
Superfund



Superfund Administrative Improvements Closeout Report

June 23, 1993 – September 30, 1994



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Superfund Administrative Improvements Closeout Report June 23, 1993 – September 30, 1994

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Introduction

In June 1993, the U.S. Environmental Protection Agency (EPA) announced a series of initiatives designed to strengthen the Superfund program prior to its reauthorization. The Superfund administrative improvements initiatives have improved the pace, cost, and fairness of the Superfund program, and have expanded public involvement.

The *Superfund Administrative Improvements Final Report*, June 23, 1993, contained 17 initiatives and specific goals and milestones to improve the Superfund program. The report established nine new initiatives that: (a) increase enforcement fairness and reduce transaction costs; (b) improve cleanup effectiveness and consistency; (c) expand meaningful public involvement; and (d) enhance the state role in the Superfund program. In addition, EPA adopted eight continuing initiatives that improve the efficiency, effectiveness, and fairness of the Superfund program.

This *Superfund Administrative Improvements Closeout Report* provides background on the development of the administrative improvements and each of the 17 initiatives and reports on the progress made between June 23, 1993, and September 30, 1994. Specifically, this report provides a description of the initiatives, a summary of the achievements or performance of the milestones, the benefits of each initiative, and the “lessons learned” by Agency personnel through implementing the initiatives. Special focus is placed on the new initiatives, which are augmented by case studies to illustrate tangible results achieved.

This report begins with an executive summary that provides an overview of the progress made under the administrative improvements program. The report then discusses each initiative and presents case studies, where appropriate, describing the success of the initiative. In addition, the report provides a reference section listing documents that were milestones under the initiatives and reports that are cited in the initiatives.

Executive Summary

Background

Responding to growing concern over public health and environmental threats due to uncontrolled releases of hazardous materials, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. CERCLA, known as Superfund, established a program to identify and clean up hazardous materials spills and contaminated sites. EPA administers the Superfund program.

During the 14 years that the Superfund program has been in existence, EPA and other Superfund stakeholders have made significant progress toward reducing risk to human health and the environment from releases of uncontrolled hazardous substances. EPA has evaluated over 35,000 sites that may pose risks, conducted over 3,700 early actions to protect the public and the environment, and has completed construction of cleanup remedies at 278 of the Nation's worst hazardous waste sites.

EPA recognizes, however, that certain aspects of the Superfund program have also generated criticism. Specific criticisms have focused on the pace and cost of cleanup, the degree to which sites are cleaned, the fairness of the liability approach, the role of states in the process, and the ability of local communities to have meaningful participation in the process, particularly disadvantaged and minority communities.

To improve the Superfund program, EPA established the Superfund Administrative Improvements Task Force, a group of representatives from the Office of Solid Waste and Emergency Response; the Office of Enforcement; the Office of General Counsel; the Office of Policy, Planning, and Evaluation; the Office of Administration and Resources Management; the Office of Research and Development; Region 2; Region 5; Region 9; and the Department of Justice. The task force, chaired by the Superfund Revitalization Office, solicited ideas from both Agency personnel and outside stakeholders, including industry, environmental groups, community groups, and Congressional staff, to develop options for strengthening the Superfund program.

The Superfund Administrative Improvements Task Force developed recommendations for the Superfund program that were approved by the Superfund Steering Committee. In developing the initiatives, the task force focused on issues of most concern to the Administration, Congress, and the public. A key criteria for selection was the ability to implement the improvement without changing the statute. Priority was given to actions that could be implemented before September 30, 1994.

To provide oversight for key Superfund administrative and legislative issues, the Administrator established the Superfund Steering Committee. The committee, chaired by the Deputy Administrator, focused primarily on Superfund reform legislation. The committee included senior officials from the EPA Headquarters offices represented on the task force, as well as the Office of Congressional and Legislative Affairs, Region 2, Region 3, Region 6, and the Department of Justice. The committee reviewed task force recommendations and provided advice on the appropriate initiatives to adopt.

The goals of the new initiatives adopted by the Agency fall into four themes

- Increasing enforcement fairness and reducing transaction costs
- Improving cleanup effectiveness and consistency
- Expanding meaningful public involvement
- Enhancing the state role in the Superfund program

The task force also considered several ongoing initiatives established to increase the efficiency, effectiveness, and fairness of the Superfund program. Eight of the ongoing initiatives met the criteria for administrative improvements. To maintain focus on these ongoing initiatives, the Agency adopted them as administrative improvements. These initiatives include

- Implementing the Superfund Accelerated Cleanup Model P
- Increasing construction completions P
- Improving contracts management
- Promoting "Enforcement First" P
- Accelerating cleanup at military base closures P
- Promoting use of innovative technology P
- Improving compliance monitoring P
- Enhancing the effectiveness of cost recovery

To accomplish the goals and action items set forth in the adopted initiatives, EPA Headquarters and Regional offices each developed implementation plans. These plans enabled the Agency to focus on the actions necessary to ensure the consistent and successful accomplishment of each administrative improvement.

Progress under each initiative was tracked through administrative improvements quarterly reports. The final quarterly report, covering performance from June 23, 1993, to September 30, 1994, was issued on December 23, 1994. In addition, performance narratives for each initiative are included in this report beginning on page 9.

Overview of Progress

The Agency, in coordination with Superfund stakeholders, was successful in achieving or exceeding most of the goals and targets it set for itself by the September 30, 1994, deadline. In two key areas of performance, construction completions and *de minimis* settlements, EPA exceeded targets that had been set at significantly higher levels than historical performance.

In total, EPA established 4 numerical performance targets, 108 action items with deliverables or due dates, and 13 action items of an ongoing nature. As of September 30, 1994, EPA had: (a) exceeded all 4 of the numerical performance targets; (b) completed 90, and was still addressing 13, action items with deliverables or due dates; and (c) was continuing to implement all 13 action items of an ongoing nature. In addition, Agency efforts on many of the administrative improvements themes and initiatives have moved beyond the goals and milestones set in the June 23, 1993, *Superfund Administrative Improvements Final Report*. Highlights of the Agency's accomplishments and progress are presented below.

Increasing Enforcement Fairness and Reducing Transaction Costs

To increase the fairness of enforcement actions and to reduce transaction costs, EPA developed specific settlement tools to facilitate the process of allocating responsibility for site costs. These tools serve to decrease transaction costs, increase allocation efficiency, and identify factors to consider when allocating response costs among potentially responsible parties.

To address the cost and liability concerns of small waste contributors, EPA encouraged earlier and expedited settlements and reduced the transaction costs by using *de minimis* settlements. In addition, the Agency is improving fairness for owners and prospective purchasers of Superfund sites.

Specifically, the Agency

- Employed non-binding liability allocation techniques and alternative dispute resolution at over 20 sites, receiving favorable reviews from potentially responsible parties
- Issued a report on currently used allocation methods and allocation implementation issues to facilitate future settlements
- Completed 86 *de minimis* settlements with over 5,500 potentially responsible parties at 69 sites in the last two years, which is more than the total number of *de minimis* settlements obtained in the prior history of the Superfund program
- Reached settlements at six mixed-funding pilot sites (mixed work was utilized at five sites and preauthorization was utilized at one site)
- Issued supplemental federal lien guidance that specifies procedures for owner notice and comment

Improving Cleanup Effectiveness and Consistency

The Agency reduced the cost and the duration of site cleanup by standardizing the approach taken at certain types of sites (presumptive remedies). EPA also reached out to affected parties in developing and testing soil screening levels to further reduce costs at Superfund sites.

In advancing cleanup effectiveness and consistency, the Agency

- Issued guidance on general policy and procedures for presumptive remedies for municipal landfills and volatile organic compounds in soil
- Implemented presumptive remedies at five municipal landfills and two sites with volatile organic compounds in soil
- Observed benefits from the use of presumptive remedies including streamlined feasibility study analysis, streamlined negotiations due to potentially responsible party acceptance, focused sampling and risk assessments for municipal landfills, as well as shortened remedial design time at some sites (At one municipal landfill site, EPA has saved three to six years from the start of the remedial investigation/feasibility study to construction initiation)
- Issued guidance on dense non-aqueous phase liquid contamination problems and technical impracticability waivers for ground-water contamination to reflect advances in technical understanding of ground-water remediation
- Issued draft guidance with methodologies for developing soil screening levels for 107 chemicals to reduce the time and cost of completing soil investigation
- Completed a desk-top pilot study of ten sites, which determined the comprehensiveness of the soil screening levels

Expanding Meaningful Public Involvement

The Agency believes that effective community involvement is critical to the success of the Superfund program. EPA has acted to enhance public participation and understanding at Superfund sites. In addition, the Agency has placed particular emphasis on developing a proactive environmental justice strategy to ensure that all communities are part of the Superfund process, including multi-cultural or lower income communities.

In accomplishing these goals, the Agency

- Arranged a national meeting in September 1993, sponsored by the National Advisory Council on Environmental Policy and Technology, to listen to citizens' opinions on environmental justice and community involvement at Superfund sites
- Established the Office of Solid Waste and Emergency Response Environmental Justice Task Force, which issued a report that greatly expanded the commitment to, and efforts in, addressing environmental justice issues at Superfund sites
- Identified ten sites for environmental justice initiatives using a possible multi-media approach
- Established community working groups or advisory boards comprised of members of the community, environmental groups, potentially responsible parties, and city, county, and regional planning boards, at more than eight sites
- Improved access to funds for citizen groups by issuing simplified Technical Assistance Grant materials that describe the functions of the grant and how to apply for a grant

Enhancing the State Role in the Superfund Program

Nationwide, there are more hazardous waste sites than EPA alone can address. Many states have developed sophisticated and experienced cleanup programs to address hazardous waste sites and have already cleaned up large numbers of sites under their own laws. EPA currently encourages states, territories, commonwealths, and federally recognized Indian Tribes to address contamination and oversee potentially responsible party cleanup actions at sites that are not on the National Priorities List. In addition, EPA is piloting state deferral of National Priorities List-caliber sites.

EPA worked with state associations to

- Develop draft criteria for states to participate in deferral
- Initiate deferral pilots in qualified states (22 sites in 7 states ongoing)
- Establish a work group to address deferral implementation questions and assessed early state-lead experiences

Continuing Initiatives

Significant progress was made on eight continuing initiatives intended to increase the effectiveness, efficiency, and fairness of the Superfund program.

The Agency has

- Increased the pace of construction completions at National Priorities List sites. Since the beginning of FY 1992, construction completions have increased from 61 to 278 at the end of FY 1994
- Streamlined the decision making process and site cleanup through implementation of the Superfund Accelerated Cleanup Model
- Conserved federal tax resources through the use of enforcement authorities. Almost 75 percent of new cleanup work was initiated by private parties in FY 1994. Private party commitments to site studies and cleanup work is expected to exceed \$1 billion for FY 1994, and the cumulative value of these commitments since 1980 exceeds \$9 billion
- Enhanced the effectiveness of enforcement actions by establishing Regional CERCLA Compliance Monitoring Procedures, instituting Regional enforcement response policies and procedures, and developing the *Cost Recovery Targeting Report*

- Improved outreach and coordination efforts with federal, private, and community stakeholders by issuing *Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities*, continuing Department of Defense partnerships in innovative technologies, and continuing efforts to mobilize private firms to participate in additional partnerships on the use of innovative technologies
- Improved cost control by issuing cost management guidance for remedial and enforcement Superfund contracting

Conclusions

Overall, the Agency is pleased with the progress made in improving the Superfund program. Significant steps were taken to address key areas of concern to Superfund stakeholders. The Superfund Administrative Improvements Task Force identified ambitious yet achievable tasks and targets for implementing the initiatives. EPA personnel in Headquarters and the Regions and other Superfund stakeholders, detailed in this report, worked hard to meet or exceed them. In addition, many of the initiatives are already providing measurable benefits to Superfund stakeholders, public health, and the environment.

Enhancing Superfund performance through administrative improvements required the Agency to refocus resource utilization. EPA Headquarters and Regions negotiated workload trade-offs to make implementation of the initiatives possible. Developing tools, guidance, direction, and reports required an “up front” investment of resources that will provide benefits into the future. Many of the initiatives with ongoing actions and performance targets require EPA to focus on site activities earlier in the process. The Agency anticipates that these “up front” investments will produce many benefits in the future, including resource savings, more cleanups, and more effective public participation.

The charter for the Superfund Administrative Improvements Task Force ended on September 30, 1994. Many of the efforts that were part of administrative improvements, such as construction completions and *de minimis* settlements, remain priorities, and the Agency will continue to set targets and goals for these in the future. EPA anticipates that public health and the environment will continue to receive measurable benefits from the administrative improvements efforts in the years ahead.

Acronym List

AA	Assistant Administrator
ADR	Alternative Dispute Resolution
AOC	Administrative Order on Consent
ARCS	Alternative Remedial Contracting Strategy
ATSDR	Agency for Toxic Substances Disease Registry
ATTIC	Alternative Treatment Technology Information Clearinghouse
BCT	Base Realignment and Closure Team
BRAC	Base Realignment and Closure
CAG	Community Advisory Group
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	CERCLA Information System
CERFA	Community Environmental Response Facilitation Act of 1992
DNAPL	Dense Non-Aqueous Phase Liquid
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
DOJ	Department of Justice
DOL	Department of Labor
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FFEO	Federal Facilities Enforcement Office
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
GIS	Geographic Information System
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
IFMS	Integrated Financial Management System
IGCE	Independent Government Cost Estimate
KDHE	Kansas Department of Health and Environment
LTCS	Long-Term Contracting Strategy
NACEPT	National Advisory Council on Environmental Policy and Technology
NEJAC	National Environmental Justice Advisory Council
NIEHS	National Institute of Environmental Health Sciences
NPL	National Priorities List
ODEQ	Oklahoma Department of Environmental Quality
OECA	Office of Enforcement and Compliance Assurance

OERR	Office of Emergency and Remedial Response
OSC	On-Scene Coordinator
OSRE	Office of Site Remediation Enforcement
OSWER	Office of Solid Waste and Emergency Response
PCBs	Polychlorinated Biphenyls
PPB	Parts Per Billion
PPM	Parts Per Million
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RDT	Regional Decision Team
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
RTDF	Remedial Technology Development Forum
SACM	Superfund Accelerated Cleanup Model
SAFER	Streamlined Approach for Environmental Restoration
SARA	Superfund Amendments and Reauthorization Act of 1986
SOW	Statement of Work
SSL	Soil Screening Level
SVE	Soil Vapor Extraction
TAG	Technical Assistance Grant
TIO	Technology Innovation Office
UAO	Unilateral Administrative Order
USACE	U.S. Army Corps of Engineers
VISITT	Vendor Information System of Innovative Treatment Technologies
VOCs	Volatile Organic Compounds

Initiative 1: Greater Use of Allocation Tools

Description

In order to reduce the legal and investigative transaction costs potentially responsible parties (PRPs) encounter in reaching settlement or in allocating responsibility for site costs, the Superfund program developed the "Greater Use of Allocation Tools" initiative. The Superfund law holds PRPs responsible for the cost of cleaning up sites. Often a number of parties share responsibility for contamination at a site. PRPs at these sites frequently incur high transaction costs from litigating when settlement efforts regarding the allocation of remedial costs are unsuccessful. Several allocation tools currently exist that promote settlement and reduce the transaction costs associated with achieving settlement. Administrative improvement milestones encourage the use of three specific tools to help decrease transaction costs for PRPs.

These cost allocation settlement tools fall into three general categories: (a) tools that create proposed allocations; (b) tools that facilitate the sharing and development of allocation information; and (c) tools that provide guidance on developing allocations.

The use of alternative dispute resolution (ADR) neutrals greatly facilitates the process of allocating responsibility among parties at sites. ADR involves a neutral third party who serves at the discretion of the parties and organizes negotiations, facilitates settlement deliberations, and/or provides an opinion to the parties to a negotiation.

The sharing of information concerning waste contributed by each PRP with other identified PRPs early in the Superfund process greatly decreases transaction costs and increases allocation efficiency. It is important that all PRPs have as much data as possible to assess their relative liability. Releasing information early in the development of a site is an important means by which the Agency can facilitate the organization of PRPs and assist them in coalescing their positions.

Allocation guidance helps identify which factors to consider when allocating response costs among PRPs, including those situations where there is an absence of volumetric information on the waste at a site.

Performance

To better understand and communicate the uses of ADR, including allocations, to support Superfund program activities, the Agency conducted a national Superfund ADR Workshop in November 1993. The conference was attended by nearly 100 corporate officials, private legal counsel, ADR service providers, state agency representatives, EPA staff, and Department of Justice staff. The workshop explored options for expanding and institutionalizing the use of ADR techniques in the Superfund enforcement process.

The Agency supported the use of nonbinding allocation techniques by PRPs at over 30 sites. Services provided by EPA staff included exploration of ADR options, convening of parties, design of allocation processes, identification of qualified neutrals, and provision of contract support and neutral services. Participating PRPs gave favorable reviews of the allocation process and the Agency's efforts to support PRP use of ADR.

As part of this initiative EPA attempted to initiate PRP participation in a binding allocation process to apportion site costs at three sites. Despite the offer of EPA's consultative and financial support for such efforts, no PRP group agreed to participate in binding allocation.

With regard to tools that facilitate the sharing and development of allocation information, the Agency issued a memorandum to EPA Regions regarding information release and assistance to PRPs in information gathering. The memorandum stated that information on PRP waste contribution at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites should be made available to all PRPs as soon as possible, preferably well before special notice is issued. The memorandum also noted that Regions should consider releasing information through PRP meetings or directly to PRPs or PRP steering committees.

On August 12, 1994, the Agency also issued a white paper on the availability of volumetric information at National Priorities List (NPL) sites and its impact on site settlements. The paper contains findings from the evaluation of 554 multi-party generator/transporter NPL sites as well as the status and impact of having complete volumetric information of waste contribution at sites. The major findings of the analysis indicated that complete volumetric information is available at only 30 percent of the multi-party generator/transporter NPL sites. Complete volumetric information, however, has only a small positive impact on achieving settlement with PRPs to conduct the site response action.

EPA is continuing to develop guidance on factors to consider when allocating response costs among PRPs. These factors will be employed by the Agency, and possibly by PRPs, in reaching allocation decisions.

On September 30, 1994, the Agency issued a report on currently used allocation methods and allocation implementation issues that were gathered through interviews with nine parties from across the country who conduct or participate in allocations.

The report, entitled *Developing Allocations Among Potentially Responsible Parties for the Costs of Superfund Site Cleanups*, highlighted three primary findings. First, it is important that the allocation process is sufficiently flexible to accommodate site-specific circumstances and to advance the ultimate goal of reaching settlement and reducing transaction costs. Second, the factors selected to apportion costs in any allocation are a function of the site type, the amount of information available, and the class of parties participating in the allocation. Finally, the most critical factors in selecting an allocator for a successful allocation are the neutrality of the allocator and the PRPs' perception of fairness in the process. These findings enhance the Agency's ability to increase the use of proposed allocation tools.

Benefits

An informal survey of PRP participants involved in the ongoing allocation procedures supported by the initiative indicates a high level of satisfaction with the use of allocation processes and the Agency's efforts to support PRP use of ADR methods. PRPs noted several benefits to using an ADR professional to assist private parties in reaching allocation agreements. Among them are reduced transaction costs attributable to resolving allocation disputes through private litigation, increased participation in negotiations, and a heightened level of communication between parties. In addition, PRPs noted the substantial benefit of having an ADR professional prepare data summaries in complex cases and develop an allocation "straw proposal" for consideration. There is a general perception that "neutralizing" the process allows for more open negotiations. The participation of a neutral allocation professional is perceived as benefiting the allocation effort by expediting resolution, allowing for effective discussions, and reducing the resource and financial commitment required by all parties. EPA also benefits by reducing its own transaction costs.

The Agency is currently performing an analysis that attempts to quantify the time and resource benefits of using ADR at Superfund sites.


Lessons Learned

Although some Agency resources are expended in supporting the use of allocation tools, it is generally recognized that this resource expenditure is overshadowed by the increased equity and fairness of the process for PRPs, and the reduced transaction costs for both PRPs and the Agency.

An informal survey of PRP representatives contacted for participation in the binding allocation pilots indicates that PRPs view the use of binding forms of ADR for allocation purposes as overly restricting the settlement discretion of companies, given the large potential financial commitment required at Superfund sites. Several PRPs stated that EPA's willingness to use an allocation procedure as a method to establish potential mixed-funding amounts would assist greatly in their willingness to participate in a binding process.

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	United States Environmental Protection Agency	Office of Solid Waste and Emergency Response	February 1995
	Savage Municipal Water Supply Well - Region 1		

Background

The use of alternative dispute resolution (ADR) neutrals greatly facilitates the process of allocating responsibility among parties at sites. ADR involves a neutral third party who serves at the discretion of the parties and organizes negotiations, facilitates settlement deliberations, and/or provides an opinion to the parties to a negotiation. ADR can benefit all parties by lowering transaction costs and avoiding litigation. At the Savage Municipal Water Supply Well Superfund site, EPA assisted potentially responsible party (PRP) allocation efforts through the use of ADR to facilitate settlement efforts, lowering the transaction costs of PRPs for whom ability to pay concerns were an issue. ADR was also used at the site to educate individuals who, although not directly involved in the contamination, were liable due to fraud claims.

Description of the Site

The Savage Municipal Water Supply Well Superfund site is a 30-acre site that consists of a former municipal well and the underlying aquifer from which the Town of Milford, Connecticut obtained its water prior to the discovery of the contamination. The Savage Municipal Water Supply Well operated from 1960 to 1983, during which time it supplied 45 percent of Milford's water. Several machine tooling industries opened plants near the well and the Souhegan River. From the 1940s until the 1980s, process waters and

wastes from four industrial facilities were released untreated to the ground or surface waters flowing through the site. Investigations at the site began in 1983, as part of a state-wide water sampling program. Contamination was found in samples and the well was closed. Following the closing of the well, the State began investigations to locate the source of the contaminants, which also were present in water samples taken at nearby industries. Ground water is contaminated with volatile organic compounds (VOCs) and heavy metals. The soil is also contaminated with VOCs and a stream on site is contaminated with VOCs and heavy metals.

Implementation

At the Savage Municipal Water Supply Well Superfund site, ADR, as specified in initiative 1 of the administrative improvements program, was used to facilitate settlement and to lower PRP transaction costs. EPA assisted PRPs in selecting a neutral ADR professional to work with the PRPs to resolve allocation issues.

ADR was used at the second of two settlements at the Savage Municipal Water Supply Well site, resulting in a cashout settlement resolving both liability under the Superfund law and fraudulent transfer claims. The approximately 20 PRPs involved were mostly passive shareholders including widows and children of former officers of a company and were not directly involved in the contamination; rather they were liable as

beneficiaries of fraudulent transfers. The assets of the company had been transferred in order to avoid liability claims under the Superfund law. The fraudulent transfer claims at the site were very complex and an ADR neutral was deemed helpful in explaining the nature of those claims to the PRPs.

EPA assisted the PRPs at the second settlement in selecting a neutral third party. The Agency's chief motivation in promoting the use of ADR was to minimize transaction costs. From the beginning, the PRPs had raised "ability to pay" arguments. The Agency wanted to ensure that most of the limited PRP resources would be used for cleanup of the site and not be spent on negotiations or protracted litigation. Also, at the time that the mediation was convened, many of the PRPs were not represented by counsel. The individual PRPs felt more comfortable speaking with a neutral mediator than speaking directly with the federal government. The mediator educated individual PRPs about the nature of the complicated claims involved at the site and the extent of each PRP's liability.

Findings

EPA accomplished two specific goals by promoting the use of ADR by PRPs at the Savage Municipal Water Supply Well site. First, ADR

helped lower transaction costs for the PRPs, thereby allowing PRPs with "ability to pay" arguments to fund more cleanup efforts, and not litigation. Second, the Agency was able to send a clear message to the regulated community that the fraudulent transfer of assets can not be used as a successful means of avoiding liability under the Superfund law. At the same time, the claims at the site were settled in a manner that attempted to mitigate the harshness of the liability to individual passive shareholders.

ADR was an invaluable tool at the Savage Municipal Water Supply Well site that worked to lower transaction costs and to educate PRPs about the nature and extent of their liability. As a result of using a neutral mediator, a settlement was achieved whereby limited funds went towards cleanup and not additional litigation.

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Bofors Nobel, Inc. - Region 5

Background

The use of alternative dispute resolution (ADR) neutrals greatly facilitates the process of allocating responsibility among parties at sites. ADR involves a neutral third party who serves at the discretion of the parties and organizes negotiations, facilitates settlement deliberations, and/or provides an opinion to the parties to a negotiation. ADR can benefit all parties by lowering transaction costs and avoiding litigation. At the Bofors Nobel, Inc. site, EPA facilitated the use of ADR by assisting in the selection of a neutral ADR professional. Due to the unique nature of the liability at the site, an extremely large volume of documents containing confidential business information exists. The ADR professional assisted potentially responsible parties (PRPs) in expediting the release of this information and reaching an allocation agreement.

Description of the Site

Bofors Nobel, Inc., is an 85-acre site at which various chemicals were manufactured from 1960 to 1987. The plant manufactured chemicals for sale and pursuant to agreements with other companies. During this time, the plant's operators disposed of process water into unlined lagoons. In 1975, the dikes around the lagoons failed, and 2 million gallons of wastewater were released to Big Black Creek, which is used for recreation. Ground water, surface water, soil, and sediments at the site are contaminated with various volatile organic compounds.

Implementation

At the Bofors Nobel, Inc. site, ADR is being used to facilitate settlement and lower PRP transaction costs. EPA helped PRPs select a neutral ADR professional to assist them in addressing allocation issues.

Settlement negotiations at the Bofors Nobel, Inc. site became exceptionally slow, primarily because of information release issues. Chemicals were manufactured at the site for dozens of companies to sell, an arrangement commonly referred to as "tolling". This arrangement resulted in voluminous amounts of confidential business information, which was in turn critical to the allocation of responsibility for site costs. Because this information could not be shared with all parties, allocation efforts at the site stalled. It became evident that a neutral third party would be helpful in moving settlement negotiations forward. A neutral third party could look at all the data and distribute allocation information accordingly without releasing critical confidential business information. The Agency assisted the PRP group in selecting an ADR neutral to facilitate information release and assist in allocation efforts. The Agency suggested possible ADR neutrals and provided the PRP group with support to procure a contract with an ADR neutral.

Findings

The mediator is assisting PRPs by cataloging and distributing site information. The use of this information is critical to the allocation deliberations in that it allows PRPs to properly assess their liability and reach settlement.

The use of ADR at the Bofors Nobel, Inc. site has led to two direct benefits. First, ADR provided a major allocation breakthrough and increased the pace of settlement negotiations. Second, transaction costs for all PRPs decreased at the site.

Less litigation was encountered with the release of the confidential business information by a neutral third party, and PRPs were able to make settlement offers.

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Initiative 2: Foster More Settlements with Small Volume Waste Contributors

Description

To provide greater fairness for small volume waste contributors (*de minimis/de micromis*) at Superfund sites, EPA developed the “Foster More Settlements with Small Volume Waste Contributors” initiative. This initiative is designed to address three common concerns raised in the context of settlements with small volume contributors: (a) that they frequently are not able to settle their liability until very late in the remedy process; (b) that for many sites, volumetric information on waste contributions, used for establishing eligibility for a *de minimis* settlement, is not comprehensive; and (c) that *de minimis* settlements are time-consuming and resource intensive.

At some sites, there are also very small volume, or *de micromis*, waste contributors. *De micromis* parties are parties whom, as a matter of enforcement discretion, the Agency would not normally pursue, but who increasingly have been subject to lawsuits filed by major contributors. Consequently, many have requested EPA assistance in resolving these legal actions.

The goal of this initiative is to encourage more, early, and expedited settlements and to reduce the transaction costs of all parties. To accomplish this, the Agency planned to: (a) simplify requirements for determining a potentially responsible party’s (PRP’s) eligibility for a *de minimis* settlement and streamline the process for settling; (b) issue guidance to the Regions on settling with extremely small volume waste contributors (*de micromis* parties) and move aggressively to settle with *de micromis* parties who are subject to contribution actions by major waste contributors; and (c) establish a communication strategy to assist small volume waste contributors in understanding the *de minimis* and *de micromis* processes.

Performance

First, the Agency issued guidance to streamline the *de minimis* settlement process by simplifying the minimum information a Region must have before offering a *de minimis* settlement. The guidance also provided a method for constructing payment matrices in appropriate circumstances and encouraged Regions to take a more active role in facilitating the *de minimis* settlement. By streamlining the process, the guidance should serve to increase the number of early, expedited settlements and reduce transaction costs of all parties.

Second, the Agency established a new policy for assisting *de micromis* contributors who have been sued by other parties at a site. By using EPA’s existing settlement authority in an expeditious manner, the Agency can resolve the liability of *de micromis* parties so they may gain the full extent of contribution protection available under the statute. The new guidance provides both site-specific examples of when a *de micromis* settlement might be appropriate and a matrix for calculating settlement payment amounts.

The Agency also issued a communications strategy, including a model notice letter, for the Regions’ use in assisting and informing *de minimis* and *de micromis* parties who may be unfamiliar with the Superfund process. The communications strategy recommends a variety of approaches to ensure successful communications with both *de minimis* and non-*de minimis* parties prior to, during, and following *de minimis* settlement negotiations. It contains a brochure that describes the basics of the Superfund program and the *de minimis* settlement process. The brochure is included in mailings to *de minimis* parties, distributed at PRP meetings, and provided to elected officials as introductory information about *de minimis* settlements.

Effective communication early in the settlement process with all concerned parties can serve many useful functions, including limiting transaction costs, improving the chance of acceptance of the settlement offer, and fostering better relationships with Congress and the public.

As part of the Agency's ongoing settlement process, EPA completed 43 *de minimis* settlements with over 1,500 PRPs at 30 sites in FY 1993. EPA also completed 43 *de minimis* settlements with more than 4,000 PRPs at 39 sites in FY 1994.

Under this initiative, EPA Headquarters is continuing to review sites submitted by the Regions for FY 1995 *de minimis* (including *de micromis*) settlements.

Benefits

One of the most significant benefits of this initiative was the repose it provided for thousands of PRPs at Superfund sites. As a result of the negotiated settlements, over 5,500 small business and other contributors of small amounts of waste to the Superfund sites (*de minimis* and *de micromis* parties) have been removed from the Superfund enforcement and cleanup process. This substantial reduction in the numbers of parties reduced the transaction costs of ongoing litigation and settlement efforts and, thereby, the eventual total site cleanup costs. The parties who settled avoided the transaction costs that they would have incurred had they stayed in the process. The reduction in the number of parties also reduced the transaction costs for EPA and those parties who remained in the settlement and cleanup process.

The achievement of these settlements also helped satisfy the Congressional and Agency goals of providing more fairness and equity to all parties in the Superfund cleanup process. In addition, the experience gained by Agency staff, in cooperation with Department of Justice staff, will improve EPA's ability to achieve similar settlements with small volume waste contributors in the future.

The Agency's ability to achieve these benefits was enhanced by the Headquarters guidance on streamlining *de minimis* and *de micromis* settlements. The process was also made more efficient by the Headquarters communications strategy for assisting *de minimis* and *de micromis* parties at sites. The guidance served to standardize the settlement process, resolve issues that arose during the course of settlement negotiations, and better communicate the goals of *de minimis* settlements.

Lessons Learned

During the course of the FY 1994 small volume waste contributor initiative, some important lessons have been learned. The foremost lesson was the importance of early and effective communication with major parties about proposed settlements with *de minimis* and *de micromis* parties. The major parties have a substantial interest in ensuring that the Agency estimates waste contributions by the smaller parties correctly and that the Agency receives a fair and reasonable settlement from the settling parties (so the total liability of the major parties will be appropriately reduced). Earlier and more effective communication with the major parties at sites decreases the likelihood that they will oppose settlements.


The Agency also learned better ways of communicating with small parties, especially at those sites where more than 100 parties were negotiating concurrently. EPA used innovative communication tools, such as a toll-free telephone information line, to increase the ability of the smaller parties to communicate with Agency staff to ask questions and request information. The Agency has also learned how to improve PRP searches and collect waste contribution data earlier in the process. Moreover, the Agency reduced transaction costs by encouraging varied and flexible settlement options.

Increased focus on the small volume waste contributors, however, required more Agency and Department of Justice resources. Nonetheless, the Agency believes the benefits of these early settlements with small parties will produce additional future benefits by reducing the total costs of settlement and litigation, and by streamlining subsequent settlements and the cleanup process.

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	United States Environmental Protection Agency	Office of Solid Waste and Emergency Response	February 1995
	Solvent Recovery Service of New England - Region 1		

Background

To provide greater fairness for small volume waste contributors (*de minimis/de micromis*) at Superfund sites, EPA developed the "Foster More Settlements with Small Volume Waste Contributors" initiative. The Region 1 enforcement team effectively applied the concepts of this Superfund administrative improvements initiative to achieve an equitable, streamlined settlement incorporating the factual circumstances of three different groups of *de minimis* potentially responsible parties (PRPs).

Description of Site

The Solvent Recovery Service of New England site is a 2.5 acre facility in the Town of Southington, Connecticut. From 1955 to 1991, spent solvents used for degreasing and other purposes were sent to the facility by approximately 1,650 businesses. Disposal practices at the site included lagoon disposal and open pit incineration. In 1967, lagoon disposal was discontinued, and the lagoons were drained and covered with fill. After the lagoons were closed, waste was burned in open pits on site or disposed of off site. In 1991, all activities at the site ceased pursuant to a court order.

The Agency has identified approximately 1,500 businesses and facilities that submitted waste to the Solvent Recovery Service facility. Approximately 1,240 of these contributors were designated *de minimis* parties, and approximately eight percent of the waste was sent to the site by

parties that either could not be located or were not financially viable. Another 256 companies, representing approximately 425 facilities, will be responsible for the site cleanup.

Implementation

The approach used by the Region 1 team at the Solvent Recovery Service site focused on increasing the amount and improving the quality of communication with the PRPs. In June 1992, the EPA team met with all PRPs in a kick-off meeting and explained the approach that the Agency would use to reach a settlement. All PRPs were encouraged to join the steering committee, which would serve as the point of dissemination of information. The *de minimis* agreement that resulted from this approach totaled \$6.7 million and settled the liability of 880 facilities.

At the Regional team's request, a small representative group of the steering committee was formed to represent the concerns of both small and large parties in negotiations. This negotiating group was the liaison between the EPA team and the PRPs. The EPA team spoke with the negotiating groups, or its members, nearly every day, and met with the steering committee as a whole when necessary to resolve issues.

The PRPs were involved in nearly every aspect of the development of the settlement, including donating administrative services to compile mailings and reviewing transaction documents.

EPA draft documents were routinely reviewed by the negotiating group prior to mailing. At one point, several boxes of transaction information were found unexpectedly. To avoid delaying the settlement, the Region 1 team requested and the PRPs provided temporary staff to review the documents and enter the information into the PRP database.

Cooperation was sought to reduce conflict over the transactions that would form the basis of the PRP's allocation of liability. Copies of all of the documents that the Agency had collected to support its case were released to the PRPs early in the process. In addition, the PRPs were invited to audit any information that the Agency was using to allocate each PRP's liability. Section 104(e) letters, sent to each PRP, included a printout of the portion of the database relating to its transactions.

To encourage *de maximis* PRPs to identify and involve *de minimis* parties, the Agency provided that a portion of the proceeds from the *de minimis* settlement would be turned over to the *de maximis* PRPs to pay for the removal action that they had agreed to conduct. This incentive was structured so that the greater the number of *de minimis* parties who settled, the greater the amount of money the *de maximis* parties would receive to cover the cost of the removal action.

Major settlement decisions were made in cooperation with the PRPs. The Region 1 team used proposals from the PRPs to determine the level of waste contribution that distinguished *de minimis* and *de maximis* parties. Similarly, the premium to be paid by *de minimis* parties as part of the settlement and the cost basis of the settlement were developed from proposals by the PRPs.

Findings

The major success of the Region 1 team in settling *de minimis* and *de maximis* liability at the Solvent Recovery Service site was a result of open communication developed between the EPA team and the PRPs, and the use of settlement initiatives. The involvement of the PRPs in verifying the transactions on which determinations of liability were based virtually eliminated arguments over the transactions database. The use of PRP proposals for developing the cut-off for *de maximis* liability, the premium, and the cost basis in the *de minimis* settlement significantly limited the negotiations required to achieve consensus on the provisions of the settlement. Using the steering committee as a dissemination point for information greatly reduced transaction costs for both EPA and the PRPs. In addition, the use of *de maximis* incentives resulted in the *de maximis* PRPs wholeheartedly endorsing the *de minimis* settlement and using their resources to increase participation by the smaller parties. Overall, the involvement of the PRPs in the full range of activities, even at the most detailed level of reviewing records, fostered a sense of cooperation and trust between the Agency and the PRPs that led to a settlement of this case in a little more than two years.

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American Chemical Services, Inc. - Region 5

Background

To provide greater fairness for small volume waste contributors (*de minimis/de micromis*) at Superfund sites, EPA developed the "Foster More Settlements with Small Volume Waste Contributors" initiative. The Region 5 enforcement team demonstrated that effective use of *de minimis* guidance and tools can result in greater equity and fairness at Superfund sites.

Description of the Site

American Chemical Service, Inc. (ACS) recycled chemicals on a 21-acre site in Griffith, Indiana from 1955 until 1990. Three different facilities were studied as part of the site: ACS, Kapica Drum, and an inactive portion of the Griffith Sanitary Landfill. ACS began as a solvent recovery firm and later became a chemical manufacturing operation. From 1955 to 1990, wastes produced during operations were either landfilled, incinerated, or disposed of off site. In the earlier years, land-filling was the primary disposal practice. In the early to mid-1970s, incineration became the primary disposal practice. Off-site disposal was used increasingly during the 1980s.

Approximately 1,400 viable *de minimis* potentially responsible parties (PRPs) have been identified. Another 450 have been identified but either cannot be located or are not financially viable. There are 27 large PRPs who will be responsible for implementing the remedial design/remedial action phase of the site cleanup.

Implementation

The Region 5 team used several of the tools developed as part of this initiative to reach the settlement with *de minimis* parties, but also relied strongly on improved communications. A group of 190 PRPs formed a steering committee to conduct negotiations. The PRP group represented the concerns of both small and large PRPs, and the EPA team used proposals developed by the PRP group to settle issues and develop the final settlements. Approximately 1,006 *de minimis* parties signed the settlement for about \$26.4 million.

Early in the settlement process, a waste-in database was developed for waste generators who sent waste to ACS over the period from 1955 to 1975. The database incorporated a mechanism to adjust each party's liability according to the waste management practices in place at ACS at the time that waste was shipped to the site. This adjustment took into account the varying environmental impacts of different disposal practices. Waste sent to ACS over the period when landfilling was the primary disposal practice was weighted more heavily than waste sent during the later period of the site's operations when incineration was the primary disposal practice. The PRP group and EPA then expanded the database to include information on generators who shipped waste to the site between 1976 and 1990. The EPA team accepted the database as the basis for allocation of liability.

The Region 5 team considered the results of a national study of *de minimis* settlement premiums in determining the appropriate premium to implement at this site. Using the facts pertaining to the technical aspects of the probable cleanup procedure, the team chose a premium of 100 percent that was supported by the national study as being fair and equitable.

Findings

Involving a relatively small PRP group to formulate the *de minimis* settlement had several positive effects on the time and effort needed to reach settlement. The small size of the group streamlined the settlement process, thereby reducing the EPA resources required to execute the consent order and address inquiries regarding the *de minimis* settlement. The PRP group was deeply involved in refining the allocation model, thereby increasing acceptance of the fundamental fairness of the resulting allocation of liability. Furthermore,

the strong consensus that was achieved within the PRP group facilitated acceptance of the settlement conditions by *de minimis* parties who had not been part of the group, yet felt that their concerns had been addressed.

The use of a standardized premium as part of the settlement also increased acceptance of the settlement conditions among the participating parties. Because the premium was consistent with the results of a national study, EPA was able to support its choice with examples from other *de minimis* settlements. This helped to foster a sense of fairness among the settling parties regarding the premium level.

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Initiative 3: Greater Fairness for Owners at Superfund Sites

Description

The “Greater Fairness for Owners at Superfund Sites” administrative improvement initiative was developed to increase fairness in the application of Superfund authorities. This initiative addressed three major concerns pertaining to: (a) federal liens; (b) property assessments; and (c) prospective purchaser agreements. Background on these issues is provided below.

(A) Federal Liens — The Superfund Amendments and Reauthorization Act of 1986 (SARA) provided EPA with the authority to establish a federal lien in favor of the United States on property where Superfund expenditures have been made. The lien provision was designed to facilitate the United States’ recovery of response costs and prevent windfalls. The Agency guidance on federal liens issued in September 1987 (OSWER Directive 9832.12) did not provide procedures for giving notice to, and receiving comments from, potentially responsible parties (PRPs).

(B) Property Assessment — Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), an owner of contaminated property is considered a liable party unless the owner qualifies as an “innocent landowner.” To qualify, a property owner must prove that at the time the property was acquired, he or she did not know, and had no reason to know, about a release or threatened release of a hazardous substance. The party is further required to have undertaken “all appropriate inquiry” into the previous ownership and uses of the property. EPA had not established a standard by which to judge “all appropriate inquiry.” The lack of a standard has created uncertainty and has had significant consequences including hesitancy on the part of lending institutions to provide loans for the purchase of property and to accept property as collateral, decisions by the private sector to abandon previously developed land, and payment by businesses for inadequate property assessments.

(C) Prospective Purchaser Agreements — Potential Superfund liability poses a dilemma for prospective purchasers of Superfund sites when knowledge of contamination prior to purchase prevents their use of CERCLA’s “innocent landowner” defense after acquisition. Prospective purchasers are willing, in some instances, to conduct or finance some cleanup work in return for a covenant not to sue from EPA. The current Agency policy limits the use of these covenants to situations where the Agency is planning to take an enforcement action at a site, and where a substantial benefit not otherwise available would be received by the Agency for cleanup of the site by the purchaser. At sites where these conditions are not met, cleanups that could be partially conducted or funded by private prospective purchasers may be left to EPA to undertake and complete. As a result, contaminated property that could potentially be cleaned up and used may instead be abandoned.

Performance

As part of the Superfund administrative improvements effort, the Agency issued supplemental federal lien guidance to improve notification and increase the opportunity for comment on final federal liens under CERCLA. This guidance states that the Agency should provide notice to property owners, who are PRPs, that the Agency intends to perfect a lien on their property prior to filing the papers to perfect such liens. The Agency should also give such property owners the opportunity to be heard through submission of documentation or by appearing before a neutral EPA official.

EPA also took steps to increase the availability of information to facilitate “all appropriate inquiry”. The Agency identified criteria for “all appropriate inquiry” standards used by other organizations, e.g.,

American Society for Testing and Materials, states, and other federal agencies. In addition, the Agency decided to supplement private efforts to develop standards for conducting adequate property assessments by providing direction about EPA's publicly available information sources, rather than setting a standard. These sources include data on permitting and remediation that can be used by the public to obtain information about the previous ownership and uses of a property.

EPA is increasing its efforts to negotiate agreements that will facilitate or assist in the re-use or development of contaminated property. The Agency has drafted expanded criteria for evaluating circumstances in which EPA may provide an administrative covenant not to sue to a prospective purchaser of contaminated Superfund property, and expects to issue a guidance document in FY 1995.

Benefits

The information collected and guidance issued under this initiative were intended to improve the fairness of EPA's treatment of owners and prospective purchasers of Superfund sites. This initiative achieves that goal through greater outreach and communication of statutory requirements to property owners. The clearest example is the supplemental federal lien guidance that provides for notification before perfecting a lien on a party's property and affords the owner of the property an opportunity to comment and present information to defeat the lien. These efforts remove barriers between the federal government and private parties, prevents the private parties from being surprised by Agency actions, and improves both communication and education.

With regard to the "all appropriate inquiry" requirement, EPA prepared a report that identified criteria for evaluating standards. Furthermore, EPA summarized the standards and related materials developed by other organizations. This report is publicly available and can be a very useful tool for any private party seeking direction and information on site assessment. EPA's decision not to set an Agency standard also had many benefits. A number of private professional organizations have been or are in the process of developing standards for conducting property assessments. EPA's setting a standard could discourage the development of better property assessment tools by those organizations and agencies with greater expertise.

Lessons Learned

The decision not to develop an EPA standard on "all appropriate inquiry" at this time has both positive and negative consequences. First and foremost, the lack of an EPA developed or sanctioned standard may still be of concern to lenders and insurers who may question the reliability of standards developed by private organizations or other federal agencies. On the other hand, the development of a standard would be extremely resource intensive.

The prospective purchaser issue was determined to be much broader than that addressed by the supplemental guidance. Indeed, an entire universe of sites where enforcement actions are not anticipated remain unaddressed. The barrier posed by potential Superfund liability at these sites prohibits beneficial economic development. To truly increase the fairness to owners or prospective purchasers of contaminated property, guidance is needed to address these situations.

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Publicker Industries, Inc. - Region 3

Background

One of the goals of the "Greater Fairness for Owners at Superfund Sites" administrative improvements initiative is to address the concerns of prospective purchasers. Superfund liability poses a dilemma for prospective purchasers of Superfund sites when knowledge of contamination prior to purchase prevents their use of the Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA) "innocent landowner" defense after acquisition of the property. The Publicker Industries, Inc. site represents a prime example where the Agency and a prospective purchaser worked together to forge a mutually satisfactory agreement. The prospective purchaser at the Publicker site has been willing to finance some of the cleanup work in return for a covenant not to sue from EPA.

Description of the Site

Publicker Industries is a 37-acre site that housed a liquor and industrial alcohol distillation process from 1912 to 1985. In the late 1970s, as production declined, the company used some of its tanks to store fuel oils for other companies. The property was sold in 1986, but the new owner declared bankruptcy and abandoned the facility shortly after acquisition. At the time of abandonment, the site included nearly 440 tanks, storage drums, product stock, warehouses, a power plant, and several hundred miles of process lines, some of which were covered with asbestos. In total, 2 million

gallons of hazardous materials were located at the site. As a result, soils are contaminated with volatile organic contaminants and heavy metals.

In December 1990, EPA filed a cost recovery action against Publicker Industries, Cuyahoga Wrecking Corporation, and Overland Corporation to recover government funds spent on the site.

Implementation

A unique redevelopment opportunity exists at the Publicker Industries, Inc. site due to its location on the Delaware River and proximity to a major airport, interstate highways, and rail lines. This redevelopment potential is clouded, however, by the possibility of Superfund liability at the site. The site is Fund-lead because the potentially responsible parties (PRPs) are either bankrupt or financially incapable of performing 100 percent of the work. Cleanup costs are very high and it is uncertain how much money the Agency will be able to recover. To date, approximately \$15 million has been spent on response actions at the site. Asbestos disposal work, the final portion of the site-wide remedial investigation/feasibility study, and the remedial design/remedial action remain to be performed. Best estimates at this time are that an additional \$3 million may be spent for site remediation. Resources from a prospective purchaser would be most welcome because they would be used to fund this additional cleanup work.

The Agency, along with the State, has negotiated a prospective purchaser agreement. Under the agreement, the prospective purchaser would pay EPA and the State \$2.3 million. In exchange, EPA and the State would provide the prospective purchaser protection from liability for all current contamination. With this protection from liability, the prospective purchaser can move forward with its plans to develop a state-of-the-art, intermodal port facility, which, in addition to providing over 500 new jobs, will allow the local cruise and cargo facilities to compete with other East coast ports.

Findings

The prospective purchaser agreement at the Publicker site has benefited the Agency, the regulated community, and the local community in

several ways. Primarily, the Agency has gained additional funding to finance cleanup at the site. The local community and economy will benefit from the redevelopment of the site through the creation of jobs and return of the land to productive use. The prospective purchaser also benefits from this agreement by gaining access to a prime location for business, without fear of possible Superfund liability. The local community will gain because the agreement results in economic redevelopment and jobs.

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Initiative 4: Evaluate Mixed Funding Policy

Description

The Agency uses mixed funding in situations where it is appropriate to recover less than 100 percent of the site costs from potentially responsible parties (PRPs) in a particular settlement. There are three types of mixed funding: preauthorization (where PRPs perform the work and the Agency agrees to reimburse them for a portion of the costs); cashouts (where the PRPs fund a portion of the work that EPA performs); and mixed work (where the PRP and the Agency perform different aspects of the cleanup).

The Agency obtained the views of organizations and individuals, including PRPs, regarding mixed funding. Many of those questioned believe mixed funding could be used more frequently at sites with a significant orphan share (the share of cleanup costs for which no financially viable PRP can be held accountable). In addition, many of those surveyed noted that the procedures and documentation required to enter into a mixed-funding settlement, or to assert a claim against the Fund (the Trust Fund established under the law to finance Superfund cleanups) are burdensome.

In FY 1993, in order to address these concerns, the Agency conducted a two-part evaluation of mixed funding as part of the Superfund administrative improvements initiative. The first part evaluated several different mixed-funding options and quantified the cost implications to the Fund. The Agency completed this phase of the evaluation during September 1993.

The second part of the evaluation explored options for streamlining the mixed-funding decision-making process, as well as options available under the current preauthorization regulation for streamlining the application and documentation requirements.

To assist the evaluation effort and gather data on mixed-funding use, the Agency piloted several mixed-funding settlement demonstration projects in FY 1993 and FY 1994. The Agency began compiling information about these negotiations and, based on experience and the evaluation of the mixed-funding demonstration projects, identified opportunities for streamlining preauthorization procedures and requirements. Any future revisions to EPA's mixed-funding policy will use the results of studies and demonstration projects.

Performance

To fulfill the requirements of the first part of the mixed-funding analysis, the Agency evaluated the potential cost of mixed funding in the *Mixed Funding Evaluation Report: The Potential Costs of Orphan Shares* (OSWER, September 1993). This report analyzed the cost implications to the Trust Fund if EPA routinely paid for the orphan share of the costs of the remedial design/remedial action (RD/RA).

If EPA paid the entire orphan share for RD/RA at all enforcement-lead sites (where PRPs perform the remedy) with an orphan share, Headquarters estimated that the annual cost to the Fund would range from approximately \$150 million to \$420 million dollars per fiscal year. For the purposes of comparison, the Superfund appropriation for FY 1993 was approximately \$1.57 billion dollars. At sites where PRPs perform the remedy, PRPs commit to perform an average of \$1.14 billion dollars worth of RD/RA each year. At sites where EPA performs the remedy, the Agency obligates an average of \$474 million dollars per year to implement the RD/RA.

To address the second part of the mixed-funding initiative the Agency evaluated streamlining options in two areas: the settlement decision-making process, and the application and documentation process for preauthorization mixed funding. In order to better assist the Agency in evaluating and gathering data on mixed-funding use, the Agency piloted several mixed-funding settlement demonstration projects.

As part of its effort to streamline the settlement decision-making process, the Agency considered making changes in the Headquarters consultation and concurrence requirements Regions must follow. After evaluating the options, the Agency decided that for the pilot sites, Headquarters would grant approval earlier in the process (i.e., pre-approval) than is done in the standard mixed-funding approval process.

In an effort to streamline the application and documentation requirements of preauthorization mixed funding, the Agency considered several options including: model preauthorization language to amend relevant provisions of the model RD/RA consent decree (CD); a simplified model preauthorization decision document; guidance for PRPs on implementing preauthorized response actions; and a one-day orientation for technical and management staff on the preauthorization process and roles and responsibilities. For the preauthorization mixed-funding pilot sites, all of these streamlining techniques were utilized.

EPA Headquarters worked with the Regional offices to identify appropriate sites for mixed funding. In order to select prospective pilot sites, Headquarters screened an initial list of 23 sites proposed by the Regions against the following five criteria

- Date by which negotiations would be completed (i.e., could negotiations be completed by March 31, 1994)
- EPA's share of the costs
- Benefits of the settlement to the government
- Type of mixed-funding settlement (preauthorization, mixed work, cashout)
- Type of concern that the pilot would address (orphan share, municipal share, divisibility of harm, innovative technology)

The initial screening focused on whether the negotiations at the site could reasonably be completed by March 31, 1994. It was important to have an anticipated negotiation completion date in order to have time to gather and analyze data with respect to the Regions' experience with the streamlined process. A number of sites fell out because of an uncertain negotiation completion dates. For the remaining sites, Headquarters conducted conference calls with the Regions to determine the site's suitability as a pilot. Seven pilot sites were selected. The Regions determined what type of mixed-funding settlement would be appropriate for a pilot site. A determination that a site was not suitable for the pilot did not rule out the possibility for a mixed-funding settlement. For these sites, traditional mixed-funding considerations would be applied to determine whether or not mixed funding would be an appropriate part of the settlement.

The Agency defined "measures of success" in order to evaluate the pilot projects. These measures relate to the overall number of settlements achieved using mixed funding and the timeliness and quality of the settlement process. Where the use of mixed funding (either mixed work or preauthorization) resulted in a case reaching settlement without a large expenditure of resources (such as would be expended going to trial), the pilot was successful. For purposes of the evaluation, settlement was more than an agreement in principle; settlement was defined as an agreement on the specific language of a document that embodies the agreement in principle, with signatures by PRPs.

Several other milestones under the mixed-funding administrative initiative are still underway. EPA will continue efforts to recommend measures for streamlining preauthorization procedures and requirements based on the evaluation of demonstration projects. The Agency will also continue to explore the possibility of using mixed funding based on the evaluation of demonstration projects.

Benefits

For the purposes of its pilot, Region 4 concluded that the process was less time consuming than anticipated and streamlining procedures (e.g., pre-approval, and other preauthorization streamlining) enabled the Region to maintain more control over, and gain a better understanding of, the process.

With respect to part one of this initiative, the principle benefit of the orphan share cost analysis was that the Agency estimated the cost of funding orphan shares. The report, therefore, provided a useful baseline for assessing orphan share funding, which will help to inform future debates on mixed-funding policy.

With respect to part two of this initiative, the results of the pilots indicated, and the Regions participating in the initiative observed, that the use of mixed funding was effective in helping the Agency reach settlement at the pilot sites. In total, six cases were settled. Regions negotiating these settlements observed that mixed funding was a critical element in directing negotiations towards reaching settlement instead of litigation. In addition, streamlining preauthorization procedures and requirements may make it less burdensome to implement mixed funding. An added benefit is that expanding the use of mixed funding may result in more settlements, which may be more equitable. Finally, in some cases, cleanup will be accomplished earlier with less litigation.

Lessons Learned

From the orphan share report, the Agency learned that expanding the use of mixed funding may create a significant demand on the Trust Fund, potentially resulting in the delay of cleanups.

The lessons learned from the mixed-funding pilots are primarily site specific, but some overall conclusions can be drawn with regard to the time and resources required to negotiate mixed-funding agreements (that is, the effect of the streamlined procedures).

For all of the pilot sites, pre-approval by Headquarters proved to be an efficient and effective way to involve Headquarters in the process since Headquarters is responsible for approving expenditures from the Fund. This pre-approval was effective in facilitating the pilot projects.

For the mixed-work pilots, delays in the settlement process were primarily attributable to the drafting of the CD language and statement of work. Delays could be minimized with the creation of model CD language for mixed-work settlements just as model language for preauthorization has been drafted.

Survey information demonstrates that, contrary to common perception, preauthorization can be approved and executed in as little as five months.

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Bypass 601 Ground Water Contamination - Region 4

Background

The Agency uses mixed funding in situations where it is appropriate to recover less than 100 percent of the site costs from potentially responsible parties (PRPs) in a particular settlement. There are three types of mixed funding: preauthorization (where PRPs perform the work and the Agency agrees to reimburse them for a portion of the costs); cashouts (where the PRPs fund a portion of the work that EPA performs); and mixed work (where the PRP and the Agency perform different aspects of the cleanup).

The settlement reached at the Bypass 601 site represents an innovative use of preauthorization mixed funding. Under this preauthorized mixed-funding agreement, the PRPs agreed to perform the remedial action while the Agency preauthorized a claim against the Fund for a portion of the response costs.

Description of Site

The Bypass 601 site is defined as an area in Concord, North Carolina, in which ground water is contaminated by multiple unknown sources. The Martin Scrap Recycling Facility is a 13-acre inactive battery salvage and recycling operation west of Concord that was identified as a potential source of the ground-water contamination.

Waste at the site was sent by a large and diverse group of PRPs, including major corporations, state

and municipal governments, and more than 2,500 small businesses and individuals. Of the total 4,200 identified PRPs, Region 4 offered to settle with 115 as *de minimis* parties and with 2,500 as *de micromis* parties under a unique *de micromis* settlement procedure. The orphan share at this site consisted of nearly 75 percent of the total waste present. This share was attributed to PRPs that either could not be located or were not financially viable.

Implementation

The sizable orphan share of total cleanup cost, combined with the high number of *de minimis* and *de micromis* parties at this site created an unfairly large allocation of cleanup costs to the larger generators. To reduce the financial burden on these PRPs, EPA chose to use preauthorization mixed funding to share cleanup costs. As much as 38 percent of total cleanup costs, or up to \$10.1 million, will be paid by EPA, and the remainder by the larger generators. The funding arrangement also recovered approximately \$4 million in past EPA costs and was incorporated into a consent decree signed by 80 of the larger generators.

The Bypass 601 settlement represents the first settlement in the nation to use the new response claims procedures regulation codified at 40 CFR 307. To simplify the application process, the Agency shared sections of draft guidance documents to help the PRPs prepare the application. Also, the Agency used streamlined language in the preauthorization decision

document that embodies the terms and conditions of preauthorization. EPA Headquarters provided the Region with model consent decree language necessitated by preauthorization, which simplified the settlement process.

Findings

The larger generators presented their “good faith” offer on October 11, 1992, and the Agency agreed in principle on November 1, 1992. The drafting of the preauthorization mixed-funding application and its review were completed in three months. This process was greatly streamlined through the use of model language for the preauthorization

decision document, and by sharing EPA draft guidance for completing the document with the PRPs. The amount of time saved by the use of a mixed-funding agreement at the Bypass 601 site cannot be determined because it is the first settlement of its kind reached under the new regulation, and, therefore, cannot be measured against a baseline.

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Jacksonville Municipal Landfill/Rogers Road Municipal Landfill - Region 6

Background

The Agency uses mixed funding in situations where it is appropriate to recover less than 100 percent of the site costs from potentially responsible parties (PRPs) in a particular settlement. There are three types of mixed funding: preauthorization (where PRPs perform the work and the Agency agrees to reimburse them for a portion of the costs); cashouts (where the PRPs fund a portion of the work that EPA performs); and mixed work (where the PRP and the Agency perform different aspects of the cleanup).

The settlement at the Jacksonville and Rogers Road Landfills represents a unique and innovative application of the mixed-funding initiative of the Superfund administrative improvements effort. Falling under the "mixed-work" type of funding, the settlement of liability for cleanup costs at these two sites will be shared between the Agency and the City of Jacksonville, Arkansas, the landfill operator. The City will use in-kind services to fund its share of the settlement, with heavy reliance on its own work force to complete some of the site work.

Description of Site

The Jacksonville and Rogers Road Landfills are two municipal landfills located near the City of Jacksonville, Arkansas. The two landfills, which were operated by the City of Jacksonville, are on properties located within one-half mile of each other. Because of the similarities between the

wastes disposed of at each site, they are being treated as one site. Unknown quantities and types of wastes were burned in open areas and buried in unlined trenches at the sites over varying periods of time from 1953 to 1974. Both landfills were closed by the State of Arkansas by 1974.

Because the sites were operated as sanitary landfills and not as permitted Resource Conservation and Recovery Act (RCRA) disposal facilities, waste transporters were not required to provide information regarding generators, waste types, or quantities. Consequently, the PRP search focused on identifying the generators most likely to have sent waste to the landfills.

Implementation

Initially, the Region 6 enforcement team approached the major PRPs and requested their voluntary cooperation in the cleanup of the landfill sites. At that time, the PRPs were unwilling to commit to funding the cleanup. The EPA team then approached the State of Arkansas.

Under the provisions of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the State would have been responsible for 50 percent of all costs incurred at the Superfund sites because they were operated by a political subdivision. The potential financial liability for the State would have been approximately \$3 to \$4 million. The State indicated that fiscal constraints to its budget

would inhibit its ability to fund the cleanup at that time, and progress toward cleanup was stalled. The Agency, therefore, began to seek an alternative solution.

The Region 6 team approached the City of Jacksonville with a proposal that the City cover a share of the cleanup costs with in-kind services using its own labor force. Negotiations between the Agency and City officials produced two consent decrees (CDs) covering the settlement of liability at both landfills. The net value of the City's participation will exceed 50 percent of the expected \$3.1 million remedial action cost.

During the negotiation of the mixed-funding agreement, the Region 6 team became aware that the City labor unions were concerned that its members would be handling hazardous waste. To accommodate this concern, the Agency allowed the segregation of work at the sites into two parts — hazardous and non-hazardous. The Agency will perform all work related to hazardous materials, and the City will perform the remainder of the work related to the handling of non-hazardous materials. Additionally, the City sought and was granted contribution protection from the other major PRPs. The CDs were signed on December 20, 1993, and entered on June 20, 1994. The removal and incineration of all hazardous waste was completed by November 1994, and site regrading and restoration will be complete in the near future.

Findings

The mixed-work settlement at these sites establishes an important precedent for treating

municipalities differently than other PRPs. The mixed-funding component of the administrative improvements effort provided the flexibility to make alternative arrangements to cover a portion of the cleanup costs for the two landfill sites in this case where the municipality did not have the resources to satisfy its financial responsibility under CERCLA. The Agency was able to adopt a cooperative role and seek an equitable solution that provided the City the latitude to meet its financial responsibilities in an alternate yet appropriate way. Using in-kind services allowed the City to preserve its scarce capital resources while expanding the employment of its work force. The City was also willing to agree to the settlement in order to gain protection from third-party suits and to establish its image as a cooperative partner in the enforcement process. As a result, the mixed-work settlement allowed for the completion of remedial action at the site in just four months from the time the settlement was entered.

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Initiative 5: Streamline and Expedite the Cleanup Process

Description

The main goal of this continuing initiative is to accelerate cleanups and standardize the cleanup decision-making process for certain types of sites. Specifically, the effort focuses on standardizing remedial components at sites and sharing information between sites to expedite the cleanup process. The initiative also attempts to eliminate duplication of effort, facilitate site characterization, and simplify analysis of cleanup options. In many cases, the components of this initiative can save time and/or money, while increasing cleanup effectiveness and consistency of remedy selection.

Performance

Presumptive Remedies: Presumptive remedies are standardized remedies for certain types of sites based on scientific and engineering analyses performed at similar Superfund sites. The Agency can realize cost and time savings by using presumptive remedies and limiting analyses during the remedial investigation/feasibility study (RI/FS) stage.

The development of presumptive remedies includes evaluating technology-implementation data for similar types of sites and drafting guidance that identifies remedy selection patterns based on the identified site characteristics. Presumptive remedies encourage streamlined RI/FS processes designed to implement the presumptive remedy correctly.

- In September 1993, the Agency identified potential presumptive remedies and issued guidance on general policy and procedures for cleaning up municipal landfills and volatile organic compounds (VOCs) in soils.
- In September 1993, the Agency developed a draft presumptive remedy guidance for ground water (which includes dense non-aqueous phase liquids strategy).
- EPA continues to identify sites for evaluating the use of presumptive remedies and has begun demonstration projects on municipal landfills and sites with VOC contamination in soil. To date, the Agency has identified seven demonstration sites, including three municipal landfill sites, that it will survey before issuing the guidance.
- Region 7 developed draft presumptive remedies in October 1994 for three site types: polychlorinated biphenyls (PCBs), manufactured gas plant, and grain storage contaminated sites. EPA Headquarters will finalize these drafts based on comments received.

Standardized Specifications: EPA develops remedial designs in response to site-specific characteristics. Developing and using standardized remedial designs based on research collected on specific types of sites can reduce cleanup costs and decrease cleanup time.

The purpose of standardized design specifications is to streamline the design process and to foster uniformity and consistency across projects.

Through an interagency agreement, EPA is partially funding the U.S. Army Corps of Engineers (USACE) development of standardized design specifications for various activities on components of hazardous waste remediation work. These specifications are prewritten to provide generic non-site-specific portions of the text, while allowing for editing of site-specific sections. After a joint review, USACE distributes

the standardized components to the federal, state, and contractor community through the widely used Construction Criteria Data Base, which is periodically updated to reflect design improvements and new field information. Standardized design components include air stripping systems, site clearing and grubbing, thermal treatment systems, and health and safety requirements. To date, 15 standardized design documents have been produced and are in use.

Addressing Dense Non-Aqueous Phase Liquids Contamination (DNAPLs): In September 1993, the Agency concluded a study of the pervasiveness of DNAPLs at Superfund sites. DNAPLs include contaminants, such as chlorinated solvents, with extremely complex fate and transport characteristics. These heavy contaminants will not mix with water and typically exist at the bottom of an aquifer. Current site characterization and cleanup strategies may fail to detect their presence, which can make aquifer cleanup difficult or impossible using current technologies. The presence of DNAPLs may result in incomplete site assessments, inadequate remedial design, and increased costs during remedial action, and may ultimately control the success or failure of ground-water cleanups.

Agency research indicates that approximately 85 percent of all Superfund sites have ground-water contamination and 60 percent of all Superfund sites are likely to have DNAPL contamination. Under the DNAPL initiative, the Agency is continuing to develop a comprehensive strategy to detect and address DNAPL contamination. This strategy focuses on locating contaminant ground-water plumes and DNAPL sources within plumes, evaluating the extent of DNAPL contamination, and initiating appropriate responses using a phased approach. The initiative places special emphasis on early actions to prevent exposure, contain plumes and DNAPL sources, and prevent migration. The initiative also encourages consideration of innovative technologies to address DNAPL contamination.

In 1994, the Agency conducted technical and policy/training seminars in all ten Regions to examine policy issues for addressing DNAPL contamination. Over 2,500 participants attended, including representatives from federal, state, and other regulatory agencies, private and public contractors, potentially responsible parties (PRPs), and academicians. The Agency also released technical guidance on characterizing DNAPL sites, and guidance on technical impracticability waivers for sites where complete restoration is not feasible, including DNAPL sites. EPA continues to monitor the implementation of the guidance.

On August 23, 1993, the Agency issued model consent decree language for DNAPL sites involving technical impracticability waivers. The language addresses situations where ground-water remediation will not achieve performance standards and is, therefore, excluded from the Record of Decision by a waiver of performance standards or the selection of a contingent remedy. The performance-standard waiver may require further actions, such as operations to prevent migration of the plume or prevent exposure to contaminated water, and may require PRPs to perform work additional to or different than that specified in the original statement of work.

Lead Initiative: Lead is a highly toxic metal that can adversely affect the nervous and reproductive systems, delay physical and neurological development, and retard cognitive and behavioral development. Lead contaminates many Superfund sites, particularly large-area mine tailing or smelting sites.

On July 14, 1994, the Agency issued the Office of Solid Waste and Emergency Response *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*. This directive assists risk managers in making accurate risk estimates and selecting effective cleanup methods. The lead initiative takes into consideration the activities and requirements of other Agency offices, such as the implementation of Title X of the Comprehensive Housing and Urban Development Act of 1992, that requires EPA to promulgate health-based standards for lead in soil, paint, and dust. The initiative also reflects careful consideration of strategies for large-area lead sites, and preliminary results from EPA's *Three City Study* on lead levels in children's blood.

Land Use Initiative: Under the land use initiative the Agency planned to issue a policy clarifying the role of land use in remedy selection. This component of initiative 5 is on hold and was not completed as part of Superfund administrative improvements.

Benefits

Standardized decision-making processes and remedies combined with practical approaches to addressing certain types of contamination allow the Agency to improve cleanup efforts. The initiative's emphasis on the similarities among sites as opposed to the specifics of each site demonstrates EPA's ability to capitalize on experience.

The municipal landfill presumptive remedy is expected to show the greatest time and cost savings of the presumptive remedies since both the characterization and the risk assessment processes are streamlined. As an example, EPA has saved three to six years at one site in the period from the start of the RI/FS to construction initiation.

EPA anticipates that the other presumptive remedies will also provide greater consistency and general acceptability of the remedy by interested stakeholders. Qualitative benefits for presumptive remedies include: streamlined negotiation due to PRP acceptance, and focused site characterization and risk assessment.

The DNAPL policy and guidance, which includes guidance on addressing the technical impracticability of ground-water remediation at DNAPL sites, have resulted in better technical evaluations, more consistent approaches at sites, and greater protection of public health and the environment due to better site management.

Lessons Learned

EPA has found that efforts to streamline cleanups are most effective when multiple initiatives are applied (e.g., presumptive remedy and early action) simultaneously on a site-specific basis.

The actual time and cost savings are expected to be dependent on the presumptive remedy as well as other site-specific factors (stage of the remedy, complexity of the PRP involvement). The effort to quantify results has been difficult because of the complexity of sites and other compounding factors.

The Agency learned that early communication with stakeholders is critical to the overall success of streamlining initiatives. This allows stakeholders to understand the processes and participate in key phases of site remediation, and reduces the perception that a streamlined process does not provide enough opportunity for stakeholders input.

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BFI-Rockingham Landfill Site - Region 1

Background

A component of EPA's efforts to streamline and expedite cleanups is the use of presumptive remedies. Presumptive remedies are preferred technologies for common categories of sites based on EPA's historical patterns of remedy selection and scientific implementation. The objective of the presumptive remedy initiative is to use the program's past experience to streamline site investigation and speed up selection of cleanup activities. Presumptive remedies can foster consistency in remedy selection, and reduce the cost and time required to clean up similar types of sites.

Description of Site

Disposal Specialists, Inc. (DSI) operated the BFI-Rockingham Landfill site in Rockingham, Vermont, as a 17-acre solid waste landfill from 1968 to 1991. Although municipal solid waste constitutes the majority of waste at the site, the landfill accepted industrial solid and liquid wastes during the 1960s and 1970s. The landfill also contains a 1.5-acre lined cell used during the 1980s for the disposal of municipal incineration ash. Browning Ferris Industries of Vermont, Inc. (BFI-VT) currently operates a solid waste transfer station on the site. The landfill sits on a ridge within 300 yards of the Connecticut River. EPA placed the landfill on the National Priorities List (NPL) in October 1989.

The State of Vermont, which has been involved in the regulation of the landfill since 1968, required that several hydrogeological investigations be performed, and ordered semi-annual sampling of monitoring wells surrounding the landfill. The State also required the installation of an alternate water supply for three residences located between the landfill and the Connecticut River. DSI installed an active gas collection system in the landfill in 1989.

Implementation

In July 1992, EPA entered into an administrative order on consent with BFI-VT and DSI for a remedial investigation/feasibility study (RI/FS) that would incorporate streamlining principles to expedite the site cleanup. The statement of work for the site emphasized the use of the presumptive remedy guidance *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites*, February 1991, and *Presumptive Remedy for CERCLA Municipal Landfill Sites*, September 1993. The Agency also selected the site as a national pilot for the evaluation of the presumptive remedy guidance.

In accordance with the landfill guidance and presumptive remedy directive, the Agency used historical data to streamline the risk assessment and RI/FS, and establish an initial basis for action. Historical data for the site included the results of the hydrogeological investigations, semi-annual sampling performed by DSI for the State solid

waste program, and historical photos of the landfill. By examining historical data, the Agency identified a ground-water risk and recognized that intense concentrations of contaminants, known as "hot spots," were unlikely.

Next, the Agency accelerated the RI by eliminating a complete chemical characterization of the landfill and focusing source control RI/FS activities on gathering data necessary to implement the presumptive remedy. This has an additional benefit of reducing the need for pre-design studies. After performing the streamlined RI/FS, the Agency selected a landfill cap remedy.

EPA streamlined the remedial action (RA) by quantifying the potential ground-water risks to support the need for a source control action and qualitatively evaluating other pathways addressed by the source control action. All pathways outside the scope of the presumptive remedy were fully evaluated in the RA. The Agency used the most recent historical information to initiate the development of the risk assessment early in the RI/FS. Data collected during the RI/FS was compared with the most recent historical information to support the useability of the historical data.

To further expedite site cleanup, the Agency implemented a non-time-critical removal action for the components of the cleanup prescribed in the presumptive remedy. In September 1993, EPA signed an action memorandum selecting a remedy that required the multi-layer landfill cap and expanded gas controls. In November 1994, the cap construction was 85 percent complete.

The final phase of the action involved aspects of the cleanup that were beyond the scope of the

presumptive remedy, such as off-site ground-water and surface water contamination. The Agency addressed the portions not included in the presumptive remedy with a Record of Decision (ROD) signed in September 1994.

Findings

The presumptive remedy approach at the BFI-Rockingham Landfill site decreased the time period from RI/FS start to construction initiation from the typical five to eight years to two years. In addition, the Agency reduced the time period from RI/FS start to ROD signing for those activities omitted from the presumptive remedy from three to five years to two years. The time saved resulted from the use of the presumptive remedy approach to streamline the RI/FS process and implement the source control action while completing the RI/FS for the management of migration action. Other factors influencing cost and time savings were the cooperative and proactive participation of the State government and potentially responsible parties.

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Indian Bend Wash South Site - Region 9

Background

At the Indian Bend Wash South Site, Region 9 employed two innovative approaches to administering remedy selection that will streamline and expedite the cleanup process. The Agency chose to implement both a presumptive remedy and the "plug-in" approach. Using a presumptive remedy allows EPA to assume that a remedial technology is appropriate in cases where treatability data substantiate its effectiveness. Based on site data and pre-existing treatability data from other facilities, soil vapor extraction (SVE) was selected as the presumptive remedy because it has been determined to be effective in removing volatile organic compounds (VOCs) from soils of the type found at Indian Bend Wash South. EPA also used the "plug-in" approach, under which multiple, similar, but separate subsites make use of the same remedy at different times. Because the Indian Bend Wash South site contains a number of distinct but similar facilities that have released VOCs into soils, the plug-in approach is appropriate.

Description of Site

The Indian Bend Wash site covers 13 square miles in Scottsdale and Tempe, Arizona. The site consists of two study areas, Indian Bend Wash North and Indian Bend Wash South. This case study focuses on Indian Bend Wash South, where the plug-in approach is being used. In 1981, the cities of

Scottsdale, Tempe, and Phoenix discovered VOCs in municipal ground-water production wells. The contaminated wells were shut down and are currently out of service; one well that has wellhead treatment remains in operation. The land surrounding the site is used for residential, light industrial, and commercial purposes.

The contaminants of concern in the affected wells, VOCs, are constituents of solvents used by a variety of industries as degreasing and cleaning agents. Indian Bend Wash South contains a number of separate industrial and business properties that have released contaminants into soils as a result of discharge of solvents or contaminated wastewater through dry wells or leachate systems, direct discharge to land surface, leaking tanks or pipes, spills, and other means.

Implementation

The remedy chosen for the Indian Bend Wash South site was termed the VOCs-in-Vadose-Zone remedy. This remedy utilizes two specialized approaches, and EPA's feasibility study (FS), risk assessment, and Record of Decision (ROD) for the site are structured to interface with these approaches. EPA is the lead agency for the Indian Bend Wash South site. Funding is being provided by a combination of sources, as potentially responsible parties (PRPs) are performing some work, and Superfund is funding other work.

The use of a presumptive remedy in the case of the Indian Bend Wash South site was justified due to

the availability of pre-existing treatability data supporting the use of SVE to treat soils of the type found at this site. This included data from Indian Bend Wash North, the other study area of Indian Bend Wash. The remedy calls for SVE to be applied to soils at the site that have unacceptable levels of VOCs in the vadose zone (soils above the water table) and also for air emissions treatment.

The plug-in approach is designed to address a site that has many similar, smaller subsites within it. A base remedy is established, and a process is designed by which the separate subsites “plug in” to it. The Indian Bend Wash South site was an ideal candidate for this approach because it is essentially a mega-site, a multitude of sites within one larger site. There is no single source of contamination. Rather, contamination has emanated from many individual properties over a wide area, and each subsite is a separate source area that needs to be investigated. Performing the same work for all the operable units would mean re-inventing the wheel many times over and using many resources. Similarly, waiting for all remedial investigation (RI) work to be completed for all subsites before signing the ROD would cause unnecessary delays in cleanup.

SVE was selected as the remedial action, and a standard process will be used to determine where it will apply. If the conditions at a subsite match pre-defined characteristics, the subsite will “plug in” to the remedial action and be subject to its requirements. After plugging into the remedy, remedial design and action can begin at the subsite. Subsites that do not meet the pre-defined criteria are not plugged in but can be addressed by other remedies, removal actions, or modifications to the remedy, if necessary. The plug-in approach is flexible so that the remedy can be adjusted to deal with unexpected conditions that occur during the RI at the subsite.

EPA has performed more than 50 screening investigations at individual facilities, including

interviews, inspections, screening sampling, and other work. These investigations identified several facilities where VOC soil gas was sampled in excess of 1,200 parts per billion (ppb), and several focused RIs followed. PRPs are required to conduct the focused investigations according to strict standardized operating procedures provided by EPA. EPA is relying on soil gas for vadose zone characterization of VOCs at the site.

Findings

EPA’s initial evaluation indicated that employing the plug-in approach for the VOCs in soil at Indian Bend Wash South could reduce the cleanup schedule by ten years and save at least \$5 million. The plug-in ROD has been developed and plugged into the first subsite at Indian Bend Wash South site. Time needed to create the FS and ROD was no more than normal, and it is assumed that this time will decrease as experience with the plug-in approach is gained.

As compared with the start of this pilot, funding and resources for Indian Bend Wash South have decreased. Consequently, progress on the RIs for the subsites is being compromised, and the Region is not realizing the full benefits of the plug-in approach. Several more plug-in completions and RD starts could have occurred if the resources were available to keep up with the fast pace at which the plug-in approach allows the Superfund process to operate.

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Initiative 6: Develop Soil Screening Levels

Description

Soil contamination is a problem at many hazardous waste sites. Soil contaminant cleanup levels and levels of concern have historically been set on a site-specific basis through the risk assessment and remedy selection process. This process requires a detailed examination of the entire site, a time-consuming endeavor. EPA is developing, as part of this initiative, soil screening levels (SSLs) for a variety of common chemical contaminants to decrease the time and, therefore, the cost required to complete soil investigations. The SSLs can be used as a tool to identify contaminant levels below which there is no concern under the Comprehensive Environmental Response, Compensation, and Liability Act and above which further site-specific evaluation is warranted. The SSLs may also be used as preliminary remediation goals in some situations.

Performance

EPA is developing the *Soil Screening Guidance* to serve as a tool designed to significantly reduce the time and cost it takes to complete soil investigations and cleanup actions, as well as to improve the consistency of these actions across the nation. The draft guidance was written to assist remedial investigation/feasibility study (RI/FS) work at Superfund National Priorities List (NPL) sites. It is expected to assist site managers in quickly dividing sections of a site into two categories: sections that pose little risk from soil contamination and sections that require additional study to determine what actions may be needed to clean up the contaminants.

The guidance provides a framework for developing risk-based, site-specific SSL values that can be compared to samples taken from a site to determine whether a particular section of a Superfund site poses a soil-contaminant risk warranting further study. The guidance provides a simple, site-specific method for developing SSLs, with options for more detailed analysis or use of genuine values. The SSLs are designed for a residential scenario and are based on three exposure pathways: soil ingestion, inhalation of volatile chemicals or fugitive dust, or ingestion of contaminated water caused by migration of soil contaminants into ground water. The most recent guidance, December 1994, provides SSLs for 107 common contaminants.

EPA completed a pilot study in 1994, to determine whether the exposure pathways addressed by the draft soil screening guidance are sufficient to model the exposure pathways of a residential area. EPA examined the soil contaminants and exposure pathways from ten sites and concluded that the guidance pathways were sufficient for their intended purpose and that additional exposure pathways did not need to be quantitatively incorporated into the SSL process.

EPA is using the SSL framework at a demonstration project Superfund site. The demonstration will provide information regarding the usefulness of the guidance, as well as the three methodologies presented in the framework.

EPA's Office of Emergency and Remedial Response is developing a document to explain the SSL process to the general public. The document will present the process in a clear, concise manner without relying on cumbersome technical explanations.

Benefits

It is too early to quantify the benefits of the SSL guidance because they have not been fully implemented. It is expected, however, that the SSLs will complement the ongoing Superfund Accelerated Cleanup Model and streamline the RI/FS process by

- Increasing the consistency of soil-contaminant risk assessments
- Focusing investigations on pathways of concern
- Eliminating from further investigation areas of NPL sites that do not pose a significant soil contaminant risk
- Concentrating resources on areas of NPL sites that pose significant soil contamination risk

These benefits are expected to reduce time, cost, and the level of EPA resources required to evaluate a site.

It also is expected that the SSL guidance will provide a framework for other cleanup efforts including Resource Conservation and Recovery Act (RCRA) cleanups, state-sponsored cleanups, and voluntary cleanups. A host of outside parties, including industry and state representatives, have already contacted EPA regarding the SSL methodologies. The Agency conducted extensive outreach to small and large industries, environmental groups, the Department of Housing and Urban Development, the Federal Deposit Insurance Corporation, the lending community, environmental auditors, the insurance industry and others to promote appropriate application of the SSL guidance, both within and outside the NPL context. EPA may see, as a result of state and industry interest, a reduction in risk to public health and the environment if states and industries undertake preemptive cleanups using the SSLs as cleanup levels. Such activities also would result in future reductions in demands on EPA resources.

Lessons Learned

EPA conducted extensive outreach to involve outside scientific and technical experts in the development of the soil screening methodologies. The involvement of such outside experts increased the development time, but also increased the integrity, quality, and overall acceptance of the final product.

EPA believes that effective community outreach programs have increased public awareness and understanding of the procedures and mitigated negative public reaction. To further this, EPA is continuing community outreach programs designed to increase public awareness of the site-evaluation process; developing a risk communication tool to facilitate public understanding of the guidelines; and seeking community groups' comments on the clarity of draft SSL guidelines to a non-technical audience.

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Initiative 7: Implement an Environmental Justice Strategy for Superfund Sites

Description

In April 1993, EPA's Superfund program began a series of demonstration projects in each Region to provide the basis for developing a national Superfund environmental justice strategy. In November 1993, the Assistant Administrator of the Office of Solid Waste and Emergency Response (OSWER) expanded the scope of the environmental justice initiative by directing the formation of a task force to analyze environmental justice issues specific to each of the waste programs, and to develop recommendations to address these issues. The OSWER Environmental Justice Task Force included representatives from all OSWER program areas, the Regions, and other EPA offices with an interest in waste programs and environmental justice.

Subsequent to the establishment of this initiative, President Clinton issued Executive Order 12898 on environmental justice (February 11, 1994), which focused the attention of all federal agencies on environmental justice issues. The order is comprised of four central themes including incorporation of environmental justice into federal agency decision making such as in rulemakings, administrative actions, permit decisions, and enforcement activities; identifying and addressing disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; conducting activities that substantially affect human health or the environment in a manner that does not have discriminatory effects; and applying the order equally to Native American programs.

The Executive Order also focuses on the establishment of an interagency working group; the development of Agency strategies on environmental justice; further research, data collection, and analysis; and the development of interagency pilot projects focusing on a medical assistance program, community empowerment programs, residential initiatives, a labor program, public housing, and Indian affairs.

EPA's OSWER has developed an environmental justice strategy to implement the requirements of the Executive Order. The task force produced a report that contained a number of recommendations, including the following: issuing an environmental justice directive on development of policy, regulations and guidance; developing interagency partnerships with the Department of Housing and Urban Development (HUD), the Department of Agriculture, the Economic Development Administration (EDA), the Department of Health and Human Services and others; expanding public participation in the Superfund remedial process through the use of community advisory groups; expanding risk assessment to include multiple sources of risk in a community; and other recommendations.

Performance

OSWER Directive

To ensure that all waste programs treat environmental justice as an integral part of all EPA policies, guidance, and regulations, OSWER's Assistant Administrator issued OSWER Directive 9200.3-17 on September 21, 1994. It requires staff to evaluate each decision document subject matter for the possibility of disproportionately adverse impacts on minority and low-income communities. Staff are also required, when appropriate, to solicit meaningful input from key stakeholders, including members of the environmental justice community and the regulated community, at all critical stages of OSWER policy, guidance, and regulatory development.

To promote consistent implementation of environmental justice goals within EPA, the Agency has also developed draft guidelines to assist staff in identifying communities that raise or are likely to raise environmental justice concerns. These guidelines are to be used as a reference by all waste programs staff who have influence over site-specific decision making or who have contact with client communities (i.e., community involvement coordinators, site assessment managers, on-scene coordinators, remedial project managers, and assistant regional counsel). A draft of these guidelines is currently under review by the National Environmental Justice Advisory Council subcommittee on waste and facility siting. These guidelines focus on risk assessment and community outreach dynamics in communities with environmental justice concerns.

NPL Analysis

EPA is being proactive in the use of the Geographic Information System (GIS) program. EPA has completed a demographic analysis of 158 National Priorities List (NPL) sites (*Preliminary Analysis of Population Demographics*, August 1993). The analysis identifies populations (White, Black, Indian, Asian, Hispanic, and Other) living near 158 sites. Data on populations above and below the age of 18 living within four miles of a site is included in the analysis. To complete this analysis, the study was expanded to include all 1,200 NPL sites; a final report is expected to be completed in early 1995.

Proactive Site Assessment

In addition to the demographic study, EPA has made plans to conduct a pilot proactive site assessment program, in conjunction with states, tribes, and local communities, to ensure that sites in areas with low income populations and minorities that warrant EPA action are identified. To accomplish this, EPA plans to undertake the following projects

- Fund a cooperative agreement with a tribe to identify previously undiscovered sites for assessments
- Through a grant to a non-profit organization such as a university, develop materials and a program for community organizations in minority areas to become involved in site identification and provide information useful to EPA and state programs
- Selection by Regions of two areas, one urban and one rural, where community groups have expressed concern about risks from multiple sources. The Regions will work with state and local governments to take a geographic approach in assessing the impacts of sites collectively and individually and will develop strategies for appropriate actions

EPA also plans to analyze site assessment priority setting to ensure that low-income and minority communities are covered. To accomplish this, EPA will review existing site assessment guidance for prioritization criteria and factors; obtain Regional input on other criteria considered by site assessment managers and Regional Decision Teams; collect environmental justice prioritization factors from the Environmental Justice Task Force; and compare current criteria with that of the Environmental Justice Task Force and provide the Regions with any additional proposed criteria for review.

National Environmental Justice Advisory Council

In an effort to improve communications and develop trust between EPA and affected communities, under the Federal Advisory Committee Act, EPA established the first National Environmental Justice Advisory Council (NEJAC), which contains a subcommittee on waste and facility siting. The committee and subcommittee were set up to provide advice and information on environmental justice issues with regard

to waste programs. A goal of the subcommittee is to foster mutually supportive partnerships and communication among all levels of government, business, communities, and academic institutions to address environmental justice issues.

There have been two meetings of the NEJAC subcommittee (August 4 - 5, 1994/Albuquerque, NM and October 25, 1994/Herndon, VA). The subcommittee is chaired by Charles Lee of the United Church of Christ Committee on Racial Justice. The subcommittee has endorsed the "cutting edge" effort represented by the OSWER Environmental Justice Task Force report.

Interagency Initiatives

EPA is working very closely with the Department of Health and Human Services (HHS), the Agency for Toxic Substances and Disease Registry (ATSDR), and the National Institute of Environmental Health Sciences (NIEHS) to conduct community outreach in minority and low-income areas with serious health concerns. HHS is helping ATSDR provide medical referral services, which are beyond the scope of ATSDR, to communities with a dearth of health facilities.

Currently, EPA, HHS, and ATSDR are working on three medical assistance pilots: Del Amo/Montrose site in Torrance, CA; the Old Reichhold Bros. site in Columbia, MS; and the Southern Wood/Piedmont site in Augusta, GA. These pilots provide technical assistance to state and local agencies, environmental health education to residents, medical testing, referral to specialty clinics, and medical monitoring. EPA has identified 20 more sites where additional health support is needed.

EPA is also conducting a survey of sites with lead paint problems to see how they have been addressed and to determine options for addressing similar problems in the future. EPA is working with the HUD lead abatement program to address the lead problem in housing where minority populations live and in low-income areas.

To further enhance the development of equity and justice in the Superfund program, EPA will continue to identify opportunities for coordination at sites with other federal agencies including HUD, Department of Labor, and EDA. Attention will focus on economic redevelopment, risk management, community outreach, and public health activities.

Community Involvement/Outreach Initiatives

EPA is committed to helping communities surrounding Superfund sites to participate more fully in the Superfund remedial process. One of the major environmental justice initiatives in the Superfund program involves developing community advisory groups (CAGs) for selected Superfund sites. EPA is developing a CAG guidance that describes membership, functions, objectives, and scope of authority. A draft is currently under review. Each Region identified a pilot site for the establishment of CAGs in FY 1994, and each Region will implement a CAG at these sites by the end of FY 1995. The pilots will

- Form groups representing the diverse interests of the community
- Provide an open forum to discuss Superfund site issues — bringing all the players to the table from the beginning
- Increase opportunities for EPA and the community to share information and work together in decisions affecting the site and community

In an effort to facilitate meaningful community involvement in environmental decision making at Superfund sites, EPA formed the Environmental Teacher Institute, which is a partnership between EPA and Morgan State University located in Baltimore, Maryland. This initiative invites teachers from areas where hazardous

waste is of serious local concern and from communities of low-income and diverse cultural backgrounds. The teachers learn about key environmental issues, how to develop an environmental action plan, and how to obtain scientific information, which will ultimately be shared with students and local citizens.

The first program was held in 1993, and included lecture and discussion sessions with senior EPA officials, specialists, and representatives from environmental groups and industry. As part of the session, teachers visited an active site and participated in workshops designed to assist them in developing programs to teach their students and other teachers about environmental issues and environmental career potentials.

EPA also held a national meeting in September 1993, sponsored by the National Advisory Council on Environmental Policy and Technology (NACEPT) to hear citizens' opinions on environmental justice issues. Topics discussed included community involvement, empowerment, non-discriminatory implementation and enforcement, economic development, redevelopment of cleaned sites, and creation of a community-wide environmental quality approach.

Additionally, Superfund Revitalization Public Forum meetings were held in May 1993, in Dallas, and in November 1993, in Atlanta. These meetings were initiated to collect ideas from different interest groups on how the Superfund process can be improved. Environmental justice issues were discussed at each of these meetings, including the need to communicate more effectively and empower low-income communities and minorities. Discussions also centered around the need for EPA to examine the exposure rates to contaminants that different communities face due to lifestyle or other conditions, such as disparities in health and nutritional status (e.g., less access to health care).

Native Americans

EPA has committed to expanding its outreach efforts to Native American Tribes, including expanding technical assistance to tribal governments, initiating pilots to implement environmental program activities with other federal agencies on tribal lands, and has co-sponsored the second National Tribal Conference on Environmental Management in May 1994.

Other Activities

Each of the Regions has been actively involved in developing and implementing environmental justice strategies at a number of Regional pilot sites. Some Regional environmental justice activities have included

- Using information from GIS to characterize population demographics, which allows EPA to examine the location of hazardous waste sites with respect to the most sensitive minority and low income populations. Other efforts have involved developing the LANDVIEW program for use as a screening tool and indicator for potential environmental justice issues at sites
- Incorporating environmental justice initiatives with community relations plans for sites

In FY 1993, EPA issued simplified Technical Assistance Grant (TAG) materials including an informational pamphlet, a fact sheet, and an application package. The pamphlet and fact sheet provide basic information including a description of what a TAG is, how it is related to the Superfund program, and how citizen groups may apply for a TAG. The application package provides citizens with detailed instructions on filling out TAG application forms.

The amount of information has a direct impact on the level people can participate in the Superfund program. To foster greater fairness and to facilitate greater community involvement among minority communities at hazardous waste sites, EPA published several other Superfund documents in other languages (e.g., Spanish, Portuguese, Vietnamese) during FY 1994.

Benefits/Lessons Learned

EPA has found that by understanding the demographics of an area it can implement strategies that allow for more effective community involvement and outreach. Through the use of innovative community involvement, EPA is expanding its communications and outreach network. By forming partnerships with other agencies, EPA is learning a great deal about how these programs can compliment the efforts of EPA, particularly in the areas of health and economic redevelopment.


Through interaction with various stakeholders on the NEJAC subcommittee on waste and facility siting and through public meetings, EPA is learning a great deal about the specific environmental concerns in client communities.

EPA also has found that by educating staff about environmental justice concerns, they are able to work more effectively with communities.

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	United States Environmental Protection Agency	Office of Solid Waste and Emergency Response	February 1995
	Diamond Alkali - Region 2		

Background

In April 1993, EPA's Superfund program began a series of demonstration projects in each Region to provide the basis for developing a national Superfund environmental justice strategy. In November 1993, the Assistant Administrator of the Office of Solid Waste and Emergency Response (OSWER) expanded the scope of the environmental justice initiative by directing the formation of a task force to analyze environmental justice issues specific to each of the waste programs, and to develop recommendations to address these issues. The OSWER Environmental Justice Task Force included representatives from all OSWER program areas, the Regions, and other EPA offices with an interest in waste programs and environmental justice.

Description of Site

The Diamond Alkali site includes a former pesticides manufacturing facility and properties located at 80 and 120 Lister Avenue in Newark, New Jersey, and a six-mile reach of the Passaic River known as the Passaic River Study Area. The Passaic River Study Area is bordered on the eastern shore by the towns of Harrison and Kearny, and on the western shore by the City of Newark, New Jersey. Several companies have been situated along the banks of the river over the last 100 years. Studies conducted at the site have revealed that many of the companies manufactured, stored, and disposed of toxic chemicals that have been found in the Passaic River sediments. The toxic chemicals that have been found include pesticides, dioxin, polychlo-

rinated biphenyls (PCBs), metals, and other hazardous substances.

The site was placed on the National Priorities List in 1983. In 1983 and 1984, the State of New Jersey issued separate bans on the consumption of fish and crabs from affected sections of the Passaic River; however, many nearby residents still consume seafood from the river. EPA has negotiated consent orders with a potentially responsible party to design and construct the containment remedy at the land-based properties at 80 and 120 Lister Avenue and to conduct the remedial investigation of the river under EPA oversight.

The site is located in the Ironbound section of Newark, a densely populated, heavily industrialized urban area with many non-English speaking residents. Early community relations efforts at the site were inadequate, considering the make-up of the community. The community was dissatisfied with the length of time required for site cleanup, the lack of information provided to the public, and with EPA's decision to contain land-based contamination rather than treating it off site. In 1993, EPA began conducting interviews in the community to obtain information for the creation of a new community relations plan.

Implementation

EPA has implemented an innovative public outreach program to improve the level and method with which it communicates with minority and low-income communities living near this site and to

involve these communities in the decision-making process. The Agency took a creative approach toward implementing a community relations plan that would gain back the community's trust.

EPA involved the community early in the cleanup process before important decisions were made about the remedial investigation by sending a copy of the scope of work to local citizens, officials, and organizations for comment. A meeting was held to answer questions and to address the community's concerns. While increasing community involvement may have slowed the cleanup process initially, EPA feels that by addressing the community's concerns early, future problems may be prevented.

During initial community interviews, EPA identified nine interest groups, including local residents, anglers, and crabbers; local county and State officials; the Ironbound Committee Against Toxic Wastes; the Passaic River Coalition; the Port Authority of New York and New Jersey; environmentalists; Vietnam Veterans of America-New Jersey Council; maritime industry organizations, including ocean carriers, marine-terminal operators, shipping and labor associations; and other area industries. To involve all interested parties in the process, a community advisory group (CAG) was formed with representatives from the interest groups and local clergy. In response to a request by the CAG, a tour of the site was held on July 28, 1994.

In an effort to reach the large population of minorities living in the area, fact sheets, flyers, and fishing advisory signs were produced in English, Spanish, and Portuguese. Public notices were translated and placed in both ethnic and local newspapers. EPA used both local translators and a local sign company to complete this work in an attempt to increase the involvement of the local community.

To better distribute information and to build a rapport with community leaders, EPA representatives attended a low-income housing project tenant association meeting. In addition, EPA obtained a list of all of the churches in the Ironbound section and sent public service announcements to all of the clergy. EPA also plans to meet with the clergy to gain ideas on how to more effectively communicate with the community. Informational material was distributed door-to-door and to community centers.

EPA has awarded over \$200,000 in grants to the States of New York and New Jersey for public outreach and education on the fish/crab consumption advisories in effect for these states. The program encourages public outreach via grassroots pathways including churches, local health clinics, one-stop shopping centers, day care centers, and schools. The goal of this program is to notify local residents of fishing advisories in local waterways, including the Passaic River.

Findings

In implementing this initiative, EPA has found that until guidance exists on how community relations activities at sites with environmental justice concerns should be implemented, each Region should develop community relations programs based on site-specific characteristics and the concerns of the community.

EPA also discovered that community relations programs involve a significant amount of time, resources, and planning to be successful and that in some instances, especially in minority communities or low-income areas, a creative approach is necessary for public outreach programs to be successful. Building trust with the community by using grassroots channels such as churches, neighborhood associations, and community centers was found to be effective for increasing community involvement.

Overall, EPA has found that to successfully address environmental justice issues at a site there needs to be ongoing and dynamic interaction with the community to build its trust and to ensure its concerns are addressed.

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Initiative 8: Early and More Effective Community Involvement

Description

Community awareness and involvement is often crucial for effective and speedy implementation of Superfund cleanup actions. EPA involvement can take many forms: working with community groups, conducting public meetings, holding one-on-one living room conversations, publishing newsletters, briefing elected and appointed civic officials, and improving the media's access to the site and site information. EPA's public outreach efforts can help communities understand the Superfund process, provide for more effective community involvement on site decision making, and, in many cases, allow cleanup to take place earlier.

Under this initiative, EPA is taking steps to overcome obstacles to effective community involvement. These obstacles can include inaccessibility of both key site information and site decision makers, difficulties in obtaining Technical Assistance Grants (TAGs), which provide funds to community groups for site study, and problems in obtaining and interpreting health studies. To make information more accessible, EPA has set up community working groups and participated in the creation of site specific advisory boards at Department of Defense sites. In addition, EPA continues to reduce the paperwork involved in obtaining a TAG. TAG materials and application forms have been revised to make them more user friendly. Based on focus group interviews held in June 1994, EPA is developing a TAG informational video to educate citizens. EPA has also streamlined the TAG process, making the grants more accessible to communities who can use TAG funds to hire experts to interpret technical information relating to a site.

The Agency also works to involve communities early in the cleanup process by scheduling presentations, providing site tours, and holding meetings to explain the Superfund cleanup process and emphasize the importance of information exchange between EPA and the public. In these and other ways, the community involvement initiative works to encourage active community participation in the Superfund process from start to finish.

Performance

EPA has completed several activities to provide more effective community involvement. Highlights of these activities are discussed below.

A working group or advisory board has been established at more than eight Superfund sites. Working groups and advisory boards, which are comprised of members of the community, regional environmental groups, potentially responsible parties, and city, county, and regional planning boards, allow these stakeholders and regulating agencies to work together to understand the competing needs and requirements that arise during site cleanup. Each working group and advisory board is designed to fit the needs of the particular community.

EPA has revised a course that educates community members on the goals of the Superfund program and the stages a site must go through before cleanup is completed. The course is designed for community groups of less than 20 people. The course was initially designed by Region 6, but has been modified to apply to all Regions. The revised course incorporates information on the Superfund Accelerated Cleanup Model and administrative improvements.

In an effort to increase community involvement early in the Superfund process, EPA has implemented several innovative approaches. Fact sheets have been developed to guide community members and other interested parties through the site assessment process, answer commonly asked questions, and provide contacts at EPA Regions and Headquarters.

In other efforts, EPA community involvement coordinators, working with remedial project managers, on-scene coordinators, and site assessment managers, are becoming involved in the site planning process early in the prelisting phase. Community involvement coordinators identify points in the cleanup process where EPA should encourage public involvement, for example, during site identification.

To communicate the technical nature of the program in ways that all parties can comprehend, EPA is working to improve its approach to outreach and environmental education. EPA has developed a short guide and video to the Superfund program entitled *This is Superfund: A Citizen's Guide to EPA's Superfund Program*. The video, which has been sent to the Regions, is approximately 10 minutes long and parallels the corresponding brochure entitled *This is Superfund*. Regions can use the guide and video to inform local citizens about the program. The brochure will be translated into Spanish by January 1995.

Region 4 developed a set of fact sheets describing common contaminants, harmful exposure levels, health effects, and recommendations to protect human health. The fact sheets are being distributed to all Regions for use in educating members of the community. Fact sheets describing common treatment technologies for hazardous materials also have been created and distributed.

In other efforts, Regions are improving the way they interact with the public. Some Regions have begun inviting community members to a short discussion of the nature of cleanup activities at a site, followed by a site tour. For some sites, the Agency has set up a toll-free number that citizens can call to hear a recording about the cleanup progress EPA is making at a specific site.

To increase involvement of communities of color at Superfund sites, EPA has been translating documents, guides, and fact sheets into Spanish. Site-specific materials have also been translated. Other language translations, such as Vietnamese, have been undertaken to meet the needs of specific communities.

In June 1994, EPA convened a series of community involvement focus groups with participation by community members, TAG recipients and applicants, and local government officials to get direct feedback on the TAG program and on proposals for new community involvement activities. EPA then produced a 30-minute video, using footage from the three meetings, to summarize the main points made by the participants. The video has been distributed throughout EPA, including all ten Regional community involvement offices, as well as to all focus group participants.

Benefits

Improved public involvement has been noted since the start of the community involvement initiative. Document translation efforts, in particular, afford non-English speaking communities the opportunity to become informed and involved in the cleanup process.

Lessons Learned

The following common themes emerged from EPA's search for improvements in community involvement

- Community working groups can be effective in assisting EPA with remedy selection decisions
- Community involvement benefits EPA and the community
- Citizens want access to information on the technical and administrative aspects of the Superfund program

The Agency has encountered certain problems that are difficult to solve. Primarily, limited resources prevent EPA from pursuing as many community involvement improvements as may be desirable. Second, community satisfaction with existing programs is difficult to measure.

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Pine Street Canal Site - Region 1

Background

Community awareness and involvement is often crucial for effective and speedy implementation of Superfund cleanup actions. EPA involvement can take many forms: working with community groups, conducting public meetings, holding one-on-one living room conversations, publishing newsletters, briefing elected and appointed civic officials, and improving the media's access to the site and site information. EPA's public outreach efforts can help communities understand the Superfund process, provide for more effective community involvement on site decision making, and, in many cases, allow cleanup to take place earlier.

Description of Site

The Pine Street Canal site is located on the eastern shore of Lake Champlain within the City of Burlington, Vermont. The site, which encompasses approximately 50 acres, is located roughly one-half mile south of downtown Burlington. The site consists of an abandoned barge canal and turning basin surrounded by partially filled wetlands along with various industrial, manufacturing, and office buildings. The Pine Street Canal is connected to Lake Champlain, which is a source of drinking water for the City of Burlington and other lakeside communities.

There have been numerous business activities at the site and in surrounding areas, including petroleum storage, soft-drink bottling,

manufacturing, and transportation. Historically, the principal use of the site has been industrial; however, residences, small shops, offices, and public parks are located nearby. A private beach, public bike/running path, and numerous railroad tracks are also located within the study area. Approximately 22 acres of the site are currently designated as wetlands, which provide habitats for a variety of wildlife including beaver, muskrat, and many species of birds and fish.

The Pine Street canal was originally constructed in the late 1800s to transport lumber and other raw materials by barge from ports on Lake Champlain to mills along Pine Street. The Burlington Gas Works coal gasification plant, which began operations at the site in the early 1900s, is the major source of site contaminants. The Burlington Gas Works reportedly disposed of large quantities of coal gasification wastes (by-products), such as coal tar, fuel oil, cyanide, and metals at its former location along Pine Street. The by-products were reportedly disposed of in the wetland areas behind the plant. The site was first proposed for inclusion on the National Priorities List (NPL) in 1981 and listed in 1983.

Implementation

In an effort to foster more effective community involvement at the Pine Street Canal site, EPA and several other interested parties established a coordinating council. The coordinating council is a coalition of community, government, and

business members whose immediate goal is to reach consensus on the studies required for the site. The council consists of representatives from EPA, the State of Vermont, the City of Burlington, U.S. Fish and Wildlife Service, potentially responsible parties (PRPs), and other citizens' groups (including the Technical Assistance Grant recipient). Council members are developing a solution for the site that is acceptable to the community, is based upon sound science, and meets state and federal requirements.

The coordinating council was organized in the summer of 1993, after EPA withdrew its proposed remediation plan for the site in June 1993. Public opposition to the proposed plan led to the discussions that resulted in the formation of the coordinating council. The council's emphasis on public participation, a neutral facilitator, pooling of data, and the participation of all parties' scientists will result in a plan for the site supported by all parties.

To facilitate the activities of the coordinating council, several technical issues work groups were created. The work groups, comprised of representatives of EPA, the State, U.S. Fish and Wildlife Service, the City, PRPs, and the Lake Champlain Committee, have been meeting since mid-November 1993, to identify relevant technical issues. The work group reviewed public comments received by EPA and incorporated potential issues into a working document titled, "Technical Issues Document." A draft statement of work (SOW) was developed by the work group's technical experts and submitted to the coordinating council for review and approval. The coordinating council presented the palled studies to the community for review and comment. The studies have been phased. A Phase I SOW was agreed upon and became an attachment to an administrative order on consent (AOC) in Summer

1994. Phase I field studies were completed in December 1994. A Phase II SOW has been agreed upon and will become part of a second AOC for field work to be performed in 1995.


The coordinating council and technical issues work group hold monthly meetings to discuss site-related issues. All meetings are open to the public and some meetings have been aired on a local cable station. Written summaries of all coordinating council meetings are available in the repositories at the University of Vermont and Fletcher's Free Libraries in Burlington, and the EPA Records Center in Boston, Massachusetts. Fact sheets have been mailed to over 800 people and a local newspaper has published a series of articles on the coordinating council meetings.

Findings

Progress at this site has been better since this collaborative effort in which the interested parties seek common ground was initiated. If the coordinating council approach is successful in Burlington, the process may work at other Superfund locations as well. The community has worked hard to organize a Vermont response to the Pine Street site, and now has the opportunity to be directly involved in effecting an environmentally sound and cost-effective solution.

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	United States Environmental Protection Agency	Office of Solid Waste and Emergency Response	February 1995
	Ralph Gray Trucking Company Site - Region 9		

Background

Community awareness and involvement is often crucial for effective and speedy implementation of Superfund cleanup actions. EPA involvement can take many forms: working with community groups, conducting public meetings, holding one-on-one living room conversations, publishing newsletters, briefing elected and appointed civic officials, and improving the media's access to the site and site information. EPA's public outreach efforts can help communities understand the Superfund process, provide for more effective community involvement on site decision making, and, in many cases, allow cleanup to take place earlier.

Description of Site

The Ralph Gray Trucking Company site is located just north of I-405, near Golden West Street and Sowell Avenue in Westminster, California. Operations at the site began in the early 1930s when the Ralph Gray Trucking Company began dumping petroleum waste products into four open pits at the site. In 1936, Mr. Gray, the owner of the company, was found guilty of maintaining a public nuisance after several complaints were filed with the local health officials and the Westminster Chamber of Commerce. He was fined \$100 and ordered to remove the "nuisance" within 30 days.

Mr. Gray never removed the wastes and in 1958, a housing developer decided to build homes at the site. He dug two trenches in the shape of a "T"

and buried the wastes from the original uncovered pits. He then constructed homes with their backyards on top of the trenches. Residents have since noticed and complained of black tar-like sludge seeping up in their yards, pools, and patios. Studies conducted at the site have revealed that the wastes and surrounding soil at the site contain benzene, polyaromatic hydrocarbons, and sulfur compounds. These toxic wastes are suspected to be the cause of some of the headaches, nausea, and respiratory problems experienced by the residents.

The site was added to the National Priorities List in 1992. Cleanup is occurring in two phases and each contaminated trench will be addressed separately. As part of the cleanup plan, buried wastes and contaminated soil will be excavated and disposed of at an EPA-approved hazardous waste disposal facility. Approximately 50 families will be temporarily relocated during the cleanup of the site.

Implementation

An extensive community involvement outreach effort was undertaken early at this site to address the impact of a removal action on the lives of nearby residents. Several approaches were taken to ease the temporary relocation of approximately 50 families living within the site. Initially, EPA conducted interviews with citizens using a 19-page questionnaire. In conducting these interviews, EPA was able to gather information concerning residents' workshifts, direct contact with waste, respiratory problems, physical disabilities, rental

properties, pets, schools, and occupations. This information assisted EPA community involvement staff and relocation specialists in meeting the needs of families affected by the cleanup of the site.

One finding of the interviews was that several of the affected families were not English-speaking. In a special effort to communicate with these families, EPA established toll-free message lines in English, Vietnamese, and Spanish. EPA also provided a Vietnamese-speaking language coordinator at the site at least two days per week and produced many of the site fact sheets in both English and Vietnamese.

In other efforts to communicate effectively with the residents, EPA produced and published a six-page fact sheet entitled *Temporary Relocation Information* in January 1994, in both English and Vietnamese. The fact sheet serves to inform residents of the ongoing activities at the site and includes information related to the relocation of several residents, announced a community meeting, and invited residents to preview temporary housing accommodations. The fact sheet also identified who would be temporarily relocated, provided a site map, described the temporary accommodations, discussed site security and insurance, and answered general questions residents might have concerning the relocation.

In July 1994, EPA published *A Resident's Guide to Temporary Relocation* in both English and Vietnamese. This booklet serves to update residents on relocation activities at the site and identifies relocation details including the relocation schedule, accommodations, and issues surrounding the preparation for relocation.

To address the concerns of residents being temporarily relocated, EPA has implemented

several security measures to ensure the safety of their homes. One measure has involved making video tapes of the condition of the residents' homes before the residents are temporarily relocated. EPA will keep the original video tape and each homeowner will be given a copy of the tape. Other security measures being provided for each house include motion detectors, lock-out boxes, and security devices. In addition, a security guard has been placed on duty 24-hours a day for the entire community.

Findings

In implementing this accelerated community involvement effort, EPA has found that residents are highly supportive of the removal activity at the site. Early and effective communication has helped to make the temporary relocation of approximately 50 families proceed smoothly and quickly. In addition, EPA's efforts to involve the public has made residents feel that they are part of the process and also has served to sustain interest in site activities.

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Initiative 9: State Deferral of Certain Site Categories

Description

The state deferral initiative presents an opportunity for states and EPA to coordinate the use of their limited resources more effectively and efficiently in addressing the large universe of hazardous waste sites potentially requiring cleanup. EPA and states have long agreed that the number of contaminated sites is larger than either level of government alone can address in the near future.

Over the past several years, many states have been developing increasingly sophisticated and experienced cleanup programs, and several states already address significant numbers of non-National Priorities List (NPL) sites under their own laws. Under the deferral program currently being developed, EPA will be able to defer consideration of certain NPL-caliber sites while interested and qualified states, territories, commonwealths, and federally recognized Indian Tribes compel and oversee potentially responsible party (PRP) response actions. The deferral program expects financially viable, cooperative PRPs to implement response activity. By deferring NPL-caliber sites, EPA will encourage both more cleanups and quicker cleanups than would occur if these sites were left in the queue for listing on the NPL. The deferral program does not anticipate using Superfund money to conduct response actions at deferred sites.

To implement the deferral initiative, the Agency established a work group to develop guidance for the program and to pilot the deferral concept at NPL-caliber sites. Representatives from every Regional office and several Headquarters offices were members of the work group. State officials also provided input on implementation issues and were responsible for conducting deferral pilots in their respective states.

Performance

During FY 1994, the work group developed draft guidance, currently under final review, to ensure that responses at deferred sites protect human health and the environment, foster public involvement, and balance competing needs for flexibility and accountability. The guidance addresses

- Criteria states and other applicants should meet to participate in the program
- Criteria for determining site eligibility for deferral
- Cleanup levels that must be achieved at deferred sites
- Procedural requirements
- EPA oversight of deferral programs
- Financial assistance for deferral programs
- Community participation
- Response completion or termination

Deferral pilots are ongoing at 22 sites located in 7 different states. The workgroup initially identified 26 sites in 8 states for potential deferral pilots; 8 of the original sites were dropped from the pilot program and were replaced by 4 alternate sites. The Agency provided \$225,000 in financial assistance to Kansas and Maryland to facilitate the implementation of the deferral pilots for 15 of the pilot sites (\$15,000 per site). The 22 deferral pilot sites are

Region 3:

Healthways, DE
Chicago Bridge and Iron, DE
Harvey Knott Landfill, DE
Anne Arundel County Landfill, MD
Black and Decker, MD
Bausch and Lomb, MD
North Carroll Shopping Center, MD
Bata Shoe, MD

Region 4:

Kentucky Industrial Haulers, KY

Region 5:

Canton Wood, OH

Region 6:

Terrero Mines, NM
Blackwell Zinc, OK

Region 7:

Almena Agra Service, KS
Deluxe Specialties, Inc., KS
Gilbert-Mosley, KS
Lakeside Hills, KS
Scoular Grain, KS
Fourth and Carey, KS
ALLCO Chemical Corp., KS
Third and Osage, KS
Koch Chemical Co., KS
Chevron Chemical, KS

The pilot sites were selected during development of the deferral guidance and were intended to provide experience in implementing the deferral concept. Experiences at the deferral pilot sites have been diverse. The Agency has identified four measures to assess progress at the pilot sites

- The presence of an agreement between EPA and the state specifying roles, responsibilities, and schedules of performance for the deferred site(s)
- The presence of an agreement(s) between the state and PRPs describing work to be performed
- Response action taking place at the deferred site
- Community support for the deferral

Ultimate measures of success for the deferral program would include levels of risk reduction, timeliness of response, cost, and community satisfaction. Such measures, however, are beyond the scope of evaluation for the pilots at this time.

Benefits

Progress at the pilots has varied, but the deferral experiences so far confirm the value of the deferral concept and the draft deferral guidance developed by the work group. At the majority of the pilot sites, states have agreements with PRPs and investigations or remedial activities are underway. The states and EPA have also entered into formal deferral agreements for nearly all the sites. Finally, community reaction has generally been positive, although the extent of state interaction with communities has not been fully determined. At the majority of deferral pilot sites, EPA expects that environmental threats, risks to communities, and PRP uncertainty about liability will be addressed more quickly than if these sites remained in the NPL listing queue.

Lessons Learned


The most significant factor influencing site progress has been the presence of an agreement with PRPs at a site. At a few sites, financially viable PRPs have not yet been identified or state negotiations with PRPs have not yet been successfully concluded. Without state/PRP agreements, timely responses at deferred sites and effective implementation of the deferral program could be precluded. Experience suggests that state/EPA agreements that clarify the respective roles of each agency and the expected outcomes at deferred sites facilitate response implementation.

The pilot experiences confirm the usefulness of the draft deferral guidance. In particular

- Site eligibility criteria, which include the presence of financially viable, cooperative PRPs, should be used to maximize the possibility of a successful deferral
- States and EPA should enter into formal agreements to clarify and document mutual understanding, identify site-specific project milestones, and encourage continuing site progress

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	United States Environmental Protection Agency	Office of Solid Waste and Emergency Response	February 1995
	Blackwell Zinc - Region 6		

Background

Over the past several years, many states have been developing increasingly sophisticated and experienced cleanup programs, and several states already address significant numbers of non-National Priorities List (NPL) sites under their own laws. Under the deferral program currently being developed, EPA will be able to defer consideration of certain NPL-caliber sites while interested and qualified states, territories, commonwealths, and federally recognized Indian Tribes compel and oversee potentially responsible party (PRP) response actions. By deferring NPL-caliber sites, EPA will encourage both more cleanups and quicker cleanups than would occur if these sites were left in the queue for listing on the NPL. The deferral program also expects financially viable, cooperative PRPs to implement response activity.

Description of Site

The Blackwell Zinc site, one of the 22 pilot deferral sites, is located in Blackwell Industrial Park, on the western edge of Blackwell, Kay County, Oklahoma, a city with a population of 12,000. The site is approximately one-square mile in size. A zinc smelter operated on the Blackwell site from the mid-1930s until the mid-1970s.

During the business activities conducted on the site, an acid pond with a concrete liner was built. This liner has since cracked, and as a result, acid and contaminants entered the ground water. A drainage

ditch that runs through the site may have spread contamination to off-site sediment. In addition, people living in the area have used contaminated soil from the site as fill material in their yards and driveways. A bag house was installed during the operation of the zinc smelter to recover emissions and minimizing contamination of the air.

The contaminants of concern at the site are lead and cadmium. Sampling revealed that several locations have elevated concentrations of either lead or cadmium. The highest soil concentrations of lead encountered to date are approximately 2,000 parts per million (ppm), and the highest soil cadmium concentrations are approximately 250 ppm. Blood lead data collected by the Kay County Health Department showed that approximately three percent of the children screened have elevated blood lead concentrations.

Implementation

Under the state deferral initiative, the State of Oklahoma is addressing contamination at the Blackwell Zinc site by compelling and overseeing PRP response actions. The Blackwell Zinc site was a good deferral candidate because the PRPs have been full and enthusiastic participants and are cooperating with the State.

A memorandum of understanding between the Oklahoma Department of Environmental Quality (ODEQ) and EPA was signed on April 19, 1994. The memorandum, which is based on Region 6 pilot deferral criteria, designates the Blackwell

Zinc site as a state deferral pilot. The PRPs at the site are Cyprus-AMAX and the Blackwell Industrial Authority (i.e., the City of Blackwell). ODEQ has entered into a consent order with these two parties to investigate and remediate the site.

The City of Blackwell is very concerned about the contamination at the site, and is pushing the PRPs to complete the work quickly. The local citizens are supportive of the deferral and site work is currently on schedule. The PRPs have conducted small scale removals at a city park and a local school. The equipment at an on-site softball field also has been removed. The methods of soil treatment currently being considered include: soil removal for disposal in a federally permitted land-fill; soil tillage to a predetermined depth; and use of a phosphate fertilizer to bind the lead.

Oklahoma prefers to perform its studies in phases and has completed approximately ten separate site studies that will culminate in a remedial

investigation (RI). The draft document is due to EPA in March 1995, and the final document must be submitted in May 1995.

Findings

Because the RI will not be submitted to EPA until 1995, there are no definitive results of the process at the Blackwell Zinc site. Preliminary indications are that the initiative is a success. Deferring the site to Oklahoma's jurisdiction has expedited the involvement of the PRPs, the City, and the citizens living in the area.

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Gilbert and Mosley Site - Region 7

Background

Over the past several years, many states have been developing increasingly sophisticated and experienced cleanup programs, and several states already address significant numbers of non-National Priorities List (NPL) sites under their own laws. Under the deferral program currently being developed, EPA will be able to defer consideration of certain NPL-caliber sites while interested and qualified states, territories, commonwealths, and federally recognized Indian Tribes compel and oversee potentially responsible party (PRP) response actions. By deferring NPL-caliber sites, EPA will encourage both more cleanups and quicker cleanups than would occur if these sites were left in the queue for listing on the NPL. The deferral program also expects financially viable, cooperative PRPs to implement response activity.

Description of Site

The Gilbert and Mosley site, one of the 22 state deferral pilot sites, is located in downtown Wichita, Kansas. The site covers 2,600 acres and includes residential, commercial, and industrial development areas. The site extends approximately four miles from north to south and one-half mile from east to west. In 1986, the Kansas Department of Health and Environment (KDHE) conducted a hazardous waste compliance inspection under the Resource Conservation and Recovery Act and discovered volatile organic compounds (VOCs) in an on-site

well. In 1989 and 1990, KDHE completed investigations confirming widespread VOC ground-water contamination and identified several potential source areas.

Implementation

Under the state deferral initiative, the State of Kansas is addressing contamination at the Gilbert and Mosley site, and is compelling and overseeing PRP response actions. The Gilbert and Mosley site was a good candidate because the PRPs have been full and enthusiastic participants and are cooperating with the State.

On May 23, 1994, the State of Kansas and EPA entered into a site-specific deferral agreement to clean up the Gilbert and Mosley site. The agreement indicates terms under which the State will manage PRP remedial investigation/feasibility studies (RI/FS) and remedial design/remedial action (RD/RA) operations. These activities will assess and address the VOC contamination at the site. The State entered into a corresponding agreement with the PRPs who will fund the RI/FS, RD/RA, and State oversight costs for the site.

As a component of its agreement with the State, EPA provided approximately \$14,000 to the State in financial assistance and anticipates providing an additional \$7,000. The funding enables the State to perform additional managerial, technical, and enforcement tasks unique to the deferral process and are defined in the agreement between the Agency and the State.

Findings

The formal agreements between EPA and the State, and the State and PRPs, provided a framework for coordinating responsibility for cleanup activities and oversight. The State and EPA agree that the presence of financially viable and willing PRPs greatly increases the likelihood of a successful site deferral. Financially viable and willing PRPs, together with effective Agency-State coordination, can greatly decrease the time required for agreement

negotiations. Both EPA and the State of Kansas consider the deferral pilot a success and have received positive feedback from the community.

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Initiative 10: Superfund Accelerated Cleanup Model

Description

To streamline and expedite risk reduction and cleanup at Superfund sites, EPA is implementing the Superfund Accelerated Cleanup Model (SACM). SACM is a continuing initiative that accelerates cleanup and risk reduction at Superfund sites by consolidating site-assessment functions into a one-step process, taking early actions while assessing long-term cleanup, using presumptive remedies where appropriate, initiating enforcement activities earlier, and addressing the worst threats to people and the environment first.

SACM comprises “early actions” and “long-term actions.” Early actions are aimed at addressing immediate threats to the health and safety of people and the environment. Based on increased use of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) removal authority, early actions may include removing soil and waste, preventing access to contaminated areas, capping landfills, relocating people, and providing alternative drinking water sources. Long-term actions may include addressing contamination of ground water and preserving wetlands and estuaries. By using both early and long-term actions, the Agency is able to quickly reduce risk and maximize resources by focusing on the most contaminated areas first.

SACM also reduces cleanup time through a single, continuous, site assessment process. This process combines the preliminary assessment of a site with the site investigation. Where a threat exists, supplementary data is collected to supply the information needed for both early and long-term actions. SACM also emphasizes early involvement for communities, states, and potentially responsible parties (PRPs) in an effort to foster communication and eliminate multiple information gathering efforts.

Performance

As a part of this ongoing initiative, EPA has completed the SACM pilots and moved to full implementation. Several pilots demonstrated the potential effectiveness of SACM concepts through measurable time and cost savings. For example, through streamlining activities, Region 8 shortened the timeframe for site assessment from three years to one year at a site in Utah; and, by using an early action, Region 10 estimates it saved more than 15 months and \$100,000 at a site in Washington.

To communicate the success of the new cleanup model in the Regions and to identify areas for national application, EPA sponsored a national workshop in Dallas, Texas, and completed the *Status of Superfund Regional Pilots: End-of-Year Report*. This document provides site-specific examples of the time and cost savings achieved through several pilot projects.

The Agency has issued various guidance documents to support SACM implementation including *Focusing Resources on Worst Sites First*, *Site Inspection Prioritization Guidance*, *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, *SACM Coordination Strategy*, *Integrating Removal and Remedial Site Assessment Investigations*, and the *SACM Update*. Regions have also issued guidance to foster implementation efforts. Regions have been given flexibility in implementing SACM; some Regions have invited state representatives to act as members of Regional Decision Teams (RDTs). Cross-training activities between on-scene coordinators and remedial project managers also take place on a Regional basis. In addition, EPA has revised program management measures to encourage SACM implementation nationwide.

Benefits

Various pilot activities established under SACM included: establishing RDTs to prioritize sites and select appropriate actions; integrating site assessments; taking early actions; and choosing appropriate long-term cleanup actions. The pilots have demonstrated benefits to the Superfund program by

- Accelerating Superfund cleanups
- Reducing risk to human health and the environment
- Increasing the role of states and involving communities early

These benefits are consistent with the goals established by the Administrative Improvements Task Force. Also, EPA will attempt to use the pilots to increase community involvement, motivate early PRP involvement, and ensure that data collection and quality objectives are met at all stages of cleanup.

Lessons Learned

The Agency expects that full implementation of SACM will cut years off the cleanup process at sites by consolidating steps. EPA Regions are finding that implementing SACM requires more resources at the front end of the process, which achieves overall efficiencies in completing cleanups.

Involving communities in the cleanup process is another important part of SACM. By involving citizens from the start, the Agency and citizen groups can work together to arrive at a cleanup plan that is acceptable to both parties.

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Annie Creek Mine Tailings Site - Region 8

Background

The Superfund Accelerated Cleanup Model (SACM) has been implemented to make Superfund cleanups more timely and efficient. To best integrate Superfund program components, SACM involves continuous site assessment, cross-program coordination of response planning, risk reduction through early action, cleanup of long-term environmental contamination, early public notification and participation, and early initiation of enforcement activities.

EPA employed coordinated response planning, risk reduction, and enforcement techniques at the Annie Creek Mine Tailings site. Using these methods as introduced under SACM, the Agency found innovative cleanup practices through alternative authorities, reduced risk with a non-time-critical removal action, and expedited cleanup through incentives for potentially responsible party (PRP) involvement.

Description of Site

The Annie Creek Mine Tailings site is located in the Black Hills of South Dakota, west of the Cities of Lead and Deadwood in Lawrence County. The site is part of the Bald Mountain-Lead mining district where gold ore has been processed at small cyanide mills since the late 1800s, leaving behind about five acres of arsenic-bearing tailings that were later placed in a timber "crib" dam for containment. It is believed that a flood destroyed

the crib dam, sending tailings downstream along Annie Creek and Spearfish Creek. Erosion of the arsenic-bearing tailings over the years has deposited tailings and tailings mixed with soil and sediment in Annie Creek and approximately three miles downstream in streambed sediments of Spearfish Creek below its confluence with Annie Creek. Both streams are designated as trout spawning areas and Spearfish Creek is used for trout fishing. Spearfish Creek Canyon is designated a National Scenic Highway and River.

In 1989, sampling results indicated high concentrations of arsenic in the water and sediments of Annie Creek. In 1989, the company stabilized the original tailings pile. In July 1991, the site was proposed for the National Priorities List (NPL). Site characterization activities were initiated in Spring 1992, and, early in 1994, a response action was selected using non-time-critical removal authority. The main conclusion of the engineering evaluation and cost analysis was that, although there is contamination in the system, the Annie Creek drainage contains a healthy, natural ecosystem that has developed over a period of 80 years. The baseline risk assessment indicated that the main exposure pathway to high arsenic concentrations, for both humans and ecological species, is ingestion of contaminated soil, sediment, surface water, and ground water.

Today, the land use is industrial and recreational; it is only under the residential maximum exposure scenario that there would be an unacceptable risk to human health. The permanent residential scenario

is highly unlikely at this site. Further, EPA concluded that in spite of arsenic contamination in the environment, the species are numerous and diverse and the general health of the ecosystems is good. A response aimed at deterring potential ecological risk would be more detrimental to the environment than beneficial and, therefore, was deemed unnecessary. In Fall 1994, the physical construction of the removal action was completed. It consisted of covering areas of exposed tailings and drainage controls to divert surface water runoff from Annie Creek. Surface and ground-water monitoring under State authority is underway and longer term institutional controls are currently being put in place. These institutional controls will include deed restrictions on private land that prohibit permanent residential activities and domestic ground-water use, and limitations on disturbing public lands.

Implementation

In May 1992, the Region issued a request for information under Section 308 of the Clean Water Act and Section 114 of the Clean Air Act. The request initiated the site characterization process for all media including surface water, ground water, soil, sediment, air, and aquatic and terrestrial biota. Using SACM procedures, the cleanup timeline was expedited using a non-time-critical removal action. The removal action is anticipated to be a final response used to balance the flexibility of a streamlined administrative removal approach with the thoroughness of the remedial process. These streamlining techniques resulted in site cleanup within three years of proposed listing to the NPL. The project is estimated to have saved over two years and approximately \$2 million.

To further expedite cleanup at the site, the Region developed incentives for PRPs by using EPA's enforcement discretion. Effectively communicating the cost benefit of innovative approaches designed to acknowledge PRP cooperation allowed the Agency to achieve such cooperation. Listening, maintaining flexibility, and employing enforcement discretion created a "win-win" situation for all involved parties including EPA, the PRP, the State, and the community.

Findings

An important lesson learned at the Annie Creek Mine Tailings site is that a cooperative partnership is essential for an expedited cleanup. Cooperation among various programs and between EPA and PRPs fostered the timely achievement of cleanup activities.

The biggest incentive EPA can offer to the PRPs is to expedite the cleanup process and lower costs. This result was achieved at Annie Creek. EPA demonstrated that, through the use of enforcement discretion, it created an environment that rewarded and encouraged PRPs to continue to work cooperatively toward an expedited cleanup. The Annie Creek project demonstrated that EPA can expedite the Superfund process without compromising its mission to protect human health and the environment.

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Initiative 11: Construction Completions

Description

In the early years of the Superfund program, EPA focused on assessing the relative risk posed by sites, prioritizing sites, and putting them on the National Priorities List (NPL). More recently, EPA's priority at sites has been to select remedies and secure private-party implementation of the remedies. As the program has matured, attention has shifted to completing remedy construction, which has become an important measure of the success of the program. In order to better communicate successful completion of cleanup activities, EPA established the Construction Completion List. As stated in 40 CFR Part 300, a site is placed on the Superfund Construction Completion List when

- Any necessary physical construction is complete, whether or not final cleanup levels or other requirements have been achieved
- EPA has determined that the response action should be limited to measures that do not involve construction (e.g., institutional controls)
- The site qualifies for deletion from the NPL. See 40 CFR 300.435(e)

Under this continuing initiative, EPA has intensified its efforts to increase the number and rate of completions.

Performance

EPA has exceeded its goal in this continuing initiative in each of the last two years. In FY 1992, EPA established national targets to more than double the number of NPL construction completions by the end of FY 1992, from 61 to 130 and, to more than triple completions by the end of FY 1993, to 200. The Agency surpassed both of these targets by completing construction at the 149th NPL site at the end of FY 1992, and completing construction at the 217th NPL site at the end of FY 1993. Similar success was experienced in FY 1994 in completing construction at the 278th NPL site by September 30, 1994.

To ensure that the NPL construction completion targets would be met, EPA initiated several activities. A collaborative approach was undertaken in which the Regions and Headquarters combined their efforts to achieve the national targets without having individual Regions assume responsibility for a specific number of completions.

Under the collaborative approach, EPA developed a comprehensive list of all potential construction completion sites and followed the status of each of the identified sites through the Superfund Lead Region (previously Region 8, currently Region 7) monthly conference calls with the Regional Waste Management Division Directors. EPA has been working toward streamlining the requirements for completions and clarifying the completion procedures for EPA project managers and will continue to use the collaborative approach to ensure that NPL construction completion targets will be met.

EPA created a work group composed of Headquarters and Regional managers to work toward meeting national construction completion goals. One particular goal of this group is to identify areas where streamlining efforts may be appropriate. The group made several changes to streamline the construction completion process, including eliminating the requirement for an Interim Closeout Report for long-term ground-water cleanups, supplementing the construction completions definitions for bioremediation and

soil vapor extraction cleanups, and issuing an information package (*Superfund Construction Completion Care Package*, May 1993). These streamlining efforts are described in more detail below.

EPA issued guidance clarifying declaration of construction completion at soil vapor extraction and certain bioremediation sites (*NPL Construction Completion Definition at Bioremediation and Soil Vapor Extraction Sites*, OSWER Directive 9320.2-06, June 21, 1993). According to this guidance, sites undergoing certain types of restoration can be included in the construction completion category when the treatment unit has been constructed and is operating as designed. These restoration activities include

- *In-situ soil vapor extraction* uses vapor extraction wells alone or in combination with air injection wells, to physically remove volatile compounds from soil layers located above the water table
- *In-situ bioremediation* uses additives to degrade organic contaminants in soils and aquifers
- *Ex-situ bioremediation* uses microorganisms to degrade organic contaminants in excavated soil, sludge, and solids

The *Superfund Construction Completion Care Package*, compiles all relevant guidance and policy documents to assist remedial project managers (RPMs) in meeting NPL construction completion targets. Included in the package is a list of contacts, a list of FY 1992 accomplishments, a question and answer section, examples of documentation used in the construction completion process, flow charts depicting the construction completion process, construction completion process guidance, a memorandum eliminating the requirement for closeout reports at certain sites with a no action Record of Decision, and a *Federal Register* notice defining construction completion.

EPA is updating the current guidance document for site completion activities. When completed, the new document will serve to replace *Procedures for Completion and Deletion of National Priorities List Sites* and the *Superfund Construction Completion Care Package* (OSWER Directive 9320.2-3A). This guidance will answer many of the questions RPMs have concerning construction completions.

Benefits

By combining the efforts of the Regions and Headquarters and streamlining the requirements for construction completions, EPA was able to surpass the NPL construction completion targets for both FY 1993, and FY 1994. The increased number of construction completions highlights the success of the Superfund program.

Lessons Learned

EPA found that by using a collaborative approach, it was able to use its resources more effectively. EPA also found, as greater emphasis has been placed on construction completions, attention has been shifted away from sites at other stages in the cleanup process. Accordingly, any change in Superfund's cleanup priorities should be evaluated from the perspective of its potential to affect the future rate of construction completions.

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Initiative 12: Contracts Management

Description

EPA makes extensive use of contractors in carrying out its Superfund mission. In general, services that can be appropriately obtained through the private sector are contracted out. EPA is currently spending over \$500 million each year on contractor support for Superfund sites.

Under this continuing initiative, EPA has focused on two areas of opportunity for improved performance. First, the Agency is continuing implementation of the Superfund Long-Term Contracting Strategy (LTCS) for the next generation of Superfund contracts. Second, EPA is developing and issuing guidance to improve cost planning and cost oversight.

The LTCS was designed to support a “one program” approach to assessment, enforcement, and cleanup at Superfund sites by basing contract design on functional rather than program-specific lines. The strategy also decentralized contracts and contract management functions to the Regions to increase flexibility and strengthen oversight, management, and accountability.

Performance

EPA has moved forward with implementation of the LTCS for Superfund. The Enforcement Support Services contracts are already in place. Solicitations for many of the other contracts have been issued. Due to the sensitivity of contracting information, all inquiries on the status of specific procurements should be directed to EPA’s Office of Acquisition Management.

On March 15, 1994, EPA completed the *Long-Term Contracting Strategy Review Final Report* that recommended adjustments to the strategy including providing more resources for contracts management in the Regions. As a part of the Superfund base budget review for FY 1995, EPA is redirecting resources to contracts management in the Regions. Implementation of the other report recommendations is ongoing.

EPA has also developed and issued guidance to increase the effectiveness of EPA’s contracts management procedures and control costs. The focus is on finalizing guidance and oversight procedures and incorporating them into future contracting vehicles. For example, the *Guide for Preparing Independent Government Cost Estimates* (issued July 29, 1993) provides information on preparing and using independent government cost estimates (IGCEs). IGCEs are detailed cost estimates based on information obtained from sources other than the contractor. IGCEs provide EPA with cost information necessary to negotiate favorable costs with contractors.

The IGCE guide

- Defines and explains the importance of IGCEs
- Defines minimum roles and responsibilities for members of the contract management team
- Details various cost estimating methodologies
- Describes EPA uses for IGCEs

The *Cost Management Manual for Superfund* (issued June 23, 1994) provides additional contract management procedures including

- Preparing detailed statements of work
- Conducting thorough reviews of contractor invoices
- Reducing program management costs
- Applying more stringent contract controls

The *Cost Management Manual* also incorporates information from the earlier IGCE guidance regarding the procedures for developing and refining IGCEs.

Each procedure is designed to improve the EPA contracts management process, thereby improving EPA oversight of contractor cost and performance and reducing costs. The procedures described in the *Cost Management Manual* also are being incorporated into the contract management procedures for the new Regionally based Response Action Contracts, designed to replace the Alternative Remedial Contracting Strategy Contracts; and the Enforcement Support Services Contracts, designed to replace the Technical Enforcement Support contracts.

Benefits

The Superfund program is beginning to realize the benefits of this initiative through cost savings in areas such as program management and in improved contractor performance. It is expected that these trends will continue with further implementation of the LTCS as the next generation of Superfund contracts are awarded.

EPA also has benefited because the new guidance and improved oversight have increased the consistency and effectiveness of the Regional and national contract management procedures. Regional reviews have indicated improved invoice review procedures and higher quality IGCEs, which have resulted in better written scopes of work.

Lessons Learned

EPA has learned that contracts providing services to a particular Region are best managed by that Region. EPA also has learned that Regionally based contracts require higher levels of coordination between the Regions and Headquarters than were necessary to manage the previous generation of Superfund contracts.

Additionally, EPA has discovered that incorporating Regional involvement into the development and implementation of national contract management tools (e.g., detailed scopes of work, IGCEs, standardized invoice review procedures, etc.) results in a higher level of Regional compliance and overall program consistency.

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Initiative 13: Enforcement First

Description

In the early days of the program, EPA's efforts were concentrated on initiating the investigative phase of Superfund. As the program developed, the ability to identify responsible parties grew. Rather than expending Superfund money to finance the study and cleanup of sites, EPA used its enforcement tools to shift the burden to the responsible parties under Agency oversight.

The Superfund 90-Day Study, completed in 1989, made a number of recommendations to strengthen enforcement and increase private party response. These recommendations included: increased use of enforcement and settlement authorities; better integration of enforcement and Fund-financed cleanup activities; improved case management and case support; stronger responsible party oversight and cost recovery; and better intergovernmental coordination.

Based on these recommendations, the Administrator shifted the emphasis of the program to "Enforcement First" and added resources to the enforcement program. As a result, the portion of remedial actions conducted by potentially responsible parties (PRPs) increased from 30 percent in FY 1987 to 70 percent in FY 1992. During that same time period, the value of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) settlements increased from less than half a billion a year to almost \$1.5 billion. To evaluate the effectiveness of "Enforcement First" under this initiative, EPA has been and will continue to track various Regional enforcement performance measures including: the number of remedial design/remedial action (RD/RA) negotiation completions; the number of civil judicial referrals of RD/RA settlements and cost recovery actions; the number of unilateral orders in compliance; the value of response actions; and the number of enforcement actions to compel compliance with existing orders and decrees.

Performance

EPA is continuing to conduct the following activities under this initiative

- Encourage the use of alternative dispute resolution tools to assist with settlements. These tools — allocation, mixed funding, *de minimis* settlements, cashouts — are incentives for obtaining voluntary response from PRPs
- Increase the use of CERCLA Section 106 administrative orders to compel private party response and help bring negotiations to a successful conclusion
- Improve case support by increasing the comprehensiveness of the administrative record and cost recovery documentation for each case
- Emphasize adequate PRP searches to bring private parties into negotiations as early as possible
- Work closely with the Department of Justice and other governmental bodies to smooth administrative decision making and expedite settlements
- Emphasize more complete communication among EPA offices to help alleviate confusion and delays

Benefits

The “Enforcement First” initiative has benefited the Superfund program because more cleanups are occurring at a faster rate than ever before. Responsible parties are performing an ever increasing proportion of response actions at Superfund sites. “Enforcement First” benefits include

- Almost 75 percent of new cleanup work was initiated by private parties in FY 1994
- Total settlements have exceeded \$1 billion in each of the last five years
- The cumulative value of private party commitments to site studies and cleanup since 1980 now exceeds \$10 billion
- The Superfund enforcement program continues to enhance enforcement fairness and reduce transaction costs
- More than \$200 million was returned to the U.S. Treasury through cost recovery efforts in 1994. In total, EPA has reached agreements for the recovery of more than \$1 billion for the Superfund

Lessons Learned

The adoption of the “Enforcement First” approach has resulted in a dramatic increase in the value of PRP settlements. EPA’s use of enforcement tools has encouraged greater PRP participation in the negotiation and settlement process. The strict, joint, and several liability scheme has proven to be a strong incentive for settlement. Likewise, the treble damages provision is an incentive to comply with unilateral administrative orders. “Enforcement First” is proven to work: it saves taxpayer dollars, allows for more cleanup, and saves government resources.

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Initiative 14: Accelerate Cleanup at Base Closures

Description

The challenge of cleaning up closing military bases has intensified because of pressure for the quick transfer of the property to non-federal owners for reuse. Military base closures and realignments have a potentially significant impact on the economies of states and local communities. President Clinton announced a five-part plan in July 1993, for revitalizing communities impacted by base closures. One of the goals of the program was to ensure environmental cleanup took place as quickly as possible to hasten redevelopment.

The goal of this initiative is to accelerate cleanup at closing or realigning bases to ensure that property is more quickly available for productive reuse by communities. The Department of Defense (DOD) has identified 77 major base closure installations around the country that receive priority attention. A Base Realignment and Closure (BRAC) Team (BCT), consisting of EPA, DOD, and state representatives, operates at each installation. The BCT meets to review the process underway to clean up the site, evaluate methods to handle problems that develop, and discuss how to integrate the priority of environmental cleanup with reuse needs.

In undertaking efforts to expedite land transfers and leases, and to accelerate cleanups, DOD and EPA developed guidance to provide direction to the BCTs. To accomplish these objectives, EPA participated in a series of interagency workgroups within DOD's Fast Track Cleanup Program to develop guidance on: property transfer; property leasing; conducting environmental surveys; and conducting "bottom-up" reviews of the cleanup plans.

The Agency has also worked closely with DOD to enhance the role of communities in the cleanup of federal facilities. EPA has worked mostly with the headquarters components of the military services in developing policy and guidance. Regional, state, and base participation has focused on implementation. California and Texas are among the states that have been the most active in these efforts.

Performance

EPA has completed several key activities under this initiative. Administrative improvements have focused on developing guidance, issuing policy, and working with DOD.

In September 1993, EPA provided input to DOD for guidance covering several elements of the Fast Track Cleanup Program, including "Finding of Suitability to Lease" (FOSL). The FY 1994 Defense Authorization Act directed EPA and DOD to establish a memorandum of understanding to assure an adequate regulatory role in the leasing of parcels at closing bases. The memorandum, which acknowledges that a DOD guidance document (the FOSL guidance) was developed with EPA participation, provides a consultation process for a FOSL, including any restrictions or limitations on reuse necessary to protect human health and the environment.

The FOSL guidance defines a process to: (a) identify parcels of land suitable to lease; (b) ensure that leases do not interfere with ongoing cleanup actions; and (c) assure compliance with applicable environmental requirements by means of model lease language. The key to the effective implementation of the guidance is to assure that the regulators are involved in the process of developing documentation as early as possible. Leasing has provided a means to allow reuse prior to remediation in some cases.

EPA provided input to DOD for guidance on "Finding of Suitability to Transfer" (FOST). This guidance defines a process to: (a) identify parcels of land suitable to transfer; (b) ensure that transfers do not interfere with ongoing cleanup actions; and (c) assure compliance with applicable environmental requirements. To transfer property by deed, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires the federal agency involved to provide a statement that all remedial action necessary to protect human health and the environment was taken prior to the conveyance.

DOD issued its final FOST guidance on June 1, 1994. Although EPA was involved in the development of the guidance, the final version does not fully reflect the position developed jointly by EPA and DOD. EPA is working with the military services to resolve the matter.

At closing bases, the military services are directed to identify uncontaminated parcels under further DOD guidance related to the Community Environmental Response Facilitation Act of 1992 (CERFA), based on the evaluation of data from a specified series of sources. For real property that is part of a facility listed on the National Priorities List (NPL), the identification is not considered complete until concurrence by the EPA Administrator, and concurrence by the state is necessary in the case of other real property. Parcels that do not meet the CERFA criteria may still be eligible for transfer by deed or lease. In 1993 and 1994, as required by CERFA, DOD developed an inventory of all uncontaminated parcels of land at closing bases. Under FOST, parcels suitable for transfer are those with no contamination that require remediation, or those that have been remediated and are ready for reuse. Under FOSL, those sites that did not meet the strict FOST requirements may be leased, as long as regulators and the federal agencies agree that the land can be reused without unacceptable risk to human health, and that the reuse will not interfere with cleanup.

EPA has determined, as a matter of policy, that in order to facilitate reuse, CERFA should be used by all the military services to identify parcels with substantial reuse potential as "uncontaminated" even though some limited quantity of hazardous substances has been stored and may have been released on the parcel. This common sense approach has aided in the identification of parcels available for reuse.

During FY 1994, EPA, DOD, and the Department of Energy (DOE) worked collaboratively to issue policy on accelerating cleanup at federal facilities. The *Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities* was signed by the three agencies on August 22, 1994. The guidance was initiated to institutionalize some accelerated cleanup approaches already in place at federal facilities and to further encourage and support efforts by federal agencies to develop streamlined approaches to the cleanup of hazardous waste. It encourages the use of innovative technologies. It also recommends the use of the following: removal actions to address imminent and substantial endangerment; non-time-critical removals and interim response actions; sampling data for both the site investigation and response investigation; and standardized technical and field methodologies.

EPA also conducted activities under this initiative that have evolved beyond base closure installations. Lessons learned from these efforts can be transferred to base closure facilities. These activities focus on identifying ways to accelerate cleanups and tailor remedial options to appropriate land use.

Federal facility sites for demonstrating ways to accelerate cleanup have been identified and projects initiated. DOE has four sites: Hanford (WA), Mound (OH), Oak Ridge (TN), and Savannah River (SC), which have components that are run through partnerships with EPA and the states. These projects, which are conducted through DOE's Streamlined Approach for Environmental Restoration (SAFER) project, are designed to move sites through the system quickly. At the NASA-Langley (VA) site, an interagency agreement was signed before the site was listed as final on the National Priorities List (NPL), and work is proceeding at an accelerated pace. DOD's sites are the Navy's government-owned, contractor-operated facilities at Calverton Long Island and Bethpage Long Island. The Region and the Navy began

negotiating an agreement for these installations, but the talks dissolved due to issues over listing the site on the NPL. Work at the sites is now proceeding under EPA's Resource Conservation and Recovery Act (RCRA) corrective action program.

Benefits

EPA and DOD have been successful in the use of FOSL leasing procedures. More than 50 parcels of land have been leased including multiple parcels at some of the same installations. In many cases, the lessees have taken over maintenance of the facilities, resulting in a financial savings for DOD.

At this point, the FOST procedures have not been used enough to determine how successful they will be. Deed transfers have occurred at approximately six sites. Although this is a small number, some of the parcels have been large in size.

SACM initiatives that have application at federal facilities were incorporated into the *Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities*. This policy, built on lessons learned in base closure, will be helpful in the larger federal facility arena.

Under DOD's authority, the BCTs conducted the BRAC cleanup plan, a bottom-up review of ongoing and planned activities, which was later compared with the anticipated base reuse plans. EPA, the state, and the service then adjusted cleanup priorities to ensure that they matched reuse needs. Through this approach, the teams brought together information that had previously been scattered throughout the system. EPA participated in this activity through its membership in the BCT.

It is difficult to measure the effectiveness of the BCTs because there is no baseline performance data to serve as a comparison. The BCTs are preventative in nature, and the benefits they provide are long term. EPA's participation in these teams ensures that there will be no surprises relating to environmental conditions and the impact of laws and regulations on proposed actions. Several intangible benefits have been noted, especially a better appreciation between the parties at the sites of how to achieve environmental cleanup.

Lessons Learned

It is critical that field level people be empowered to make decisions regarding the activities conducted under this initiative. These individuals have the best understanding of the site, which helps to ensure that decisions do not have to be reconsidered.

The partnership projects between EPA and other federal agencies have demonstrated the importance of working together up front to prevent significant future problems. This results in a much more cost-effective and efficient process.

The activities undertaken have provided the opportunity to accelerate the process. There have been mixed results so far, with some installations emphasizing cleanup while others have focused primarily on reuse.

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Initiative 15: Promote the Use of Innovative Technology

Description

Comprehensive, readily accessible information on treatment technologies improves the timeliness and consistency of remedy selection, facilitates remedy implementation, and reduces the risk associated with emerging technologies. The goal of this initiative is to obtain market, regulatory, and public acceptance of innovative technologies through full-scale demonstrations of hazardous waste treatment systems.

A shortage of facilities where large-scale testing can be conducted using actual hazardous waste has hampered technology development and evaluation. To solve this problem, EPA has focused on efforts to increase the testing and use of innovative technologies as well as the sharing of information. "Orphan" sites and federal facilities are excellent candidates for demonstrating innovative technologies. Potentially responsible party (PRP) lead sites may also be suitable under appropriate circumstances.

Performance

Public-Private Partnerships

EPA has emphasized the use of public-private partnerships at federal facilities to demonstrate and evaluate innovative hazardous waste treatment technologies. As a focus of this effort, Clean Sites, Inc., through a cooperative agreement with EPA's Technology Innovation Office (TIO), is working to establish partnerships between federal agencies (EPA, the Department of Defense [DOD], and the Department of Energy [DOE]), states, and Fortune 500 companies. Private sector participants include AT&T, Beazer East, Dow, DuPont, Monsanto, Southern California Edison, Xerox, Exxon, Phillips Petroleum, General Electric, Thiokol, Hercules, and ICI.

Innovative technologies, demonstrated through the partnership projects, target contamination problems of mutual concern at federal facilities and private sites across the country. TIO's cooperative agreement with Clean Sites, Inc. was implemented in July 1992 and runs through July 1997.

EPA's first public-private partnership is continuing with the DOD McClellan Air Force Base (CA). The private companies involved in this partnership are AT&T, Beazer East, Dow, DuPont, Monsanto, Southern California Edison, and Xerox. Two demonstrations were implemented at the site between July and October 1994. The first technology demonstrated was a two-phase extraction process for treating soil and ground water contaminated with volatiles. Preliminary results from the demonstration indicate that extraction rates are higher, and the need for surface treatment of extracted water has been minimized. The second technology demonstrated was a photolytic destruction process used to treat off-gases from soil vapor extraction. The initial application of this technology did not perform as expected due to mitigating factors at the demonstration site, and the demonstration was suspended. A modified version should be ready for the resumed demonstration by March 1995. A public visitors' day was held at the McClellan site on October 6, 1994; 250 people attended.

EPA concluded an agreement with DOE at the Pinellas plant in Florida. A public-private partnership project involving General Electric, Exxon, and Phillips Petroleum is now in the implementation phase at this facility through DOE's Innovative Treatment Remediation Demonstration program. The agreement outlines the roles and responsibilities of the various partners at the site. Decision-making authority rests with DOE and the federal and state regulators, with input from the private companies.

Private firms are participating in additional partnerships. Clean Sites is currently working with the Remedial Technology Development Forum (RTDF) to demonstrate an innovative remediation technology at DOE's Paducah (KY) Gaseous Diffusion Plant. General Electric, Exxon, and Phillips Petroleum are involved in this activity. Efforts are also underway to establish partnerships at the Joliet (IL) Army Ammunition Plant, Massachusetts Military Reservation-Otis Air National Guard Site, and the Naval Air Station North Island (CA). Thiokol, ICI, Hercules, Alliant, and DuPont are interested in the partnership at Joliet. The EPA Risk Reduction Engineering Laboratory is providing support for all of the partnership projects.

Databases: Improving Remedy Selection Through the Generation of Cost and Performance Data

Evaluation of existing and potential technology databases revealed the lack of actual cost and performance data on technology applications as a major, continuing limitation. Currently, the contents of final closeout reports vary widely, and much of the first-hand experience of project personnel is not routinely documented.

EPA is conducting an ongoing information collection activity to assess existing and potential databases. The Agency currently has several databases that contain information on remediation technologies, including the Alternative Treatment Technology Information Clearinghouse (ATTIC) and the Vendor Information System of Innovative Treatment Technologies (VISITT). EPA is also in the process of developing the Decision Document Database (3-DB) to address many of the information shortcomings in existing databases that have been identified by internal and external studies.

In conjunction with the Federal Remediation Technologies Roundtable, made up of federal agencies including EPA, DOE, DOD, and the Department of Interior (DOI), EPA's TIO developed a consistent set of cost and performance data elements on innovative technologies of interest. Utilizing these data elements as a guide, EPA is in the process of preparing summaries of 17 completed Superfund remedial actions. These remedial actions involve the use of innovative technologies such as soil vapor extraction, thermal desorption, bioremediation, and soil washing. DOD efforts in this area are funded by the Air Force and involve preparation of cost and performance summary reports for approximately 20 remediation projects at military facilities.

Other Activities

EPA undertook efforts to ensure that treatment technology information is provided to data repositories for dissemination. Access to information has been a problem in the past, and this ongoing effort will ensure that all parties involved will be able to take advantage of information on innovative technologies.

The Federal Facilities Enforcement Office (FFEO) and the Western Governors' Association held the "Regulatory and Institutional Barriers Roundtable" conference in October 1993. This conference, which was a follow-up to the "Commercialization Roundtable" held in August 1993, identified regulatory, attitudinal, and financial barriers that hamper the use and commercialization of innovative technologies.

The Agency developed policy regarding the use of federal facilities as test centers for innovative technology. *EPA Policy for Innovative Environmental Technologies at Federal Facilities* was signed by the Administrator on August 19, 1994. The document reaffirms EPA policy that federal facilities should be used as test and demonstration centers, and encourages their use. It encourages remedial project managers (RPMs) to be more flexible at federal facility sites, thereby allowing for more widespread use of innovative technologies.

Benefits

By pooling the expertise of engineering departments and laboratories, the public-private partnerships will result in faster identification and implementation of cost-effective, permanent treatment technologies. In addition, the use of these partnerships will encourage community acceptance of innovative alternatives. An added benefit comes when the private partners introduce the innovative products demonstrated as part of treatment systems at sites where they are PRPs. In the long term, the public-private partnerships are expected to either save time, money, or clean up sites better, or result in a combination of these benefits.

Agencies comprising the Roundtable recognize the importance of documenting results from cleanups and the benefits of greater coordination of such efforts between agencies.

Systematic collection of cost and performance information employing standard terminology will establish a baseline for future data gathering, assist in remedy selection by allowing project managers to consider previous technology applications on sites with similar characteristics, and allow more meaningful comparison of technology performance.

Lessons Learned

EPA has implemented several demonstrations of innovative technologies, and is in the process of establishing an additional three or four. The performance and cost data collected through the partnership demonstrations are valuable components of technology transfer from one site to another. The public-private partnerships also illustrate a more streamlined remedy selection process at the demonstration site that can be used at private company sites around the country where contamination problems are similar to those found at the demonstration site.

There are currently six active sites where partnerships are in place. At two of the sites, McClellan and Paducah, technology demonstrations are underway. Communication and cooperation are vital because of the large number of individuals involved at every site, each with a different set of expectations and ideas. In conducting the partnerships, EPA developed agreements to describe the roles and responsibilities of all involved parties, as well as status reports, roadmaps, timetables, and distinct milestones. The agreements formalized the communication between the parties. Getting the right people, i.e., cleanup managers, to the table is vital.

In addition to the challenges of reaching consensus among a large group, as might be expected with projects of this nature, there have been technical difficulties with some of the technologies. The purpose of the initiative is to test the technologies to determine their capabilities and limitations. Even if a technology does not work immediately, it does not mean that the effort is a failure. An important lesson from partnership demonstration efforts to date is that a promising technology should not be abandoned at the first sign of difficulties. Demonstrations should be of sufficient scale and duration to allow modifications and improvements as necessary based on operating experience.

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Initiative 16: Compliance Monitoring

Description

EPA has been very successful in encouraging potentially responsible parties (PRPs) to clean up sites. In order to ensure that PRP cleanups are being performed satisfactorily and in a timely manner, the Agency must have an effective compliance monitoring and enforcement program. In November 1992, the Office of Solid Waste and Emergency Response (OSWER) implemented a long-term strategy for facilitating implementation of Regional compliance monitoring and enforcement programs. This strategy has two primary components: (a) development of Regional compliance monitoring and enforcement procedures; and (b) installation of enhanced compliance tracking systems (for monitoring compliance with terms and conditions of consent decrees (CDs), administrative orders on consent (AOCs), unilateral administrative orders (UAOs), and enforceable work-plan milestones).

The goals of the compliance monitoring program are to strengthen EPA enforcement of AOCs, UAOs, and CDs through ongoing oversight of PRP compliance. EPA will monitor PRP activities to ensure that they are performed correctly and on schedule. Such oversight will encourage PRPs to adhere to cleanup schedules that will result in reduction of risk to public health and the environment.

The Regions have been free to develop their own procedures for compliance monitoring and enforcement so long as the procedures provide: clearly defined roles and responsibilities for the program and Office of Regional Counsel staff; routine documentation of non-compliance; documentation of recommended responses to non-compliance; management review; and notification to Regional financial management staff when a stipulated penalty assessment is made. OSWER will not mandate any particular compliance monitoring approach so long as significant Regional progress continues to be made in implementing compliance monitoring programs.

Performance

EPA is continuing to develop and implement procedures for increasing the effectiveness of the compliance monitoring and enforcement program. This process is underway in every Region and includes issuing Regional Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) compliance monitoring guidance and implementing Regional compliance tracking systems.

Each Region has issued compliance monitoring guidance that explains how remedial project managers (RPMs) and on-scene coordinators (OSCs) should conduct compliance monitoring. The guidance documents outline

- How frequently RPMs and OSCs should conduct compliance monitoring activities
- How the Region defines AOC and CD compliance
- What type of tracking mechanism (e.g., manual or automated) is used to track AOC, UAO, and CD compliance
- Whether the Region requires that compliance information be tracked on a Region-wide or site-specific basis
- The level of tracking detail required to monitor AOCs, UAOs, and CDs

Each Region has also issued enforcement response guidance that specifies the Regional procedures for handling non-compliance with AOCs and CDs. These guidance documents identify appropriate documentation and Regional enforcement response in the event of non-compliance. The enforcement guidelines typically specify that the appropriate EPA personnel first contact the PRPs by phone to notify

them that they are not in compliance. If the PRPs do not indicate an intent to comply or if the PRPs fail to comply, Regional guidance often specifies that a letter should follow the phone call. If the PRPs fail to comply after receiving the letter, EPA may assess stipulated penalties and, in extreme cases, cite legal action for injunctive relief and may even take over work at the site.

EPA's Office of Enforcement and Compliance Assurance (OECA) currently is reviewing Regional compliance reporting measures and plans to determine whether national compliance guidelines are appropriate or necessary. The Office of Site Remediation Enforcement (OSRE), as part of the OECA review, is reviewing each Region's approach to ensure that the Regions are tracking the most appropriate compliance indicators.

Benefits

Region-specific compliance monitoring and enforcement guidance has clarified the roles and responsibilities, methods, and procedures used within each Region. The information has increased the efficiency and effectiveness of each Region's compliance monitoring and enforcement procedures. The guidance documents also have increased the inter-Regional exchange of information concerning compliance monitoring and enforcement activities that will continue to increase the overall efficiency and effectiveness of EPA's compliance monitoring and enforcement program.

Assuring compliance with CERCLA orders and decrees sends a strong message to the PRP community that the Agency is aggressively monitoring compliance with its orders and agreements. By using enforcement procedures in all ten Regions, the Agency indicates its intention to compel PRP compliance. As the Agency decreases non-compliance delays, PRP cleanups are conducted in a more timely fashion.

Preliminary results of EPA Regional compliance monitoring reviews indicates that the improved compliance monitoring procedures are increasing Regional enforcement of AOCs, UAOs, and CDs. Region 8, for example, has responded to approximately 13 instances of PRP non-compliance since January 1993, when the monthly compliance monitoring and reporting practices were put in place. A precise count is difficult to obtain since some instances are reported over a span of several months and appear to reflect continuing non-compliance rather than distinct instances of non-compliance.

Lessons Learned

EPA has learned that an aggressive compliance monitoring and enforcement program can reduce the time required to clean up a site by minimizing the number of delays due to PRP non-compliance with AOCs, UAOs, and CDs.

EPA also has learned that the current national data systems may not meet completely the Regions' need to monitor compliance and enforcement concerns. Regional methods of monitoring compliance and enforcement issues currently range from manual filing systems, to automated desk-top systems, to the use of modified national tracking systems. Improved national automated data systems would allow a standardized compliance monitoring and enforcement tracking system to be developed.

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Initiative 17: Improve the Effectiveness of Cost Recovery

Description

The Superfund law provides for recovery of federal money spent at a site. EPA is responsible for recovering the costs as fully and expeditiously as possible. To improve cost recovery, EPA is currently undertaking several activities, including integrating financial and Superfund information systems, and promulgating the cost recovery rule.

This initiative addresses obstacles to effective cost recovery. Activities focus on the development of tools to increase the efficiency, timeliness, and effectiveness of the Agency's cost recovery efforts under Superfund. These tools include improved systems for tracking the Agency's cost recovery data and prioritizing cost recovery work, and developing a cost recovery rule to standardize the cost recovery process and documentation.

Performance

EPA has completed several important activities under this initiative. Efforts have focused on developing effective and efficient reports, and revising the cost recovery targeting process.

The *Cost Recovery Targeting Report* was developed to combine CERCLA Information System (CERCLIS) planning obligations with Integrated Financial Management System (IFMS) actual past data to present a complete picture of statute of limitations dates and the past costs associated with the respective sites. CERCLIS and IFMS do not normally interact, which has made it difficult to assemble an accurate assessment of the statute of limitations workload or the effectiveness of past cost recovery efforts.

The *Cost Recovery Targeting Report* merges data from the two systems to resolve potential problems related to comparability of and access to data, and to enable EPA to identify sites where the statute of limitations is near expiration. The report is also used to present a complete picture of recoverable past costs and the status of all past, ongoing, and planned efforts to address those costs. EPA revised the cost recovery target process to target all cases greater than \$200,000 where the statute of limitations is an issue.

Under the revised process, the Regions are required to provide documentation for all cases where the statute of limitations is an issue, including those where the deadlines have expired. The revised process should help Regions prioritize their cost recovery work.

In order to protect the Trust Fund, standardize cost recovery documentation requirements, and clarify statute of limitations issues, EPA proposed the Cost Recovery Rule. The rule addresses cost documentation requirements, the application of the Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA's) statute of limitations, the types of costs that constitute recoverable indirect costs, and the methodology used to calculate these indirect costs. The rule is still in the deliberative process.

Benefits

Promulgation of the cost recovery rule will clarify cost recovery issues for all stakeholders. It will also reduce transaction costs by reducing the potential for litigation and standardizing the documentation that potentially responsible parties (PRPs) can expect to receive.

The *Cost Recovery Targeting Report* merges CERCLIS and IFMS data, allowing for more efficient, timely and effective cost recovery.

Lessons Learned

Developing the automated statute of limitations targeting report was much more difficult than expected. The ambiguity of the statutory language made it very difficult to arrive at a consensus on how it should be interpreted and implemented. Resolving these differences required many meetings and revisions. In addition, bridging the gap between IFMS and CERCLIS has proved to be difficult because of the differences in the two systems, principally that IFMS data is organized at the site level while CERCLIS is much more detailed.

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