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# SUPERFUND

# Progress, Problems, and Future Outlook

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Mr. Chairman and Members of the Committee:

Thank you for the opportunity to discuss the current status and management of the Superfund program and the outlook for the program's future. My comments today are based on a number of reports we have issued in recent years that relate to three specific issues: (1) progress made toward cleaning up sites in the program, (2) continuing management problems, and (3) factors affecting Superfund's future workload. In summary, our work has shown the following:

- In the past, we have called attention to the slow pace of cleanups in the Superfund program. For example, we reported that cleanups completed in 1996 took an average of over 10 years.[1] However, now, 17 years after sites were first placed on the Superfund list, many of the sites have progressed a considerable distance through the cleanup process. Decisions about how to clean up the great majority of these sites have been made, and the construction of cleanup remedies has been completed at over 40 percent of the sites. EPA's goal is to complete the construction of remedies at 1,200 sites by 2005. Work to clean up groundwater will continue at many sites after remedies are constructed.
- Despite the progress that Superfund has made toward site cleanups, certain management problems persist. These problems include the difficulty in controlling contract costs, the failure to recover certain federal cleanup costs from the parties who are responsible for the contaminated sites, and the selection of sites for cleanup without assurance that they are the most dangerous sites to human health and the environment. These problems have caused us to include the program on our list of federal programs vulnerable to waste and abuse. Furthermore, our analysis indicates that the costs of on-site work by cleanup contractors represent less than half of the spending in the program.
- There is considerable uncertainty about the future workload of the Superfund program. Resolving this uncertainty depends largely on deciding how to divide responsibility for the cleanup of sites between EPA and the states. The number of sites that have entered the Superfund program in recent years has decreased as EPA has focused its resources on completing work at existing sites and the states have developed their own programs for cleaning up sites. However,

[1] Superfund: Times to Complete the Assessment and Cleanup of Hazardous Waste Sites (GAO/RCED-97-20, Mar. 31, 1997).

according to EPA and state officials who responded to our survey, a large number of sites in EPA's inventory of potential Superfund sites are contaminating groundwater and drinking water sources and causing other problems and may need cleanup. We have recommended that EPA work with the states to assign responsibility for these sites among themselves. The Superfund reauthorization process gives the Congress an opportunity to help guide EPA and the states in allocating responsibility for addressing these sites.

## Background

In 1980, the Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), creating the Superfund program to clean up highly contaminated hazardous waste sites. CERCLA authorizes EPA to compel the parties responsible for the contaminated sites to clean them up. The law also allows EPA to pay for cleanups and seek reimbursement from the parties. EPA places sites that it determines need long-term cleanup action on its National Priorities List (NPL). As of early 1999, there were 1,264 sites on or proposed for the NPL. Another 182 sites had completed the cleanup process or were determined not to need cleanup and had been deleted from the NPL. Once listed, the sites are further studied for risks, and cleanup remedies are chosen, designed, and constructed. EPA relies extensively on contractors to study site conditions and conduct cleanups.

Cleanup actions fall into two broad categories: removal actions and remedial actions. Removal actions are usually short-term actions designed to stabilize or clean up hazardous sites that pose an immediate threat to human health or the environment. Remedial actions are usually longer term and more costly actions aimed at permanent remedies.

According to a 1998 report by the Environmental Law Institute,[2] all 50 states have established their own cleanup programs for hazardous waste sites. In addition to handling less dangerous sites, some of the state programs can handle highly contaminated sites, whose risks could qualify them for the Superfund program. Some states initially patterned their cleanup programs after the Superfund program but over the years, in an effort to clean up more sites faster and less expensively, have developed their own approaches to cleaning up sites.

[2] An Analysis of State Superfund Programs: 50-State Study, 1998 Update, Environmental Law Institute.

States accomplish cleanups under three types of programs: (1) voluntary cleanup programs that allow parties, who are often interested in increasing sites' economic value, to clean them up without state enforcement actions; (2) brownfields programs that encourage the voluntary cleanup of sites in urban industrial areas to enable their reuse; and (3) enforcement programs that oversee the cleanup of the most serious sites and force uncooperative responsible parties to clean up their sites. States generally use their voluntary and brownfields programs to clean up less complex sites by offering various incentives to responsible parties, such as reduced state oversight. States maintain that these programs accomplish site cleanups quickly and efficiently.

Some states also maintain cleanup funds to pay all or a portion of the costs of cleanups at sites for which responsible parties that are able to pay for full cleanups cannot be found. The states vary greatly in the resources that they have devoted to cleanups. For example, the 1998 Environmental Law Institute study determined that states had cleanup funds totaling $1.4 billion as of the end of the states' 1997 fiscal year, with 6 states having fund balances of $50 million or more and 26 states having fund balances of less than $5 million. The study also reported that states spent a total of $565 million on their cleanup programs in fiscal year 1997,[3] with 2 states spending $50 million or more and 27 states spending less than $5 million.

## Superfund Has Made Progress Cleaning Up Sites

Even though cleanups have taken a long time to accomplish, if it maintains its current pace, the Superfund program will complete the construction of cleanup remedies at the great majority of current NPL sites within the next several years. In our March 1997 report, we said that cleanups completed in 1996 took an average of 10.6 years. Much of the time taken to complete cleanups was spent during the early planning phases of the cleanup process during which cleanup remedies are selected. We said that less time had been spent on actual construction work at sites than on the selection of remedies.

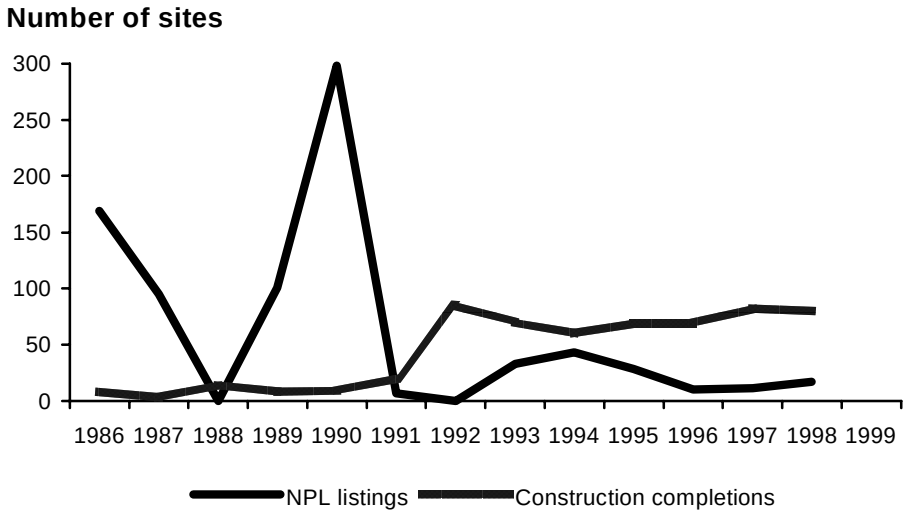
[3]Six states did not report on their spending.

Now, however, most NPL sites have been in the cleanup process for a long time and have moved beyond the remedy selection phase. Last year, we reported that EPA had completed the selection of remedies at about 70 percent of the NPL sites as of the end of fiscal year 1997.[4] It had plans to complete, by the end of fiscal year 1999, remedies for about 67 percent of the federally owned or operated sites and 95 percent of the nonfederal sites that were listed as of the end of fiscal year 1997. EPA reports that it has completed the construction of cleanup remedies at 585 sites as of January 1999; will complete construction at 85 sites in each of fiscal years 1999 and 2000; and will finish a total of 1,200 sites by 2005. Groundwater cleanups will continue at many of these sites after the completion of remedy construction.

These completion rates reflect EPA's decision to make the completion of construction at existing sites the Superfund program's top priority and to reduce new entries into the program. About 89 percent of the NPL sites were placed on the list between 1982 and 1990. Figure 1 shows the number of sites listed on the NPL and the number of sites where the construction of the cleanup remedy was completed during the years 1986 through 1998.

[4] Superfund: Information on the Status of Sites (GAO/RCED-98-241, Aug. 28, 1998).

**Figure 1: Numbers of Sites Listed on the NPL and for Which the Construction of Final Cleanup Remedies Were Completed, 1986 Through 1998**




Source: Compiled by GAO from Environmental Protection Agency data.

Under the Superfund program, in addition to its remedial work, EPA has conducted removals at 595 NPL sites and 2,591 other contaminated sites. Cleanup work has also been conducted at sites where construction of the final cleanup remedy has not yet been completed. At the request of this committee, we are conducting a review to determine the extent of this ongoing cleanup activity.

## Uncorrected Problems Make Superfund A High-Risk Program

For several years, GAO has included the Superfund program on its list of federal programs that pose significant financial risk to the government and the potential for waste and abuse. We included Superfund on the list because of (1) problems with the management of cleanup contractors, (2) insufficient recovery of cleanup costs from responsible parties, and (3) the absence of risk-based priorities for site cleanups.[5] EPA has corrected some of these problems, but enough remain that we have not yet been able to remove Superfund from the high-risk list. I would like to review these problems and EPA's response.

[5] High-Risk Series: Superfund Program Management (GAO/HR-93-10, Dec. 1992, GAO/HR-95-12, Feb. 1995, GAO/HR-97-14, Feb. 1997, and GAO/OCG-99-17, Jan. 1999).

## Contract Management

First, we raised concerns about several contracting practices. We said that EPA had a backlog of more than 500 audits of its Superfund contracts. The purpose of these audits is to evaluate the adequacy of contractors' policies, procedures, controls, and performance. The audits are necessary for effective management and are a key tool for deterring and detecting waste and abuse. The agency has now almost eliminated its backlog of contract audits.

We also found that EPA was approving contractors' cleanup cost proposals without estimating what the work should cost. As a result, the agency could not negotiate the best contract price for the government. In response, EPA is now developing its own cost estimates and using them to guide its price negotiations with contractors. However, EPA was still having problems developing accurate estimates in about half the cases we recently reviewed. Furthermore, many of the cost estimators in the EPA regions told us that they lacked the experience and historical data they needed to do a better job at developing these estimates. EPA has requested the U.S. Army Corps of Engineers, an agency with extensive contracting experience, to conduct an assessment of EPA's cost-estimating practices and recommend potential improvements. The assessment is still ongoing and will be completed in mid 1999. Unless EPA ensures that its regions implement and sustain corrective measures resulting from this review, problems can reoccur. EPA has taken similar corrective actions in the past, yet we continue to find problems with estimates.

Lastly, with respect to contracting, we reported that EPA had difficulty controlling the overhead, or program support costs, of its contractors. To ensure that it had enough contractors to conduct cleanups, EPA hired a large number of contractors—more, it turned out, than it actually needed. Even though it did not have enough cleanup work to keep them all busy, it had to pay their overhead costs (i.e., the costs of their maintaining the capacity to respond to work assignments--such as office space). Although EPA cut in half the number of contractors that it keeps in place, our recent work indicates that this reduction may not have been enough. We found that, for the majority of contracts we reviewed, EPA continues to pay overhead costs ranging from 16 percent to 76 percent of the overall contract's costs, exceeding EPA's 11 percent target. In addition, persistent high overhead costs and uncertainty about the future size of the program raise broader questions about the type and the number of contracts EPA really needs to have in place.

## Cost Recovery

Even though CERCLA makes parties who are responsible for contaminated sites liable for cleanup costs, we have repeatedly reported that EPA has not charged responsible parties for certain costs of operating the cleanup program--mainly indirect program costs, such as personnel and facilities. EPA has excluded about $3 billion—about 20 percent of the $15 billion it has spent on Superfund through fiscal year 1997—in indirect costs from final settlements with responsible parties. In the early years of the program, EPA took a conservative approach to allocating indirect costs to private parties because it was uncertain which indirect costs the courts would agree were recoverable if parties legally challenged EPA. The agency could lose the opportunity to recover at least a half billion dollars more if it does not soon reverse this practice. Recently, Superfund program officials have developed a new way to determine recoverable indirect costs that could increase EPA's cost recoveries, but the Superfund program has not yet used this new method because it is waiting for approval from EPA and the Justice Department.

## Priority Setting

The final Superfund issue that we discussed in our high-risk series is the absence of a system for prioritizing sites for cleanup based on the risk they pose to human health and the environment. EPA has partially corrected this problem. In 1995, it created the National Prioritization Panel to help it set funding priorities for sites at which remedies had been selected and that were ready for cleanup. The panel, which is composed of regional and headquarters cleanup managers, ranks all of the sites ready for cleanup construction nationwide on the basis of the health and environmental risks and other project considerations, such as cost-effectiveness. EPA then approves funding for projects on the basis of these priority rankings.

EPA, however, does not use relative risk as a major criterion when deciding which of the eligible sites to place on the NPL.[6] In our discussions with EPA managers responsible for assessing sites for Superfund consideration, we found that the agency relies on the states to choose which of the eligible sites to refer to EPA for placement on the NPL. States refer sites after selecting those that they will address through their own enforcement or voluntary cleanup programs. The EPA cleanup managers with whom we talked expect that future sites placed on the NPL will not necessarily be the

[6]A site is eligible for the NPL if it scores sufficiently high on EPA's Hazard Ranking System, which evaluates a site's potential risk to public health and the environment.

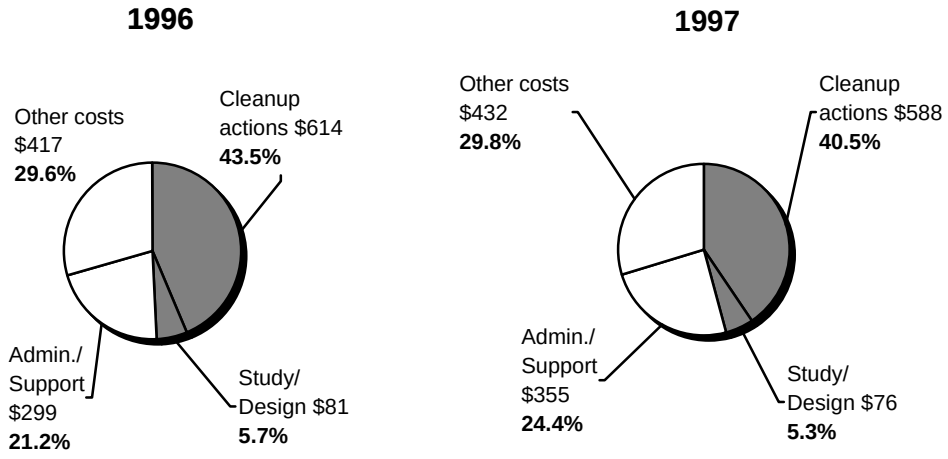
most risky but, rather, those that the states find to be large, complex, and therefore costly, or those without responsible parties willing and able to pay for the cleanup.

Because EPA does not usually track the status of cleanups that take place outside of the Superfund program, EPA does not know if the worst sites in the nation are being addressed first. Some EPA regions are encouraging their states to voluntarily provide EPA with information on the cleanup status of the sites that the states are addressing and that EPA considers as potentially posing significant risk.

In addition to our work on the high-risk aspects of the Superfund program, we have conducted detailed analyses of spending in the program[7]. In summary, we have reported that the share of Superfund expenditures that go to cleanup contractors for the study, design, and implementation of cleanups increased from fiscal years 1987 through 1996, but declined in fiscal year 1997. We also reported that between fiscal years 1996 and 1997, EPA's Superfund costs for administration and support activities correspondingly increased (see fig. 2). As you know, we are currently conducting additional analysis of the Superfund program's expenditures for this Committee and others. We plan to report on the results of this work in May.

[7] Superfund: Trends in Spending for Site Cleanups (GAO/RCED-97-211, Sept. 4, 1997) and Superfund: Analysis of Contractor Cleanup Spending (GAO/RCED-98-221, Aug. 4, 1998).

**Figure 2: Superfund Spending for Contractor Cleanup Work and Other Program Activities, Fiscal Years 1996-97, Dollars in Millions**




Note: "Other costs" includes costs for enforcement activities, research and development/laboratories, and other directly related costs.

Source: Superfund: Analysis of Contractor Cleanup Spending (GAO/RCED-98-221, Aug. 4, 1998).

## The Future Direction Of Superfund Is Uncertain

EPA's inventory of potential NPL sites contains sites that have been awaiting a decision for several years or more on whether they should be listed on the NPL. EPA and state officials believe that many of these sites need cleanup work, but the respective cleanup responsibilities of EPA and the states have not been established.

As of the end of fiscal year 1997, EPA's Superfund database indicated that the risks of over 3,000 sites had been judged on the basis of preliminary evaluations to be serious enough to make the sites potentially eligible for the NPL. EPA classified these sites as "awaiting an NPL decision." Information about the nature and the extent of the threat that these sites pose to human health and the environment, the extent of states' or EPA's cleanup actions at the sites, and the states' or EPA's cleanup plans for the sites is important to determining the future size of the Superfund program.

We surveyed EPA regions, other federal agencies, and the states to (1) determine how many of the over 3,000 sites remain potentially eligible for the NPL; (2) identify the characteristics of these sites, including their health

and environmental risks; (3) determine the status of any actions to clean up these sites; and (4) collect the opinions of EPA and other federal and state officials on the likely final disposition of these sites, including the number of sites that are expected to be placed on the NPL. We reported the results of our surveys in two November 1998 reports.[8]

On the basis of our surveys, we determined that 1,789 of the 3,036 sites that EPA's database classified as “awaiting an NPL decision” in October 1997 are still potentially eligible for placement on the list.[9] EPA, other federal agency, and state officials responding to our survey said that many of these sites presented risks to human health and the environment. According to these officials,

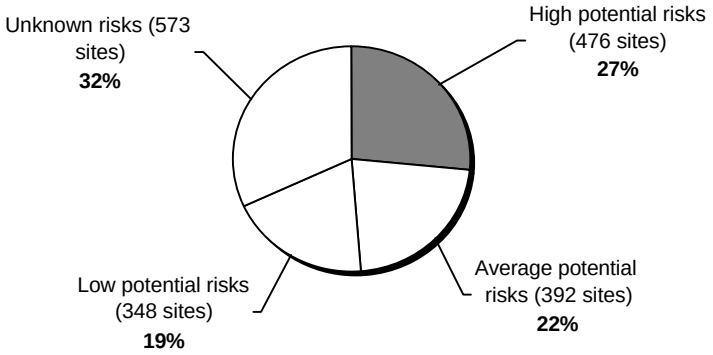
- about 73 percent of the sites have caused contamination in groundwater and another 22 percent could contaminate groundwater in the future;
- about 32 percent of the sites caused contamination in drinking water sources and another 56 percent could contaminate drinking water sources in the future;
- 96 percent of the potentially eligible sites are located in populated areas within a half-mile of residences or places of regular employment; and
- workers, visitors, or trespassers may have direct contact with contaminants at about 55 percent of the sites.

We asked officials of EPA, other federal agencies, and states to rank the risks of the potentially eligible sites. These officials collectively said that about 17 percent of the potentially eligible sites currently pose high risks to human health and the environment, and another 10 percent of the sites (for a total of 27 percent) reportedly may also pose high risks in the future if they are not cleaned up (see fig. 3). For about one-third of the sites, the officials said that it was too soon or they needed more information to determine the seriousness of the sites' risks, or they provided no risk characterization.

[8]Hazardous Waste: Unaddressed Risks at Many Potential Superfund Sites (GAO/RCED-99-8, Nov. 30, 1998, and Hazardous Waste: Information on Potential Superfund Sites (GAO/RCED-99-22, Nov. 30, 1998).

[9]We refer to these 1,789 hazardous waste sites as "potentially eligible sites." We consider the 1,234 other sites as unlikely to become eligible for various reasons. For example, some sites were erroneously classified as awaiting an NPL decision or do not meet EPA's criteria for placement on the list. Other sites do not require cleanup in the view of the responding officials, have already been cleaned up, or have final cleanup activities underway. Whether potentially eligible sites are eventually listed depends on, among other things, a final evaluation by EPA and the states' concurrence.

**Figure 3: Number of Potentially Eligible Sites With High, Average, and Low Potential Risks**




Source: Hazardous Waste: Unaddressed Risks at Many Potential Superfund Sites (GAO/RCED-99-8, Nov. 30, 1998).

Officials responding to our surveys said that some cleanup activities (which they stated were not final cleanup actions) have taken place at 686 of the potentially eligible sites. These actions were taken at more than half of the sites that were reported to currently or potentially pose high risks, compared to about a third of the sites that have been reported to currently or potentially pose average or low risks. No cleanup activities beyond initial site assessments or investigations have been conducted or no information is available on any such actions at the other 1,103 potentially eligible sites.[10] Many of the potentially eligible sites have been in state and EPA inventories of hazardous sites for extended periods. Seventy-three percent have been in EPA's inventory for more than a decade. No cleanup progress was reported at the majority of the sites that have been known for 10 years or more.

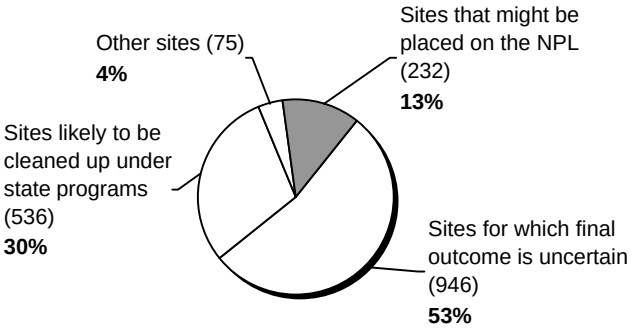
It is uncertain whether most potentially eligible sites will be cleaned up; when cleanup actions, if any, are likely to begin; who will do the cleanup; under what programs these activities will occur; and what the extent of

[10]Of the 1,103 sites for which no cleanup actions were reported, both EPA and the states said that they had taken no cleanup actions beyond initial site assessments at 719 of them. For 336 sites, EPA officials alone said that their agency had taken no cleanup actions, but the states provided no information. California, Massachusetts, and New Jersey accounted for about 85 percent of these sites. Similarly, for six sites, the states said that they had taken no action, but EPA provided no information. Neither EPA nor the states provided information on any cleanup actions that may have occurred at the remaining 42 of the 1,103 sites.

responsible parties' participation will be. We did not receive enough information from our survey to determine what cleanup actions will be taken at more than half of the 1,789 potentially eligible sites and whether EPA or the states will take these actions (see fig. 4). We are making no forecast of the number from the group of 1,789 potentially eligible sites that will be added to the NPL in the future. However, EPA and state officials collectively believed that 232 (13 percent) of the potentially eligible sites might be placed on the NPL in the future.[11] Officials estimated that almost one third of the potentially eligible sites are likely to be cleaned up under state programs but usually could not give a date for the start of cleanup activities. State officials stated that, for about two-thirds of the sites likely to be cleaned up under state programs, the extent of responsible parties' participation is uncertain. This is important because officials of about half of the states told us that their state's financial capability to clean up potentially eligible sites, if necessary, is poor or very poor. In addition, officials of about 20 percent of the states said that their enforcement capacity (including resources and legal authority) to compel responsible parties to clean up potentially eligible sites is fair to very poor.

[11]However, EPA and the states agreed on the listing prospects of only 26 specific sites.

**Figure 4: Estimates of the Likely Final Cleanup Outcome for 1,789 Potentially Eligible Sites**




Note: "Other sites" includes sites likely to be cleaned up under other EPA programs (43), sites that either EPA or state programs may clean up (13), and sites that are reportedly unlikely to be cleaned up (19).

Source: Hazardous Waste: Unaddressed Risks at Many Potential Superfund Sites (GAO/RCED-99-8, Nov. 30, 1998).

Our November report recommends that EPA review its inventory of potential NPL sites to determine which of them need immediate action and which will require long term cleanup action and, in consultation with the states, develop a timetable for taking these actions.

In conclusion, Mr. Chairman, despite the long durations of cleanups in the past, Superfund is within sight of completing the construction of cleanup remedies at most of the sites on the NPL. While recognizing this accomplishment, we believe that management problems and cost control issues we have reported on for several years remain to be solved. Because few sites have been admitted to the program in recent years, the NPL pipeline is clearing out. On the other hand, there are many sites in EPA's inventory of potential NPL sites that still need attention and possible cleanup, but EPA and the states have postponed decisions, sometimes for up to 10 years or longer, on how to address them.

Over the last two decades, the states have built up the capacity to deal with site cleanups to varying degrees. Some have substantial programs, but others have limited resources and report that their ability to pay for cleanups is poor. Furthermore, not all of the states have adequate enforcement authority to force responsible parties to pay for cleanups.

Because states generally now have the lead for screening sites for NPL consideration, future NPL sites may disproportionately represent complex cleanups for which responsible parties cannot be found or are unwilling to ante up the full cost of the cleanup. We have recommended that EPA work with the states to assign responsibility among themselves for these sites. The Superfund reauthorization process gives the Congress an opportunity to help guide EPA and the states in allocating responsibility for addressing these sites.

Mr. Chairman, this concludes my prepared statement. I will be happy to respond to your questions or the questions of committee members.

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