranges from a minimum of \$20,000 to a high of \$3 million. As of June 1991, 6 of the 97 closing land disposal facilities in the three states we reviewed had been abandoned or had declared bankruptcy, and state officials have concerns about the financial status of 13 other facilities.

Because of facilities' inability or unwillingness to comply with costly requirements, EPA and the states have few options available to close land disposal facilities and issue them post-closure permits when enforcement efforts do not result in compliance. Eventually, these facilities may have to be closed and cleaned up at the public's expense, either under a state cleanup program or the national Superfund program. Once facilities become the responsibility of these programs, additional delays can occur, and cleanup costs can escalate. Average cleanup costs under the national Superfund program are about \$25 million. EPA has not determined which facilities nationwide will not close or whether they have installed adequate groundwater monitoring systems. Also, EPA has not determined who will install groundwater monitoring systems, when they will be installed, and who will be responsible

for any necessary cleanup in a timely, efficient, and cost-effective manner. Until EPA has made these determinations and acted on them, adequate groundwater monitoring systems will not be in place to detect contamination as it spreads.

CONCLUSIONS AND RECOMMENDATIONS IN OUR APRIL 1992 REPORT

While states have generally followed EPA's inspection guidelines and detected numerous violations at closing facilities, the agency has relaxed time frames for compliance inspections because of resource constraints. Because current EPA guidance no longer provides for an annual compliance inspection, violations that may delay or prevent closure could go undetected for even longer periods of time. As a result, we recommended that EPA give a higher priority to closing facilities by annually conducting compliance inspections at these facilities.

Although the three states we visited have not always followed EPA's enforcement policy, their success in ultimately closing facilities is more closely related to their success in ensuring that facilities install adequate groundwater monitoring systems. The failure to install such systems not only prevents a facility from certifying closure and receiving a post-closure permit, but it also results in a lack of information on the risks that such facilities pose to humans and the environment. Because these systems are so important, we recommended that EPA collect and maintain data on the status of groundwater monitoring systems and on the barriers delaying or preventing their installation at closing facilities.

Certifying closure and issuing post-closure permits are delayed by various factors not addressed by EPA's enforcement policy. Once enforcement action is initiated, negotiations and appeals can be very lengthy. Because of these delays, we recommended that EPA establish time frames for negotiating with facilities. Additional delays occur in issuing post-closure permits because EPA has not provided guidance on when post-closure permit applications should be requested and processed. Therefore, we recommended that EPA develop guidance specifying when post-closure permit applications are due. In our view, requesting the applications could encourage some facilities to install groundwater monitoring systems in a more timely manner.

In addition to delays caused by negotiations, appeals, and requests for post-closure permit applications, delays result from the costs of complying with closure and post-closure requirements. Agency officials acknowledge that some closing land disposal facilities, either because of financial distress or the lack of incentives, will not comply with RCRA requirements. Enforcement efforts will likely be unsuccessful at closing these facilities, and until adequate groundwater monitoring systems are installed to provide critical information on the actual or potential threat that

these facilities represent, no one is in a position to determine how great a threat they pose. Furthermore, until the waste at these facilities is properly contained, there is nothing to prevent the waste's migration to groundwater and surface water. For these reasons, we recommended that EPA develop and implement a plan for identifying these facilities, taking timely actions to ensure that groundwater monitoring systems are in place, and determining the best options for controlling and or cleaning up those facilities that pose the greatest threat. This plan should consider (1) whether it would be appropriate for EPA or the states to unilaterally undertake closure and post-closure activities, such as installing adequate groundwater monitoring systems, and (2) what is the most efficient and cost-effective means of accomplishing these activities.

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This concludes my prepared statement. I would be happy to respond to any questions at this time.

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