



Testimony

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Committee on Public Works and Transportation
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SUPERFUND

**Issues That Need To Be
Addressed Before the Program's
Next Reauthorization**

Statement of
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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to be here today to discuss the progress that has been achieved in the Environmental Protection Agency's (EPA) Superfund program and the major issues that need to be addressed before the program's next reauthorization in 1994. Our testimony today will primarily be based on numerous reviews we have conducted of Superfund issues. Attachment I contains a listing of our relevant reports and testimonies.

As you know, the Superfund program, which was originally intended to be a short-term project to clean up a limited number of hazardous waste sites, has become an expensive, contentious, and open-ended effort involving potentially thousands of sites. The program has had substantial accomplishments, especially in responding to emergency releases of hazardous substances and in enforcing the cleanup obligations of polluters. However, considering the time and resources consumed, the number of sites cleaned up has been disappointingly small. Moreover, the program may be overwhelmed by the number of sites that EPA projects may be added to the program in the future. Given these problems, the Subcommittee's effort to identify the major Superfund issues in this and future hearings is very timely.

In summary, we believe that the main Superfund issues needing attention are:

- First, how can EPA accelerate the pace of site cleanups? For the foreseeable future, EPA expects that more sites will enter the cleanup process than will leave it. Consequently, the number of sites bogged down in the process can be expected to increase.
- Second, how can Superfund costs be better controlled? While cleanup costs are mounting, contract mismanagement and high administrative costs may be wasting fund resources.
- Third, will completed cleanups successfully protect human health and the environment? The permanence of some cleanup remedies is uncertain. Over the next few years, as more cleanups are completed, the success of cleanup remedies will need to be monitored and evaluated.
- Last, what are the risks of Superfund sites to human health and the environment? These risks have not been adequately defined. The Congress and the public need better information to help set expectations for the program in light of competing demands on the nation's limited environmental protection dollars.

BACKGROUND

Before discussing each of these issues in more detail, I would like to briefly review the Superfund program's development and operation.

The program was created by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to clean up the nation's most dangerous hazardous waste sites. This act provided EPA with a \$1.6-billion fund accumulated from taxes on petroleum and certain chemicals and from federal appropriations, to carry out cleanup activities. The Superfund Amendments and Reauthorization Act of 1986 extended the program for another 5 years and provided additional funding of \$8.5 billion. In October 1990, the Congress extended the Superfund program for an additional 3 years and increased its authorization by \$5.1 billion, bringing the cumulative Superfund authorization to \$15.2 billion.

The scope and cost of Superfund have greatly exceeded initial expectations. The Superfund cleanup list, which originally included 406 sites, currently contains 1,245 sites and EPA expects it to reach over 2,100 sites by the year 2000. The \$5 billion remaining in the Superfund authorization through 1994 will not come close to paying for EPA's projected \$40 billion share of cleanup costs for the currently listed sites.

A description of the Superfund process may help in understanding our discussion of the issues. When a hazardous waste site is identified, EPA begins a series of evaluations to determine whether site contamination is serious enough to include it in Superfund. If a site is included, it becomes eligible for remedial actions to permanently clean up the pollution. To identify the most appropriate remedial action at each site, EPA conducts a remedial investigation and feasibility study to assess the types and quantities of hazardous waste present and to consider alternative cleanup remedies. After completing these studies, EPA chooses a remedy and documents its choice in a record of decision. Implementation plans for the selected remedy are developed during the remedial design phase of the process. Once designed, a remedial action can be taken. EPA can take emergency removal actions to address immediate, serious site threats at any time during the process. In addition, Superfund money can be used to respond to hazardous waste emergencies at non-Superfund sites. The program's accomplishments in this area have been considerable; more than 2,600 emergency actions have been taken at sites since the program started.

EPA relies heavily on private contractors to help carry out Superfund. About three-quarters of the program's funds have been obligated for contractors' costs, mostly through cost-reimbursable contracts. These contracts, compared to fixed-price contracts, transfer more of the risk of unexpected cost increases to the

government. Careful government oversight is needed to avoid contractor abuses.

The Congress provided EPA with strong enforcement authorities to make parties responsible for site contamination either clean up sites themselves or reimburse EPA for government-funded cleanups. EPA's enforcement efforts have been more productive in recent years. The value of responsible party cleanup settlements almost tripled between fiscal years 1988 and 1990. Since 1980, EPA achieved responsible party settlements of nearly \$4 billion.

Earlier this month the EPA Administrator announced the findings of two task forces he had commissioned to study Superfund. One of these groups was a 30-day task force on accelerating Superfund cleanups; the other was a task force on Superfund contracting. As we will discuss, these groups proposed changes to deal with some of Superfund's main problems.

I would now like to discuss in more detail the four Superfund issues I mentioned earlier.

SPEED OF CLEANUPS HAS BEEN SLOW

One of the most frequently criticized aspects of Superfund is the slow pace of its cleanups. Sites that have entered the Superfund pipeline have become clogged in a lengthy study and evaluation process, and few have emerged from the end of the pipeline. The challenge facing EPA is how to unclog the Superfund pipeline without sacrificing cleanup quality.

After 11 years, cleanups have been finished at only 63 sites, or 5 percent, of the current 1,245 Superfund sites. Cleanup work is underway at an additional 353 sites. The remaining 829 sites have progressed no further than the remedial study or design phase of the process, which means they are still years away from being cleaned up.

To illustrate how slowly the Superfund process moves, attachment II shows a comparison of the pipeline in 1986 and today. As you can see, in 1986, only 25 of the 888 sites that had entered the Superfund pipeline had been completely cleaned. Since then, 357 additional sites have entered the pipeline, but only an additional 38 have been completely cleaned. This leaves 1,182 sites, 95 percent of all Superfund sites, unfinished. Many of these sites will still be in the process well beyond the end of the century.

A major cause of slow cleanup progress is the extended time EPA takes to choose and design a cleanup remedy. This pre-construction phase has gotten longer over time. Site studies once expected to take 2 years are now lasting 4 years or more. Remedial designs that were done in 18 months are now taking nearly 3 years.

Add to these time frames at least another 3 years to complete the cleanup action, and the average cleanup now requires more than 10 years.

EPA has recently set Superfund cleanup goals averaging about 65 completed sites per year in the 1990s. During this time frame, however, EPA also expects to add about 100 new sites annually to the program. To avoid an ever-growing backlog of sites, EPA needs to shorten cleanup study and construction time.

Recently, EPA studied options for expediting the Superfund cleanup process. In his October 3, 1991, testimony before this Subcommittee, the EPA Administrator described some of these planned initiatives. They include (1) setting cleanup completion targets, (2) standardizing remedies and investigation procedures, (3) speeding up resolution of issues with states and other agencies, and (4) accelerating private party cleanups. We view these initiatives as a step in the right direction and in line with many of the recommendations we have made in our prior reports. However, we believe that it will take strong commitment and follow-up on the part of EPA management to effectively implement these initiatives.

COST OF CLEANUPS IS HIGH

The next issue I would like to discuss is the high costs associated with Superfund cleanups. The \$5 billion Congress has authorized for Superfund over the next few years represents only a downpayment on a much larger cleanup bill facing this program. Currently, the average cost of construction per site is about \$25 million, and there is good reason to believe that these costs will rise as more complex sites enter the construction phase. As I mentioned earlier, EPA's projected cleanup cost for all current Superfund sites is \$40 billion. With as many as 900 more sites projected for Superfund by the year 2000, cleanup work can be expected to continue well into the next century and to cost tens of billions of dollars more.

With this high price tag, EPA must find ways to achieve cleanups cost effectively. However, a number of cost concerns raise serious questions about the program's efficiency.

High Administrative Costs

First, the program is spending a high percentage of its funds on administrative matters. As attachment III shows, only 30 percent (\$2.3 billion) of the \$7.5 billion total Superfund expenditures through fiscal year 1990, went for actual cleanup operations--that is, emergency removals and implementation of cleanup remedies. Another 19 percent (\$1.4 billion) went for cleanup studies and designs. The remaining \$3.8 billion, a little over half of Superfund's expenditures, was spent in areas EPA describes as support activities. Some of these support costs pay

for necessary program activities such as enforcement and staff training. However, the proportion of costs going for things other than actual cleanups is so large that it warrants scrutiny by EPA.

EPA's 30-Day Task Force recently proposed to transfer 100 personnel slots from non-site-specific activities to site cleanup activities. This appears to be a step in the right direction but, may not come close to addressing the apparent imbalance in cleanup and overhead costs.

Need for Better Contract Management

Second, Superfund's contract management controls and oversight need to be improved. About three-fourths of the program's money has been paid to contractors who study site contamination, design and build remedies, help EPA with enforcement, and do other Superfund tasks. Most of these contractors work under cost-reimbursable contracts that promise to pay all of a contractor's allowable cost and provide little incentive for contractors to control their costs. Partly for this reason, we have selected Superfund as 1 of 16 federal programs most vulnerable to fraud, waste, and abuse. We currently have a number of reviews under way that are focusing on various Superfund contract management issues.

In addition to this ongoing work, we have issued several reports and presented congressional testimony in the past disclosing weaknesses in contracting policy and administration that exposed Superfund to excessive costs. Many of these problems involved breakdowns in the controls over contractor costs. For example, since most Superfund contractors are reimbursed for their costs, EPA should carefully review contractors' spending plans before approving them, check bills for reasonableness before paying them, and verify charges later by auditing contractor records. Our reports (GAO/RCED-88-182, GAO/RCED-92-45) showed that EPA has not adequately used these controls. Its regional office staffs have approved contractor budgets without making their own estimates of what project costs should be and paid bills without adequate scrutiny. We reported in congressional testimony last year that large backlogs of audits had developed, with cost audits being delayed for years (GAO/T-RCED-91-5). For example, six of EPA's contractors we selected for study had been paid over \$1 billion in fiscal years 1983 through 1990, but most of this amount had not been audited.

Management attention in Superfund has been focused on trying to get sites cleaned up, but as a result, cost control has been neglected. For instance, Superfund contractors' program management costs--basically, their administrative charges--have been too high because EPA hired more cleanup contractors than it needed. EPA officials were aware of the problem but were slow to reduce contracting capacity out of concern that cleanups would be delayed if the work load actually increased. EPA has promised to act on

this problem, but only after press reports of high program management costs appeared.

In 1989, we reported another contract management problem that has the potential to seriously drain Superfund resources--excessive contractor indemnification (GAO/RCED-89-160). The 1986 Superfund amendments authorized EPA to indemnify its Superfund contractors--that is, to pay for the damages caused by any negligent work--but only up to a limit set by EPA and only if a contractor could not get private insurance. However, we found that EPA was routinely granting contractors unlimited indemnification, without proof of uninsurability and despite the apparent willingness of some contractors to work without it. Because EPA has not set a limit on indemnification, each indemnification agreement is currently backed by the entire unobligated balance of Superfund. It is still our position that this opens Superfund up to excessive risk. EPA is working on a new indemnification policy to improve this condition, but it remains to be seen whether the final policy will adequately address our concerns.

In a report which we just issued yesterday to several Subcommittee Chairman, we followed-up on a number of EPA contract management weaknesses and found that they continue to plague the program (GAO/RCED-92-45). EPA's contracting task force recently recommended actions which, if implemented, would address many of the weaknesses I just discussed. However, we believe that EPA management attention and oversight will have to be stronger than in the past to effectively carry out these actions.

Transaction/Liability Costs

The third cost concern involves the issue of transaction or liability costs. In addition to the litigation expenses and other costs incurred by EPA and responsible parties as a direct result of EPA's enforcement program, Superfund has produced a second round of litigation among the responsible parties and among these parties and their insurance companies over how to share cleanup costs. Local governments and small businesses, that may have contributed relatively small portions of toxic substances contaminating sites, have been drawn into the legal battles. Since some sites have hundreds of responsible parties and these parties may have one or more insurers, some Superfund cases have become very difficult and time consuming to resolve. On the other hand, Superfund's system of liability does put responsibility for cleanup costs on those who caused the cleanup problem and it may foster good waste disposal practices through concern about cleanup liability.

Some parties and insurers have called for changes to the Superfund enforcement and liability system to reduce litigation. Under Superfund, EPA can use de minimus settlements for parties who contributed only small amounts of contaminants to sites. These settlements protect de minimus settlers against suits by other

responsible parties. In our 1989 report, we found that this authority was not being used often (GAO/RCED-90-22). Increased use of this settlement authority would reduce some of the more controversial litigation surrounding the program. But before a change in Superfund's liability system can be justified, more information on the size and severity of the litigation problem is needed. We are currently assessing the feasibility of getting more data on this issue at the request of several congressional committees and members.

EFFECTIVENESS OF COMPLETED CLEANUPS IS UNCERTAIN

The next matter I would like to discuss is an issue that, until now, has not received a great deal of attention--the effectiveness of completed site cleanups. An effective cleanup should be fully protective of human health and the environment and maintain this protection over time.

In the past, cleanup effectiveness has been difficult to assess primarily because few site cleanups had been completed. The issue of how to choose cleanup remedies for sites has tended to overshadow consideration of whether the remedies chosen actually worked. However, with EPA projecting that 200 sites will be cleaned up by the end of 1993, and 650 by the year 2000, greater attention needs to be focused on the success of remedies at permanently eliminating or controlling contamination.

There are already some signs of problems with the effectiveness of remedies. For example, some clay "caps" that were built to isolate contaminated soil have failed to do so because, over time, they have cracked and allowed contaminants to migrate from the site. Also, an EPA study of one of the most common Superfund remedies--the pumping and treating of groundwater--raises serious questions about the effectiveness of this technology. After examining 19 sites where pump and treat techniques had been used for up to 10 years, the study concluded that contamination had been reduced, but not to target levels. More disturbingly, once pumps were turned off, contaminant concentrations rose again since contamination sources had not been eliminated.

With increased emphasis on faster cleanups, more responsible-party cleanups, and pressure for use of cost-effective remedies, EPA must make every effort to ensure the effectiveness and integrity of Superfund site cleanups. In response to congressional requests, we have initiated a series of reviews that, over the next few years, will evaluate EPA's remedy selection process. Among other things, we plan to focus on the (1) comparability of fund (EPA) versus enforcement (responsible party) remedy decisions; (2) effectiveness of cleanups; and (3) adequacy of the risk assessment process. We anticipate the results of this work will be completed before the program's next reauthorization, and we are hopeful it will be useful in congressional deliberations.

SUPERFUND SITE RISKS HAVE NOT BEEN ADEQUATELY DEFINED

A fourth Superfund issue that needs attention is the lack of solid information on the health and environmental dangers posed by Superfund sites and potential sites. Even after 11 years of program operation, there is disagreement about how severe these threats are. Judgments about how large the program should grow, how fast it should move, and the appropriate division of responsibility between federal and state governments depend on how critical the risks are rated. About a year ago, EPA's Science Advisory Board recommended better aligning EPA's program priorities with health and environmental risks.¹ In effect, the board advocated spending money where it would do the most good, that is, where it reduced health and environmental dangers the most.

The potential scope of the federal hazardous waste site cleanup effort is enormous. The Office of Technology Assessment (OTA) estimates that Superfund could eventually include 10,000 sites. Estimates by OTA and others of the ultimate costs of cleaning up sites are many times higher than EPA's \$40 billion projection for current sites. Superfund already accounts for one quarter of EPA's budget. Increasing cleanup costs could expand Superfund's budget portion.

The dimensions of the federal effort to address such a potentially massive and expensive job need to be based on good information about health and environmental threats. But the scope of Superfund has not been fully justified on the basis of risk. For example, our recent report on the Agency for Toxic Substances and Disease Registry, a U.S. Public Health Service unit responsible for assessing the health dangers of Superfund sites, showed that the agency has not adequately assessed the health risks of many sites (GAO/RCED-91-178).

The Congress and the public need more precise evaluations of hazardous waste site risks to make decisions on what the long-term investment in Superfund should be. If the problem is overstated, resources may be misallocated on a lesser environmental issue; if it is understated, an important need may not be adequately addressed.

CONCLUSIONS

In conclusion, Mr. Chairman, through its removal function, Superfund has performed a valuable service by alleviating emergency conditions at hazardous waste sites, and through its enforcement efforts it has convinced many responsible parties to meet their

¹Reducing Risk: Setting Priorities and Strategies For Environmental Protection, Relative Risk Reduction Strategies Committee, EPA Science Advisory Board, Sept. 1990.

obligations to help restore contaminated areas. Potential Superfund liability may also have made handlers of hazardous substances more careful about waste disposal. However, despite a large investment of resources, Superfund has so far achieved little of its primary purpose: the permanent cleanup of major hazardous waste sites. EPA must find ways to increase the speed and control the costs of cleanups or the log-jam of sites "in process" could grow even larger and already high costs rise beyond the nation's ability to pay. Questions about the health and environmental risks of Superfund sites need to be better resolved to ensure that Superfund spending levels are appropriate. Since these issues are interrelated, improvements in one area may result in direct benefits to other areas. For example, increasing the speed of the process may reduce the costs of the program; better defining the health and environmental risks could help in the development and selection of cleanup remedies.

It is important, then, in the few years before Superfund is scheduled for reauthorization to look for solutions to the issues that we have highlighted today--streamlining the cleanup process, better controlling costs, assessing the effectiveness of cleanup actions and getting a better handle on hazardous waste site risks. We look forward to assisting the Subcommittee in further consideration of these and other issues in the next few years.

Mr. Chairman, this concludes my prepared statement. I will be glad to respond to any questions that you or Members of the Subcommittee have.

RELATED GAO PRODUCTS

Superfund: EPA Has Not Corrected Long-Standing Contract Management Problems (GAO/RCED-92-45, Oct. 24, 1991).

Superfund: Public Health Assessments Incomplete and of Questionable Value (GAO/RCED-91-178, Aug. 1, 1991).

Superfund: More Settlement Authority and EPA Controls Could Increase Cost Recovery (GAO/RCED-91-144, July 18, 1991).

Hazardous Waste: Pollution Claims Experience of Property/Casualty Insurers (GAO/RCED-91-59, Feb. 5, 1991).

EPA's Contract Management: Audit Backlogs and Audit Follow-up Problems Undermine EPA's Contract Management (GAO/T-RCED-91-5, Dec. 11, 1990).

Potential Liability of Property/Casualty Insurers for Costs of Cleaning Up Hazardous Waste Sites (GAO/T-RCED-90-109, Sept. 27, 1990).

Superfund: A More Vigorous and Better Managed Enforcement Program Is Needed (GAO/RCED-90-22, Dec. 14, 1989).

Implications of State Cleanups of Hazardous Waste Sites on Federal Policy (GAO/T-RCED-90-5, Nov. 7, 1989).

Superfund: Contractors Are Being Too Liberally Indemnified by the Government (GAO/RCED-89-160, Sept. 26, 1989).

Hazardous Waste Sites: State Cleanup Status and Its Implications for Federal Policy (GAO/RCED-89-164, Aug. 21, 1989).

Making Superfund Work Better: A Challenge for the New Administration (GAO/T-RCED-89-48, June 15, 1989).

Superfund Contracts: EPA's Procedures for Preventing Conflicts of Interest Need Strengthening (GAO/RCED-89-57, Feb. 17, 1989).

Superfund: Missed Statutory Deadlines Slow Progress in Environmental Programs (GAO/RCED-89-27, Nov. 29, 1988).

Superfund: Interim Assessment of the Environmental Protection Agency's Enforcement Program (GAO/RCED-89-40BR, Oct. 12, 1988).

Superfund Contracts: EPA Needs to Control Contractor Costs (GAO/RCED-88-182, July 29, 1988).

Superfund De Minimis Settlements (GAO/T-RCED-88-46, June 20, 1988).

RELATED GAO PRODUCTS

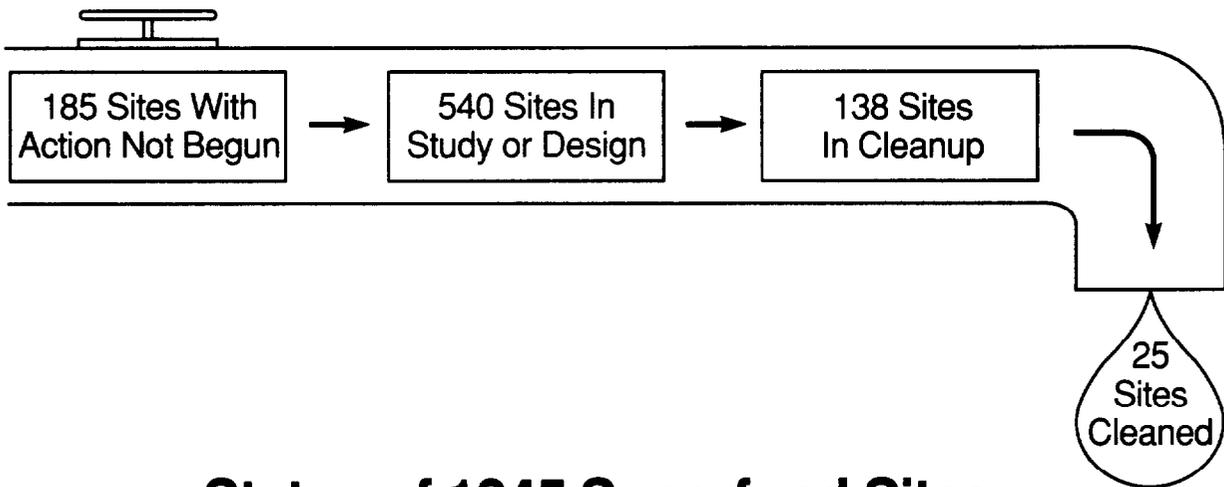
Superfund: Cost Growth on Remedial Construction Activities
(GAO/RCED-88-69, Feb. 24, 1988).

Superfund: Extent of Nation's Potential Hazardous Waste Problem Still Unknown (GAO/RCED-88-44, Dec. 17, 1987).

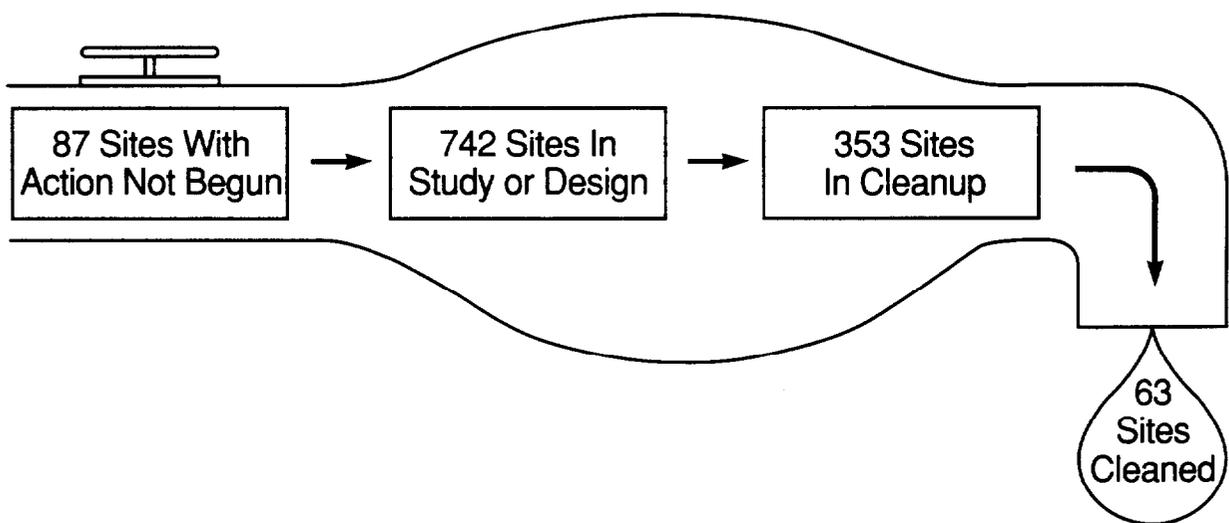
Superfund: Improvements Needed in Workforce Management (GAO/RCED-88-1, Oct. 26, 1987).

GAO The Superfund Pipeline 1986 and 1991

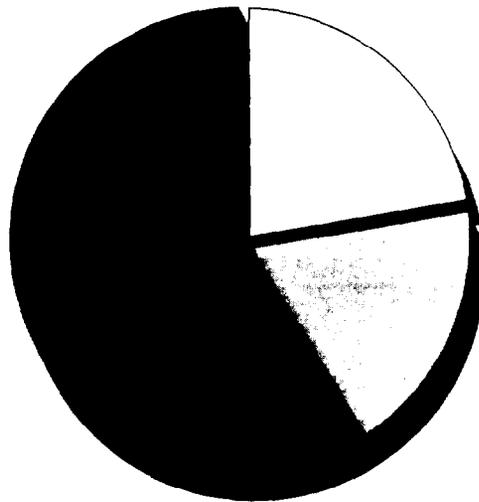
Status of 888 Superfund Sites as of October 1986



Status of 1245 Superfund Sites as of October 1991



GAO Percentage of Program Costs Associated with the Various Program Activities



- Remedial Activities **22.5%**
- Pre-Remedial Activities and Engineering and Design **18.6%**
- Program Support, Indirect Site Support, and Direct Site Support **51.1%**
- Removal Activities **7.8%**

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