United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Oversight,
Committee on Ways and Means,
House of Representatives

For Release
on Delivery
Expected at
10:00 a.m. EDT
Thursday,
June 11, 1992

SUPERFUND

Current Progress and Issues Needing Further Attention

Statement of Peter F. Guerrero,
Associate Director, Environmental Protection Issues,
Resources, Community, and Economic
Development Division

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 confront the program. This program, which has been authorized $15.2 billion, is financed by the Hazardous Substances Superfund--a fund supported by taxes on petroleum and certain chemicals, a corporate environmental tax, and general revenues. This substantial investment of tax resources and competing demands for the nation's limited environmental protection dollars mandate that EPA manage the program so that trust fund money is used efficiently. Our testimony today will primarily be based on numerous reviews we have conducted of Superfund issues. Appendix I contains a listing of our relevant reports and testimonies.

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 oversight hearings are timely.

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

-- First, how can Superfund costs be better controlled? While cleanup costs are mounting, contract mismanagement and high administrative costs may be wasting trust fund resources.

Additionally, the size and severity of litigation costs associated with the Superfund enforcement and liability system need to be assessed to determine whether they can be reduced.

-- Second, 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.

-- 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 alternative possible uses for scarce environmental protection resources.

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 special taxes, general revenues, and other sources 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 taxing authority and the Superfund program for several more years. It increased the Superfund authorization by $5.1 billion, bringing the cumulative 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 1,275 sites, and EPA expects the list to reach as high as 2,000 sites by the year 2000. The revenue to be raised from the Superfund taxes will not come close to paying for EPA's projected $40 billion share of cleanup costs for the currently listed sites.[1]

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 the site on the Superfund list. 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 (1) assess the types and quantities of hazardous waste present and (2) 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.

---

[1] The cost of cleaning up federally owned facilities in the Superfund program are estimated at well over 100 billion dollars. These costs will be paid for out of agency budgets, not Superfund.

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 2,800 emergency actions have been taken at sites since the program started.

EPA relies heavily on private contractors to help carry out Superfund cleanups. A very large portion of the program's funds have been obligated for contractors' costs, mostly through cost-reimbursable contracts. These contracts, compared with fixed-price contracts, transfer more of the risk of unexpected cost increases to the government. Thus, careful government oversight is needed to avoid contractor abuses.

The Congress provided EPA with strong enforcement authorities to make parties that were responsible for site contamination either clean up the sites themselves or reimburse EPA for government-funded cleanups. EPA's enforcement efforts have been productive in recent years. The value of responsible party cleanup settlements, that is, agreements to undertake site cleanups, increased 1-1/2 times between October 1990 and March 1992. Since 1980 EPA achieved responsible party settlements of $5.8 billion. This figure represents the value of work to be conducted by responsible parties in cleaning up Superfund sites. Additionally, as of March 31, 1992, responsible parties reimbursed EPA for $415 million of its Superfund appropriations spent on government-funded cleanups.

As we will mention later in this statement, in response to criticism over the slow pace of Superfund cleanups and EPA's management of Superfund contractors, EPA recently began implementing some organizational and operational changes. These changes include efforts to test new procedures called the Superfund Accelerated Cleanup Model (SACM). Among other things, the model calls for standardizing remedies and investigation procedures to

help accelerate the initial assessments and subsequent cleanups of Superfund sites. Additionally, EPA is initiating efforts to improve Superfund procurement by, for example, elevating procurement functions within the organization and increasing contract audit resources. I would now like to discuss in more detail the four Superfund issues that I mentioned earlier.

COST OF CLEANUPS IS HIGH

The first issue that I would like to raise is the high costs associated with Superfund cleanups. The $5 billion that the Congress authorized for Superfund over the next few years represents only a down payment 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 more than 700 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

The Superfund program is spending a high percentage of its trust fund on administrative matters. As appendix II shows, approximately 48 percent ($4.4 billion) of the $9.1 billion total Superfund appropriations through fiscal year 1991 went for actual cleanup operations--that is, emergency removals and the implementation of cleanup remedies. Another 11 percent (approximately $1 billion) went for enforcement activities. The

remaining $3.7 billion, or 41 percent of Superfund's appropriations, was earmarked for areas that EPA describes as support activities. Some of these support costs pay for necessary program activities such as staff training and research and development. However, the proportion of costs going for things other than actual cleanups is so large that it warrants scrutiny by EPA.

EPA is examining the current distribution of Superfund personnel with a view towards transferring personnel slots from non-site-specific activities to site cleanup activities. This appears to be a step in the right direction, since it is helping to address the apparent imbalance in cleanup and overhead costs.

Need for Better Contract Management

Superfund's contract management controls and oversight need to be improved. A very large portion 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 costs and, hence, 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.

In reports and congressional testimony, we have disclosed 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 allowable charges before paying them, and verify charges later by auditing contractor records. Our reports on Superfund contractors (GAO/RCED-88-182, GAO/RCED-92-45)

showed that EPA has not adequately used these controls. EPA's regional offices have approved contractors' budgets without estimating what the project costs should be and have paid bills without adequate scrutiny. We reported in congressional testimony in December 1990 that large backlogs of audits had developed and that cost audits were 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 from fiscal years 1983 through 1990, but most of this amount had not been audited.

In the absence of effective contractor oversight, trust fund money can be wasted. For example, we testified in March 1992 that CH2M Hill, a consulting engineering firm and one of Superfund's largest contractors, included expenses in its indirect cost pool (a portion of which is charged to EPA) that were not allowable under the Federal Acquisition Regulations (FAR).[2] In an examination of 15 of the firm's 89 indirect cost accounts, including meals, lodging, relocation, advertising, social club dues, and 2 of the firm's service functions (which include services such as the use of the firm's aircraft), we identified about $2.3 million in indirect costs that the FAR does not allow. The expenses included tickets to professional sporting events, alcohol at company parties, and travel by nonemployee spouses. One example of these unallowable costs was $873,000 that CH2M Hill charged the government for use of the firm's aircraft. In addition to the unallowable costs, we identified indirect costs of $266,500 that, while not specifically unallowable, appeared questionable for allocation to federally sponsored contracts. CH2M Hill has responded that none of these costs are inappropriate because they are offset by a discount in prices that the contractor provides to the government.

---

[2]Federally Sponsored Contracts: Unallowable and Questionable Indirect Costs Claimed by CH2M Hill (GAO/T-RCED-92-37, Mar. 19, 1992).

Management's attention to the Superfund program 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 increased. As part of the agency's recent efforts to review its management of Superfund contracting, EPA asked its regional offices to assess their contracting capacity. EPA's assessment has so far resulted in the termination of one contractor.

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 that the contractors had sought insurance 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 has drafted a new indemnification policy to improve this condition. However, the draft policy is currently undergoing review by the Office of Management and Budget, so it is too early to determine whether the final policy will adequately address our concerns.

In October 1991 we summarized our past Superfund contract management reviews in a report that concluded that EPA had not corrected long-standing problems (GAO/RCED-92-45). We said that a

pattern was apparent in EPA's response to reported contract management deficiencies--namely, extended study of the problems, sometimes leading to revised plans or procedures, but with insufficient follow through to actually get the problems corrected. The underlying causes of this pattern seemed to be a lack of high-level attention to contract management and the delegation of responsibility to the regions without sufficient oversight and accountability.

EPA is taking some initial actions which, if fully implemented, will address many of the weaknesses that I just discussed. For example, EPA has (1) elevated the agency's procurement function within the organization, (2) designated accountability for procurement efforts to specific senior officials in both headquarters and field units, (3) created trouble-shooting teams to monitor regional office compliance with procurement requirements, (4) increased contract audit resources, and (5) reported Superfund contract management as an agency internal weakness. While these actions are consistent with some of our recommendations for addressing the chronic top management disregard of contract management, we believe that it will take strong commitment and follow-up on the part of EPA management to effectively implement these initiatives.

Transaction/Liability Costs

Another cost concern involves 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 between 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 to contaminated sites have been drawn into the legal battles. Since some sites have

hundreds of responsible parties that 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 make those who caused the cleanup problem responsible for cleanup costs, and it may foster good waste disposal practices by raising concern about cleanup liability.

Some parties and insurers have called for changes to the Superfund enforcement and liability system to reduce litigation. 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. In addition, we need to explore the possibility of reducing costs within the present system. For example, under Superfund, EPA can use certain settlements, called de minimis settlements, for parties who contributed only small amounts of contaminants to sites. These settlements protect these parties against suits by other responsible parties. In our 1989 report, we found that this authority was not being used often (GAO/RCED-90-22). The increased use of this settlement authority would reduce some of the more controversial litigation surrounding the program. We are currently assessing the feasibility of getting more data on this issue at the request of several congressional committees and members.

SPEED OF CLEANUPS HAS BEEN SLOW

The second issue I would like to raise is the slow pace of Superfund cleanups--one of the most frequently criticized aspects of the program. The progress of sites that have entered the Superfund "pipeline" has become sluggish because of 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 12 years, cleanups have been finished at only 80, or 6 percent, of the current 1,275 Superfund sites. Cleanup work is underway at an additional 357 sites. The remaining 838 sites have progressed no further than the remedial study or design phase of the process, which means that these sites are still years away from being cleaned up.

To illustrate how slowly the Superfund process moves, appendix III 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, 387 additional sites have entered the pipeline, but only an additional 55 have been completely cleaned. This leaves 1,195 sites, 94 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 that EPA takes to choose and design a cleanup remedy. This preconstruction phase has grown longer over time. Site studies once expected to take 2 years to complete 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 needed to complete the cleanup action, and the average cleanup now requires more than 10 years.

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

EPA is currently in the process of implementing a number of actions to expedite the Superfund cleanup process. They include (1) setting cleanup completion targets, (2) standardizing cleanup

remedies and investigation procedures, (3) combining cleanup phases, and (4) accelerating private party cleanups. While it is still too early to assess the impacts of these initiatives, we view them as steps in the right direction that are in line with many of the recommendations 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.

EFFECTIVENESS OF COMPLETED CLEANUPS IS UNCERTAIN

The third issue I would like to discuss is the effectiveness of completed site cleanups. An effective cleanup should be fully protective of human health and the environment and should maintain this protection over time.

In the past, cleanup effectiveness has been difficult to assess primarily because few site cleanups had been completed. The question of how to choose cleanup remedies for sites has tended to overshadow consideration of whether the remedies chosen actually worked. However, since EPA projects 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 how successful remedies are 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 pumping and treating 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 the 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 the 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 funding (EPA) versus enforcement (responsible party) remedy decisions, (2) effectiveness of cleanups, and (3) adequacy of the risk assessment process. We anticipate that the results of this work will be completed before the program's next reauthorization, and we are hopeful that they will be useful in congressional deliberations.

SUPERFUND SITE RISKS HAVE NOT BEEN ADEQUATELY DEFINED

The last 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 12 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 what the appropriate division of responsibility between federal and state governments should be depend on how critical the risks are rated. In September 1990 EPA's Science Advisory Board recommended that EPA's program priorities be better aligned with health and environmental risks.[3] In effect, the board advocated spending money where it would do the

[3]Reducing Risk: Setting Priorities and Strategies for Environmental Protection, Relative Risk Reduction Strategies Committee, EPA Science Advisory Board (Sept. 1990).

most good, that is, where it would reduce 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 of the ultimate costs of cleaning up hazardous waste sites are many times higher than EPA's $40 billion projection for current sites. Superfund already accounts for one-quarter of EPA's budget. Thus, increasing cleanup costs could expand Superfund's portion of EPA's budget.

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 August 1991 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 less important 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

obligations to help restore contaminated areas. Potential Superfund liability may also have made the 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 for them. 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--better controlling of costs, streamlining the cleanup process, 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 may have.

RELATED GAO PRODUCTS

Federally Sponsored Contracts: Unallowable and Questionable Indirect Costs Claimed by CH2M Hill (GAO/T-RCED-92-37, Mar. 19, 1992).

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).

APPENDIX I

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).

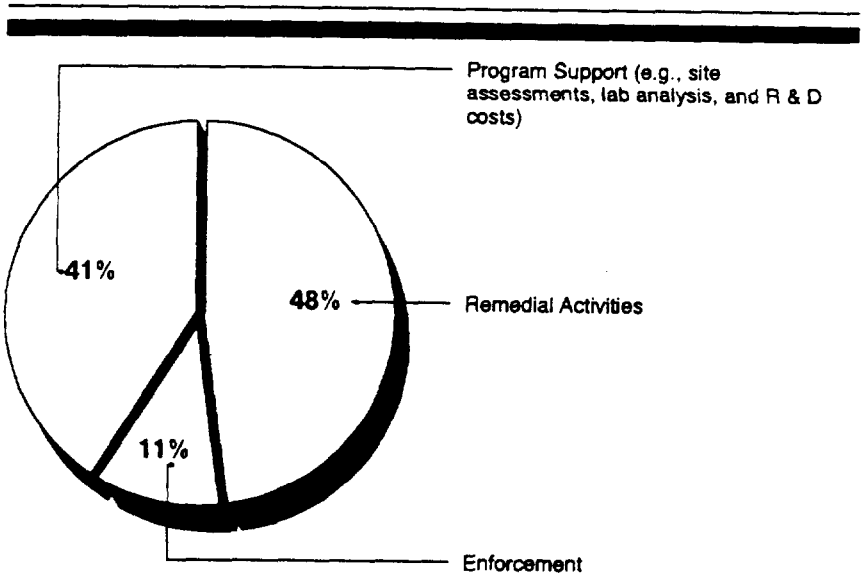
Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, MD 20877

Telephone 202-275-6241

APPENDIX II

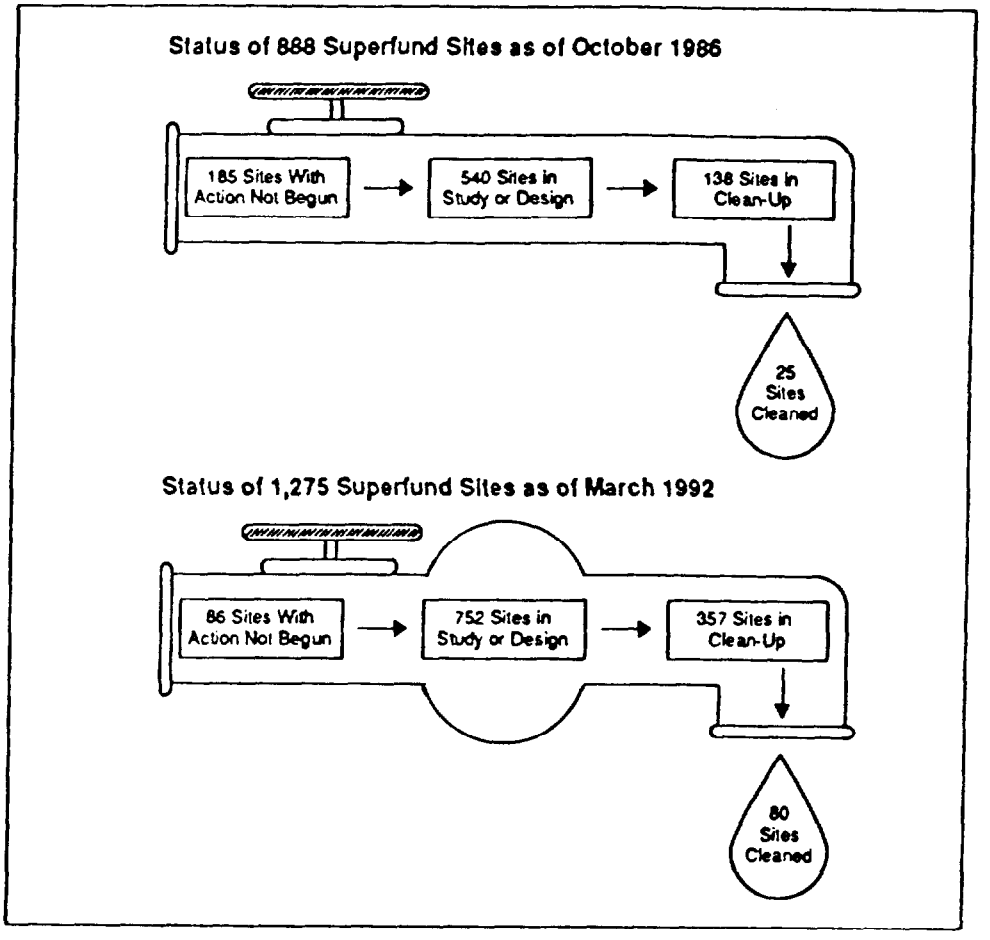
PERCENTAGE OF PROGRAM COSTS ASSOCIATED WITH THE VARIOUS PROGRAM ACTIVITIES



Source: EPA. Numbers updated as of the end of fiscal year 1991.

APPENDIX III

THE SUPERFUND PIPELINE 1986 AND 1992



(160154)