



Status of Regional Superfund Pilots

End-of-Year Report





Publication 9202.1-15A
NTIS PB94-963216

Status of Regional Superfund Pilots: End-of-Year Report

December 8, 1993

U.S. Environmental Protection Agency
Region 5, Library (PL-12J)
77 West Jackson Boulevard, 12th Floor
Chicago, IL 60604-3590

**United States Environmental Protection Agency
Office of Solid Waste and Emergency Response
Superfund Revitalization Office
Washington, DC 20460**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	I-1
INDEX OF REGIONAL SUPERFUND PILOTS AND KEY CONTACTS	II-1
ABSTRACTS	III-1
SUPERFUND REGIONAL PILOTS	
REGION 1	
Kearsarge Metallurgical, New Hampshire Site	IV-1
"Start"/SACM Initiative: Accelerating the RI/FS Process	IV-3
Settlement With Third Party Generators (Murtha Case Settlement)	IV-8
Expedite PRP Remedy Implementation	IV-9
REGION 2	
Accelerate RI/FS Process	IV-12
Accelerate Federal Facility Agreements	IV-17
REGION 3	
Accelerating Cleanup to Reduce Risk	IV-20
Innovative Data Validation Approaches	IV-23
Bring Sites to Completion by End of FY 93	IV-26
Integrated Site Assessment and Early Enforcement	IV-28
Proactive Settlement of <i>De Minimis</i> PRPs	IV-31
Accelerate ROD to RD Process Through Early Enforcement	IV-33

REGION 4

Early Enforcement Prior to Listing IV-35

Early *De Minimis* Settlement IV-41

REGION 5

Regional Decision Team IV-44

Early Action Pilot, Better Brite, Wisconsin Site IV-47

Integrated Site Assessment IV-50

Wisconsin Single Site Assessment IV-53

REGION 6

Lightning ROD Projects IV-56

SACM Demonstration and Regional Decision Team
National Zinc, Oklahoma Site IV-62

REGION 7

Remediation Goals and Presumptive Remedy Initiative IV-64

REGION 8

Accelerated Cleanups Initiative IV-67

RI/FS Acceleration Pilot IV-69

Sandy Smelter, Utah Pilot IV-71

PRP Incentives IV-73

Comprehensive Site Management IV-74

Cross Program/Multi-Media Approach, Annie Creek, South Dakota Site IV-76

REGION 9

SACM Site Assessment Pilot IV-78

Plug-in ROD, Indian Bend Wash South, Arizona Site IV-83

Early *De Minimis* Settlement, Operating Industries Inc., California Site IV-86

REGION 10

Accelerate Cleanup Through Removal
 Yakima Plating, Washington Site IV-90

 Allied Plating, Oregon Site IV-93

Demonstration Pilot, Alaskan Battery Enterprises, Alaska Site IV-95

Outreach Specialist IV-97

PRP Search Initiative IV-99

Executive Summary

Status of Regional Superfund Pilots:

End-of-Year Report

Superfund Revitalization Office

December 8, 1993

EXECUTIVE SUMMARY

STATUS OF REGIONAL SUPERFUND PILOTS: END-OF-YEAR REPORT

In 1991 and 1992, the Office of Solid Waste and Emergency Response (OSWER) began major efforts to streamline and improve the equity of Superfund response activities. The Superfund 30-Day Study Implementation Plan (October, 1991) identified strategies for improving the efficiency, effectiveness and equity of Superfund. The Superfund Accelerated Cleanup Model (SACM) emphasized cross-program coordination and prompt risk reduction through early actions, within the existing regulatory framework (February, 1992). All ten Regions began pilots of these initiatives, and during 1993 have monitored and evaluated the results of their pilots. Half of the pilots are completed and half are continuing into 1994.

The Executive Summary provides an overview of pilot activities to accelerate response activities and enhance their equity, and draws preliminary conclusions where possible at this time. The main body of the report provides an index of pilots and key contacts, and details the goals of each pilot, its status, evaluation plan and results to date.

OVERVIEW OF PILOT ACTIVITIES AND RESULTS

Half of the SACM and Revitalization pilots are completed (see Index of Pilot Activities), and their major benefits have been to:

- Accelerate Superfund and improve its efficiency;
- Improve enforcement equity; and
- Increase the States' role in Superfund.

These benefits are consistent with the goals of the new Administrative Improvements, which EPA initiated during June 1993 to further accelerate Superfund activities to the extent possible under CERCLA, and to enhance their equity. Several key goals of the Administrative Improvements are to enhance cleanup effectiveness and consistency, enhance enforcement fairness, and enhance the States' role in Superfund. This report does not address the new Administrative Improvements, which are described in the June 23, 1993, "Superfund Administrative Improvements" and in the July 7,

1993, "Implementation Strategy for Superfund Administrative Improvements."

Note that in many cases the Regions applied significant "up-front" resources to achieve the benefits described above for individual pilots and sites. For example, the Regions were able to accelerate assessment and response activities, or enforcement activities, but used additional staff during the initial stages of the pilots. The Agency is still evaluating the potential transferrability of findings at individual pilot sites to a broader array of sites, and the potential for net resource savings due to these pilot measures.

The following sections highlight key examples and findings for each of these areas:

ACCELERATE AND IMPROVE EFFICIENCY:

Many of the Revitalization and SACM pilots have served the objective of accelerating cleanups and enhancing their effectiveness and consistency, as described below.

SACM Pilots:

The Superfund Accelerated Cleanup Model (SACM) emphasizes cross-program coordination through "Regional Decision Teams", integrated site assessments, prompt risk reduction through early actions, and appropriate long-term cleanup actions. The following discussion highlights the major components of SACM, and provides examples of Regional pilots that started the SACM process.

All Regions have established Regional Decision Teams (RDTs) to prioritize sites and select appropriate actions. These teams are composed of representatives from the removal, remedial, site assessment, enforcement and community-relations programs, and from other key offices such as Regional Counsel. The RDTs facilitate cross-organizational decisions, and identify early actions for new sites as well as NPL sites. Regions differ in the exact structure of these teams; several Regions have

a process by which a management team of Branch Chiefs or Division Directors reaches decisions based on the analysis and recommendations of site-specific teams composed of senior staff. Several Regions include the appropriate States in their RDT meetings.

A major emphasis under SACM is the streamlining and integration of site assessments. Regions 2, 5, 8 and 9 have pilots that are continuing to integrate the assessment activities previously conducted under different program areas, and to ensure that sampling strategies and data quality objectives will support different possible response actions that eventually may be identified by the Regional Decision Teams.

Another major emphasis of SACM is to identify early actions to reduce risk wherever possible, using either removal or remedial action authorities. The RDTs are instrumental in choosing the most appropriate authority for early actions (e.g., non-time-critical removal actions, or accelerated enforcement) and ensuring that States, other Agencies and the community are involved in the process as appropriate. Several Regions (1, 3, 5 and 10) have completed early action pilots.

Finally, after immediate risks are reduced, additional risk reduction will be achieved through longer-term site remediation activities, such as groundwater treatment. Throughout all stages of SACM, the Agency continues to emphasize enforcement activities and community relations.

Following are results from several completed pilots that illustrate some of the benefits of the SACM approach to site assessment and cleanup. (Parts III and IV of this report provide additional detail on these and other pilots.)

- Pilots in Regions 1, 3, 5, and 6 established Regional Decision Teams that are implementing SACM and ensuring that all major Superfund sites come through "one door" for decision-making. Region 5 also combined a section and branch (re-organized) to implement the "one door" goal, and is expanding the role of the RDT to include site funding decisions.
- Early action pilots have been completed in Regions 1, 3, 5 and 10, making greater use of removal authorities/contracts and resulting in

significant time and cost savings (e.g., Kearsarge, N.H.: acceleration of 6 to 12 months and about \$300,000 saved; North Penn #6, Pa.: acceleration of 3 years; Yakima Plating, Wash. & Allied Plating, Oregon: acceleration of 15 months and about \$100,000 saved). Much of the accelerations and cost savings were achieved because the Regions did not do formal Remedial Designs.

- Region 4 completed a pilot under which the potentially responsible party (PRP) accelerated site assessment by more than two years, resulting in cost savings of about \$300,000 (by integrating different stages of the site assessment process). This site (Greenback) was referred to the State of Tennessee.
- Under Region 8's integrated assessment pilot (Sandy Smelters, Utah), assessments occurred about 2 years sooner, but required twice the normal intramural resources.

Note that OSWER and the Regions are beginning full implementation of SACM during 1994, building upon the lessons learned from the initial pilots. Pilot results have been shared among the Regions at National conferences, for example at the SACM Implementation Conference in August, 1992 and at the Superfund Branch Chiefs Conference in December, 1993. Some of the initial pilots are continuing into 1994, and OSWER and the Regions will evaluate those pilots upon their completion. For example, in their integrated assessment pilots, Regions 1, 2, 8, and 9 are continuing to examine issues concerning sampling strategies, data quality objectives, and field analysis techniques.

Revitalization Pilots:

Several important Revitalization pilots have demonstrated different approaches for accelerating and enhancing cleanup effectiveness and consistency. For example, one of the major goals identified in the Superfund 30-Day Study was to standardize the remedial planning process for some categories of sites, to the extent possible given the variation among site conditions. These "presumptive remedies" are generally expected to consist of several remedies typically selected for specific categories of sites. The Agency expects that the availability of these standard choices will accelerate remedy selection for the

specified site types and enhance cleanup consistency. An additional benefit may be to encourage voluntary cleanups and enhance cleanup consistency at non-NPL caliber sites, in addition to saving time for remedy-selection at NPL-caliber sites. Regions 7 and 9 have presumptive-remedy pilots for different site categories.

In another important effort to standardize and accelerate the remedial planning process, Region 6 undertook "Lightning RODs" (Records of Decision) where the Region has accelerated all preparation for the Remedial Investigation/ Feasibility Study (RI/FS) and Remedial Design (RD) before a pilot site was proposed for inclusion on the National Priorities List (NPL); and is accelerating remedy selection through policy and process improvements (such as the use of presumptive, or standard, remedies). And, in another noteworthy example, Region 3 has developed a streamlined approach to data validation.

Some key results of these pilots are:

- Region 9 developed and published for comment a "Plug-in ROD" for volatile organic compounds (VOCs) in soil at an important mega-site (South Indian Bend Wash, Arizona). This is an example of a presumptive, i.e., standard remedy that can be applied at many facilities within a mega-site, with the potential for very significant savings of time and resources, and enhancing cleanup consistency.
- Region 7 is continuing its pilot to develop presumptive remedies for grain storage, coal gasification, and PCB sites. This is an important effort, focused on site-categories of special significance to the Region, that complements Headquarters' efforts. Potential results of this Region 7 effort may be to encourage voluntary cleanups and enhance cleanup consistency at non-NPL caliber sites (e.g., at some coal gasification and grain storages sites), in addition to accelerating remedy-selection at NPL-caliber sites.
- The Region 6 "Lightning RODs" have already resulted in accelerations of 2 to 3 years in defining site remedies, and may accelerate the complete process by 5 years. Intramural costs were twice the normal utilization in the first year; however, the Region expects to realize net resource savings of about 30%. Region 6 has

regularly shared its findings with other Regions, for example at the Superfund Branch Chiefs Conference in November, 1992.

- Region 3's Data Validation pilot has resulted in streamlining turn-around time and costs by more than 50%, without changing the quality of the analytic deliverable or customer satisfaction.

Note that several of the pilots described above have focused on accelerating the Remedial Design (RD) process, or not doing a formal RD when appropriate. Regions 1 and 10 found that, by conducting early actions at NPL sites using the removal program, they avoided the cost and time of doing a formal Remedial Design. Region 6 began its RD work prior to ROD approval, thus accelerating the RD and ensuring that EPA focused its efforts on the most viable remedial alternatives. The Agency's development of presumptive remedies will also lead to a more standardized RD process for certain site categories, and is expected to result in cost and time savings.

In addition to the pilots described above, there were several important enforcement pilots that also accelerated RD activities. For example, both Regions 1 and 8 found in their "PRP Incentives" pilots that a major incentive for accelerating PRP activities is to simplify the administrative procedures leading to final RODs. Region 1 is emphasizing at selected sites a performance-based approach under which the EPA holds the PRPs fully accountable for developing RODs, but with fewer interim deliverables and less formal procedures. Region 3 also has a pilot to accelerate RODs and RDs at PRP-lead sites through early enforcement planning and also by incorporating performance standards into RODs, thereby accelerating Consent Decree negotiations. These approaches are being demonstrated at a number of sites and will be evaluated during 1994.

IMPROVING ENFORCEMENT EQUITY:

Several Revitalization pilots, in Regions 1, 3, 4, 8, 9 and 10, have been instrumental in OSWER's efforts to enhance enforcement fairness. These included pilots of expanded PRP searches, *de minimis* settlements, and incentives for accelerating PRP activities. Headquarters personnel and Regional Decision Teams also identified opportunities to integrate PRP searches, negotiations and other

enforcement activities into the appropriate stages of the SACM process. Key examples of these pilots include:

- The Region 3 *de minimis* pilot (Tonolli Corp., Pa.) has been completed, and served as an important case study for *de minimis* guidance development. This case highlighted that early, accurate cost estimates are important for *de minimis* settlements, and also provided late respondents with a second opportunity to settle (with penalty). The Region is recovering about \$4 million from *de minimis* parties.
- Pilot experiences in Region 3, 4, and 9 have reinforced that *de minimis* settlements are advantageous to the settlers, because their potential Superfund liabilities at the site are satisfied. (Region 4 and 9 also found that *de minimis* settlements were supported and encouraged by the "major" PRPs.) However, *de minimis* settlements require substantial EPA staff time (e.g., to develop comprehensive "waste-in" lists), and this finding contributed to efforts to streamline these procedures under the new Administrative Improvements. Region 9 is continuing its early *de minimis* pilot (Operating Industries, Inc., California) as an Administrative Improvement initiative.
- "PRP Incentives" have been identified and continue to be piloted in Regions 1 and 8. While both Regions set out to identify possible financial incentives for PRPs to accelerate their activities, the major incentive proved to be simplifying the administrative procedures leading to Remedial Design.
- Region 10 defined new "PRP Search" operating procedures to ensure more comprehensive and fair PRP searches in the Region.

INCREASING STATES' ROLE:

Several Regions have emphasized in their pilot activities the importance of increasing States' involvement in the assessment and remedy selection process. These have been important efforts leading up to the Administrative Improvements "State Deferral" initiative. Several Regions have included States in the deliberations of their Regional Decision

Teams, e.g., Regions 2, 5, and 6. Key examples of increased State participation include:

- Regions 5 and 6 are working closely with States to implement SACM. In Region 5, Wisconsin has the lead on performing integrated site assessments at three sites (with estimated time savings of 25 to 75%, i.e., 3 to 18 months). In Regions 5 and 6, States and Tribes are active participants in RDT meetings.

OTHER BENEFITS:

During the course of their pilots, several Regions have identified opportunities to increase public involvement in Superfund activities. For example, a number of Regions have included community-relations specialists on their Regional Decision Teams, to ensure early and appropriate public involvement. (These comments focus only on the pilots, and do not address the many other Superfund community relations activities that are occurring, especially under the new Administrative Improvements initiatives.) Noteworthy examples include:

- Region 10's Outreach Pilot resulted in better understanding of SACM and these results were shared with other Regions at a National conference on communicating Superfund successes. In addition, Region 10's "early action" pilots provided the opportunity for full public comment.
- In Region 6, the RDT regularly considers community concerns in a very proactive approach, including "environmental justice" concerns. The Region's strategies include using bi-lingual representatives where appropriate, and working directly with community leaders. In cases where there are competing applicants for a Technical Assistance Grant, the Region facilitates the development of a joint application.

RESOURCE AND ORGANIZATIONAL IMPLICATIONS OF PILOT ACTIVITIES

The Regional pilot activities during 1992 and 1993 highlight a number of significant resource and organizational issues and choices. While it is

premature to draw broad conclusions from these case studies, the Agency will continue to monitor and evaluate these issues throughout 1994:

Start-up costs: Several Regions reported that pilot activities were initially resource intensive. In fact, OSWER provided "incentive funding" for the pilots in order to enable the Regions to begin these activities. For example, meetings of the RDTs initially required a great deal of management and staff time, and "fairness" initiatives such as *de minimis* settlements and broadened PRP searches required significant resources. The Agency anticipates that these start-up costs will level off and result in overall efficiencies, due to enhanced cross-program coordination, and early identification of major issues to be resolved. For example, several Regions are screening sites before forwarding them to the attention of the full RDT. Thus, the RDT will focus on those sites that clearly require cross-organizational decisions, and will empower site-specific teams and lower levels of management to address other sites. In another key example, the early implementation of *de minimis* policies proved very resource intensive. The Agency is streamlining and revising the *de minimis* procedures to be less resource intensive.

Contract Vehicles: Several Regions reported that the use of removal contracts rather than remedial contracts was an important factor in accelerating their early actions. Removal contracts are more readily accessed than remedial contracts. In addition, it is easier to expand or change the scope of work since removal contracts are "time and materials" contracts, whereas the ordering process is more time consuming for "level of effort" remedial contracts.

Organization: SACM can, and is, being implemented without major reorganization, because the RDTs facilitate cross-program coordination. Most Regions have found it important to establish the function of SACM Coordinator, or Pilot Coordinator, to facilitate the work of the RDT and the implementation of SACM. At least one Region (Region 5) combined a section and a branch to facilitate integrated site assessments.

Evaluation of costs and benefits: These preliminary observations highlight the importance of continuing to monitor and evaluate pilot activities, in order to better evaluate their ultimate costs and benefits, and the

potential applicability of pilot findings to other Superfund sites.

PILOT ACTIVITIES DURING 1994

As described earlier, OSWER is undertaking a number of new Administrative Improvements to further improve Superfund during 1994, and has identified SACM and Revitalization measures as important continuing Administrative Improvements. For example, the Region 6 Lightning RODs, the Region 9 Plug-in RODs and the Region 9 *de minimis* pilot are continuing in 1994 as Administrative Improvements. EPA will monitor and evaluate these ongoing pilots during 1994, along with the new Administrative Improvements initiatives. The results to date make clear that it is appropriate to proceed with full implementation of SACM in FY 1994.

Part I

Introduction

Status of Regional Superfund Pilots: End-of-Year Report

Superfund Revitalization Office

December 8, 1993

STATUS OF REGIONAL SUPERFUND PILOTS: END-OF-YEAR REPORT

I. INTRODUCTION

In 1991 and 1992, the Office of Solid Waste and Emergency Response (OSWER) began major efforts to streamline and accelerate Superfund response activities. In a statement on October 2, 1991, the USEPA Administrator approved the Superfund 30-Day Task Force Implementation Plan (October 1, 1991) which identified aggressive cleanup targets and strategies for streamlining and "revitalizing" the Superfund process. OSWER also developed the new Superfund Accelerated Cleanup Model (SACM) for streamlining and accelerating the Superfund program within the existing regulatory framework; and on February 27, 1992, the Administrator approved the SACM initiative. During March and April, 1992, OSWER began communicating the new SACM process to Regions, other EPA offices, and external groups (Publication No. 9203.1-01, April 7, 1992) and began developing implementation plans for SACM.

During this period OSWER requested that the Regions identify pilot projects to initiate revitalization measures identified in the Superfund 30-Day Study; to begin the SACM process; and to integrate enforcement activities with SACM procedures. OSWER targeted special funding to enable all ten Regions to begin pilot activities, and reviewed the Regions' pilot proposals to ensure that they met certain criteria.

The criteria for approval were that the pilots must (i) have been proposed by the Region, and approved by the Headquarters Superfund Division Directors; (ii) have a high potential for benefits such as: transferability to other sites and Regions, savings in time and resources, improved procedures resulting in enhanced equity, or accelerated completions; and (iii) be conducted consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). Thirty-four pilots were approved by OSWER, with most beginning during the summer of 1992.

Through their pilot activities, Regions established the processes necessary to streamline Superfund, initiated them for selected sites (both National Priorities List (NPL) and non-NPL), and began applying SACM principles to dozens of sites with the objective of

fully implementing SACM during Fiscal Year (FY) 1994. More than half of the Regional pilots were completed by the end of FY 1993, with the remainder continuing into FY 1994.

Headquarters and Regions have jointly evaluated the progress of pilots throughout FY 1993. The objectives of this effort were to identify benefits, lessons learned, and appropriate modifications to the pilot procedures; and to transfer successful procedures and findings among the Regions and to external audiences. For each pilot, a team consisting of a Regional project manager, a Headquarters contact, and a Regional Counsel representative has been responsible for identifying milestones, measures of success, and legal (or other) issues that must be addressed.

During FY 1993, the Regions reported quarterly on the status of their pilots. In addition, video conferences and teleconferences were held in February and March 1993, between Headquarters and the Regions to document the goals and expected benefits of each pilot. The quarterly reports, conferences and regular followup with the Regions provided the information for this report.

Following this Introduction, Part II of this report contains an index of pilot activities and key contacts; Part III provides abstracts on each pilot; and Part IV describes in detail the goals of each pilot, its status, evaluation plan, and results to date.

(Note: In late FY 1993 the Agency began new "Administrative Improvements" to further accelerate Superfund activities, to the extent possible under CERCLA, and to enhance their equitable implementation. This report does not address the new Administrative Improvements, which are described in the July 7, 1993 "Implementation Strategy for Superfund Administrative Improvements.")

Part II

Index of

Regional Superfund Pilots

and

Key Contacts

Superfund Revitalization Office

December 8, 1993

STATUS OF REGIONAL SUPERFUND PILOTS: END-OF-YEAR REPORT

II. INDEX OF REGIONAL SUPERFUND PILOTS AND KEY CONTACTS

REGION 1

Key Contacts

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Ira Leighton (617) 573-9610

Pilots to Accelerate Response and Improve Effectiveness

- ✓ Kearsarge Metallurgical, New Hampshire Site
"Start"/SACM RDT Initiative: Accelerating the RI/FS Process

Enforcement Pilots

- ✓ Settlement With Third Party Generators and Transporters of Municipal Solid Waste
(Murtha Case Settlement)
Expedite PRP Remedy Implementation

REGION 2

Key Contacts

Ron Borsellino (212) 264-8667

Vince Pitruzello (212) 264-3984

Pilots to Accelerate Response and Improve Effectiveness

Accelerate RI/FS Process
Accelerate Federal Facility Agreements

- ✓ - Pilots that are complete.
- * - Completed pilots pending a final report.
- No marking indicates that the pilot is ongoing.

REGION 3

Key Contacts

Abe Ferdas (215) 597-8132
Peter Schaul (215) 597-8334

Pilots to Accelerate Response and Improve Effectiveness

- ✓ Accelerating Cleanup to Reduce Risk
- ✓ Innovative Data Validation Approaches
- * Bring Sites to Completion by End of FY 93
Integrated Site Assessment and Early Enforcement

Enforcement Pilots

- ✓ Proactive Settlement of *De Minimis* PRPs
- * Accelerate ROD to RD Process Through Early Enforcement

REGION 4

Key Contact

Kirk Lucius (404) 347-5059

Enforcement Pilots

Early Enforcement Prior to Listing
Early *De Minimis* Settlement

REGION 5

Key Contact

Doug Ballotti (312) 886-4752

Pilots to Accelerate Response and Improve Effectiveness

- * Regional Decision Team
- * Early Action Pilot, Better Brite, Wisconsin Site
Integrated Site Assessment

State Lead Pilot

Wisconsin Single Site Assessment

- ✓ - Pilots that are complete.
- * - Completed pilots pending a final report.
- No marking indicates that the pilot is ongoing.

REGION 6

Key Contacts

Carl Edlund (214) 655-6664
Betty Williamson (214) 655-2240

Pilots to Accelerate Response and Improve Effectiveness

Lightning ROD Projects

SACM Demonstration and Regional Decision Team, National Zinc, Oklahoma Site

REGION 7

Key Contact

Bob Morby (913) 551-7052

Pilots to Accelerate Response and Improve Effectiveness

Remediation Goals and Presumptive Remedy Initiative

REGION 8

Key Contacts

Diana Shannon (303) 293-1517
Carol Campbell (303) 293-1293

Pilots to Accelerate Response and Improve Effectiveness

- * Accelerated Cleanups Initiative
 - RI/FS Acceleration Pilot
 - Sandy Smelter, Utah Pilot

Enforcement Pilots

- * PRP Incentives
- * Comprehensive Site Management
 - Cross Program/Multi-Media Approach, Annie Creek Mine Tailings Site, South Dakota Site

- ✓ - Pilots that are complete.
- * - Completed pilots pending a final report.
- No marking indicates that the pilot is ongoing.

REGION 9

Key Contacts

Nancy Lindsey (415) 744-1517
Sherry Nikzat (415) 744-2333

Pilots to Accelerate Response and Improve Effectiveness

SACM Site Assessment Pilot
Plug-in ROD, Indian Bend Wash-South, Arizona Site

Enforcement Pilots

Early *De Minimis* Settlement, Operating Industries Inc., California Site

REGION 10

Key Contacts

Kathy Davidson (206) 553-1088
Carol Rushin (206) 553-7151

Pilots to Accelerate Response and Improve Effectiveness

- ✓ Accelerate Cleanup Through Removal:
 - Yakima Plating, Washington Site
 - Allied Plating, Oregon Site
- ✓ Demonstration Pilot, Alaskan Battery Enterprises, Alaska Site
- ✓ Outreach Specialist

Enforcement Pilots

- ✓ PRP Search Initiative

HEADQUARTERS CONTACTS

Superfund Revitalization Office	Jan Young	(202) 260-1691
Office of Emergency and Remedial Response	Sherry Hawkins	(703) 603-8896
Office of Waste Programs Enforcement	Bruce Kulpan	(703) 603-8985

- ✓ - Pilots that are complete.
- * - Completed pilots pending a final report.
- No marking indicates that the pilot is ongoing.

Part III

Abstracts of

Regional Superfund Pilots

Superfund Revitalization Office

December 8, 1993

STATUS OF REGIONAL SUPERFUND PILOTS: END-OF-YEAR REPORT

III. ABSTRACTS

REGION 1

Pilots to Accelerate Response and Improve Effectiveness

Kearsarge Metallurgical, New Hampshire Site

In this pilot, Region 1 conducted joint removal and remedial actions at a National Priority List (NPL) site to reduce the time required for the overall completion of site remediation. The removal program undertook an early action at the first Operable Unit (OU) which consisted of a waste pile and a septic tank and leach field. The remedial program is addressing the second OU which consists of the long-term treatment of the contaminated groundwater through a pump and treat system.

As a result of the pilot, 6-12 months were saved at the first OU because a Remedial Design (RD) was not required. This also resulted in cost savings because a formal RD was not conducted (the savings were estimated at \$300,000 to \$450,000). At OU #2, remedial work began approximately nine months earlier than was originally planned because it was performed simultaneously with work at OU #1.

"Start"/SACM RDT Initiative: Accelerating the RI/FS

This pilot includes two activities designed to accelerate the Superfund process. Under the first activity, "Start," the Region develops technical strategies early in the Remedial Investigation/Feasibility Study (RI/FS) process that will allow the RI/FS workplan to be as specific as possible. To assist with the RI/FS, some site characterization work is accomplished by EPA personnel or by other government agencies, such as the US Geological Survey, through Inter-Agency Agreements (IAGs), eliminating down time prior to RI/FS start.

Substantial field work has been completed at four of the nine sites identified by Region 1, while file reviews have been performed at all nine sites. Data from these four sites is currently being reviewed to determine if non-time critical removal actions (NTCRA) can be implemented. By taking advantage of the time following proposed listing of a site on the NPL and prior to the RI/FS start to gather data and develop site strategies the Region will be able to significantly increase the speed and efficiency of the RI/FS in the out-years as well as other remedial pipeline activities. The ability to sustain site work at a low level until full funding is available to begin the RI/FS gives Regions additional flexibility in dealing with sites while not compromising the final product or increasing the overall cost of the process.

In the second activity, the SACM Regional Decision Team (RDT) coordinates the Region's implementation of SACM and facilitates Regional decisions regarding appropriate actions at NPL-caliber and NPL sites. The RDT provides a forum for removal and remedial managers and Office of Regional Counsel to consider action jointly. The Region also developed SACM Site Screening Criteria in order to recommend sites to the RDT. These criteria were applied to the first twelve sites considered by the RDT and resulted in the selection of five sites for RDT attention, four pre-NPL sites and 1 NPL site.

REGION 1

Enforcement Pilots

Settlement with Third Party Generators and Transporters of Municipal Solid Waste (Murtha Case Settlement)

The Municipal Solid Waste (MSW) issue has been a contentious issue for the Superfund program. Beginning in the spring of 1992, the Murtha Case Settlement Team Pilot sought to examine a strategy for reducing the transaction costs of third party MSW generators and transporters.

EPA considered a site specific method for determining a fair share of remedial costs to be assigned to the MSW parties. In August 1993, however, EPA made the decision not to proceed with a site specific pilot for the two Murtha sites but to wait for a formal determination of the issue in the context of Superfund reauthorization. Based on that decision, the Region has ceased work on this enforcement pilot.

Expedite PRP Remedy Implementation

The Expedite Potentially Responsible Party (PRP) Remedy Implementation Pilot objective has been to identify and test incentives for PRPs to expedite the Remedial Design and Remedial Action (RD/RA) phase of the pipeline. After meetings with groups of PRP representatives, Remedial Project Managers (RPMs), and private sector attorneys, the Region determined that procedural rather than financial incentives would be most effective and developed a new "Design Accelerated Remedial Target" (DART) process. The DART paradigm is a results-oriented process in which EPA sets clean up standards and a conceptual remedy. PRPs can then design and implement the most cost-effective remedy to achieve the clean up levels. While EPA does not review multiple interim deliverables leading to the RD, EPA reviews and approves or disapproves the RD, and determines whether the constructed remedy meets specified standards. Using this pilot approach, EPA can be reasonable and flexible toward PRPs while still protecting human health and the environment. The DART paradigm is expected to result in a more efficient, effective, and equitable approach to the RD/RA phase.

The two NPL sites where the DART process is being piloted are: Solvents Recovery Services, Southington, Connecticut; and Linemaster Switch, Woodstock, Connecticut. The project is planned for completion in September 1994.

REGION 2

Pilots to Accelerate Response and Improve Effectiveness

Accelerate RI/FS Process

This pilot project accelerates the RI/FS process at NPL-caliber sites so that it can take place prior to the sites being listed on the NPL. This accelerated process involves conducting NPL listing activities concurrently with the sites' assessment, remedial planning, and removal actions.

The response activities at the sites involve two major strategies. The first divides the problems posed by the site into time critical and non-time critical based on the site's need for a removal action. Time critical problems, such as piles of contaminated soil and ash, are being evaluated and addressed by removal actions. The non-time critical problems, such as temporary stabilized ash piles and potentially contaminated groundwater, will be evaluated in the RI/FS workplan and addressed by future removal or remedial actions. The second strategy starts the development of the RI/FS workplan while the Hazardous Ranking System (HRS) package is under review and prior to the site's NPL listing.

Region 2 is applying the accelerated RI/FS process at a site in New York and a site in New Jersey. Expected benefits include: a decrease in the time required for the entire cleanup process by expediting the RI/FS; a decrease in the time necessary to select a remedy because of the additional quantity and precision of the data collected prior to site listing; efficient use of contractors for site assessment/characterization and remedial/response activities at the site by eliminating overlapping activities and sharing information; and removal data will be used for the RI and the HRS assessment to avoid duplication.

Accelerate Federal Facility Agreements

This pilot is designed to accelerate negotiations at two Federal facilities, Naval Weapons Industrial Reserve Plants (NWIRP), Calverton and Bethpage located in Nassau and Suffolk County, New York, respectively.

Under Section 120 of CERCLA, Federal agencies are required to enter into Inter-Agency Agreements (IAGs) with EPA for remediation of those sites which they own or operate and which are on the NPL. In order to accelerate negotiations, EPA and the Navy began negotiations for the IAG prior to listing on the NPL.

The Region expects time and resource savings because with Federal facility negotiations accomplished, there is no delay between site listing and the commencement of cleanup activities. This concurrent process will accelerate the RD, RA, and construction completion of a site. In addition, the Region anticipates efficiencies since IAGs are being developed for two sites at the same time with the same Agency. Although the negotiations are not yet completed, the Region has estimated that if the approach is successful, time savings from site investigation to the signing of the ROD may be 1 to 2 1/2 years.

REGION 3

Pilots to Accelerate Response and Improve Effectiveness

Accelerating Cleanup to Reduce Risk

The goal of this Region 3 pilot was to develop and implement a systematic approach for identifying NPL site conditions which could be addressed through removal processes. The Region has developed procedures and a checklist to assist RPMs in using removal authority to conduct early actions at NPL sites. This approach is based on the removal action criteria set forth in the NCP and provides a methodology for identifying candidate sites that can be addressed through the removal process. Using this pilot process and checklist, RPMs can more easily determine if an immediate response action is appropriate. The checklist may be used to support an Administrative Order, or can be transformed into an Action Memo to authorize Superfund monies for a Fund-lead removal response at NPL sites.

The new procedures have been used at twelve sites already and have resulted in Unilateral Administrative Orders and Orders on Consent to have removal work

conducted at NPL or NPL-caliber sites. The procedures have shown results at Region 3 sites where removal actions might not otherwise have been attempted. Significant time savings have been demonstrated (e.g. North Penn #6, Pennsylvania: three years saved) and in addition cost savings may be realized at sites as well. For example, some time and cost savings can be attributed to the contract vehicle available to the removal program (already established time and material contracts, ERCS) versus those available to the remedial program (individually negotiated fixed price contracts, ARCS).

Innovative Data Validation Approaches

Region 3 conducted the Innovative Data Validation Approaches pilot to streamline the data validation process by defining levels of review which are relevant to the data uses. The new process consists of five levels of review (three organic, two inorganic) which are defined to ensure that the level of data review is appropriate to the intended data use. Prior to implementation of the pilot, Region 3 validated 100 percent of the analytical data generated for Superfund using all of the evaluation criteria in the National Functional Guidelines for Evaluating Organic and Inorganic Data. Costs for validation under the traditional process averaged \$4 million annually and the average turn around time for validation was 70 days. Using the pilot process, RPMs and On-Scene Coordinators (OSCs) specify the level of validation required for samples so that resources are conserved.

Results from implementation of the pilot include: Reduction in the average time for data validation (receipt of data package to final validation report) from the current average of 70 days to an average of 21 days; and an estimated reduction in the average cost for data validation of one sample from \$50 per sample to \$15 per sample.

Bring Sites to Completion by End of FY 1993

Region 3 provided additional management review to the sites scheduled for completion in FY 93 in order to ensure proper planning and scheduling of Remedial Actions and close communication with States to address outstanding issues. The pilot was applied at Lackawana Refuse, in Old Forge Borough,

Pennsylvania, and Ambler Asbestos, in Montgomery County, Pennsylvania, to ensure completions by the end of fiscal year 1993. The Region's tracking has consisted of identifying problems that could delay completion, committing sufficient resources to the sites, and maintaining the schedule of the site.

Integrated Site Assessment and Early Enforcement Activity

This pilot demonstrates the effectiveness of integrated enforcement and site assessment activities and explores the use of early actions to accelerate site activities. After the Preliminary Investigation and Site Investigation (PA/SI), the Region decided that an Expanded Site Investigation (ESI) was warranted to determine whether the pilot site should be listed on the NPL. Rather than do only an ESI, however, the Region negotiated that an Extent of Contamination Study (ECS) be conducted by the PRP. The ECS combines the sampling needs of the ESI and the removal assessment and may include data equivalent to an RI. Under the Administrative Order on Consent (AOC), the PRP is also required to do an engineering evaluation and cost analysis (EE/CA) should the results indicate the need for a non-time critical removal action.

The Region expects that if the site were to be listed on the NPL, one to two years could be saved in the remedial process by eliminating or streamlining the RI/FS as equivalent RI/FS data was gathered during the ECS. Also, the information gathered during the ECS can be used to support CERCLA Section 106 findings to require further site cleanup. The ECS, if used at NPL-caliber sites, can save one to two years time.

REGION 3

Enforcement Pilots

Proactive Settlements of De Minimis PRPs

Region 3 has piloted a new process to test pre-ROD *de minimis* settlements as a means to promote equity, settle quicker with the major PRPs, and recover

additional funds to cover past costs at the Tonolli Corporation site in Nesquehoning, Pennsylvania. This is the first *de minimis* settlement conducted by EPA prior to ROD signature. Through this early *de minimis* settlement EPA was able to reduce the transaction costs of the *de minimis* parties who settled and got them out of the process early.

One hundred seventy parties signed the order which contained a 65 percent premium and have agreed to pay \$3.5 million; \$2.5 million for past costs and \$1 million for future costs. A second offer was made to the 230 parties who did not sign the first agreement and included a 10 percent penalty for late settlement in addition to the 65 percent premium. Thirty three parties signed the second offer and have agreed to pay \$540,000. The cost to EPA was \$825,000 in extramural and intramural funds and EPA will collect approximately \$4 million from *de minimis* parties to partially address response costs. Through this early *de minimis* settlement EPA was able to reduce the transaction costs of the *de minimis* parties who settled and to get them out of the process early.

Accelerate ROD to RD through Early Enforcement Planning

This Region 3 pilot was developed to accelerate the ROD to RD process through early enforcement planning. The pilot activities are designed to overcome time delays and inefficiencies in the enforcement process and to expedite cleanup at all enforcement-lead sites. Under the accelerated pilot process, a search team holds meetings four to six months before the ROD with the RPM, EPA attorney, civil investigator, and other interested EPA parties. These meetings examine various PRP liability issues, enforcement strategies, natural resource trustee issues, and investigate how to prepare the Pre-Referral Notice (PRN) in a timely manner with all information required for the Department of Justice. Additionally, 100 days after the ROD is signed, decision meetings are held to determine the optimal way to conclude negotiations. The effort is labor intensive but has provided good results. Performance standards are also being incorporated into RODs to cut down on the amount of negotiations required for the RD. Parties are also encouraged to sign an AOC requiring them to begin RD once the Consent Decree is signed even though it has not been entered in court. The

acceleration of the ROD to RD process is being achieved through additional activities such as monthly docket reviews; creation of model enforcement documents; formalization and use of PRP search procedures; and improved coordination with natural resource trustees.

REGION 4

Enforcement Pilots

Early Enforcement Prior to Listing

Under this approach to accelerate site assessments, the PRP conducts a consolidated ESI-RI/FS, with EPA oversight. Through this early enforcement effort, the Region is able to use the data collected to prepare an HRS document. The Region has completed its pilot activities at one of three sites under this approach (Greenback Industries, Tennessee). Actual benefits to date at Greenback include the completion of the ESI-RI/FS within two years, an acceleration of two years. Also, the PRP will pay for EPA's oversight of the site assessment, thereby conserving Fund resources. The PRP will realize savings of about \$300,000 due to the integration of the ESI-RI/FS. Although the site proved not to be NPL-caliber under the new HRS, the approach is applicable to other NPL-caliber sites. The site has been referred to the state of Tennessee, which was able to integrate the available RI/FS data into its RD/RA. Therefore, the State saved time and money and is now able to start their cleanup process.

Early De Minimis Settlement

The Early *De Minimis* settlement pilot includes an emergency removal, a settlement by a group of 100 major PRPs and the settlement with *de minimis* parties. Under this pilot, the Region entered into settlement with the major PRPs before the emergency removal with the major PRPs agreeing to pay for the emergency removal up front. In addition, the Region undertook to recover appropriate cleanup costs from the *de minimis* PRPs immediately after the removal was complete, as opposed to waiting for the site to be placed on the NPL. This *de minimis* settlement was supported and encouraged by the major PRPs. The

pilot process involves the formation of a PRP steering committee and entering into negotiations with that committee during the removal but before the site is listed on the NPL. The site is located in South Carolina and was a past State and Federal RCRA enforcement site.

REGION 5

Pilots to Accelerate Response and Improve Effectiveness

Regional Decision Team

The goal of the Regional Decision Team (RDT) pilot is to ultimately develop a process within the Region whereby all components of the Office of Superfund are fully integrated into a single continuous effort to efficiently and quickly evaluate and cleanup sites. The RDT pilot is addressing 19 sites that were nominated by the six states that are within the Region. Each site was assigned a core Site Assessment Team (SAT) that was composed of an OSC, a RPM, a Site Assessment Manager (SAM), and a State representative. The SAT determined what additional personnel were necessary to evaluate the site; eventually all the sites were assigned an attorney and a community relations coordinator.

Under the pilot, the SAT reports their findings to the RDT which makes decisions on what further action, if any, should be taken at a site to explore innovative approaches to expedite site evaluation and cleanup. The RDT does not micro-manage a site. Instead the RDT reviews status reports and strategy options from the SAT, establishes response priorities, and provides advice and direction on appropriate response actions. The major role of the RDT is to clarify, evaluate, and prioritize non-time critical early actions. These actions are intended to achieve site stabilization and risk reduction. The action may serve as an initial response or provide final cleanup for the site. The role of the RDT is to identify the response opportunities and direct the initiation of the required support actions. The RDT also has the responsibility for ensuring that response actions are fully consistent with the requirements contained in the National Contingency Plan (NCP). The RDTs meet once a month. The following actions were taken at the sites

already reviewed: 4 Site Evaluation Accomplished; 2 RCRA deferrals; and 3 non-time critical removals.

Early Action Pilot, Better Brite, Wisconsin Site

This pilot project accelerates cleanup by performing a Federal-lead time-critical removal action through the coordination of multiple programs. The strategy of this pilot uses removal authority for addressing immediate risks, while integrating cross-program needs in the planning process. The removal action at the site, when complete, will have addressed the source areas to the groundwater contaminant plume and containment of the plume. The pilot process involves the combination of the time critical removal and RI/FS. The time critical removal will contain the contaminated plume and will decrease the amount of cleanup needed under a remedial action.

Expected benefits from the pilot include: a significant early reduction of risk from the accelerated cleanup action; and knowledge and experience for future multi-program coordination because of the significant involvement from the removal and remedial programs, the State of Wisconsin Department of Natural Resources, EPA's Office of Public Affairs, and the ATSDR.

Integrated Site Assessment

In its integrated site assessment pilot Region 5 is coordinating the removal program and the site assessment program to combine elements of traditional removal assessments with those of the PA/SI. The Region has developed a team approach for the pilot involving OSCs and SAMs that result in the combination of sampling needs at newly discovered sites for removal and site assessment purposes and the close coordination of removal and remedial efforts.

Through this pilot, the Region has defined a new process (Removal Integrated Site Evaluation, RISE) for screening and assessing new sites coming into the Superfund program for removal and/or remedial considerations. By combining the Site Assessment Section and the Removal Branch, the Region has developed the "one door" entry into the Superfund

process as envisioned under SACM. The pilot assists in designing an effective mechanism to address these sites prior to the initiation of the remedial process. Seven sites are being piloted with this new approach and the results will be assessed after they have completed all site assessment activities.

REGION 5

State Lead Pilot

Wisconsin Single Site Assessment

The Region is implementing a pilot with the State of Wisconsin designed to integrate into a single site assessment the traditionally separate removal and remedial assessment. The pilot will be conducted by the State of Wisconsin which has assembled a site evaluation team to develop a comprehensive approach for the site evaluation under a cooperative agreement. Approximately five to six sites are being addressed through this pilot.

This pilot may assist the Superfund program in integrating its initial assessments and removal/remedial assessments to efficiently and quickly determine the prospects for a site. By using data for multiple purposes, economies can be achieved in terms of the amount of sampling needed, expertise and learning can be shared among agency officials responsible for the various tasks undertaken at a site, and the time between data collection and action or no further action can be shortened. A preliminary estimate of the savings at the three sites thus far completed range from 3-18 months and cost savings of up to 20 percent of the cost of the site assessment.

REGION 6

Pilots to Accelerate Response and Improve Effectiveness

Lightning ROD Projects

In December 1991 Region 6 initiated the Lightning ROD pilot projects at three hazardous waste sites to test the effectiveness of a range of improvements designed to accelerate the Superfund process. Using intensive staff effort on the sites in the early stages of the remedial process, the Region estimates that the time required to move from NPL proposal to RA start can be reduced from an average of eight years to less than three. While this approach requires the commitment of up to twice as many resources in the first year or work, it is estimated that a savings of 30% can be expected over the course of site work. This high level of initial effort points to the importance of carefully prioritizing sites for such an accelerated effort. The sites selected for the pilot are two wood treater sites (Popile, El Dorado, Arkansas and American Creosote Works, Inc., Winnfield, Louisiana) and an abandoned dump (South Eighth Street Landfill, West Memphis, Arkansas).

SACM Demonstration and Regional Decision Team

At the SACM demonstration site (National Zinc, Bartlesville, Oklahoma) the Region is employing most aspects of the Lightning ROD process with the addition of removal actions prior to NPL listing. The four goals of the demonstration are: Completion of all preparations for the RI/FS and RD before the site is proposed for inclusion on the National Priorities List; definition of the total site remedy in the first year through technical, policy and process improvements; definition of responsibility for remedial action in the second year after addition to the NPL; and starting remedial action within three years of the site's proposal to the NPL.

The second aspect of this pilot is the formation of RDTs comprised of managers representing the various elements of the program to screen sites for early acceleration and integrated action; to integrate technical requirements for sampling and analysis for

the pre-remedial, removal, remedial, and enforcement components of the program; and expand the use of early actions using removal authority to address obvious problems as early as possible.

Preliminary findings indicate that the coordinated sampling that was conducted at the demonstration site will provide over 90 percent of the data needed for the RI/FS and RD. The RDT organization ensured project team coordination of all aspects of the process at this site. The Region anticipates reduced sampling costs, and reduced time to define the remedy. The RDT has proven to be an important forum for communication and integrating activities across different program areas. The Region has developed site screening criteria to help staff understand the Superfund Accelerated Cleanup Model (SACM). The RDT has screened over 60 sites for potential integrated or accelerated action. Of equal importance is the increased level of coordination among the States, Tribes, and EPA.

REGION 7

Pilots to Accelerate Response and Improve Effectiveness

Remediation Goals and Presumptive Remedy Initiative

Under this pilot, Region 7 pilot is developing guidance on standard cleanup goals, remedy types, ROD and Statement of Work (SOW) language for grain storage sites, Polychlorinated Biphenyl (PCB), sites, and coal gasification sites. These sites represent significant problems in Region 7 as well as other Regions. There are approximately 1500 grain storage sites, 50 PCB sites, and 265 coal gasification sites which may benefit by the application of this initiative in Region 7 alone. Once the guidance documents are completed, pilot sites will be selected in Region 7 for application of the standards to evaluate their success.

REGION 8

Pilots to Accelerate Response and Improve Effectiveness

Accelerated Cleanups Initiative

The goal of the Accelerated Cleanups Initiative pilot has been to identify the best candidates sites for accelerating existing cleanup schedules to reach construction completion goals and to evaluate how obstacles to accelerated completion can be overcome. During the pilot Region 8 was able to achieve construction completion at six sites, with time savings due to Regional initiatives ranging up to six years at the Libby Groundwater Site.

Region 8 used a Total Quality Management approach to evaluate a number of sites and to determine which sites required additional management attention and resources. In addition to the pre-designation evaluation, the pilot included constant evaluation to foster communication and coordination among site team members. This evaluation has ensured that obstacles to accelerated cleanup are dealt with effectively and quickly.

RI/FS Acceleration Pilot

The goal of the RI/FS accelerated pilot is to demonstrate that for NPL-caliber sites, a more focused and compressed investigation can yield considerable time and cost savings. This acceleration process expedites the overall Superfund cleanup process by conducting these phases simultaneously. This pilot concept is designed to accomplish Superfund phases in a more efficient manner and deliver results the public will value including quick reduction of acute risks at all Superfund sites (removal and remedial) and restoration of the environment over the long-term. Due to the intensified site investigations and sampling done for the HRS package and the RI/FS prior to listing, EPA will be able to move quickly towards the selection and implementation of remedial actions after listing.

Only two weeks were needed to prepare the HRS package for the Summitville Mine site located in Rio Grande, Colorado, compared to the estimated national

and Regional averages of three to six months. The final listing is expected to take about six months, which will be quicker than the national and Regional averages. It is estimated that the pilot approach will reduce the time it takes to cleanup the site by more than one year.

Sandy Smelter, Utah Pilot

The goal of the Sandy Smelter Study pilot is to integrate the traditionally separate steps of the PA/SI, RI, RD and if necessary the removal assessment into one assessment. This combination should require approximately one year as opposed the three year average. This site is an abandoned mining smelter in a residential area and a site investigation has demonstrated that on-site residential soils have been contaminated with heavy metals. Where appropriate, presumptive remedies will be used to implement large scale remediation through non-time critical removals.

REGION 8

Enforcement Pilots

PRP Incentives

The goal of the PRP Incentives pilot was to identify PRP incentives that will increase the number of, accelerate, and improve the quality of PRP-lead NPL site cleanups. The pilot's early attempts to offer financial incentives were not completely successful when attempted at two sites. Given these initial results and information gathered by a similar pilot in EPA's Region 1 office, the Region 8 pilot was re-evaluated. To identify incentives, the Region held a national conference with PRPs and their representatives on April 15, 1993. At the conference EPA gained valuable insight into PRP's views on incentives. The Region has published a conference report which describes approaches for streamlining Superfund procedures to accelerate cleanups and expedite settlements. These incentives are primarily administrative and procedural, for example, to accelerate the RD process.

Comprehensive Site Management

Region 8 conducted an enforcement pilot for a comprehensive cleanup covering all activities of the CERCLA process from discovery of waste areas on site and investigative studies through cleanup and operations and maintenance. The goal of this pilot was to expedite the Superfund process by use of a single Consent Decree (CD) with the primary PRP. The pilot's goal was for the PRP to comply with the CD, and reimburse EPA's oversight costs. Full compliance with the CD would have superseded the need for NPL listing. Consent Decree negotiations were started in November 1991 and were discontinued in January 1993. The PRP rejected the proposed Consent Decree in August 1993. However, EPA hopes to use many of the technical and administrative innovations from the negotiations in a more traditional enforcement framework. During the period of negotiations (1991 - 1993), seven removals under order and EPA oversight were started, and three are completed.

Cross Program/Multi-Media Approach, Annie Creek Mine Tailings Site, South Dakota

This pilot saved the Region and the PRP time and resources using Clean Water Act (CWA) and Clean Air Act (CAA) authority to initiate the remedial investigations at the Annie Creek Mine Tailings Site, a site proposed for the NPL. The Region and the PRP saved time and resources using the CWA/CAA request to initiate the investigation instead of negotiating traditional Superfund orders. Further, this approach created a less adversarial environment and allowed all parties to focus on technical resolutions to site cleanup which resulted in the PRP conducting site work within one month of the request. PRP incentives were used that included agreeing to initiate site work under the CWA/CAA request, therefore not negotiating orders, and not including the Water Management Divisions oversight of the CWA/CAA as part of the Superfund costs to be reimbursed by the PRP. The Region will seek recovery of costs associated only with Superfund's oversight. Non-time critical removals are being used to speed the process as well. The Region estimates that more than six months have already been saved as compared to the planned duration for a traditional RI/FS. Savings to

EPA for the entire cleanup are projected to be at least 2 years and \$250,000. The PRP may also realize significant cost savings.

REGION 9

Pilots to Accelerate Response and Improve Effectiveness

SACM Site Assessment Pilot

In this pilot, Region 9 has developed and is implementing at 20 sites, an integrated site assessment process that satisfies the data and sampling needs of different program areas. The pilot introduces two phases, the Integrated Assessment (IA) and the Expanded Site Inspection/Remedial Investigation (ESI/RI). The IA is a single continuous assessment that begins with the evaluation of available records and may also include field sampling to more accurately determine if a site is NPL-caliber. If the site may potentially score based on the evaluation of records, the site will move directly into field sampling and an IA document is prepared (PA/SI). The ESI/RI is a much more comprehensive investigation than the IA and will typically be used on sites that may be NPL-caliber. For this reason, the Region's RDT has input on when to use an ESI/RI. The ESI/RI may be used to gather ESI, RI/FS and/or EE/CA information. Time and cost savings are expected over the course of the Superfund process and a full evaluation is being conducted by the Region.

Plug-In ROD, Indian Bend Wash-South, Arizona Site

The Plug-in ROD pilot project will demonstrate the use of two innovative approaches to accelerate remedy selection at "mega-sites." The use of a Plug-in ROD allows site managers to complete a "master" FS for the site as a whole and issue a ROD that can be used for facilities meeting criteria in the ROD. Site managers then perform an RI on each facility to determine whether the facility: a) can "plug-in" to the site ROD, b) can "plug in" to the site ROD with minor modifications, or c) requires a different ROD. The use of a "presumptive remedy" is an essential component of the Plug-In ROD. A presumptive

remedy must be selected that is potentially applicable to most facilities at the site. Preliminary results include an anticipated saving of time and money by eliminating the need to conduct a FS for each facility, and a reduction in transaction costs. The savings achieved depend on the number of subsites or operable units in the site that are able to "plug-in" to the ROD. This pilot creates a new approach to multi-source-site management for mega-sites if their individual facilities have similar characteristics, such as contaminants. The ROD can be completed, and no single subsite's RI work holds up the overall Superfund process.

REGION 9

Enforcement Pilots

Early De Minimis Settlement, Operating Industries, Inc., California Site

The pilot project for Early *de minimis* Settlement, Operating Industries, Inc. (OII) in Monterey Park, California involves design and implementation of an early settlement strategy for the 3,500 *de minimis* PRPs that disposed of hazardous waste at the OII landfill. The goal is to complete the settlement by the end of the first quarter of FY 1995, before the final remedy is selected and before the final RD/RA CD negotiations are initiated in mid-FY 1995. This *de minimis* pilot is supported by the major PRPs. The pilot findings that could best be transferred to other sites are: 1) the notice strategy which encourages *de minimis* PRPs to form steering committees which assist the Region in better communicating with the major PRPs; and 2) the volume adjustment process with a steering committee which develops default volumes.

REGION 10

Pilots to Accelerate Response and Improve Effectiveness

Accelerate Cleanup Through Removal, Yakima Plating, Oregon Site

Region 10 avoided the cost and time of doing an RD by using removal rather than remedial processes at a plating site in Washington state. The site remediation described in the ROD was accomplished as a removal under the management of an RPM and OSC, using the combined efforts of ARCS, TAT, and ERCS contractors (A 30 day comment period was provided for the RI/FS and Proposed Plan). Time savings were estimated at over 15 months, 12 of which were saved by not performing the RD. Cost savings achieved by not conducting an RD were estimated at \$100,000 in extramural funds based on the size of this response. The Region also needed only 40 percent of the usual staff time to complete the action.

Accelerate Cleanup Through Removal Allied Plating, Oregon Site

At Allied Plating, the Region performed a pre-ROD removal leading to a No-Action ROD. Again, about 12 months and the cost of an RD were saved by not performing the RD (estimated to be \$100,000 for a response of this magnitude compared to a national average of \$600,000). In addition, the Region estimates that \$400,000 were saved during the removal itself by using the US Army Corps of Engineers Rapid Response Program (actual costs of \$1.1 million, versus estimated costs of \$1.5 million for on-site containment).

Demonstration Pilot, Alaskan Battery Enterprises, Alaska Site

This pilot project involved pre-ROD remediation activities. Regional staff conducted pre-ROD remediation of the site chosen for pilot application via a Superfund Innovative Technologies Evaluation (SITE) demonstration project. The SITE program designated the Alaskan Battery Enterprises site as a demonstration pilot for a new soil washing technology

that removes lead contamination from soil. In September 1992, the SITE demonstration was completed and all soil above the action level, approximately 150 cubic yards, had been excavated and treated. A "No Further Action" ROD was issued in March 1993. The site will be listed as construction completed. Actual time required for cleanup was approximately 12 months as opposed to the 22 months based on FS estimates and best professional judgement assumptions.

procedures and training. It is expected that the pilot will result in time and cost savings during PRP searches and result in more effective and efficient searches.

Outreach Specialist

The goal of the Outreach Pilot project was to enable the public to make informed judgments about the Superfund program and to develop an understanding of SACM within the Region. The objective of the pilot was to develop and oversee a focused outreach agenda aimed at enhancing the Region's Superfund outreach efforts. Going beyond site-specific community relations, the Region also coordinated with Headquarters to communicate Superfund accomplishments on a larger scale. Using this initiative an Outreach Specialist ensured that the public, broadly defined to include most of EPA's customers, routinely receive factual information about Superfund. Under the Outreach Pilot, regional staff conducted more general types of Superfund outreach, with emphasis on responding to the public and media quicker and more efficiently.

REGION 10

Enforcement Pilots

PRP Search Initiative

Region 10 developed this pilot project to support its goal of speeding and facilitating Superfund settlements. As part of the pilot two civil investigators were hired, an Enforcement Support Group (ESG) was established, and a full-time PRP search coordinator was hired.

The ESG provides assistance to the PRP Search Coordinator who has the lead responsibility for coordinating Superfund PRP searches and enhancing the Region's capacity for investigative and litigation support including establishment of PRP search

Part IV

Individual Reports on

Regional Superfund Pilots

Superfund Revitalization Office

December 8, 1993

Region 1

Kearsarge Metallurgical, New Hampshire Site

PILOT DESCRIPTION

In this pilot, Region 1 conducted joint removal and remedial actions at a National Priority List (NPL) site to reduce the time required for the overall completion of site remediation. The Removal program undertook an early action at the first Operable Unit (OU) which consisted of a waste pile and a septic tank and leach field. The Remedial program is addressing the second OU which consists of the long-term treatment of the contaminated groundwater through a pump and treat system.

For OU #1, Region 1 conducted a removal action utilizing Emergency Response Cleanup Services (ERCS) in place of a full Remedial Design/Remedial Action (RD/RA). Region 1 concurrently utilized Alternative Remedial Contracting Strategy (ARCS) contractor support on the second OU. Using contractor support in this manner expedited early actions and hastened the start of long-term action.

The traditional process requires that once a ROD is written, the OUs identified are remediated using the RD/RA contracting process. Traditionally, work is done at one OU at a time so that proper oversight may be conducted of the ARCS contractor. Using ERCS contracts to conduct a removal at the first OU allowed the ARCS contractor to begin work at the second OU simultaneously.

Demonstrated benefits of using this pilot approach include the flexibility to undertake early actions using Removal Authority to conduct certain types of remediation resulting in more efficient cleanups, and more effective use of program resources. This in turn will reduce demand for Fund resources and allow additional sites to proceed through the remedial pipeline.

PILOT STATUS

The specific site involved in the pilot was the Kearsarge Metallurgical site in Conway, New

Hampshire. The nine acre Kearsarge Metallurgical site is an abandoned foundry in the town of Conway, New Hampshire. The site is located within the 100-year floodplain of the Saco River. Pequawket Pond borders the site to the south. The site contains a drainage pipe with four open-bottomed catch basins, two waste piles, a septic tank and leach field, and forested wetlands. The site was originally operated as a saw mill, but from 1964 to 1982 was operated as a foundry. Wastes generated by Kearsarge include solid substances such as ceramics and metal grindings, and hazardous substances including caustic soda, hydrofluoric acid, volatile organic compounds (including TCE), chromium, and flammable liquids. A hydrologic study in 1982, revealed contamination of groundwater in the upper aquifer underlying the site, a potential drinking water source.

The Record of Decision (ROD), in the first OU, called for the following activities: removing the septic tank and contents, followed by off-site incineration and ash disposal in a Resource Conservation and Recovery Act (RCRA) hazardous waste landfill; excavating and dewatering approximately 250 cubic yards of leach field soil, followed by off-site treatment and disposal; excavating 4,650 cubic yards of waste pile materials with off-site disposal of approximately 4,400 cubic yards in a RCRA solid waste landfill and off-site treatment and disposal of approximately 250 cubic yards in a hazardous waste landfill. The Hazardous Ranking System (HRS) score for the Kearsarge Site was 38.45.

This removal took the place of an RD/RA and was able to meet all cleanup levels specified in the ROD. The surface contamination was cleaned up 6-12 months quicker using a removal because a Remedial Design (RD) was not required. The groundwater OU was not scheduled to be completed before the summer of 1994 but because work began concurrently with the removal the groundwater restoration construction is planned to be completed in early Fiscal Year 1994. The removal action was completed on December 30, 1992.

EVALUATION PLAN

Evaluation of the pilot improvements reveals that clean-ups occur more quickly and more cheaply when early actions are performed (where appropriate) at NPL sites. This increases the overall efficiency of the Superfund program. The Region's evaluation focused on the following measures:

- A reduction in the time required to complete cleanup at OU #1.
- A reduction in the time required to reach construction completion at OU #2.
- A reduction in the costs to conduct the cleanup at OU #1.

RESULTS

Results of this pilot include time savings at both Operable Units at this site:

- At OU #1, the ERCS contractor has completed the removal 6-12 months faster than a comparable RD/RA would have taken by essentially skipping a formal RD and proceeding directly to construction.
- At OU #2, an ARCS contractor began work approximately nine months earlier than was planned. Construction of the groundwater pump and treat remedy should be completed by early in Fiscal Year 1994 as opposed to the originally planned completion date of the Fourth Quarter of 1994. This reduction is due to the fact that both the ERCS and ARCS contractors began work simultaneously at both OUs as opposed to waiting until OU #1 was completed to begin work at OU #2.
- At OU #1, the costs of performing a formal RD were avoided by conducting the removal. Based on best professional judgement, it is estimated that the RD would have cost between \$300,000 and \$450,000 for a response action of this magnitude.

In addition, public confidence in EPA has been heightened because the cleanup will be completed

sooner than anticipated. Also, the use of early actions resulted in quicker risk reduction at the first OU.

Region 1

"Start"/ SACM RDT Initiative: Accelerating the RI/FS Process

PILOT DESCRIPTION

This pilot encompasses two activities designed to accelerate the Superfund pipeline process. The first is known as "Start" and the second is the SACM Regional Decision Team (RDT).

START

The objective of "Start" is to develop technical strategies that will allow the Remedial Investigation (RI)/Feasibility Study (FS) workplan to be as specific as possible using EPA employees and other governmental entities; supplemented by Alternative Remedial Contracting Strategy (ARCS) contractors. As a result, subsequent pipeline activities should be accelerated including: focusing investigations toward promising remedial alternatives; identifying potential early actions; and eliminating down-time prior to the start of the RI/FS by working on the site at a low level of effort. The difference between "Start" and traditional RI scoping is that more in-depth work is done, and it is a more coordinated approach which utilizes non-traditional methods for gathering information (e.g., US Geological Survey, US Fish and Wildlife Service).

Traditionally, contractors may conduct preliminary site characterization work prior to submission of the RI/FS work plan. A Statement of Work (SOW) is then developed by EPA followed by the contractor's submission of a work plan. EPA then circulates the work plan among the Regional staff for review. EPA reviews the RI/FS workplan prior to finalization and comments on deficiencies. This process results in considerable down time between listing on the National Priorities List (NPL) and the actual RI/FS start.

Using the "Start" approach, those who would prepare the SOW and review the workplan are brought in at the front-end of the RI/FS process for their input on what is important, how the work should proceed, and what are the objectives so the site work proceeds on a faster track. To assist with the RI/FS, some site

characterization work is accomplished by EPA personnel or by other government agencies through Inter-Agency Agreements (IAGs), eliminating down time prior to RI/FS start. Once RI negotiations begin, it is often difficult for RPMs and technical staff to do a full scoping effort because of the time demands made upon them. Thus these pre-RI/FS activities allow the RPM and technical staff to reflect on what is being done and what is needed.

Anticipated benefits using the "Start" process include: enabling site managers to bring in those who will review the RI/FS for consultation at the front-end of the process; and decision making about what is needed in an RI which will prevent unnecessary delays and added costs for additional work done at the end of the process. This will allow RI/FSs to be completed quicker and at a lower cost. Work done prior to the RI allows for a more thorough examination of needed future work resulting in a more complete, focused, cost effective RI and thus facilitates the FS, ROD and RD/RA. It should be noted that this objective can only be accomplished if the Region is given a budget to start the RI/FS in subsequent years.

Using IAGs and EPA staff allows a lower cost option when conducting RI scoping and encourages expert opinion prior to the RI to give input at a point where it can be of more use resulting in a complete RI/FS at reduced cost savings and engendering public confidence. In addition, using Federal employees allows an RI to continue at a low level until full funding is available avoiding the pitfalls of starting and stopping work at a site. As an example, the Region has used the U.S. Geological Survey (USGS) to conduct detailed geologic and geophysical field activities at three NPL sites. Not only was the work completed at less cost (estimated) than using an ARCS contractor, but the USGS is recognized as the preeminent organization in this field and as such Superfund is getting an excellent product.

SACM RDT

The second activity, the SACM Regional Decision Team (RDT), is designed to facilitate Regional decision making regarding early actions at National Priorities List (NPL) caliber and NPL sites and to coordinate Region 1 implementation of SACM. The Region 1 SACM RDT pilot consists of a multi-tier approach that will provide both a technical and legal review component as well as management concurrence for commitment of staffing, intramural and extramural funds. The RDT establishes the following support organizations: a Screening Team composed of technical, legal and removal and remedial program staff who will review prospective candidate non-NPL and NPL sites submitted by the various Regional program offices; a Core Group responsible for recommending appropriate response actions and follow-up activities; a site specific case team to implement the action; and a Support Group who will be responsible for providing information, recommendations, and consultation as needed.

Using the traditional process removal and remedial program managers considered site specific actions separately while a management team made priority decisions for remedial sites only. Early actions were considered on a site by site basis.

The SACM RDT pilot initiative allows removal and remedial managers and office of Regional Counsel to meet together to consider action jointly, and early actions are considered with a Regional perspective.

The anticipated benefits of the RDT include improved coordination between the removal and remedial programs. This new integrated program will eliminate redundancies between remedial and removal programs and capture efficiencies inherent in each program thus allowing for a more efficient and effective Superfund program. The SACM RDT approach allows site managers to creatively analyze how best to handle their site and achieve cleanup in the most efficient manner. Increased risk reduction resulting from early actions will be a major benefit of the RDT as well. This benefit will have a direct impact on those living near a Superfund site and will help foster public confidence in the program. Improved coordination between the program and states is another anticipated benefit of the RDT. This initiative allows earlier identification of obstacles and a reduction in delays to reach construction

completions again resulting in higher public confidence, a better working relationship between the states and EPA and allowing more sites to move through the pipeline.

PILOT STATUS

START

The START pilot tasked ARCS contractors and the US Geological Survey (USGS), with support from the Environmental Services Division (ESD), to conduct file reviews and field investigations and assist in the preparation of Data Summary Reports. These reports were based on the existing listing documentation at nine NPL sites in Region 1 (which had no RI/FS starts as of Fiscal Year 93), and selective residential well sampling, geological surveying, soil investigations and hydrogeologic investigations.

Substantial field work has been completed at four of the nine sites, while file reviews have been performed at all nine sites. Activities at the four sites included comprehensive file reviews, evaluating and sampling existing monitoring and residential wells, updating and expanding topographic maps, conducting ecological field reconnaissance and stream gaging, sampling surface water, sediments and surficial soils, and conducting surface geophysics. Reports on these activities are completed for one site and are currently being prepared for three sites. In addition, negotiations have been completed and the RI/FS has been initiated for one of the nine sites. Data from all of these four sites is currently being reviewed on an on-going basis to determine if non-time critical removal actions (NTCRA) can be implemented.

The START team has also initiated work at the remaining five sites including field review activities and site visits. Work on all sites is proceeding based on addressing the worst sites first.

Technical staff continue to meet approximately every two weeks to discuss site progress. Future activities associated with this START pilot include: further site studies at all Region 1 NPL sites where RI/FSs have not been initiated and selected NPL-caliber sites, and continuing identification of potential early actions at all investigated sites. The START initiative is an ongoing project.

SACM RDT

Under the SACM RDT initiative, the Region established a process for identifying, screening and evaluating NPL sites and NPL-caliber sites. Periodic RDT meetings were established to provide removal, remedial and Regional Counsel staff an opportunity to meet and discuss issues. One of the first outcomes of the initiative was a Region 1 Fact Sheet of SACM Questions and Answers to assist the staff in implementing SACM. In addition, the Region developed SACM Site Screening Criteria in order to recommend sites to the RDT. These criteria were used on the first twelve sites considered by the RDT and resulted in the selection of five sites for RDT attention, four pre-NPL sites and 1 NPL site. These criteria are currently used by staff to continue to screen NPL-caliber sites.

The first formal meeting of the RDT was held in November 1992, to review the five sites selected after the screening process: 1) a landfill in Rhode Island, which did not have a significant risk to warrant early action; 2) a site in Vermont, which led to the removal program conducting a time critical removal action and collecting additional data to determine if non-time critical actions are needed; 3) a site in Maine, which appeared to not be a NPL-caliber site and was subsequently referred back to the State; 4) a site in Connecticut, where the State of Connecticut plans to take an action; and 5) an NPL site in Connecticut which was sent to the START program to gather additional information. With the exception of the site where the State of Connecticut is taking action, the Region continues to track these sites to determine if early actions can be implemented.

Based on the results of the November meeting, the Region decided that criteria must be established to determine which sites represent good candidates for NTCRA. The RDT met on several occasions and the outcome was the development of Regional NTCRA criteria.

In December, the RDT met to discuss a NTCRA consisting of a landfill cap at the Browning Ferris Industries (BFI) Landfill (NPL site). The RDT decided to initiate an Engineering Evaluation/Cost Analysis (EE/CA) and to negotiate with BFI for a NTCRA. The EE/CA was initiated in February and concluded in July. The action memo was signed on September 7, 1993, and BFI signed an Administrative

Order on Consent (AOC) to conduct the NTCRA on September 24, 1993.

In February, the RDT met to discuss the Rose Hill Landfill (NPL site) and agreed that a time critical removal action was needed to address gas emissions from the landfill. The removal action was initiated in March and construction was completed in May.

In June, the RDT met to discuss a NTCRA consisting of a building demolition at the New Hampshire Plating site in New Hampshire (NPL site). The RDT decided to initiate an EE/CA. The EE/CA was concluded in October and the action memo is pending.

During June and July, the RDT met on several occasions to discuss the Raymark Site. The RDT established a communication and coordination strategy to resolve listing issues, removal issues and remedial issues. The team for this site consists of representatives from all programs. In order to make critical decisions in a time efficient fashion, the team also includes some members of the RDT.

Through the RDT, the Region has begun developing a process to identify and prioritize one list of sites. As part of this process, the Region continues to review the NPL sites and NPL-caliber sites to identify sites that may be good candidates for NTCRA.

Although started as a pilot during the summer of 1992 and funded only through the end of FY 1993, the Region will continue to use the SACM RDT as its official process for managing the Superfund process.

EVALUATION PLAN

START

By taking advantage of the time following proposed listing of a site on the NPL and prior to the RI/FS start to gather data and develop site strategies the Region will be able to significantly increase the speed and efficiency of the RI/FS in the out-years and the other remedial pipeline activities. It should be noted that these gains are dependent upon the availability of both intramural and extramural budget and staff in the out-years.

Specific long-term evaluation criteria include:

- the cost to complete the RI/FS using "Start" versus traditional processes (Note: This data may not be available for PRP-lead sites)
- The time required to complete the RI/FS using "Start."

The Region will collect this information upon completion of RI/FSs at the "Start" sites.

SACM RDT

The RDT approach should increase the overall effectiveness and efficiency of Regional management of the Superfund program. Exact quantitative measurement of such results will not be straightforward. It is anticipated, though, that decisions about specific sites and the resultant actions at those sites will be:

- More effective than the past practice because the most appropriate overall plan for the site will be proposed earlier in the process since more senior people from a wider range of removal and remedial program backgrounds will be involved sooner. Specifically, sites that may have stayed in the remedial pipeline may be selected for non-time critical removals or be referred to the states for cleanup.
- More efficient -- from both a time and cost standpoint -- because:
 - Sites will be addressed earlier in the process.
 - Assessment, investigation and later remedial phase costs may be lower because the early review by both the screening team and the RDT will enable more focused efforts.

Such site specific savings in time and cost should offset the increase in oversight time and cost that may result from the time and effort required for integrated assessments, screening team meetings, review meetings, and other coordination efforts.

As the Region notes, a purely quantitative evaluation will not address some key benefits. Thus, the evaluation may also assess the acceptability of RDT to Regional staff and State representatives. The opinions of the RDT members will be an important indicator of its future effectiveness.

RESULTS

START

Preliminary results of the "Start" initiative show that an early understanding of Region 1 NPL sites makes the RI/FS scoping process easier because it reduces uncertainty regarding site objectives. For example, the START activities at one site resulted in the efficient conclusion of negotiations with the PRPs for the RI/FS. In fact, the PRPs have inquired about potentially utilizing the technical expertise of the USGS during their performance of the RI at this site.

In the future, a site that has completed the combined site assessment and is NPL-caliber could begin "Start" activities immediately. "Start" could replace or supplement parts of an expanded site inspection in the site assessment pipeline. It is important to maintain continuity when making decisions concerning the sites. Once the integrated assessment is made for these sites, technical work should be continued and accomplished at a sustainable level (not a full RI) by collecting data from the field. By continuing to work at a site at a low level of effort, problems such as misplaced data, community disaffection, and difficulty re-starting work are avoided.

One initial hurdle which needed to be overcome was allocating sufficient resources to "Start". Technical specialists are still expected to review ongoing normal process activities as well as contribute to "Start" activities. Another consideration is that using the USGS can result in a slow delivery of USGS products because of their strenuous reporting standards.

The "Start" initiative results in the use of government personnel to perform certain site specific activities as opposed to ARCS contractors. This will result in time and cost savings in the long-term over the life of the project.

The "Start" pilot results in better planning and scoping and will lead to a better, more complete and focused RI/FS. This increase in quality will engender additional confidence in EPA by PRPs and citizens alike. Additionally, the ability to sustain site work at a low level until full funding is available to begin the RI/FS gives Regions additional flexibility in dealing with sites while not compromising the final product or increasing the overall cost of the process.

SACM RDT

A number of RDT meetings have been held and more than 30 sites have been reviewed. For a quantitative evaluation of the RDT, however, analysis must focus on a year to year comparison. Some tentative conclusions about the workings of the RDT, however, are possible at this time.

There are two significant intangible benefits derived from the SACM RDT: 1) adoption of the SACM mind-set to think creatively about how to address sites, and 2) further integration of communication among all parties in the program, in particular, the removal and remedial programs which in Region 1 are located in separate divisions and separated geographically by 30 miles. The quantifiable benefits are the site specific success stories discussed in the status section above that have achieved early action to reduce risk.

Preliminary findings indicate greater coordination between the programs. This improved coordination has resulted in early actions conducted at NPL-caliber and NPL sites. In addition, better coordination with the states is improving the process of assigning site lead responsibility and identifying areas where additional attention is needed. Finally, risk reduction has been or is being achieved at a number of the sites that have been already considered by the RDT.

As the Region gains more experience with RDTs, the Region will continue to refine the process and make necessary improvements.

Region 1

Settlement with Third Party Generators and Transporters of Municipal Solid Waste (Murtha Case Settlement)

PILOT DESCRIPTION

The Municipal Solid Waste (MSW) issue has been a contentious issue for the Superfund program. Beginning in the spring of 1992, the Murtha Case Settlement Team Pilot sought to examine a strategy for reducing the transaction costs of third party MSW generators and transporters.

Under the traditional contribution action process, municipalities are treated as any other third party generator and transporter of hazardous waste at landfill sites, unless a *de minimis* determination can be made, and therefore incur significant transaction costs in determining their share of the cleanup costs through negotiations or the litigation process. Using this pilot approach, EPA considered determining a settlement among EPA, the MSW parties and the PRP coalitions that would be fair, reasonable, and in the public interest. Acceptance of a settlement of this kind by PRPs and municipalities, while difficult to achieve, would provide a starting point for other negotiations and thus increase the efficiency of negotiations.

One of the benefits of the settlement pilot was to reexamine the MSW issues as Superfund faces reauthorization. This pilot provided a current example of the issues faced when dealing with MSW.

PILOT STATUS

The Murtha case settlement involves two landfills in Connecticut, the 19 acre Laurel Park, Inc. Landfill Site in Naugatuck Borough (accepting industrial and municipal wastes since the 1950s), and the 34 acre Beacon Heights Landfill Site in Beacon Falls (operating intermittently from the 1920s to 1979 as a minimum cover landfill for mixed municipal and industrial waste). The sites are owned and operated by the Murthas. The following legal cases exist: 1) the Laurel Park Settlement between the United States and Laurel Park; 2) the Beacon Heights Settlement

between the United States and Beacon Heights coalition; 3) the settlement between EPA and the Murthas; and 4) Non-settler litigation in each of two sites.

At both sites, the settling parties filed third-party action against MSW generators and transporters, and various other parties. EPA considered a site specific method for determining a fair share of remedial costs to be assigned to the MSW parties.

Before beginning to implement any strategy for the sites, EPA requested approval from the Department of Justice (DOJ) in developing a proposed settlement strategy, and revised the strategy at various times in response to comments from DOJ.

In August 1993, EPA made the decision not to proceed with the pilot. Rather than pilot a site-specific settlement effort, EPA will address MSW policy in the broader context of the Reauthorization process.

Region 1

Expedite PRP Remedy Implementation

PILOT DESCRIPTION

The objective of this Region 1 pilot is to identify and test incentives for Potentially Responsible Parties (PRPs) to expedite the Remedial Design and Remedial Action (RD/RA) phase of the pipeline. Seventy percent of sites in Region 1 are PRP-led and take much longer to move through the design process than Fund lead sites. After productive meetings with groups of PRP representatives, Remedial Project Managers (RPMs), and private sector attorneys, it was determined that process rather than financial incentives would be most effective. The new process that was developed from this pilot is the Design Accelerated Remedial Target (DART). The DART paradigm is a results-oriented process in which EPA sets clean up standards and a conceptual remedy. PRPs can then design and implement the most cost-effective remedy to achieve the clean up levels. While EPA does not review multiple interim deliverables leading to the RD, EPA does retain its role as the sole arbiter of whether or not the PRP design is acceptable, and whether the constructed remedy meets specified standards. Using this pilot approach, EPA can be reasonable and flexible to PRPs while still protecting human health and the environment. As important, the DART paradigm will result in a more efficient, effective, and equitable program.

The DART paradigm has four major components:

1) The DART Record of Decision (ROD) is more flexible than a traditional ROD. The DART ROD outlines a remedy, selects a general technology type, establishes Applicable or Relevant and Appropriate Requirement (ARARs), sets a general timeline with compliance points, contains a general description of how EPA will judge performance, or clearly indicates that the PRPs must design a plan. The primary difference from a traditional ROD is the flexibility in technology selection.

2) Under the DART Administrative Order on Consent (AOC) the RD is separated from the RA. Under the AOC, PRPs and EPA hold periodic consultative meetings leading to the design submission. PRPs are empowered to choose the most cost effective technology for cleanup, while EPA approves only the final design, with purely consultative meetings during the development. The burden is on the PRP to design a remedy that achieves Agency mandated ARARs.

3) The DART RD results in a 100% design package and a demonstration of compliance plan that explains how the effectiveness of the remedy will be measured. These documents would independently serve as a Statement of Work (SOW) for RA negotiations.

4) The DART Consent Decree (CD) governs the Remedial Action (RA). EPA negotiates the CD for the RA with RD construction plans and timetables as the SOW. The DART CD covers only the RA.

Using the traditional process, the remedy is specified in the ROD, Acceptable Contamination Levels (ACLs) are often not objectively stated, and PRPs and EPA negotiate a CD for both RD and RA together. Additionally, EPA reviews PRP progress during the RD by providing extensive oversight and requiring multiple deliverables.

PILOT STATUS

Because PRPs had often stated their desire for the type of flexibility offered in the DART process, the Region felt it could be rather selective when choosing pilot sites. In essence, the DART process could be used almost as a reward for cooperative PRPs. This provides the Region with incentives as well as disincentives to encourage PRP cooperation. In addition, the Region wanted the concept of DART widely understood in the PRP community at large and so chose sites with prominent and/or numerous PRPs.

The two National Priorities List (NPL) sites where the DART process is currently being implemented are:

Solvents Recovery Services (SRS), Southington, Connecticut: Because there are numerous PRPs at this site (a four acre solvent recycling facility from 1955 through 1982) the Region determined that this would be a good candidate for the DART pilot in order to get the word out to a large segment of the PRP community. The AOC and SOW have been drafted and are currently being reviewed by the PRPs.

Linemaster Switch, Woodstock, Connecticut: The PRPs at Linemaster Switch (a 92 acre electronic and electrical equipment manufacturer) had been very cooperative and had worked well with EPA. The Region saw this site as an opportunity to reward a cooperative PRP and test this new process. The ROD for Linemaster Switch is a "DART ROD" and was completed in June 1993. The consent decree and SOW are currently being drafted.

This pilot project is expected to be completed in September 1994. Once each site has been completed a full analysis of the time and cost savings to EPA will be made based on actual experience. EPA will ask PRPs to keep records of the time and money spent on the clean-ups enabling future PRP savings calculations.

EVALUATION PLAN

The purpose of this pilot has been to develop a better approach for negotiating with and overseeing PRPs. The evaluation plan identifies measures to be monitored when the DART approach is tested at the three selected pilot sites.

The DART approach is expected to improve the efficiency of PRP-led cleanups at individual sites as well as the overall efficiency of Superfund Regional management as follows:

- Speeding up the process at individual PRP led sites by:
 - Making negotiations easier; and
 - Decreasing the number and complexity of reviews by EPA staff while the site is in the pipeline.

- Enabling EPA staff and contractors to oversee more sites since the oversight requirements at a typical PRP led site will be dramatically less than it has been to date.

These efficiency improvements should increase the overall effectiveness of the Superfund program in that the number of construction completions per year should increase significantly using the DART approach.

The Region has identified specific quantitative measures they will collect that will address the expected time and cost savings. These are as follows:

- Time duration from ROD signature to RD start
- Time required for RD
- Time duration from RD completion to RA start
- Cost of RD oversight
- Cost of RA oversight.

The baseline for comparison of efficiency measures is listed in Table 1.

In addition to the quantitative analysis, the Region will examine the acceptance of the DART process by the Department of Justice, EPA Office of Enforcement, EPA Office of Waste Programs Enforcement, the local communities, and the State. The Region will also identify the factors and circumstances for which this process is appropriate.

MEASURE	National Averages	Regional Averages
Time from ROD to RD Start	3.3 Qtrs	3.9 Qtrs
Time duration of RD	9.4 Qtrs	10.2 Qtrs
Time from RD completion to RA start	To Be Determined (TBD)	TBD
Cost of RD oversight	N/A	Region to gather TES and ARCS costs at pilot and other sites
Cost of RA oversight	N/A	Region to gather TES and ARCS costs at pilot and other sites

TABLE 1

RESULTS

The meetings with RPMs, PRP attorneys and PRP representatives resulted in a number of suggestions that may substantially impact the RD/RA process. By listening to its customers, the Region may have found a process that dramatically improves on the traditional RD/RA process.

The Region has determined that to be successful, EPA should: identify the remedial concept; implement a procedure to accomplish the design; and retain authority to determine whether the remedy achieves the clean-up standards. EPA should redefine the PRPs mission to designing and implementing a remedy at as low a cost as possible while fulfilling EPA's standards. In meetings with EPA PRPs expressed that this can best be accomplished by allowing PRPs to produce a product in the shortest possible timeframe, unimpeded during the design and planning phases, and ultimately judged on the performance of the final product. Because the new process is less antagonistic, a cooperative relationship between EPA and PRPs should occur, resulting in a smoother process with fewer delays. Under the DART process, negotiations for the RD and RA will be easier, significantly reducing the cost for both EPA and PRPs at each site. In addition, this incentive may serve to encourage other PRPs to be more cooperative

in order to use the DART process, thus facilitating quicker and easier operations at other sites.

Because final responsibility for the remedy rests with the PRP and fewer deliverables are required from the PRPs, less oversight of the RD process will be needed from EPA. This streamlined oversight could lead to several possible results. EPA could oversee more RAs with the same level of staff. Other sites which are not using the DART process may receive additional attention because of the reduced demand for oversight from DART sites. Another potential outcome is the possibility of sustaining the current level of site oversight with fewer resources, allowing other phases of the pipeline to receive more attention. The time required between ROD signature and RA completion will be reduced significantly as well.

There are, however, some potential negative consequences to the DART process. States or citizens may see the DART process as providing too much latitude to PRPs, therefore EPA must assure interested parties that clean-up standards will be enforced. Finally, PRPs take a risk by investing significant resources and work prior to receiving any official approval from EPA in return for reduced costs if the process works.

Region 2

Accelerate RI/FS Process

PILOT DESCRIPTION

This pilot project accelerates the Remedial Investigation and Feasibility Study (RI/FS) process at National Priorities List (NPL) caliber sites so that it can take place prior to the sites being listed on the NPL. This accelerated process involves conducting NPL listing activities concurrently with the sites' assessment, remedial planning, and removal actions.

Traditionally, under the phased approach to Superfund cleanups, the RI/FS workplan would not be developed until the Hazardous Ranking System (HRS) screening was completed and the site was officially listed on the NPL.

The response activities at the sites involve two major strategies. The first divides the problems posed by the site into time and non-time critical based on the site's need for a removal action. Time critical problems, such as piles of contaminated soil and ash, are being evaluated and addressed by removal actions. The non-time critical problems, such as temporary stabilized ash piles and potentially contaminated groundwater, will be evaluated in the RI/FS workplan and addressed by future subsequent removal or remedial actions. The second strategy starts the development of the RI/FS workplan while the HRS package is under review and prior to the site's NPL listing.

This acceleration process expedites the overall Superfund cleanup process by conducting these early phases simultaneously. This pilot concept is designed to accomplish Superfund phases in a more efficient, expeditious manner and deliver results the public will value including quick reduction of acute risks at all Superfund sites (removal and remedial) and restoration of the environment over the long-term. Due to the intensified site investigations and sampling done for the HRS package and the RI/FS prior to listing, EPA will be able to move quickly towards the selection and implementation of remedial actions after listing.

PILOT STATUS

Region 2 is applying the accelerated RI/FS process at the two sites; one in New York and one in New Jersey.

Site One site consists of an inactive 1940's saw mill and wood treating facility and three active light manufacturing companies (a sawmill, a laminated wood manufacturing company, and a calendar printing company), located in New York. Contamination at the site includes: on-site contamination of soils and surface water with creosote components; a suspected release to groundwater based on poorly contained waste sources; a large quantity of waste; and shallow water table. A release of contaminants to surface water is also suspected as creosote components have been detected in an on-site pond that drains to the Susquehanna River. Wetlands may be within contaminant boundary and nearby workers may be impacted by the waste sources. There is also a suspected release of contaminants to air.

The remedial work is divided in two parallel units. The first unit (Unit One) deals with the portion of the site originally targeted for time critical removal activities (referred to as the Site property) and the second unit deals with the remainder of the site (referred to as non-Site property) and any other activity not covered under Unit One. Unit One removal activities to dispose of *drummed material* have been completed. As actions under the removal activities a fence was installed to limit site access; approximately 41,360 gallons of creosote from storage tanks and associated piping, floors, pressure tanks, sumps, etc. were removed and treated and disposed off-site. In addition, approximately 190,000 pounds of creosote solids, 23,000 pounds of creosote sludge and 20,000 pounds of creosote contaminated piping were disposed of off site, while 3,482 gallons of Number 2 fuel oil and 165 tons of scrap metal were recycled. Off-site migration was controlled via drainage ditches. Approximately 4,000 cubic yards of debris were screened and staged pending final treatment/disposal. Additional soil, sediment, and

surface water samples were collected and analyzed. In addition, soil mounds and debris piles were stabilized via temporary liners and covers.

The contaminated soils in Unit One were originally being investigated for potential remediation under EPA's removal authority. A composting treatability study was initiated to determine its applicability at Site One for a possible removal action. Under SACM, the potential remediation of these soils will be investigated to meet removal and remedial cleanup levels. While this modification to the strategy to address the contamination at the site has slowed down the initiation of the remediation, it is expected that the final remediation will be more complete and would not require further response. The initial approach to be taken to investigate the nature and extent of contaminated soils was to take soil samples using removal contractors. However, because of budgetary and contracting issues, this approach needed to be revised. This work was added to the RI/FS contractors scope of work and is currently ongoing. The combined sampling approach will take into consideration all the data needs for remedial and removal purposes. The determination as to whether the cleanup of these soils will be performed using EPA's removal or remedial authority will be made at a later date.

The RI/FS for Unit Two was initially funded on September 1992. The FS has, however, not yet begun. It will begin after the RI is complete. The accelerated RI/FS characterizes site conditions which have not been investigated as part of the phase one investigation (e.g., groundwater, soils on the non-Site property) and evaluates overall long-term response alternatives to non-time critical risks posed by the site. The RI/FS work plan was approved in February 1993. The Field Operations Plan was approved in April 1993. All analytical data critical for the completion of the HRS package was collected. An NPL letter was prepared on November 1992, and submitted to Headquarters for comment. A draft NPL package was completed on December 1992, and reviewed by the Region and Headquarters. A revised package was completed in July 1993, and sent to Headquarters for review and comment.

The State of New York has been consulted and is an active participant in the development of the remedial approach being taken at this site. EPA representatives

have met with local officials to discuss the time-critical removal. EPA is currently in the process of performing additional community relations activities, including the modification of the community relations plan and holding a public meeting to discuss EPA's response at Site One. EPA has been conducting PRP search activities since 1990 on this site.

Site Two, located in New Jersey, consists of seven non-contiguous sub-sites which have resulted from copper reclamation activities between 1960 to 1990. The waste sources are contaminated soil and ash piles. The site related contaminants include heavy metals, PCBs, dioxins and furans. There is a possible release of contaminants to the groundwater. Approximately 25 people obtain potable water from within the area of potential groundwater impact. There is also a potential release to surface water. There is a wetland that may be located within the contaminant boundary. In addition, 25 people live within 200 feet of the waste sources. While there was the potential for contaminants to escape from the site in particulate form during dry and dusty periods, subsequent removal actions have eliminated this threat temporarily at sub-sites 1 and 2 and entirely at the other sub-sites.

Using the accelerated approach, long-term response activities have been initiated while the HRS package is being prepared. The package was completed in September 1992, and is undergoing review by the Region and Headquarters for final submittal and proposal. A contractor workplan is currently under review for conducting the RI/FS for the site. The accelerated RI/FS approach will characterize site conditions which have not been investigated as part of the removal activities (e.g., temporarily stored ash piles, groundwater/surface water contamination). The accelerated RI/FS will also evaluate long-term and non-time critical response alternatives in order to respond to risks posed by the sub-sites. These accelerated actions are in contrast to previous practices of conducting these investigations farther along in the cleanup process.

The description of the time critical responses is broken down by the seven sub-sites. All of the time critical responses were completed May 25, 1993. Completed removal actions at sub-sites 1, 2 and 3 included consolidating and stockpiling ash on site. The consolidated ash was covered with an

impermeable vinyl liner to prevent rain water infiltration. These actions were necessary to minimize migration of contaminants off site, and to eliminate threat of direct contact with contaminated ash. Sub-sites 1, 2 and 3 are surrounded by a fence to prevent unauthorized access.

A time critical removal action was initiated at sub-site 4 in October 1992 for the removal of contaminated ash/soil. Approximately 614 cubic yards of contaminated ash/soil has been excavated and transported to an off-site disposal facility. The Emergency Response Team (ERT) has performed post excavation sampling to verify that EPA cleanup objectives have been met. Post excavation results show that no contamination remains above the EPA risk based cleanup levels. Backfilling has been completed and revegetation of the excavated areas will commence shortly.

At sub-site five, a time critical removal action for the removal of contaminated ash/soil was initiated in September 1992. Approximately 1,000 cubic yards of contaminated ash/soil has been excavated and transported off-site for stabilization and landfilling at a RCRA permitted facility. ERT's post excavation confirmation sampling of the soils indicate that cleanup levels have been met over most of the site. However, some contamination remains above EPA risk based cleanup levels, below the water table. EPA determined that it was not feasible to excavate contaminants below the water table. Ground water monitoring wells to be installed during the RI will determine the extent to which these contaminants are impacting the ground water quality. Backfilling is completed and the excavated areas have been revegetated.

The time critical removal at sub-site six for the removal of contaminated ash/soil was initiated in October 1992. Approximately 1,300 cubic yards of contaminated ash/soil have been excavated and transported to an off-site disposal facility where it will be stabilized and landfilled. As in the case of sub-site 5, ERT's post excavation sampling indicates the cleanup levels have been met over most of the site. However, some contamination remains above cleanup levels below the water table. Ground water monitoring wells to be installed as part of the RI activities will determine the extent to which these contaminants are impacting the ground water quality. The sub-site has been restored and hydroseeded.

A time-critical removal was initiated at sub-site 7 in January 1993. Approximately 700 cubic yards of contaminated soil/ash has been excavated and transported to an off-site RCRA facility for stabilization and disposal. ERT's post excavation indicates that cleanup levels for target metals have been met. The site has been restored and hydroseeded.

The State of New Jersey has been consulted and has concurred with the overall approach to the site and with the time critical removal actions, and has been involved in developing the RI/FS workplan. A meeting with the town's manager was held to discuss the time critical removals and the overall approach. In addition, public availability sessions were conducted by the Region to discuss the cleanup actions. These meetings resulted in overall community acceptance and understanding of the pursued approach. A family living on sub-site five was temporarily relocated by the Army Corps of Engineers for the duration of the removal actions at sites four, five, and six. The family has now been returned to their home.

The pilot project's completion date will be determined at a later date. The expected benefits from the pilot include: a decrease in the time required for the entire cleanup process by expediting the RI/FS; a decrease in the time necessary to select a remedy because of the additional and more precise data being collected prior to the site listing; efficient use of contractors for site assessment/characterization and remedial/response activities at the site by overlapping activities and sharing information; and removal data will be used for the Remedial Investigation and the HRS assessment to avoid duplication.

EVALUATION PLAN

The evaluation plan includes measuring improvements in efficiency and effectiveness expected from a pilot process that accelerates the RI/FS process by conducting investigations prior to NPL listing, while also addressing time-critical problems at potential NPL sites in an expeditious manner. Additional efficiencies later in the pipeline are expected because the intensified site investigations and sampling done for the HRS package, the time-critical removal actions, and the RI/FS prior to listing will enable quicker selection and implementation of remedial actions after listing. The anticipated decisions about specific sites and the resultant actions at those sites will likely be:

- More effective because the most appropriate remedy will be chosen earlier in the life cycle of the site.
- More efficient -- from both a time and cost standpoint -- because:
 - Sites will be addressed earlier in their life cycle.

- Data needed for several phases, e.g., removal assessments, HRS ranking and RI, are coordinated and combined when possible.

Other efficiencies might accrue in oversight and related costs because of the compression of the time duration for activities at sites.

Region 2 will monitor and measure the following:

- Anticipated reduction in the time required for the RI because of site characterization performed prior to NPL listing and better RI scoping.
- Anticipated reduction in the time duration from listing on the NPL to remedy selection because of the parallel activities.
- Cost of the total investigations.

The baseline for comparison of efficiency measures for acceleration of the RI/FS is listed in Table 2.

Measure	National Average	Regional Average
Time for RI (Fund Lead)	8.7 Qtrs	7.1 Qtrs
Time from listing to RI/FS completion	18.5 Qtrs	17.9 Qtrs
Time from listing to ROD	18.9 Qtrs	20.6 Qtrs
Extramural Cost of RI/FS	\$938,980	\$1,143,297

TABLE 2

Effectiveness improvements resulting from this process will be assessed by comparing results against clean-up goals for removals and remedial actions, highlighting risk reduction.

RESULTS

When this pilot has been completed the Region will have additional findings and good ideas which will contribute to the approach's success. At this point in the pilot's progress the Region has identified several lessons learned and has gained valuable experience. Among them, the Regional staff must be flexible and creative when funding and contractor problems arise. Flexibility in directing contractor work assignments is essential to enabling EPA to revise response actions as new information is received and evaluated.

The close working relationship between the On-Scene Coordinators (OSC) and the Regional Project Managers (RPM) has facilitated information exchange. There is now a team approach to site management. The site managers have approved site work as a total response rather than in terms of remedial and removal. It is anticipated that this approach avoids duplications, contractor efforts are minimized resulting in time and money savings, and in response actions decisions that are appropriately efficient and effective.

Accelerating the RI/FS to take place while the HRS package is being prepared and before the site becomes listed on the NPL eliminates delays or waiting periods in site investigations. Coordinated preresidential, removal, and remedial planning and investigations are initiated prior to NPL listing, resulting in shared information, integrated use of contractor efforts which can save time and money.

At Site One this accelerated approach to the cleanup process contrasts previous practices because the expanded amount of data collected and studied before the site becomes listed on the NPL. The Region may achieve their goal of accelerated efficient actions, reducing risks quicker and restoring the environment by using this new approach. Intensified sampling and analysis earlier in the process decreases the likelihood that contaminants will be discovered late in the process and the need to rewrite workplans and repeat work already accomplished.

At Site Two this accelerated pilot process has the effect of shortening the cleanup process by reaching the RD phase faster than compared to the traditional process. The RI/FSs under the pilot process will be more focused, thereby saving costs and time through reduction of unnecessary sampling and other work. In addition, the ROD that is produced will be more comprehensive than would traditionally be done and will therefore supplant the need for some RD analysis. Therefore, this should lead to a decrease in the extramural dollars that will be spent during the ROD and RD phases. The RD will be done more effectively and efficiently because of the more comprehensive data collected early in the process.

Region 2

Accelerate Federal Facility Agreements

PILOT DESCRIPTION

This pilot approach is designed to accelerate negotiations at two Federal facilities by beginning negotiating the Inter-Agency Agreement (IAG) prior to listing on the National Priorities List (NPL). Under Section 120 of CERCLA, Federal agencies are required to enter into IAGs with EPA for remediation of those sites which they own or operate and which are on the NPL.

Proceeding with IAG negotiations in advance of potential proposed listings will benefit all parties by demonstrating a mutual commitment to addressing the environmental concerns at the sites and by actually facilitating a more expeditious cleanup of these sites. EPA's experience negotiating Federal facility IAGs has been that they are often prolonged and can cause delays in response activities at sites prior to a site's proposal and listing on the NPL. This pre-NPL listing negotiation is a significant difference from the traditional process for negotiations of Superfund sites.

The Region anticipates time and resource savings because there is no delay after the sites are listed to begin cleanup activities with Federal facility negotiations accomplished. This accelerated process will affect the RD, RA, and construction completion of a site because these phases will occur sooner. In addition, the Region anticipates efficiencies since IAGs are being developed for two sites at the same time (with the same Agency).

PILOT STATUS

This pilot project concerns the accelerated Federal facility agreement negotiations at two Naval Weapons Industrial Reserve Plants (NWIRP), Calverton and Bethpage located in Nassau and Suffolk County, New York, respectively. Bethpage and Calverton are both sites on the Federal facilities docket and are regulated by both Federal and State Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability

Act (CERCLA) programs. Each site has an actual or potential release of contaminants to the groundwater (a sole source aquifer), soil and surface water. Ongoing restoration of the groundwater is being conducted by the Navy at NWIRP Calverton. The Navy has submitted Preliminary Assessments and Site Investigations (PA/SIs) for both sites which are currently under review by EPA. The review comments will be coordinated with the RCRA program to ensure that information needs to support the SI will be consistent with information requested from the ongoing RCRA Facility Investigation under the RCRA permitting process.

At the Calverton Navy plant, some areas of the site are already in the Remedial Investigation (RI) stage, while others are concluding their SIs. The PA began on December 21, 1988 and was completed on December 29, 1988. At the Bethpage Navy plant, the PA began December 21, 1988 and was completed on December 29, 1988. The SI was completed on September 30, 1992. Phase II of the RI was completed at the Bethpage Navy plant and the Region is currently working towards the RI completion.

As of September 1992, Calverton and Bethpage had been preliminarily evaluated and the potential existed for proposed inclusion on the NPL. EPA proposed and encouraged the Navy to commence negotiations with EPA and the State of New York for IAGs at these facilities in advance of any proposed NPL listing. The Navy agreed to participate in the early negotiations for the sites and in addition, began RI work at these sites, prior to their listing on the NPL. The site completion dates for these sites has not yet been determined.

The IAGs have been crafted to require the Navy to work with EPA and New York State Department of Environmental Conservation (NYSDEC) to evaluate areas of concern, prioritize these areas, and utilize the most appropriate response authority to address problems. The Agreement will also attempt to limit duplication of documents and redundant reviews of the documents.

The draft agreements were sent by the Region to NYSDEC in March 1993, for comment prior to issuance to the Navy. After the State comments were incorporated, the draft agreements were sent to the Navy April 26, 1993 for review. The start dates for interagency negotiations is measured from the date the draft agreement is sent to the Federal agency.

A Technical Review Committee (TRC) was established and meetings were held at both sites to discuss the status of the sites. The meetings included the Navy, Grumman (the contractor operating the facilities), citizens, and representatives of the RCRA and Superfund programs from EPA and NYSDEC. The discussions included the integration of Superfund program requirements such as the RI, into the ongoing RCRA work. Follow up conference calls between the Navy, EPA, and NYSDEC have occurred. The TRC meeting raised groundwater issues which may be suitable for a time critical response at NWIRP Bethpage. The Navy is obtaining additional data about the sites. After the supplemental data is received the Navy, EPA, and NYSDEC will evaluate the need for expedited response.

This pilot is expected to be completed in the third quarter of FY 1995.

EVALUATION PLAN

Evaluation of this pilot centers on the expected improvements in efficiencies in three areas:

- Accelerating up the process -- and therefore cleaning up the sites more quickly -- by:
 - Beginning negotiations prior to listing and
 - Simplifying remedy selection by cooperatively establishing priorities and being flexible in use of response authorities.
- Realizing time and cost savings through improved data sharing with the RCRA program and the state.
- Reducing EPA oversight costs by negotiating for two Federal facilities at the same time.

Because of the difficulties in attempting comparisons using intramural cost data, the evaluation will focus on improvements in efficiency as shown in comparisons using the following time measures that will be collected by the Region:

- Time duration of IAG negotiations
- Time from SI to ROD
- Time for RI/FS
- Time from NPL listing to RD start or removal action
- Time from ROD to RD Start

The baseline for comparison of efficiency measures can be found in Table 3.

Measures	National Averages	Regional Averages
Time for IAG	TBD	TBD
Time for RI/FS	14.5 Qtrs	15.5 Qtrs
Time from SI to Listing	TBD	TBD
Time from listing to ROD	18.9 Qtrs	20.6 Qtrs
Time from ROD to RD start	TBD	TBD

TABLE 3

Comparison of actual time frames versus these baseline figures will illustrate time savings possible with this approach.

Although data limitations make sound evaluation difficult, reductions in cost are expected as follows:

- Reduction in intramural cost of EPA oversight of the RI/FS because the negotiations will have resolved some issues during early negotiations.
- Reduction in EPA personnel effort expended on IAG negotiations because two negotiations are being conducted simultaneously.

RESULTS

Although the negotiations are not yet completed, the Region has estimated that if the approach is successful, time savings from site investigation to the signing of the ROD may be 1 to 2 1/2 years:

- The typical time from site investigation to the signing of the ROD in Region 2 is estimated at 5-6 years.
- Estimates for the accelerated approach are that this time duration will be 4-5 years for the Calverton Navy plant, and 3 years for the Bethpage Navy plant.

After the accelerated negotiations take place and the sites are cleaned up, many results will be realized from this pilot process. Preliminary results include the integration of the RCRA and CERCLA activities and staff which have resulted in an efficient use of resources and the utilization of individual expertise.

The Region has also learned that they can effectively conduct an RI/FS without having to wait for the site's listing on the NPL. While the RI is close to completion at the Bethpage site, it would not have progressed as quickly, or may have only focused on RCRA regulated areas if it were not for the implementation of this pilot project. It is projected that a great deal of time will be saved by this accelerated approach once these sites are listed and the negotiations are completed, as the sites may move right into their FS without any delays. Specifically, it will shorten the period of time from the SI to the

signing of the ROD by potentially two years because of the accelerated negotiation time.

Early negotiations are beneficial for coordination among different programs and activities, for contractor planning and commencement, and for state involvement and community relations through early actions. Early negotiations can effectively handle issues early in the cleanup process and provide a clear plan for the future working relationship between the parties. An effective Federal facility agreement will "give credit" for work done prior to the effective date which will prevent duplication of efforts and allow faster response decisions.

The Region anticipates time savings by negotiating two Federal facility agreements concurrently, thus spending the same amount of time and effort that would be used under the traditional process for one negotiation.

Accelerating IAG negotiations can conceivably decrease the time required for the overall cleanup process by two years. This pilot has the effect of not only making the cleanup process proceed more efficiently but also more effectively by encouraging Federal agencies to work together on their own terms and without having to strictly follow negotiation standard operating procedures. Using this accelerated approach to conduct negotiations and the RI/FS concurrently does create additional responsibilities for the project managers, to oversee both activities occurring simultaneously at one site, but at the same time it creates an efficient process.

Proceeding with IAG negotiations in advance of potential proposed listing will benefit all parties by demonstrating a mutual commitment to addressing the environmental concerns at the sites and by actually facilitating a more expeditious clean up of these sites. The State and community also benefit by participating in the early negotiation by ensuring that their interests are incorporated in the agreement.

Region 3

Accelerating Cleanup to Reduce Risk

PILOT DESCRIPTION

The goal of this Region 3 pilot was to develop and implement a systematic approach for identifying National Priority List (NPL) site conditions which could be addressed through removal processes. An interdisciplinary team, consisting of On-Scene Coordinators (OSCs), Remedial Project Managers (RPMs), and Regional Counsel representatives, has developed procedures and a checklist to assist RPMs in using removal authority to conduct early actions at NPL sites. This approach borrows the removal action criteria set forth in the NCP and provides a methodology for identifying candidate sites that can be addressed through the removal process.

Using this pilot process and checklist, RPMs can more easily determine if an immediate response action is appropriate. The checklist may be used to support an Administrative Order (AO), or can be transformed into an Action Memo (AM) to authorize Superfund monies for a Fund lead removal response at NPL sites. An RPM does the first screening and the site is rescreened by an OSC which may result in an early action. If a removal is not conducted, the Region proceeds with the remedial process.

PILOT STATUS

The procedures described above for integrating removal and remedial activities, identifying immediate responses, and using the checklist have been developed, and after some clarification by the Regional Decision Team (RDT), are now being used Regionwide. The pilot project was completed in 1993 and the procedures developed as a result have become standard operating procedures.

Typical actions may include the development of source control techniques, excavation, and/or other responses that would likely be part of a final remedy. The procedures to implement the early actions were issued on January 13, 1993 and clarified on July 7, 1993. RPMs are being trained in using the checklist

and are becoming familiar with the use of removal authority. The checklist has been used at the following sites with the stated results:

Spectron: A study conducted under the removal order found that groundwater contained Dense Non-Aqueous Phase Liquids (DNAPLs), and pumping and treating would not be effective. Now that the site has been added to the NPL, a focused Remedial Investigation/Feasibility Study (RI/FS) will be conducted under the existing removal order, saving time in the notice and negotiation of a separate RI/FS order.

Westinghouse-Sharon: An action memo has been signed that requires operation of a groundwater pump and treat system to recover PCB-contaminated oil on the water table. An Administrative Order on Consent (AOC) or a Unilateral Administrative Order (UAO) will be issued soon, however, if the PRPs do not perform the response action, EPA is able to do so immediately.

Dixie Caverns: Located in Salem, Virginia, has had an AOC issued for sedimentation/erosion control measures adjacent to a stream at the site to mitigate the environmental threat to a federally endangered species and one candidate species.

Delaware Sand and Gravel: Located in New Castle, Delaware, drums discovered during a pre-Design investigation are being excavated pursuant to an AOC.

North Penn Area 6: An AOC has been signed, and construction to extend a waterline has started at this Montgomery County, Pennsylvania site. A no further action ROD is expected as a result of this action.

Rentokil: Sedimentation/erosion control measures to stop the migration of hazardous substances into adjacent wetlands have been implemented pursuant to an AOC at this Virginia site.

Maryland Sand and Gravel: An Action Memo, based on the Endangerment Determination was prepared to support the issuance of a UAO for removing

subsurface sludge. The RPM also prepared a consent order for negotiation that will require removal and disposal of the buried sludge, thereby alleviating the health risk to those drinking the water and if the AOC is not finalized, the Region would be prepared to issue the UAO or fund the response.

Mid Atlantic Wood Preservers: The checklist was used to assess the need for sediment excavation within a tidal inlet. Sediments are a continuing source of contamination to the Elizabeth River. An AOC was submitted to the RPs and an Action Memo was subsequently prepared to fund work if an order is not complied with.

Du Pont-Newport: This former landfill site in New Castle County, Delaware is the source of a discharge of a hazardous substance into the adjacent Christina River. The PRP has signed a consent order and is currently developing a means to capture the toxic substance before it enters the River.

Boarhead Farms: A consent order for the removal and disposal of a few recently discovered, labeled, buried drums was issued to a PRP during the conduct of an EPA-funded removal action at this Bucks County, Pennsylvania NPL site. Removal work was completed at the site shortly thereafter.

EVALUATION PLAN

The Accelerating Cleanup approach should increase the overall effectiveness and efficiency of Regional management of the Superfund program. It is anticipated that decisions about specific sites and the resultant actions at those sites will be:

- More effective because the most appropriate remedy will be chosen earlier in the life cycle of the site. In particular, sites that might have stayed in the remedial pipeline may be selected for non-time critical removals.
- More efficient -- from both a time and cost standpoint -- because:
 - Sites will be addressed earlier in their life cycle.

- Less expensive removal actions rather than remedial actions may be performed when appropriate.
- Later remedial phase costs may be lower because the early review will enable more focused efforts.

Effectiveness within the program is also expected to improve as well. The pilot method for determining when to conduct a response action will result in additional response actions being undertaken, thus resulting in quicker risk reduction and allowing for more focused RI/FSs and possibly no further action RODs. As a result, the Region will be able to designate more sites as construction complete, better protect human health and the environment and increase public confidence in the program.

A concern is that this approach may increase demand on removal resources. The Region is currently examining this area and adding conditions regarding when to use the new procedures at Fund lead and enforcement lead sites. The Region will gather data on the above mentioned measures as the new procedures are implemented at individual sites.

RESULTS

This completed pilot has resulted in actual findings. The procedures have shown results at Region 3 sites where removal actions might not have been attempted. Perhaps as important, however, is that the checklist is making the integration of the removal and remedial programs a reality in Region 3 and clarified the requirements, decision points, and necessary conditions for undertaking immediate response actions.

There can be no dispute that conducting any action that results in an improvement in human health or welfare is beneficial and is of paramount concern in the implementation of CERCLA. Further, the benefits derived from action to mitigate an environmental threat by directly improving site conditions or circumventing further environmental deterioration cannot be understated, either in cost savings or ecological responsibility.

While expedited actions are normally discrete portions of the remedial action that may be deemed necessary

at a site, it is possible that a final remedy may be performed, thereby only requiring a subsequent "No Action" ROD to fulfill remedial requirements and initiate site delisting. This is the case at the North Penn Area 6 Site (NP#6). At NP#6, extensive groundwater contamination related to past disposal practices of trichlorethylene (TCE) by local industries necessitated the placement of carbon filters on the water supplies of numerous residents, and resulted in the naming of the Site to the NPL. While treatment of the aquifer is certainly a consideration during the RI/FS, the likely remedy will be the connection of those residents to an existing public water supply. Extension of a public water supply was required under a removal order on consent prepared by the RPM in accordance with the Regional procedures developed under this pilot. Subsequently, the PRPs have developed a plan and have initiated construction of the system even before the RI/FS for the site had been completed. Time savings is estimated to be, at a minimum, three years, since the moratorium for negotiation of the RD/RA was not invoked, a consent decree was not necessary, and the RD was replaced by a workplan required to be submitted within 20 business days under a removal order.

In addition to time savings, significant cost savings may be realized at sites as well. Some of those cost savings can be attributed to the contract vehicle available to the removal program (already established time and material contracts, Emergency Response Cleanup Services [ERCS]) versus those available to the remedial program (individually negotiated fixed price contracts, Alternative Remedial Contracting Strategy [ARCS]). Other more obvious costs associated with the more stringent requirements of remedial action that are avoided by using removal processes include: the application of more rigorous Applicable or Relevant and Appropriate Requirements (ARARs) compliance; the minimization of residual risk; *mitigation of natural resource damage*; acquisition of public support; and obtaining State cost share. Many, if not all of these requirements are, however, addressed during removal.

Finally, there is little doubt that increased public confidence will result because of the conduct of removal actions at NPL sites. The public actually witnesses construction and response efforts during what would normally be "down time" spent by EPA staff investigating, developing the ROD, negotiating

a Consent Decree and/or designing the remedial alternative. Performance of removal response actions, or any physical on-site work invariably elicits tremendous public support.

Region 3

Innovative Data Validation Approaches

PILOT DESCRIPTION

Region 3 conducted the Innovative Data Validation Approaches pilot to streamline the data validation process by defining levels of review which are relevant to the data uses. The pilot process consists of five levels of review (three organic levels and two inorganic levels) and is defined to ensure that the level of data review is appropriate to the intended data use. Using the pilot process, Regional Project Managers (RPMs) and On-Scene Coordinators (OSCs) specify the level of validation required for samples so that resources are conserved.

Prior to implementation of the pilot, Region 3 validated 100 percent of the analytical data generated for Superfund using all of the evaluation criteria in the National Functional Guidelines for Evaluating Organic and Inorganic Data. Costs for validation under the traditional process averaged \$4 million and the average turn around time for validation was 70 days. The data validation function was a decentralized operation performed by the sampling contractor. Approximately 20 FTEs were used to support this effort.

The two primary goals of the project were to reduce data review time and cost, and to provide the data user with an appropriate and useful product. Time and cost savings have been achieved.

PILOT STATUS

In order to implement this pilot process, several tasks were undertaken within the Region. After the implementation plan was developed, it was presented to the Hazardous Waste Management Division. With this new system, Data Quality Objectives (DQOs) drive the data review. Thus, when selecting the level of review, the data user would consider such elements as: qualitative Quality Control (QC) measures, quantitative QC measures, degree of importance of the detection limit, concern with detectable concentrations, false negatives, false positives, and use of invalid data.

Environmental Services Division (ESD) staff and Environmental Services Assistance Team (ESAT) data review team were briefed on the new procedures and implementation process. A directive was issued to Regional Alternative Remedial Contracting Strategy (ARCS) contractors describing the new process and its requirements and Remedial Project Managers (RPMs) were briefed on the new validation process.

Implementation of the data validation streamlining process was completed in June 1993. Standard Operating Procedures were revised based on pilot results. As a result of the revisions, all data validation functions are now performed centrally by the ESAT staff using 10 FTEs.

Each level of review involves:

ORGANICS

- Level M1 Detects only;
- Level M2 Quantitative assessment of data quality, false negatives, and detection limits; and
- Level M3 Full validation using current procedures.

INORGANICS

- Level IM1 Quantitative assessment of data quality, false negatives, and detection limits; and
- Level IM2 Full validation using current procedures.

Table 4 indicates the suggested uses of the new data validation levels of review.

EVALUATION PLAN

To evaluate this pilot, the Region collected data on time and cost savings realized since full-scale implementation of the pilot in June 1993. Since investigations throughout the site life cycle wait for data validation, a faster validation process will allow sites throughout the Region to move through the pipeline faster. In addition, data users will be provided with opportunities to comment on the quality and usability of the product they are receiving.

**INNOVATIVE DATA VALIDATION APPROACHES AND
SUGGESTED DATA USES***

Data Uses	Organics			Inorganics	
	M-1	M-2	M-3	IM-1	IM-2
Oversight	X			X	
Action Level Comp.	X			X	
Initial Investigation		X		X	
Nature and Extent		X		X	
Preliminary Risk Assessment		X		X	
Risk Assessment with Known High Level Toxics		X		X	
Feasibility Study		X		X	
Preliminary Study		X		X	
Treatability Study		X		X	
Contamination Sources		X		X	
Initial Cleanup Verification		X		X	
Risk Assessment with Marginal Risk			X		X
Low-Level Contamination, Nature and Extent			X		X
Cleanup Near Detection or Action Levels			X		X

TABLE 4

* The indicated data uses are not definitive or all inclusive. Data uses indicated for lower levels of data review are included in the upper-level data uses.

Pilot Results
June - September 1993

Level of Review	Average Time for Review - Per Sample (Days)	Average Review Cost Per Sample
M-1	12.7	\$15.24
M-2	19	\$20.31
M-3 (Full Functional Guidelines - Organic)	31.9	\$27.32
IM-1	20	\$7.80
IM-2 (Full Functional Guidelines - Inorganic)	28.7	\$11.38

TABLE 5

RESULTS

Partial implementation in the Region began on March 1, 1993, with full implementation occurring in June 1993. The Region had the results indicated in Table 5 during full implementation.

Time and cost savings identified to date include:

- Reduction in the average time for data validation (receipt of data package to final validation report) from the current average of 70 days to an average of 21 days.
- An estimated reduction in the average cost for data validation of one sample from \$50 to \$15 per sample.

Given historical levels of sampling and validation, the Region estimates that at least \$2 million per year can be saved in Region 3 by implementing this approach:

- Approximate annual costs for data validation for the Region have been \$4 million.
- With the new approach, costs for the same number of samples should be less than \$2 million.

In addition, sites can move through the pipeline more quickly, thereby reducing oversight costs.

This improvement in efficiency has not come at the expense of effectiveness. While the level of review

may be reduced, the analytical deliverable is unchanged. The process design requires full CLP deliverables for each analysis scheduled through the CLP. This approach allows flexibility to users of the new process, should a more comprehensive data review be required at a later date.

Results from customer feedback forms indicate that customers are very satisfied with the new product they are receiving. Based on customer feedback, some changes that affected which Quality Control criteria are evaluated for a given level of review were made. Changes were made without disruption to data validation operations, which have helped fine-tune this process.

Region 3

Bring Sites to Completion by End of FY 93

PILOT DESCRIPTION

Under the Construction Completion Pilot, Region 3 provided additional management review to the sites scheduled for completion in FY 93 by ensuring proper planning and scheduling of Remedial Actions (RAs) and close communication with States to address outstanding issues.

The goals of this pilot were accomplished by surveying Remedial Project Managers (RPMs) to develop a schedule for completion and identifying events, situations, and/or problems that could cause delays. These surveys were coordinated with state agencies and included the following issues: expediting the Record of Decision (ROD) for any remaining phases; exploring the possibility of no action RODs; reexamining risk assessments of outstanding RODs and using the latest science to explore the possibility of reducing the actions required; using municipal and Polychlorinated Biphenyl (PCB) policies to expedite cleanups; emphasizing use of Publicly Owned Treatment Works (POTWs) to shorten construction times; and developing incentives to encourage Potentially Responsible Parties (PRPs) to shorten project times.

Under the traditional process, achieving completion targets are the responsibility of each individual RPM, and State concerns must be addressed by the RPM or passed up the management chain for resolution.

Using the pilot process, a Regional coordinator ensures that when obstacles arise where sites are nearing completion, they are handled swiftly. Region 3 met its specified completion goals for the fiscal year. In addition, keeping these sites on schedule assures that the resources required for these sites will be available for other commitments when scheduled.

PILOT STATUS

The Region 3 Construction Completion pilot was applied at Lackawana Refuse, in Old Forge Borough, Pennsylvania, and Ambler Asbestos, in Montgomery County, Pennsylvania, to ensure completions by the end of fiscal year 1993. The Region's tracking consisted of identifying problems that could delay completion, committing sufficient resources to the sites, and maintaining the schedule of the site. The Region has established several initiatives based on the observations of tracking these sites to completion. These initiatives have been incorporated into the tracking for future completions. The Region is pursuing four initiatives that should facilitate the adherence to construction schedules. They are as follows:

1. *Coordination with the State where the State plays a pivotal role in the Superfund process that continues after the ROD is signed.* For a Fund lead site, the State is responsible for 10 percent of the capital cost and all of the Operation and Maintenance (O&M) costs. Accordingly, the Region involved the State in the review of the Remedial Design (RD) so that the RA incorporated the features necessary to facilitate O&M. In addition, the coordination with the State ensured that the State's Applicable or Relevant and Appropriate Requirements (ARARs) were incorporated into the design. In this way, the State was in agreement with the direction of the RA and was confident of a successful transition to O&M.
2. *Oversight of the Remedial Action Contractor.* For enforcement lead sites, the Region must supervise the PRP's compliance with the CD or unilateral order. The Region has emphasized the importance of adhering to the schedule in order to have timely project completion.
3. *Adequate planning for the final construction activities and Initiation of the O&M.* Preparation for the final construction activities included site inspection with the remedial contractor, site visits with the State, correspondence with the remedial

contractor listing the outstanding construction items, and initiation of the activities necessary to transfer responsibilities to the State. For enforcement lead sites, this includes coordination with the PRPs construction manager for the proper execution of the paperwork necessary to document the completion of the project.

4. Good Community Relations. Once the RA has started, the public generally becomes concerned with the impact of the action on the community. The community routinely focuses on damage to vegetation and roadways. The Region has recommended that the surrounding area is videotaped prior to the initiation of the RA. The videotape can then be used to facilitate discussions with the community to ensure that the surrounding area is repaired similar to its original condition.

The Region is also examining other efforts to speed the remedial process and hasten completions. For example, using Administrative Orders on Consent (AOCs) to start Remedial Designs (RDs) so that PRPs may begin the RD as soon as a Consent Decree (CD) is lodged in court. Once the CD is entered in court, it supersedes the AOC. Another effort involves the application of Superfund Accelerated Cleanup Model (SACM) and the use of early actions to hasten the final RA.

This pilot was completed on September 30, 1993.

EVALUATION PLAN

In its pilot evaluation, the Region will highlight those factors that were most pertinent in accelerating construction completions, focusing on: State coordination issues, PRP incentives, expediting RODs, community relations, and the role of the coordinator. In addition, the Region will project the effect of these improvements on the number of construction completions, and will examine the time and cost savings that may occur at the sites that have been accelerated to meet the completion goal. Thus the two measures evaluated are:

- Number of construction completions in FY 93; the "baseline" to surpass is two completions.

- Time duration from RA start to RA completion; national baseline is 11.5 Quarters; Region 3 baseline is 7.3 Quarters.

Evaluation of actual results is being conducted by the Region.

RESULTS

Region 3 met its specified completion goals for the fiscal year. This benefits not only the program in its effort to achieve 650 completions by the year 2000 but also engenders confidence from the public that EPA fulfills its commitments.

All of the activities implemented during the pilot will be evaluated upon completion of the pilot to determine the most effective methods for ensuring construction completions in a timely manner. The Region has realized several preliminary findings to date, including experience with the impact of State concerns on nearly all aspects of the RD/RA on O&M. Meetings with State representatives, RPMs, and PRPs have yielded substantial information that will help ensure timely completion of the affected sites. Equally important, the Region has a better understanding of these groups and will be more effective in the future at preventing delays in construction timetables.

This pilot will provide evidence as to whether concentrating responsibility for completions with one person is more effective than having such authority diffused throughout the Region.

Region 3

Integrated Site Assessment and Early Enforcement Activity

PILOT DESCRIPTION

This pilot demonstrates the effectiveness of integrated enforcement and site assessment activities and explores the use of early actions to accelerate site activities. Using the pilot process, after Preliminary Investigation and Site Investigation (PA/SI) the Region decided that an Expanded Site Investigation (ESI) was warranted to determine whether the site should be listed on the National Priorities List (NPL). Rather than do only an ESI, however, the Region negotiated that an Extent of Contamination Study (ECS) be conducted by the Potentially Responsible Party (PRP). The ECS combines the sampling needs of the ESI and the removal assessment and may include data equivalent to a Remedial Investigation (RI). Under the Administrative Order on Consent (AOC), the PRP is also required to do an engineering evaluation and cost analysis (EE/CA) should the results indicate the need for a Non-Time Critical (NTC) removal action.

Under the traditional process, a PA/SI is conducted followed by an ESI to determine whether the sites will be listed on the NPL. If the site is listed, an RI/FS follows. A removal assessment may also be done to determine if a removal is necessary.

This pilot approach ensures that should the site be listed on the NPL, data gathered through the ECS will be sufficient for an RI/FS and will thus eliminate the RI/FS data gathering and analysis phase, saving from one to two years time. This time savings will result in a faster completion and more resources available to other projects in the Region.

PILOT STATUS

The site is a former rail switching and maintenance yard operated from 1906 until 1990. During the operation of the maintenance facility, the PRP serviced coal fired, steam powered, electric and diesel-electric locomotives. A Preliminary Assessment and Site Investigation (PA/SI) was

performed during 1988 and 1989 by the Virginia Department of Waste Management (VDWM) at the site, and an Environmental Assessment (EA) was completed by the PRP at the northern portion of the site in February 1990. The EA indicated the presence of Poly-Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPHs), metals and low levels of Poly-Chlorinated Biphenyls (PCBs) at several locations on-site. It was determined that an ESI was necessary to determine whether the site would be named to the National Priorities List (NPL). The PRP signed an AOC with EPA on September 22, 1992, whereby the PRP agreed to conduct an ECS, which will include an ESI. The PRP signed the AOC and is proceeding with work on the site.

The AOC originally required the PRP to conduct the ECS in three phases, an investigation of one specific area of the site (Area A1); subsequent cleanup of that area, if warranted; and an investigation of the balance of the site (Area A). The AOC was developed at the time the PRP was negotiating to have a football stadium built on the site. The stadium proposal called for the stadium to be built on Area A1 of the site. Area A of the site was to be addressed under Phase III of the AOC. During Phase I, the PRP was required to investigate the nature and extent of contamination which may be present within designated Area A-1 of the site. However, because the stadium proposal was cancelled and a stadium will not be built on the site, EPA and the PRP are currently re-negotiating the AOC to comprehensively address Areas A1 and Area A in Phase I and eliminate Phase III. If the Phase I study and the PRP's risk assessment, which is based on the ECS results, indicates that additional removal actions are appropriate, EPA will require that the PRP, under Phase II will conduct an engineering evaluation and cost analysis (EE/CA). An EE/CA is an analysis of removal alternatives for a site.

This site was chosen as a SACM Pilot because it was recognized that the ECS, if performed to the satisfaction of EPA, would possibly supplant an additional PA/SI as well as a RI/FS for the site. Most importantly, the ECS information could determine if

the site will be listed on the NPL. Also, any removal actions undertaken as a result of the information gathered during the ECS could also be considered when EPA decides whether or not to pursue NPL site listing at a later date. Because the PRP is performing the ECS, and not EPA, Superfund money has not been expended to the extent it would have been had EPA performed the ECS.

This site was brought to the forefront during the summer of 1992 when construction of a new stadium at the site was proposed. The site had been envisioned before the stadium proposal as a prime location for industrial or residential development, however, the stadium proposal stimulated the interest in reducing or eliminating any environmental or public health threats from the site as soon as possible. The PRP actually submitted a sampling plan to EPA before the AOC was signed by EPA on September 22, 1992. EPA reviewed the initial ECS work plan and submitted comments to the PRP on December 8, 1992. Comments on the revised ECS work plan or approval of the plan were submitted to the PRP on February 17, 1993. Subsequent meetings and discussions led to EPA approving the ECS work plan on April 21, 1993. An addendum to the work plan will be submitted to EPA for Area A within thirty days of the effective date of the revised AOC. The revised AOC will allow the PRP to perform the risk assessment for the site, instead of EPA. EPA will review the ECS report for Areas A and A1 of the site, and the risk assessment to determine whether an EE/CA is needed for the site. It is anticipated that the pilot will be completed in June 1994.

EVALUATION PLAN

Combining removal and remedial sampling with RI/FS data gathering in an ECS should prove to be an effective and efficient method for handling NPL-caliber sites. Although the ECS will not be completed until later this year, the expected benefits of conducting an ECS are:

- Data from the ECS will be used to score the site on the Hazardous Ranking System in order to determine if the site should be listed on the NPL.
- Any removal actions undertaken as a result of the information gathered during the ECS could be

considered when EPA decides whether or not to pursue NPL listing for the site.

- A more efficient remedial process should the site be listed on the NPL because the data gathered through the ECS may be sufficient for an RI.
- ECS data can be used to support CERCLA Section 106 findings to require future site cleanup, as would be the case with an ESI and RI.

Evaluation measures the Region will provide include:

- The time and cost of the ECS approach compared to an ESI;
- The time required for the RI/FS (should it be needed) compared to the traditional approach; and
- EPA oversight levels.

Comparison with baselines time and cost measures will be conducted after the pilot is completed. The national average for an enforcement lead RI/FS is 15 quarters and in Region 3, an enforcement lead RI/FS lasts 13.4 quarters, on average. The time savings expected from conducting the ECS, should an RI/FS be needed, are from four to eight quarters because the data collection for an RI will have already been completed.

RESULTS

No quantitative results are available yet; however, the PRP has signed the AOC to conduct the ECS and is proceeding with work on the site. The AOC is currently being re-negotiated to include Area A1 of the site in the ECS. The amended AOC will allow the PRP to perform the risk assessment, in lieu of EPA, at the site. EPA will review the ECS report and the risk assessment.

A preliminary expectation is that if the site were to be listed on the NPL, one to two years could be saved in the remedial process by eliminating or streamlining the RI/FS, as equivalent RI/FS data was gathered during the ECS. Also, the information gathered during the ECS can be used to support CERCLA Section 106 findings to require further site cleanup. The ECS, if used at NPL-caliber sites can save one to

two years time. The accelerated scheduling afforded by an ECS will lead to more construction completions and quicker risk reduction at Region 3 sites.

By using this pilot approach, more widespread use of ECSs may result in increased demand for site assessment resources and a decrease in demand for remedial resources, such as the RI/FS.

Region 3

Proactive Settlements of *De Minimis* PRPs

PILOT DESCRIPTION

Region 3 has piloted a new process to test pre-Record of Decision (ROD) *de minimis* settlements as a means to promote equity, settle more quickly with the major Potentially Responsible Parties (PRPs), and recover additional funds to cover past costs. This is the first *de minimis* settlement conducted by EPA prior to ROD signature. Under the traditional process, *de minimis* settlements are pursued after the ROD is signed.

Through this early *de minimis* settlement, EPA was able to reduce the transaction costs of the *de minimis* parties who settled and got them out of the process early. For this settlement, parties who had contributed less than one percent of the waste to the site were defined as *de minimis*.

PILOT STATUS

The Region undertook this pilot project at the 20 acre Tonolli Corporation site located in Nesquehoning, Pennsylvania. Tonolli operated a secondary lead smelter and battery recycling facility from August 1974 to January 1986. Batteries were stripped for lead content. Contaminants identified at the site were cadmium, chromium, copper, lead and arsenic. The site was listed on the National Priorities List (NPL) on October 4, 1989.

In all, almost half of the 405 *de minimis* PRPs that EPA contacted chose to settle. EPA is currently negotiating with 10 of the 30 *de maximis* PRPs for the Remedial Design and Remedial Action (RD/RA). In addition, 28 *de minimis* parties joined those negotiations for a total of 38 PRPs in negotiations.

The *de minimis* pilot is complete and the Region is awaiting receipt of the final payments from *de minimis* PRPs scheduled for 12/31/93.

EVALUATION PLAN

This pilot addresses effectiveness, efficiency and equity. Clean up at many sites has been delayed because of *de minimis* issues; thus, demonstrating better ways of addressing this issue will increase program effectiveness. This acceleration will also increase program efficiency as will the collection of money from the settlements. But, the most important aspect of this pilot addresses equity. The limited liability for minor contributors who agree to the settlement is one of the primary benefits of *de minimis* settlements. This protection of small businesses from predatory litigation by larger companies is a key issue in promoting equity within the Superfund program.

In addition, major PRPs may be more likely to settle with EPA because of the increased perception of fairness. Easier settlements may then result in lower legal costs for settlements. This possibility must, however, be balanced with the increased demand for resources that *de minimis* settlements require.

Quantitative evaluation of pilot results addressing equity and effectiveness is difficult; a subjective assessment of relative resource use and its effect on overall Regional effectiveness should be discussed after the pilot is complete. However, the results of the increased effort expended on *de minimis* parties has been assessed.

RESULTS

Over \$4 million from *de minimis* parties will be collected for past and future costs. Although extra staffing was required to collect this money, the money collected far exceeds EPA intramural and extramural costs of approximately \$825,000.

This is the first pre-ROD *de minimis* settlement conducted by EPA. The bulk of the *de minimis* work was done between December 1991 and July 1992. The original settlement was offered to 405 *de minimis*

Potentially Responsible Parties (PRPs). One hundred and seventy parties signed the order which contained a 65 percent premium and have agreed to pay \$3.5 million; \$2.5 million for past costs and \$1 million for future costs. A second offer was made to the 230 parties who did not sign the first agreement and included a ten percent penalty for late settlement in addition to the 65 percent premium. Thirty three parties signed the second offer and have agreed to pay \$540,000. The cost to EPA has been \$725,000 in extramural resources and approximately 3,300 EPA staff hours (approximately \$100,000 in intramural resources). From an expenditure of over \$800,000 EPA will collect approximately \$4 million from *de minimis* parties. Through this early *de minimis* settlement, EPA was able to reduce the transaction costs of the *de minimis* parties who settled and got them out of the process early. For this settlement, parties who had contributed less than 1 percent of the waste to the site were defined as *de minimis*.

The single most critical element that led to the success of this settlement was that the enforcement team (RPM, attorneys, and Civil Investigator) was committed to completing the settlement in a proactive manner. The team worked very well together. Other factors that helped make the settlement a success included EPA's investigation of all challenges to the waste-in-list (approximately 70 challenges), which improved EPA's credibility and gained the trust of the PRPs. Being flexible and establishing a 65 percent premium helped the settlement process as did adding a second settlement offer with a ten percent penalty. The penalty again improved EPA's credibility by being fair to those who settled with the first offer.

One lesson learned was the importance of accurate cost estimates at the time of settlement. This settlement was based on earlier cost estimates of \$34 million which were subsequently revised to \$16 million when the remedy was chosen.

The demand on the enforcement team's time was extraordinary. For several months, the case demanded 60 to 80 percent of the team's time to the detriment of other cases. The lack of information on *de minimis* settlements accomplished by EPA nationwide prior to Tonolli hindered the team's negotiations with *de minimis* PRPs. A lack of continued support from the Office of Enforcement on the trust agreement prolonged the time between

receiving signature pages and notifying PRPs of the trust agreement terms.

In the future, the Region will more thoroughly brief management prior to beginning settlement activities, including case strategy and rationale, to be sure of their complete understanding of the project. This will also aid in responding to inquiries from outside EPA, Headquarters, and upper management. The Region will also be prepared to handle a large volume of documents that may be contaminated (the original documents had roughly 3500 ppm of lead) as this led to some problems with the contractor. Prior notification of Congressional offices of settlement activities may help reduce the number of Congressional inquiries which consumed staff time at critical points in the process. The second offer with a penalty worked well and may be used again, although it will be made clear in the first settlement package that any second settlement offer will include a penalty for the delay in settling. Finally, the Region may be more active in suggesting tiers of settlers. While it was made clear that EPA would listen to proposals about tiers, no specific proposals were made by the PRPs. Tiering would have allowed more flexibility for the PRPs.

Region 3

Accelerate ROD to RD through Early Enforcement Planning

PILOT DESCRIPTION

This Region 3 pilot was developed to accelerate the Record of Decision (ROD) to Remedial Design (RD) process through early enforcement planning. The pilot activities are designed to overcome time delays and inefficiencies in the enforcement process and to expedite cleanup at all enforcement lead sites.

Through traditional processes, challenges by Potentially Responsible Parties (PRPs) lead to extended negotiations. Under the accelerated pilot process, a search team holds meetings four to six months before the ROD with the Remedial Project Manager (RPM), EPA attorney, civil investigator, and other interested EPA parties. These meetings include brainstorming on PRP liability issues, enforcement strategy, natural resource trustee issues, and investigating how to prepare the Pre-Referral Notice (PRN) in a timely manner and to ensure that all information required by the Department of Justice (DOJ) is ready when the PRN is sent (around the time of the proposed plan issuance). Additionally, 100 days after the ROD is signed, decision meetings are held to determine the optimal way to conclude negotiations - whether to cut off Consent Decree (CD) negotiations and prepare a Unilateral Administrative Order (UAO) or whether request an extension of the moratorium. The effort is labor intensive but has provided good results. Performance standards are incorporated into RODs. Parties are encouraged to sign an AOC requiring them to begin RD once the CD is signed even though it has not been entered in court.

The acceleration of the ROD to RD process will also be achieved through activities such as: monthly docket reviews held with the program, the Office of Regional Counsel, EPA Headquarters representatives, and DOJ staff; creation of model enforcement documents; formalization and use of PRP search procedures; and improved coordination with natural resource trustees.

Under the traditional process, RODs are written without specific performance standards and are therefore negotiated to some extent during the RD. The RD is not started until the CD is entered in court. The biggest problem under the old system was that negotiations became drawn out when PRPs brought up legitimate issues with respect to PRPs, including the identification of additional PRPs who were not given notice. PRP searches were not always comprehensive or effective. Often there was no review of the search before the deadline for settlement after a ROD was finalized.

The Region anticipates that sites will move from ROD to RD start in a shorter period of time, and there will be resource savings because EPA is better prepared for litigation and enforcement cases.

PILOT STATUS

All pilot activities have been implemented and are being used in the Region. The early RD start AOC received approval from DOJ and the Region. The Region is currently evaluating the impact of pilot activities on Regional operations.

EVALUATION PLAN

The Region is in the process of conducting an extensive evaluation of the pilot and its impact on regional enforcement operations. Regional averages for the various stages in the enforcement process (Special Notice Letters sent, CDs signed, etc.) as well as the overall time from ROD to RD will be measured and compared for the period prior to the fourth quarter of FY 1991 and the period after the fourth quarter of FY 1991. It is anticipated that the differences in the averages will show a significant increase in enforcement efficiency.

The number of initiatives being implemented as part of the pilot will make it very difficult to measure the impact of any single initiative. As such, the

evaluation will measure the impact of the initiatives as a whole, and will qualitatively highlight those initiatives which the Region recommends be adopted by other Regions, and why.

The qualitative improvements in the enforcement process will not be easily measured but Regional staff have already expressed support for the new initiatives. Regardless of the level of efficiency improvements, the Region will continue to use the new initiatives because of the higher quality they provide.

RESULTS

Results anticipated by Region 3 are that sites will move from ROD to RD start in a shorter time period. The Region anticipates reduced litigation costs because EPA is better prepared for cases. More focused attention on enforcement sites can lead to quicker cleanups at a reduced cost to the program. The Region's findings result in thorough planning and preparation for the negotiation process which leads to a more effective and efficient process.

The ROD Remedy component of this pilot provides an additional success story. By incorporating performance standards as part of the ROD, it helps to ensure that there is no question as to whether or not a PRP has performed their obligations. The effect of this change, however, will be difficult to document in the short term.

All of the above mentioned initiatives have been implemented in the Region and appear to be having a positive effect. Further evaluation will be necessary to determine their actual impact.

Region 4

Early Enforcement Prior to Listing

PILOT DESCRIPTION

The goal of the SACM early enforcement pilot is to speed up the Superfund process, accelerating the remedial process, where there is a willing and financially viable Potentially Responsible Party (PRP) at a site that will likely be placed on the National Priorities List (NPL). The pilot accelerates the cleanup of the site based on the elimination of the time lapse between the site assessment and remedial investigations. Rather than taking the traditional approach (Expanded Site Investigation [ESI] followed by the preparation of a Hazardous Ranking System [HRS] package, NPL listing then a Remedial Investigation [RI]) the Region has consolidated the Expanded Site Investigation (ESI), with the RI/FS. The PRPs are conducting these assessments concurrently with the Region's development of the Hazard Ranking System (HRS) package. The pilot encourages early involvement under an administrative Order on Consent (AOC) under which PRPs perform the combined ESI-RI/FS. Through the early enforcement effort, the Region is able to use the data collected during the ESI-RI/FS to prepare an HRS document. At the end of a project, the Region is ready to propose a site for the NPL if the data show that the site merits being listed, and go on to Remedial Design/Remedial Action (RD/RA). At any point in the process, removal action could be taken if necessary.

The pilot project is complete at one of the three sites where it is being applied. Completion at the other two is expected in 1994.

PILOT STATUS

The pilot is being applied at three sites: Greenback Industries; a site in Florida (referred to as Site One); and a site in South Carolina (referred to as Site Two). The pilot is complete at the Greenback site and will be completed at the other two in early 1994. Until the sites are listed on the NPL, however, the names of the sites and PRPs will not be presented.

Greenback Industries, Inc., located in Eastern Tennessee, about 30 miles south of Knoxville, was the first SACM Early Enforcement pilot site in the Region. The site is a metal processing plant where metal powders are produced for use in aircraft engines, brake pads, and such. Operation began in the mid-1940s, and ended recently. Most of the contamination results from a time when environmental controls did not exist. The primary contaminants were copper, lead, and barium, which were deposited over the years through regular plant operation, primarily through air deposition and discharge into the stream through waste-water.

The site was discovered in 1980 as a result of a CERCLA Section 103(c) notification. The State of Tennessee, under a cooperative agreement with Region 4, performed a preliminary assessment (PA) in 1984 and recommended further action, and an SI was conducted in 1987. During the SI, Greenback Industries hired a contractor to take samples. The results showed a high level of contamination on the plant property soil and stream-sediment, and the company asked EPA for guidance. Greenback began as a Regional enforcement pilot. Due to the company's continued interest, approval was received to conduct an early enforcement pilot to accelerate the cleanup process at the site.

As a result of negotiations in 1991, a CERCLA § 106 administrative order was signed with the PRP to conduct an RI/FS and reimburse EPA for all oversight costs for the Greenback site. The Region agreed to do the community relations coordination, and the contractors were responsible for the required risk-assessment.

In October 1991, the first public meeting was held at the site which allowed the discussion of activities, including the results of well-samples. In July 1992, the RI was completed. The site scored a 48 on the earlier HRS system. With the new HRS, and the change in the site conditions (the county laid water-lines in the area), the score dropped to 17. Under the previous HRS, the groundwater pathway was the primary factor, while under the present HRS, the

surface water pathway is the primary factor. The surface water stream is not used for fishing or drinking water due to its small size, and many people changed from private well water to public drinking water supply because the county laid new water lines.

The risk assessment concluded that the existing threat was for future potential residential use at the site. Groundwater contamination was only found on the site. In January 1993, the FS was completed. It determined that the best remedy was to perform a soil removal from the site, and sediment removal from the stream. The site was not placed on the NPL since the HRS (revised) score was only 17, but the site was on the State's Superfund list and the State of Tennessee's Division of Environment and Conservation agreed to conduct further oversight and assume the site lead.

In February 1993, the final public meeting was held at the site, where the public and the press were informed about the site's activities. The public agreed with the process because the State could be more efficient in this cleanup, due to the establishment of a local field office.

In March 1993, there was a cost recovery AOC drafted to recover the \$235,000 spent by EPA on the site. EPA has now ceased all activity at this site as it has been referred to the state.

The second site addressed by this pilot is a 5 acre site located in Florida which operated as a pesticide blending facility from 1949 to 1976. Contaminants at the site included pesticides such as chlordane and DDT as well as solvents used for pesticide formulation. The current PRP sold the property in 1978 to an individual who operated a truck service-facility. The truck company is responsible for waste-oil, solvents, and motor fuel contamination at the site. In 1987, the trucking company went bankrupt. The individual who operated the trucking company retained ownership of the property until 1993, when the PRP repurchased the property.

EPA concluded a SI in June 1989. High levels of pesticides and other organics were discovered in the groundwater and soil. Chlordane was found in the groundwater at concentrations of 530 parts per billion (ppb) (the Maximum Contamination Level [MCL] for Chlordane is 2 ppb). As a result of the elevated

levels of pesticides in the soils, the site was referred to EPA's Emergency Response Removal Branch.

In May 1990, an AOC was executed for removal action. In December 1990, the PRP completed the contamination assessment report, installed 22 monitoring wells, and collected an additional 35 soil samples. This data was used to score the site under the HRS. The removal action began in December 1991. The facility was demolished, including the office building, water tower and warehouse. The site is now a vacant lot. A total of 22,000 tons of contaminated soil were removed and transported off-site. The amount of soil removed was based on cleanup levels established by Agency for Toxic Substances and Disease Registry (ATSDR) for the protection of human health, not for the protection of the aquifer, which was based on a chlordane level of 50 parts per million (ppm) in the surface soil and 100 ppm for subsurface soil. The PRP is anticipating NPL listing and went beyond the required levels of cleanup.

EPA accepted the removal action report in January 1993. Simultaneously, the RI/FS-AOC began. Groundwater is the major pathway of concern because of the local geology and the presence of two municipal well systems and private wells within a four-mile radius. The PRP work plan has been approved by EPA. The baseline risk assessment is being conducted by EPA, and the HRS package is under Regional review. Community relations interviews were conducted in Orlando during the week of June 21, 1993. The baseline risk assessment has been assigned to EPA's Alternative Remedial Contracting Strategy (ARCS) contractor.

The focal point of the signed AOC is groundwater contamination. When chlordane limits were set, the purpose was to protect human health, not the aquifer. More removal of the soil may be needed in the future to protect the area against further groundwater contamination.

The PRP was pleased that this site was selected as a pilot because remedial standards for the removal actions will be set. In this way the PRP may avoid the cost of additional soil removal if the site is listed on the NPL. The PRP has negotiated for a 300 day RI/FS, while EPA conducts the risk-assessment.

The Region anticipates that the RI/FS will be completed next year, when it is proposed for the NPL. A ROD can then be signed, and RD begun. Once the site is listed, there will not be any "down time" or delay in this process. In July 1993, the RI/FS kickoff meeting was held in Florida. Field work began in August 1993 with the installation of an additional 18 monitoring wells.

While the sampling is being conducted for the RI/FS, an EPA representative is on-site. Samples (10 percent) are split with the contractor. The objective of EPA's oversight and split sampling is to provide QA/QC assessment of the PRP contractors sampling procedures and chemical analysis. The PRP has agreed to pay 100 percent of the oversight costs.

Based upon the preliminary results from the soil analysis of samples collected from the neighboring trailer park, an elevated level of chlordane, which is believed to have migrated via drainage from the site, was detected. This resulted in the need to expand the existing RI Scope of Work, and a delay in the final RI/FS Report by approximately 4 months.

On November 17, 1993, an additional 44 soil samples were collected from the trailer park to define the area of contamination and to evaluate the risk. The results of analyses should be available in December. If the results of the data analyses warrant, a removal action will be conducted in January under the existing removal AOC.

The PRP has offered the residents of the two mobile homes, where the highest concentration of chlordane was detected, assistance in relocating in anticipation of a forthcoming removal action.

The third site covers an area of over 25 acres, and is located on the shore of the Cooper River, which is bounded on one side by a peninsula. The source of the contamination was a coal gasification plant, which operated for over 100 years, between the early 1800s and mid-1900s. Part of the site was occupied during World War II by the U.S. Navy. Based on site history, it is possible that other additional contaminants are present from other industries, such as a wood-treating plant and dry docks.

The area of concern is a park in the middle of the site. The coal gasification plant was demolished, and

the site is now an electrical sub-station. Next to the park is a low-income housing project. Across the street from the site is the future location of an aquarium and a tour boat dock facility.

The South Carolina Department of Health and Environmental Control (DHEC) conducted an SI on the site during 1991-1992. The site was discovered and put on the Region's inventory in 1990. This is a high priority site for the State of South Carolina. The State introduced SACM with this site, and performed a PA/SI in 13 months. The SI results showed Polycyclic Aromatic Hydrocarbons (PAHs) in all environmental media on the site, including sediments in the Cooper River, surface water, groundwater, surface soil and sub-surface soil. There was also a six-foot thick layer of coal-tar residues in a monitoring well on the site. The main migration pathway for the PAHs was a mid-1800s brick-lined storm drain, which at high tide, is full of water from the Cooper River. The brick-lined drain was acting as a French drain in allowing the subsurface contamination to leach into the storm drain, and then into the Cooper River. The primary pathway of concern is surface water due to the fact that the site is so close to the tidal water.

The groundwater is not potable, and is not used for drinking water. The deep aquifer is used for drinking water. The nearest public wells are 2.5 miles away, across the river. The park was closed by the city in 1989 due to soil contamination. The low-income housing was vacated during 1991-1992 due to soil contamination and damage that occurred during Hurricane Hugo in 1989. The draft HRS scores are above 28.5. This is a surface water pathway driven score, with human food-chain contamination being the major consideration.

The three PRPs for this site are the utility which operated the coal gasification plant; the municipality, which operated the park; and the municipal housing authority, which owns the property the City leases for the park, and owns the low-income housing property. On January 19, 1993, the three PRPs signed an AOC with the Region prior to NPL listing. According to the schedule, this will be a two-year RI/FS, and should be completed by 1995.

Since the site has a high profile in the municipality, the public will be involved early. The risks of the

site, such as human health, food chain contamination, and ecological risks, can be identified early, after the site assessment is complete.

The construction on the tour boat facility can be built, with the remedial process taken into consideration. The remedial design can be incorporated into the construction. With the pilots approach to site assessment information, the new construction will not be done in a vacuum, causing releases to the river or the need to later remediate construction. There is a chance that a part of the brick-lined storm drain, that runs through the most contaminated area will be removed. The city plans to remove and upgrade the storm drain. It remains to be seen whether the removal will occur under EPA authority.

There is no habitation of the old low-income housing units that trigger removal immediacy. It is conceivable that during the investigation they could find an old, underground, sludge-filled tank used for coal gasification, that might prove to be a gross source of contamination needing early removal. As the city copes with the storm sewer as part of the aquarium construction, it is possible they might come across some contaminated soil, accidentally triggering what would be considered a removal action. At this point, those are the two most likely options requiring a removal.

EVALUATION PLAN

The Region has developed a sound evaluation plan that will assess the improvements in effectiveness and efficiency expected at the three sites being addressed by this pilot. The categories of measures proposed that the Region will collect include:

- Construction Completion goals: by speeding up the process at sites and saving Fund money, -- through both cost efficiencies and PRP reimbursement -- this pilot approach can help achieve the 650 site construction completion goal.

- Time savings: by integrating some steps, e.g., ESI and RI/FS, and eliminating time delays between steps, the Region expects to save a minimum of 24 months from the beginning of investigation activities (ESI-RI) to the signing of the ROD or an enforcement document.
- Resource savings:
 - Fund resources will be saved since the PRPs are conducting the ESI/RI/FS;
 - EPA oversight costs will be reduced since EPA will not have to oversee a separate ESI, the whole process will be shortened, and the PRP will reimburse EPA oversight costs;
 - PRPs will also realize savings due to the integration of the ESI with the RI/FS.

The baseline for comparison of these measures is as follows:

- Completion goals - improvement in fulfillment of SCAP targets with the same or declining Fund resources will indicate improved effectiveness and efficiency in the overall regional approach.
- Time and cost savings -- the time measures compiled by the Site Assessment Branch, HSED, are an excellent standard for comparison, as suggested by the Region and shown in Table 6. As a further standard, the average time and cost measures listed in Table 7 are also appropriate as further measures of the pilot's success.

The Region has identified a number of qualitative measures such as early community involvement and early baseline risk reduction that can also be assessed.

Activity	Average (Months)	Range (Months)
RI activities	23	12-38
ESI activities	16	4-26
NPL proposal to NPL final listing	18	9-26
NPL listing to RI start	8	0-22.5
ESI completion to RI start	16	0-35
ESI start to RI completion	54	25-76

TABLE 6

Activity	National Average	Region 4 Average
Time from listing to RI/FS	4.4 Qtrs	4.6 Qtrs
Time from listing to ROD	18.9 Qtrs	17.3 Qtrs
Extramural costs of RI/FS	\$938,980	\$765,002
Extramural costs of ESI	\$250,000	N/A
Intramural cost of oversight activities	N/A	Region to estimate

TABLE 7

RESULTS

Greenback Industries: The actual benefits to date at the Greenback site include the completion of the ESI-RI/FS within 25 months (1/91-1/93) instead of the national average of 54 months, an acceleration of over two years. The PRP will reimburse EPA oversight costs of about \$250,000 and EPA resources are available for use at other sites. The PRP will realize savings of approximately \$330,000 due to the integration of the ESI and the RI/FS. While the site

proved not to be NPL-caliber under the new HRS, the approach is potentially applicable to other NPL-caliber sites. The site has been referred to the State of Tennessee, which was able to integrate the available RI/FS data into an RD/RA. Therefore, the State saved time and money, and is now able to start their cleanup process. This project is complete now that it has been referred to the state.

At the second site, if all goes according to plan, the RI/FS will be completed next year when the site is

proposed for the NPL. Once the site is listed, there will not be any "down time" in the process from NPL listing to ROD. If the site has a proposed ROD 0.5 years after NPL proposal, four years will have been saved from the National average of 4.5 years.

At the third site, the benefits include a possible two-year time savings. The time line for the RI/FS process and the ESI, if they are integrated, ranges from 22-29 months to complete.

Region 4

Early *De Minimis* Settlement

PILOT DESCRIPTION

The Early *De Minimis* settlement pilot includes an emergency removal, a settlement by a group of 100 major PRPs and the settlement with *de minimis* parties. Under this pilot, the Region entered into settlement with the major PRPs before the emergency removal under which the major PRPs agreed to pay for the emergency removal up front. In addition, the Region undertook to recover appropriate cleanup costs from the *de minimis* PRPs immediately after the removal was complete, as opposed to waiting for the site to be placed on the NPL. This *de minimis* settlement was supported and encouraged by the major PRPs. The pilot process involves the formation of a PRP steering committee and entering into negotiations with that committee during the removal but before the site is listed on the NPL.

In addition, the Region hired additional employees, an On-Scene Coordinator (OSC) to oversee the cleanup at the site and a paralegal/lawyer to conduct a PRP investigation. The additional employees also allowed senior employees to work on other sites. Work on the settlement is continuing.

PILOT STATUS

The pilot Site is located in South Carolina and was a past State and Federal RCRA enforcement site. The site was an active Resource Conservation and Recovery Act (RCRA) disposal site which achieved interim status in 1980. It was bought by the most current operator in 1989. Site conditions improved when they first took over the site, but then began to worsen when the company began laying off some of its employees. The State of South Carolina (hereinafter referred to as the State) took over the site in 1991. The State terminated the interim status of the facility in September 1991, and RCRA involvement no longer exists. The previous operator is now bankrupt. The State has spent \$2 million at the site. In January, 1992, EPA took over the site.

EPA performed a quick enforcement action offering about 50 PRPs a unilateral order and the other 50 a *de minimis* settlement. However all 100 entered into the unilateral order (this group of 100 PRPs became the PRP steering committee). The PRP steering committee took over the site in early April 1992. EPA spent about \$1.6 million dollars on the cleanup before the PRP steering committee took over the site.

The enforcement action has progressed well. Funding for the pilot has allowed the Region to hire two additional employees. A paralegal (now an attorney), has worked on the site for 6-8 months; and an OSC, was hired on a one year temporary basis to work full time on-site. The additional OSC has allowed: the PRPs to finish the removal without any down time due to the absence of an OSC; the other Regional OSCs to work on other areas; and EPA to monitor and facilitate removal at the site. The OSC performed significant research of the records and sped up the process. He researched records dating from 1987 for the generators that sent waste. The additional paralegal/attorney has allowed the Region to search through the 175 boxes of waste manifests and find all the *de minimis* PRPs, review information request responses and respond to FOIA requests.

De minimis settlements are offered in this case first, to meet Congress' goal to get the parties who had little impact on contamination out of the enforcement process, and second to induce the PRP steering committee to enter into settlement quicker. The PRP steering committee requested that the Region start the search beginning with records from 1980, which doubled the number of manifests and PRPs. A majority of these had Department of Defense involvement, which considerably delayed the *de minimis* settlement. The PRPs whose cylinders had little impact on groundwater contamination at the site will be offered *de minimis* settlement. General notice (CERCLA Section 104(e)) letters were sent to PRPs.

The Region had expected the final volumetric rankings to be complete by mid-July 1993. Budget problems, however, have resulted in the contractor

having to stop work before the transactional database could be completed. After the volumetric rankings are complete the Region will be able to enter into a settlement with the *de minimis* PRPs.

The site is being evaluated for proposal to the NPL in FY 1994. The PRPs have packed and removed about 6,600 drums, 1,800 waste gas cylinders, 35-40 tanks, shock-sensitive and explosive wastes, and the boiler. Surface contamination will be dealt with by the remedial program.

The cost for removal was estimated at \$14-16 million, however, the cost of dealing with the increased number of gas cylinders raised the price to about \$18-20 million. Money was saved when the PRP steering committee paid \$20 million up front, since EPA assured the PRPs that everyone, including *de minimis* parties, would be brought to the table. The Region derived the figure to settle with the PRP steering committee through the Technical Assistance Team (TAT) contractor who contacted Regions 2 and 3, who had cleaned up similar drum sites, and extrapolated their numbers to get an estimate of \$14-16 million.

The State was invited to the initial enforcement meeting. The State helped the Region acquire a generator list. The Office of Regional Counsel (ORC) and OSC have refined the generator list to help the State recover their money. The Region has excellent relations with the State. The State originally requested the Region's help, because they would have had a difficult time funding and overseeing the cleanup with their limited resources.

The *de minimis* and settlements will be entered into immediately after the removal is complete.

EVALUATION PLAN

The evaluation of this pilot focuses on the effectiveness, efficiency and equity of the *de minimis* process. The specific concern is whether the pursuit of *de minimis* settlements speeds up the Superfund overall process and yields collections appropriate to the resources (time and cost) dedicated to this effort. That equity is served is presumed to be true.

Evaluating this pilot by comparing site results to other sites or to national or Regional averages is very difficult for three reasons:

- It is a very large site, perhaps one of the three largest landfills in the country -- making cost and time comparisons difficult.
- EPA assumed lead responsibility for the site only recently, in January 1992 -- which complicates the use of time comparisons.
- Because of the visibility of the site, several EPA staff members were assigned full time to the site.

For these reasons a more focused evaluation approach is being utilized by the Region.

Region 4 is evaluating and collecting data on the following measures:

- Was more money collected from *de minimis* settlements than was expended in the collection and negotiation effort (in FTEs and extramural dollars for data collection)?
- Was the site cleaned up more quickly than it would have been without the *de minimis* settlements? This concern should address the reactions of PRPs as well as a general time duration analysis.
- Was the Region still able to meet its STARS commitments and SPCC inspections despite the attention and staffing devoted to the pilot? Specifically, what was the level of effort required for this *de minimis* pilot?

RESULTS

Whether the money obtained from *de minimis* settlements offsets the intramural costs of negotiating with *de minimis* parties will need to be evaluated from a cost/benefit standpoint.

The major PRPs supported the decision to pursue settlement with the *de minimis* PRPs and agreed to pay for the removal before NPL listing. Thus a PRP lead removal action at the site began quickly. This pilot approach may also have induced the PRP steering committee to stay together throughout the cleanup. Therefore it does appear that the site will be cleaned up more quickly than it would have been without the *de minimis* settlements.

The Region was able to maintain branch efficiency through the hiring of an additional OSC and paralegal/lawyer at the site (enabling the Region to meet its STARS commitments in 1993 of conducting removals at 34 non-NPL sites and 4 NPL sites). Going beyond this straightforward finding, the Region will draw conclusions and recommendations on how to streamline the *de minimis* process for other sites.

Finally, this approach helped address community concerns better. The community was very concerned about the cleanup at the pilot Site, and the Region promised the community that EPA would oversee the quick cleanup of the site. The OSC helped the Region earn the trust of the public and local elected officials by establishing a continuous EPA presence and by cleaning up the site quickly and safely.

Region 5

Regional Decision Team

PILOT DESCRIPTION

The goal of the Regional Decision Team (RDT) pilot is to ultimately develop a process within the Region whereby all components of the Office of Superfund are fully integrated into a single continuous effort to efficiently and quickly evaluate and cleanup sites. The RDT pilot is comprised of 19 sites that were nominated by the six states that are within the Region. Each site was assigned a core Site Assessment Team (SAT) that was comprised of an On-Scene Coordinator (OSC), a Regional Project Manager (RPM), a Site Assessment Manager (SAM), and a State representative. The SAT determined what additional personnel were necessary to evaluate the site; eventually, all the sites were assigned an attorney and a community relations coordinator.

Under the pilot, the SAT reports their findings to the Regional Decision Team (RDT) which makes decisions on what further action, if any, should be taken at a site to explore innovative approaches to expedite site evaluation and cleanup. The RDT will not micro-manage a site. Instead, the RDT will review status reports and strategy options from the SAT, establish response priorities, and provide advice and direction on appropriate response actions. The major role of the RDT will be to clarify, evaluate, and prioritize non-time critical early actions. These actions are intended to achieve site stabilization and risk reduction. The action may serve as an initial response or provide final cleanup for the site. The role of the RDT is to identify the response opportunities and direct the initiation of the required support actions. The RDT also has the responsibility for ensuring that response actions are fully consistent with the requirements contained in the National Contingency Plan (NCP).

Under the traditional process, when sites move into the Superfund process the removal and remedial program managers consider site-specific actions separately. This results in an inefficient process where decisions are made without taking all factors into account. Early action decisions were only made

for remedial sites and considered on a site by site basis.

PILOT STATUS

The composition of the RDT has been established. The expectation of the RDT pilot is to define an unencumbered process to address all Superfund sites in the Region. The RDT pilot markedly redesigns how the Region does business in the Superfund program. Significant latitude is being provided to the individual site teams (SATs) to explore innovative approaches to expedite site evaluation and cleanup. The concept is that the SAT is in the best position to draft a more efficient and productive cleanup program. An office procedure and implementation plan will ultimately result from the approaches that prove most successful in the pilot.

The pilot provides a method of coordinating all new sites in the Region. The RDT takes the information provided by the SAT and makes an informed decision about the destiny of each site. The RDT takes into account all pilots presently being performed in the Region in conjunction with the budgetary constraints and threat to the public health and environment. The RDT also increases communications between the different programs within Superfund and state representatives. This enables the process to be more efficient because all of the regulators are involved in the decision-making process.

The RDTs meet once a month. The following actions were taken at the sites already reviewed: 4 Site Evaluation Accomplished; 2 RCRA deferrals; and 3 non-time critical removals.

The use of SATs at the site level and the RDT at the Regional level allows Region 5 to implement two layers of cross-program team work designed to accelerate the cleanup process while cutting the costs associated with the cleanup.

Information on twelve of the sites is available and include the following resolutions:

Jennison Wright Site - located in Granite City, IL. The RDT agreed with the recommendations of the SAT and decided to address a large portion of the site as a non-time critical removal; initiate the RI for the remaining portion of the site; and designate the site as State lead.

Willow Run Site - located in Ypsilanti, MI. the site is composed of several landfills, ponds, and lagoons located along a creek. The RDT recommended that a portion of the site undergo a non-time critical removal action and the remaining portion begin a remedial investigation.

Voss Scrap Site - located in Bell Plaine, MN. With the State dissenting, the RDT determined that the site should be Site Evaluation Accomplished (SEA).

USS Lead - located in Gary, IN. The RDT recommended that the site should be considered low priority under Superfund until after RCRA enforcement has run its course.

Circle Smelting - located in Beckmeyer, IL. The SAT recommended to the RDT that an early action be conducted as a non-time-critical removal to address several areas of significant contamination as identified by the team. The RDT concurred with the SAT's recommendation.

New Jersey Zinc - located in De Pue, IL. The SAT recommended to the RDT that the site be handled as a State-lead whereby the state uses its own authority to secure cleanup. The state will be responsible for a focused RI/FS addressing on-site and residential soils, and site waste piles. The RDT concurred with the SAT's recommendation.

Pierce Oil - located in Springfield, Illinois. The removal program conducted a \$1.3 million cleanup as a time-critical removal. Although significant contamination still remained following the removal, the SAT determined that the site would not score high enough on the HRS for NPL listing. The recommendation by the SAT was to defer the site to the State and consider the site SEA. The RDT concurred with the recommendation.

Old Mankato Dump - located in Belgrade Township, MN. A qualitative human health and ecological risk assessment conducted for the site indicated little or no risk. In addition, the SAT determined that the site was not NPL-caliber. Consequently, the SAT recommended that the site be considered SEA. The RDT concurred with the recommendation.

Manistique Harbor - located in Manistique, MI. The RDT decided to review the determination by the SAT for a time-critical removal action. Generally, the RDT does not review time-critical removal actions. The RDT concurred with the SAT's recommendation to pursue additional site characterization and engage the PRPs for possible conduct of the removal.

Brooks Foundry - located in Adrian, MI. A removal action had been conducted at the site in 1990. The site is expected to be proposed for the NPL in the next update. The SAT recommended that the site be placed in the queue for RI/FS funding for FY 94. The RDT concurred with the SAT recommendation.

Stickney/Tyler Dumps - located in Toledo, OH. The SAT recommended the two landfills be approached as presumptive remedies for closure utilizing removal authorities, i.e., non-time-critical removal. The RDT concurred with the SAT.

Master Metals - located in Cleveland, OH. Master Metals is an operating facility under RCRA interim status. Presently, a RCRA enforcement action is underway. The SAT recommended the site be deferred to RCRA until RCRA authorities are exhausted. Consequently, the site is considered SEA. The RDT concurred.

The pilot is classified as completed on September 30, 1993, although work is continuing at the various sites.

EVALUATION PLAN

Region 5 is gathering performance data on pilot sites and on comparative sites and a tracking system for the pilots has been developed. By the end of this fiscal year, the Region will produce a comprehensive evaluation.

The Region is looking to the RDT pilot to define an unencumbered process to address all Superfund sites

in the Region. This will produce a more effective and efficient process. If successful, the pilot approach could significantly reduce the time and money spent on sites by ensuring that as each new site enters the Superfund process, the specific actions required are quickly identified. Reduction in risk at sites can be achieved through short-term actions which were not previously considered. In addition, sites requiring no further action can be assessed and identified quickly.

Region 5 will collect data on the following evaluation measures for this pilot:

- Length of time for completion of site assessment
- Cost of site assessment (intramural and extramural)
- Early risk reduction
- Enforcement -- number of sites assessed by PRPs
- Coordination and teamwork with the SAT
- Involvement of the states
- Community relations.

The Region is developing a baseline for quantitative measures from CERCLIS and Regional sources.

RESULTS

Since the beginning of the RDT pilot, twelve sites have been reviewed by the RDT. Significant progress has been made in defining the role and responsibility of the RDT in decision-making. Site teams have an improved understanding of what the RDT expects of them. Experience derived from the RDT pilot will form much of the process being developed in the Region for SACM implementation. The role of the RDT will expand beginning in FY 1994. The RDT will be responsible for directing funds program-wide to sites with the most significant environmental threats.

In addition, the RDT pilot has enhanced communication among Superfund program elements and has fostered a better understanding of the requirements of different aspects of the program. This increased knowledge will help the program achieve its goals with greater efficiency to accelerate cleanups.

Region 5

Early Action Pilot, Better Brite, Wisconsin Site

PILOT DESCRIPTION

This pilot project accelerates site cleanup by performing a Federal-lead time-critical removal action through the coordination of multiple programs. The strategy of this pilot uses removal authority for addressing immediate risks, while integrating cross-program needs in the planning process. The removal action at the site, when complete, will have addressed the source areas to the groundwater contaminant plume and containment of the plume.

The pilot process involves the combination of the time critical removal and Remedial Investigation/Feasibility Study (RI/FS). The time critical removal will contain the contaminated plume and will decrease the amount of cleanup needed under a remedial action.

Additionally, this pilot uses removal authority for addressing immediate risks, while integrating cross-program needs in the planning process. The expected benefits to be derived from the pilot are significant early risk reduction at the site from accelerated cleanup action and the knowledge gained and experience drawn from multi-program coordination in executing the early action. The planning for the removal was conducted with significant input from the Regional removal and remedial programs, the Wisconsin Department of Natural Resources, EPA's Office of Public Affairs, and the Agency for Toxic Substances and Disease Control. The removal action will reduce risk at the site by removing contaminated soils that are contamination sources of the groundwater contaminant plume, and by containing the groundwater plume.

PILOT STATUS

The Better Brite site is made up of two separate metal plating shops (a chrome and zinc shop) which are located less than a half-mile from each other. The site scored 48.5 on the Hazard Ranking System (HRS) and was listed on the National Priorities List

(NPL) August 30, 1990. The documented environmental damage includes ground water contamination, soil contamination, and flora contamination; the contaminants consist of heavy metals and volatile organic compounds. A State lead Remedial Investigation/Feasibility Study (RI/FS) and a Fund-lead removal are presently being conducted at the site.

Better Brite is a Fund-lead site with no viable PRPs. The contaminated soil from the zinc shop has been removed, and over the past couple of months, the extension of the ground water collection system has been completed at the zinc shop. The city and state have taken over the operation and maintenance of the collection system. At the chrome shop, soil excavation is complete and the ground water collection system should be completed in July. The city and state will take over the operation and maintenance of the system. Once the targeted soil contamination is removed from the site, both the chrome and zinc shop sites will be covered using a solid-waste type cap.

The time critical removal is more than 90 percent complete and should be completed in July. The removal action addresses the source areas to the groundwater contaminant plume, and containment of the plume. The remaining remedial action will be a pump and treat system remedy for the groundwater contamination.

The pilot was substantially completed during October, 1993, with the final report under preparation.

EVALUATION

Region 5 is gathering performance data on pilot sites and on comparative sites and by the end of this fiscal year will produce an evaluation.

The pilot addresses the increases in effectiveness and efficiency possible by performing removal actions at NPL sites. At Better Brite, the pilot is expected to:

- Show significant early reduction of risk from the accelerated cleanup action; and
- Identify an efficient means for State and Federal coordination among the removal, remedial, State of Wisconsin Department of Natural Resources, EPA's Office of Public Affairs, and ATSDR programs.

Region 5 will collect data on the following evaluation measures for this pilot:

- Early risk reduction compared to the remaining risks to be addressed in the completion of the RI/FS

- Duration of removal action in comparison to traditional remedial action
- Cost of the removal as compared to cost of a remedial action
- Cooperation and teamwork

The Region is identifying costs at this site. The baseline for comparison of efficiency measures is listed in Tables 10 and 11. Comparison of the pilot with these baseline figures will illustrate cost avoidance and time savings possible through this pilot approach.

Activity	National Average	Region 5 Average
Time from listing to RA completion	45.4 Qtrs	TBD
Extramural costs of RD	\$694,176	\$364,206
Extramural costs of RA	\$4,105,828	\$3,968,117

TABLE 10

AVERAGE PIPELINE DURATIONS FOR REGION 5 (QUARTERS):		
Activity	At Completed Projects	At Ongoing Projects
RI/FS	13.77	18.73
ROD to RD	2.69	6.73
RD	5.11	11.05
RA	7.78	15.76
TOTAL	29.35	52.27

TABLE 11

RESULTS

Region 5 identified the expected benefits from the pilot to include: 1) significant early reduction of risk from the accelerated cleanup action; and 2) due to the significant involvement from the removal, remedial, State of Wisconsin Department of Natural Resources, EPA's office of Public Affairs, and ATSDR programs, knowledge and experience will be gained to assist in future multi-program coordinations to execute time critical removals.

Most of the removal is complete at the chrome and zinc shops and little remedial action is needed at the sites to treat the contaminated groundwater. The different EPA programs are working well together. By having Regional employees work on different aspects of the Superfund program, the pilot is promoting their learning the requirements of other Superfund program areas. In addition, the removal is addressing most of the contamination, which will significantly shorten the time required to cleanup the site as compared to the traditional process.

By reducing risk through a removal action the Region can gain public support. Improved coordination between Superfund programs can reduce response time and costs at a site. Time critical removal actions to eliminate source releases to the groundwater quickly decrease the risk at a site and significantly reduces the time it would take to reach construction completion. This removes a site from the NPL quicker than with the traditional method of a long remedial action.

Region 5

Integrated Site Assessment

PILOT DESCRIPTION

In its integrated site assessment pilot, Region 5 has coordinated the removal program and the site assessment program to combine elements of traditional removal assessments with those of the preliminary assessment and site inspection (PA/SI). The Region has developed a team approach involving On-Scene Coordinators (OSCs) and Site Assessment Managers (SAMs) that result in the combination of sampling needs at newly discovered sites for removal and site assessment purposes and the close coordination of removal and remedial efforts.

Through this pilot, the Region has defined a new process for screening and assessing new sites coming into the Superfund program for removal and/or remedial considerations. By combining the Site Assessment Section and the Removal Branch, the Region has developed the "one door" entry into the Superfund process as envisioned under SACM. The pilot has resulted in an effective mechanism to address sites prior to the initiation of the remedial process (i.e., remedial investigation/ feasibility study (RI/FS), remedial design (RD), and remedial action (RA)).

By combining the assessments of the traditional Superfund process and using removal activity where appropriate, the traditional Superfund process can be shortened. Preliminary results indicate that this initiative can save time and costs over the Superfund process and decreases duplicative testing. In addition, this may allow for an HRS scoring package to be developed quicker than the traditional process by deleting the "down" time between steps and duplicative testing.

PILOT STATUS

The Region has addressed seven sites in this pilot. All sites are presently undergoing assessment for possible inclusion on the National Priorities List (NPL) except Union Steel which was determined to require no further action. The site assessment teams are composed of an OSC, SAM, and a state representative. The integrated assessments for the pilot sites involve the generation of data for both removal and pre-remedial purposes. The information is shared between both the OSC and the SAM to determine whether a removal action is warranted and to screen the site for possible NPL listing.

EVALUATION PLAN

The Region is gathering performance data on pilot sites and on comparative sites and is producing an evaluation. More information will be available after the evaluation is complete.

The pilot approach is expected to increase the effectiveness and efficiency of the assessment process. A team approach to site assessment will lead to the definition of an improved process to screen and assess new sites for removal actions and/or eventual NPL listing.

In summary, the measures that Region 5 will evaluate for this pilot are:

- Duration of integrated site assessment
- Cost of the integrated site assessment (state and Federal intramural and extramural), compared to separate assessments
- Coordination between Removal program and site assessment program.

The Region will develop a baseline for quantitative measures on the cost and time duration of Regional removal site assessments and pre-remedial activities.

The partial baseline for comparison of efficiency measures are listed in Table 8.

Activity	National Average (hours)	Region 5 Average (hours)
Level of Effort (LOE) for PA	135	120
LOE for SI	440	500
LOE for ESI	1050	600-1000

TABLE 8

RESULTS

The Region has defined an integrated assessment and has developed a process, the Removal Integrated Site Evaluation (RISE), to address the wide array of activities possible. This process, now implemented, will enable the Region to quickly assess a site and determine the most efficient path to SEA, remedial, or removal activity. In addition, it will define a new process to assist the Site Assessment Manager (SAM) and OSC to work together.

By combining the assessments, the process significantly reduces the time from site discovery, to site assessment, to remedial investigation at Fund-lead sites. (i.e., to increase the speed of assessments). This will accelerate the pace of response activities, and also reduce the cost of site assessments. The coordination and communication between the removal and site assessment programs has been enhanced by placing all site assessment activities under the Emergency Response Branch (ERB). Both the activities and goals of the Site Assessment Section and the Removal Branch are now coordinated through one branch. Overall, the Superfund program will

benefit from personnel having a broadened understanding of different aspects of the program.

The RISE process provides for the ERB to be the "one door" for the Superfund site discovery program. ERB is responsible for performing time critical and non-time critical removal actions, and remedial site activities. Remedial site assessment activities include Preliminary Assessments (PAs), Screening Site Inspections (SSIs), Focused Site Inspection Prioritization (FSIP), Expanded Site Investigations (ESIs) and the preparation of Hazardous Ranking System (HRS) packages for the proposal of sites to the NPL.

While the integration of these activities will require some changes in the current processes, the response to classic emergencies will not be substantially altered. A primary outcome of the RISE process is better communication during all site activities which should result in work being coordinated and completed more efficiently (See Figure 1 below for a graphic representation of the integrated assessment process).

In addition, a workgroup has been convened among Regional OSCs and SAMs to define procedures in the conduct of integrated assessments based on experience to date and to develop a reference fact sheet during the fall of 1993.

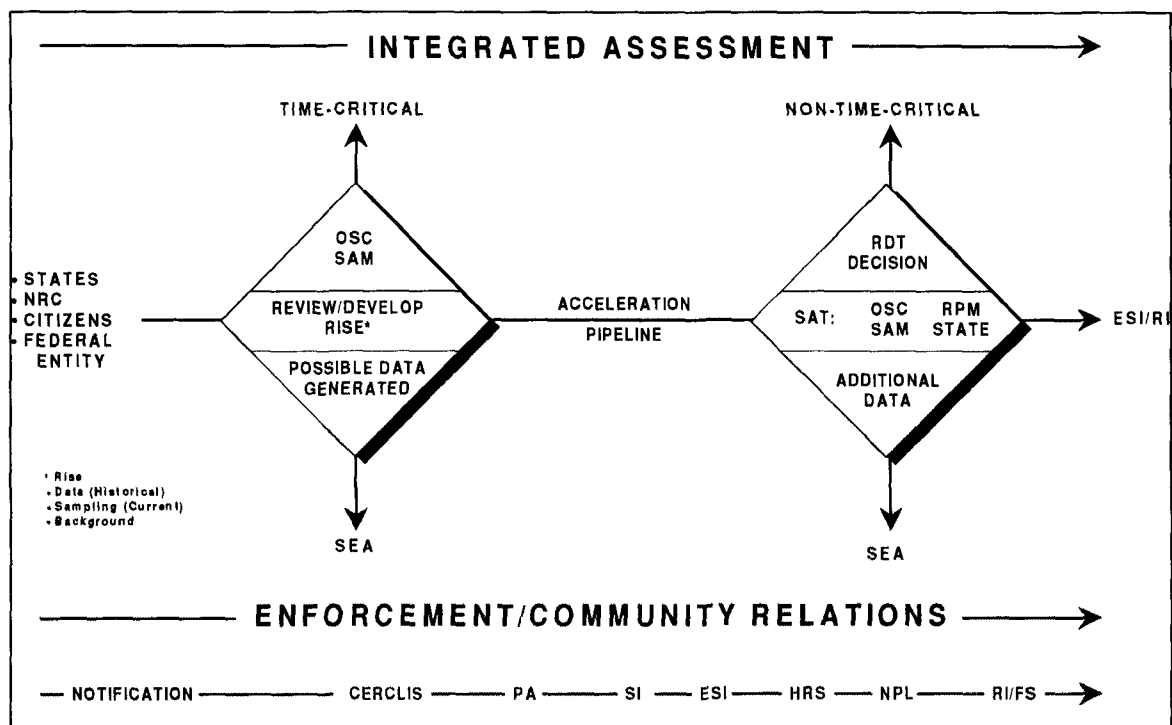


Figure 1

Region 5

Wisconsin Single Site Assessment (SACM)

PILOT DESCRIPTION

The Region is implementing a pilot with the State of Wisconsin designed to integrate into a single site assessment, the traditionally separate removal and remedial assessments. The pilot will be conducted by the State of Wisconsin and will assemble a site evaluation team to develop a comprehensive approach for the site evaluation under a cooperative agreement with the State. Approximately five to six sites are addressed through this pilot.

The objective of the pilot is ultimately to define an efficient process for the combination of different assessments into a single assessment, particularly at the preliminary assessment stage. Sites that have been recently discovered were chosen for the pilot.

Under a cooperative agreement with the State of Wisconsin, the Region will employ the single site assessment approach at five or six sites. To implement this pilot at the site level, a State-appointed response coordinator will be responsible for coordinating and facilitating activities under the integrated assessment approach. When a site has been selected, a site evaluation team will be assembled that will consist of an On-Scene Coordinator (OSC) from the Region, a remedial specialist, and a community relations specialist. After the team has been assembled, it will develop a comprehensive approach to the site evaluation. The pilot will be continue beyond the September 30, 1993 date.

PILOT STATUS

Three sites have been identified for the pilot.

At Site One, removal action has been taken and is complete. Concurrent with the removal, state personnel conducted a Preliminary Assessment and have determined that the site should be classified as Site Evaluation Accomplished.

At Site Two, removal was completed by the PRP at US EPA's request in ten days and additional sampling was conducted at the site to determine possible inclusion on the NPL.

At Site Three EPA's Emergency Response Branch removed an immediate threat and a Site Evaluation Accomplished resulted after the Preliminary Assessment.

By combining the assessments of the traditional Superfund process, one step in the traditional Superfund process is deleted. This saves time and costs over the Superfund process and decreases duplicative testing by the State. In addition, this may allow for an HRS scoring package to be developed quicker than through the traditional process by deleting the "down" time between steps and duplicative testing.

EVALUATION PLAN

The pilot approach is expected to increase the effectiveness and efficiency of the assessment process. Significant reductions in the time from site discovery, to site assessment, to remedial investigation at State-lead sites are expected. This process should also reduce the duplicate testing that occurs during the steps of the traditional process. Further, the cost of a single assessment should be less than the cost of multiple separate assessments.

Region 5 will collect data on the following evaluation measures for this pilot:

- Duration of site assessment
- Cost of site assessment (State and Federal intramural and extramural)
- Coordination between State and Federal agencies
- Community relations.

The Region is developing a Regional baseline for quantitative measures from CERCLIS, and Regional and State sources that will address the duration and cost of preremedial activities.

The partial baseline for comparison of efficiency measures is listed in Table 9.

Activity	National Average (Hours)	State Average (Hours)
Level of Effort (LOE) for PA	135	134
LOE for Screening SI (SSI)	440	224
LOE for SSI sampling	183	TBD
LOE for ESI	275	TBD
LOE for ESI sampling	149	TBD

TABLE 9

RESULTS

A very preliminary analysis was conducted on timeframes and cost in the Wisconsin pilot. At the completion of the pilot, a final analysis will be conducted. The present findings are as follows:

At Site One, activities include site discovery, development of background information, two sampling events, and generation of a pre-score.

Site Timeframe: 9 months
Estimated Cost: \$24,217

Historical Timeframe
(Similar Activities): 2 years
Historical Cost: \$30,134

At Site Two, activities include site discovery, development of

background information, two site visits, and coordination with EPA Emergency Response Branch for a removal action.

Site Timeframe: 9 months
Estimated Cost: \$2,489

Historical Timeframe: 1 year
Historical Cost: \$2,416

At Site Three, activities include site discovery, development of background information, PRP removal, and pathway sampling.

Site Timeframe: 6 months
Estimated Cost: \$9,211

Historical Timeframe: 2 years
Historical Cost: \$13,200

The cost of the single assessment should be less than the cost of multiple separate assessments, because of the reduction in duplication. This will save the State and Region money when conducting assessments.

This pilot may assist the Superfund program to integrate its initial assessments and removal/remedial assessments to efficiently and quickly determine the prospect for a site. By using data for multiple purposes, economies can be achieved in terms of the amount of sampling needed, expertise and learning can be shared among agency officials responsible for the various tasks undertaken at a site, and the time between data collection and action or no further action can be shortened. Increasing the coordination between the State and EPA may also lead to improved community relations.

Region 6

Lightning ROD Projects

PILOT DESCRIPTION

In December 1991, Region 6 initiated the Lightning Record of Decision (ROD) pilot projects at three hazardous waste sites to test the effectiveness of a range of improvements designed to accelerate the Superfund process. Additional goals were to improve the quality of the decision making process and reduce the overall cost of the investigative phase of the cleanup. The Region's efforts to improve the quality of the Superfund process utilized total quality management (TQM) principles. In addition to evaluation by the project team, reviews of work products were also conducted by the Region 6 Remedial Project Managers (RPM) Peer Review Committees, State staff, the U.S. Army Corps of Engineers, and various EPA Headquarters staff. This expanded review process assured that, despite the speed in which they were produced, Lightning ROD work products were reviewed from a larger experience base than is typical at most sites. Region 6 believes that the broader base of experience increased the overall quality of the Remedial Investigation and Feasibility Study (RI/FS)

deliverables. Lightning ROD work products also reflect more in depth technical analysis than current national guidance requires. For example, the RI/FSs for the two wood treater sites included in-situ ecological impact pilot tests and technology treatability studies. Moreover, the proposed plans for these two sites were based on an evaluation of remedies at all other wood treater Superfund sites in the country with a ROD signed after 1986 (post - Superfund Amendments and Reauthorization Act) in addition to the traditional RI/FS report.

PILOT STATUS

The sites selected for the pilot were two wood treater sites (Popple, El Dorado, Arkansas and American Creosote Works, Inc., Winnfield, Louisiana) and an abandoned dump (South Eighth Street Landfill, West Memphis, Arkansas). A major factor affecting the speed of site work is whether viable responsible parties were present. The South Eighth Street site has

**CUMULATIVE TIME FROM NPL LISTING
TRADITIONAL VERSUS LIGHTNING ROD PILOT PROCESS**

TRADITIONAL PROCESS (YRS)	PILOT PROCESS (YEARS)	MANAGEMENT GOAL	STATUS
1.25	0.0	Complete planning and budgeting prior to NPL proposal	Achieved in all three pilots
4.5	1.0	Define site remedy in the first year	Shown to be feasible
6.5	2.0	Define lead for RA and initiate action via procurement or consent decree	Continuing pilot work
8.0	2.5	Start RA within three years of NPL proposal	Continuing pilot work

TABLE 12

numerous viable Potentially Responsible Parties (PRPs), while remedial action assessment at the creosote sites was expected to be carried out solely using Superfund resources.

The basic changes to the traditional Superfund process were initially derived from a series of brainstorming sessions among Regional managers and team members as the pilot project teams began functioning. The proposed changes to the process can be summarized by the following four management goals: complete all preparation for the RI/FS and the Remedial Design (RD) before the site is proposed for inclusion on the National Priorities List (NPL); define the total site remedy in the first year through technical, policy and process improvements; define responsibility for remedial action in the second year after addition to the NPL; and start remedial action within three years of the site's proposal to the NPL.

At Popile and American Creosote, all preparations prior to NPL listing have been completed including RI/FS, RD and Removal Statement of Work (SOW) and work plan, community relations plan, sampling and analysis plan, budgeting and planning preparation, and PRP search. The Region has defined the remedy for the site including completion of negotiations, early action removal, RI/FS, ROD and RD.

Site Information

Popile, El Dorado, Arkansas. The site is an inactive wood preserving facility comprising approximately 41 acres located in southern Arkansas near the town of El Dorado. The area surrounding the site includes rural, commercial, and residential properties. Contamination at the site includes 200,000 cubic yards of soil with moderate contamination (PCP up to 280 ppm, carcinogenic PAH's up to 35 ppm). The site also contains subsurface non-aqueous phase liquids and some 85 million gallons of contaminated groundwater. The ROD for the site, signed on February 1, 1993, provides for the soils and sludges to be remediated via biological treatment in an on-site land treatment unit. The non-aqueous phase liquids will be recovered and incinerated off site, and the groundwater will be removed, treated, and either discharged to surface waters or reinjected back into the aquifer.

American Creosote Works, Winnfield, Louisiana. The American Creosote Works is a 34 acre former

wood treating facility located in the City of Winnfield in central Louisiana. Threats from the site result from 250,000 cubic yards of contaminated soils in an old process impoundment (PCP concentrations up to 6,000 ppm, carcinogenic PAH's in concentrations up to 50 ppm), 25,000 cubic yards of highly contaminated tars and sludges in a drainage area located near the old process area. Subsurface contamination includes free phase organic liquids and 24 million gallons of groundwater contaminated above Maximum Contaminant Levels (MCL's). Contamination from the site was also detected in stream bed sediments for some 2 miles from the site. On April 1, 1993, the comment period jointly announced by EPA and the Louisiana Department of Environmental Quality for the final remedial plan closed. A ROD for the site is expected to provide for on-site incineration of highly contaminated tars/sludges, in-situ biological treatment of soils contaminated with process compounds, extraction and on/or off-site destruction of liquid contaminants, and grading and capping of surface contaminated soils and decontaminated process equipment and scrap metal.

South Eighth Street, West Memphis, Arkansas. The 40 acre South 8th Street Landfill site is located adjacent to the Mississippi River in West Memphis, Crittenden County, Arkansas. Approximately 14 acres were used for landfill operations. A large, oil sludge pit comprises an additional 3 acres of the site. The sludge pit, composed of 10,000 cubic yards of pure sludge and an additional 17,000 cubic yards of contaminated soil and debris, has been determined to be the only hot spot on the site. The site was operated as an uncontrolled municipal and industrial waste dump from the late 1950's to 1979. The site was identified in the original Superfund list in 1979 as the "West Memphis Landfill, South 8th Street". A Hazard Ranking System (HRS) package was completed in August 1991, and the site was proposed to the NPL in February 1992. Most of the preparations prior to NPL listing have been completed along with all remedy definitions.

This pilot is expected to be completed in FY 1995. Due to the delays encountered in remedy selection decisions at the wood treater sites, two first year pilot project deliverables will be completed in the second year: standardized RD provisions, and improved ROD rationale/sensitivity analysis.

EVALUATION PLAN

Region 6 will track the results of the Lightning ROD pilot over its projected three year course. The four primary goals of the Lightning ROD pilots which will serve as the milestones for measuring pilot success are:

- Complete all preparation for the RI/FS/RD before the site is proposed for inclusion on the NPL.
- Define the total site remedy in the first year through technical, policy, and process improvements.
- Define responsibility for remedial action in the second year after addition to the NPL.
- Start remedial action within three years of the site's proposal to the NPL.

In addition to the goals of reducing the time required to move from listing to RA, the Region will also monitor the total cost of the Lightning ROD process compared to the regular remedial process. Although twice as many intramural resources were used in the first year of the Lightning ROD process compared with the traditional process, an overall savings of 30% are expected in intramural costs. The compressed timeframe will also result in significant extramural expenses which can not be estimated at this time but will be measured as the pilot progresses.

The Region also expects an improvement in the quality of deliverables because of the broad mix of experienced staff participating in the process. This improved quality is an important aspect of the Lightning ROD process. Because of the compressed timeframe it is imperative that there not be any reduction in the effectiveness of the process. In fact, an improvement in the effectiveness of the remedy selection is expected because of the additional work done when examining remedial alternatives.

RESULTS

This pilot is expected to be completed in FY 1995. The Region's efforts to reduce the cost of the Lightning ROD projects cannot be calculated until the completion of the second half of the pilot. However,

some important preliminary conclusions can be reached. The Lightning ROD approach requires commitment of at least twice the "average" intramural resources in the first year for each site, but is expected to produce net resource savings due to the accelerated clean up schedule that results. If twice the intramural resources are required to reduce the time from NPL proposal to initiation of cleanup from 8 to 2.5 years, the Region estimates that net long term intramural costs could be reduced by about 30 percent. In the first year the three sites required the expenditure of over \$600,000 in intramural funds (roughly double the "average" site). In addition, 48 different professional staff in the Region contributed to the Lightning ROD projects; some, such as the three RPM's, were committed full time for much of the project. It is clear that Lightning ROD techniques accentuate the need to marshal a broad mix of skills and increase the initial resource investment. This means that executing an accelerated effort will require Superfund managers to commit a large amount of resources at the very beginning of the project. Full commitment by Regional management based on a careful prioritization of resources is an absolute prerequisite before initiating a Lightning ROD project.

The type of sites chosen for the Lightning ROD pilot projects is significant. While some of the acceleration concepts (e.g. advanced preparation before NPL addition) are readily adaptable to all types of sites, the greatest increase in speed could be achieved at site categories having a significant number of RODs. Patterns of remedy selection at other, similar sites is a means of focusing field investigation efforts and providing support for a narrowed scope of remedial options.

All planning and budgeting was completed prior to the sites being proposed for the NPL, as opposed to the 1.5 years it normally takes. In addition, it has been shown feasible that the RI/FS, ROD and RD can be conducted in parallel and completed within one year of listing. This activity is expected to contribute to the accelerated start of the final RA.

Enforcement issues at the landfill site were not easy to address. Because a previous Removal action had not been conducted at the site, the initial PRP search report had not been "tested" and was less complete. This issue was discovered the month prior to the planned NPL addition. In general, the search report

did not clearly identify the liability trail as the site and corporate PRPs changed ownership numerous times over a 40 year period. In addition, the addresses for the PRPs in the report were often incorrect or nonexistent. These problems resulted in additional, unanticipated RPM and staff attorney efforts prior to the initial issuance of general notice/104(e) information request letters and Special Notice Letters. In addition, the evolving understanding of prior responsibility for the site meant that an extra notice letter to some 75 PRPs was executed in September.

To avoid delays in the process, the final draft PRP search report should be reviewed by the staff attorney and RPM at least 3 months prior to proposed addition of the site to the NPL. All future PRP search reports should contain the information necessary to easily issue notice letters, such as good addresses, identification of agents for service of process, telephone numbers, and discussion of corporate successor and property transfer issues.

After a series of brainstorming sessions regarding ways to achieve project goals, team members were surprised to determine the degree of flexibility that is afforded by the current statute and National Contingency Plan. Consistent with the concept of performing as much of evaluation work in parallel, the idea of starting the RD concurrently with RI and FS was tried at all three sites. For "Fund-Lead-Only" sites, the concept is consistent with statutory requirements that RA funds not be expended before final addition of the site to the NPL and a signed ROD (both of which would precede completion of the RD). At sites with viable PRP's, however, there was a concern that initiating the RD could be interpreted as making a sham of the remedy selection process. This issue crystallized when notice letters were drafted for the South Eighth Street Site.

After considerable debate among project participants, novel language was developed for the general notice/104(e) letters for South Eighth Street site accelerating and consolidating RI/FS and RD actions. PRPs were informed that RI/FS activities at the site would be occurring using accelerated time frames and that general RD activities would be occurring concurrently with the RI/FS. Design activities were limited to those elements common to each of the viable alternatives. Some of the RD activities which

were expected to be conducted concurrently with the RI/FS included the collection of design type data during RI data collection, (e.g., geotechnical data, process design data) and the development of conceptual designs and specifications for typical RA requirements such as mobilization, excavation, and site layout which would be common elements of all potential remedial alternatives.

Another major time saving process change devised by the Lightning ROD teams was early preparation by EPA of complete RI/FS/RD work plans. At sites with PRPs, such as south Eighth Street, the work plan was included with the special notice letter and draft Administrative Order of Consent (AOC) for the RI/FS. The project team correctly anticipated that the work plan and AOC could be negotiated concurrently and that the PRPs could move to the field within 30 days of AOC signature. Conversely, if the PRPs chose not to conduct the RI/FS, as was the case with the landfill pilot, EPA could quickly move to the field and not waste additional time developing work plans. Another benefit of this approach was that the PRPs clearly understood what EPA expected including what types of work and in what time frames the work should be accomplished.

For all the pilot sites, the Alternative Remedial Contracting Strategy (ARCS) contractor submitted a complete RI/FS work plan including the field sampling plan and quality assurance project plan within 30 days of the date it received the work assignment. The accomplished goal was to reduce these sampling efforts to a single event and to utilize innovative techniques to sample better and more efficiently. This enabled the contractor to be visibly in the field implementing evaluations the week that it was announced that the site was added to the NPL, a great reassurance to the community that positive action was being taken.

Timing and availability of extramural funds to carry out work at all three sites was a chronic concern. Even though the three sites were approved as pilot projects in November, 1991, funding to conduct RI/FS/RD work was received in increments beginning in March, 1992, (a month after contractor mobilization) through June 1992, for the wood treater sites. Funding for work at the landfill site was similarly delayed and became an acute issue when additional funds were needed in September, 1992, to

redo work incorrectly done by the PRP. All three sites were in jeopardy, at various points, of being halted for lack of funding. In addition to delay of time, such interruptions would have also increased project costs (funding an otherwise unnecessary start up and shut down) and might have also resulted in changeover of key contractor staff.

Funding was maintained for all three sites by utilizing temporarily idle funds from other sites until formal advice of allowances were received and through constant coordination with Headquarters staff. While such specialized efforts were justified for pilot projects, these actions obviously cannot be adopted as a normal course of business, nor can the Regional budget accommodate the volatility of funding shifts that would be required. It is believed by the managers involved with the Lightning ROD pilots that a fundamental cause of the funding issue is the cycle of funding that the Agency as a whole (and other Executive Branch agencies) experiences. Due to deliberations by Congress and assessments by the Office of Management and Budget, advices of allowance do not reach Regional Offices until several months after the fiscal year has begun. The cycle of NPL updates in February and August mean that if the first management goal of completing all preparations for the RI/FS and RD before the site is proposed for inclusion on the NPL, is to be met, funds for a site need to be secured several months in advance.

A core concept in the Lightning ROD approach is that the Agency now has sufficient experience with many different types of sites (e.g., wood treater, landfills, metal platers, etc.) to provide a basis for categorizing probable conceptual remedies. At these sites, it should no longer be necessary to rely exclusively upon site specific scientific data to develop plans and remedies. The Lightning ROD teams used the Agency's past experience with other wood treater and landfill sites to focus all of the RI/FS/RD efforts. Both of the wood treater sites proposed remedies were based upon this analysis. These evaluations were also critical in the selection of appropriate RI analytical methods and use of trenching as a primary investigative tool to determine the extent of the bulk waste presumed to be present at the two woodtreater sites.

One problem encountered with the wood treater analysis was that the information it produced could

have been used even earlier in the process. For example, based upon the initial results of wood treater site surveys, treatability studies were scheduled for solidification/stabilization and incineration.

For the landfill site, guidance for the investigation of landfills (OSWER Directive 9355.3-11) was available to develop the investigative approach. Based upon the guidance, EPA determined that the identification of hot spots was a primary concern at the sites and again selected trenching in combination with geophysics as the primary investigative tool to determine the aerial extent of the hot spots.

Improvements were sought in the quality and responsiveness of contractors, responsible parties, and other involved parties. These changes included the following: (1) use of the RI/FS work plan as the only work plan for the work assignment; (2) use of TQM techniques to define roles and responsibilities for EPA and its contractors; and (3) expedited subcontractor procurement. As a primary condition of acceptable response, the teams required the ARCS contractors to submit one work plan for the work assignment to EPA for review within 30 days of the contractors receipt of the work assignment. The traditional work plan the Region has typically received from the ARCS contractor is much less focused and requires many revisions prior to finalization. Although the contractors were initially uncomfortable with these requirements for the wood treater sites, a much better response was received for the landfill site. The work plans for the three pilot sites can now be given to future RPMs and project teams as examples to continue to increase the efficiency of the work plan development process.

In addition to the timing of response, another problem was the large volume of information typically received from ARCS contractors and PRPs. This problem was believed to be due to poor definition of required deliverables. For the pilots, excess verbiage and redundant documentation were eliminated from the work plans. The ARCS contractors were strongly encouraged not to reiterate verbiage and tables found in EPA guidance. The work plans were standardized by incorporating the Health and Safety Plans, Field Sampling Plans, and Quality Assurance and Quality Control Plans as appendices to the overall Work Plan. In addition, the use of Standard Operating Procedures

(SOPs) was relied upon to reduce the redundancy between the Field Sampling Plan and the Work Plan.

Through recognition of major delays associated with the award of subcontractors (e.g., drilling, trenching) on previous projects, the EPA Region 6 Site Management Team (SMT) realized a major time savings by streamlining this process. The EPA Contracting Officer and the ARCS Procurement Official reviewed the subcontractor proposals concurrently and were able to award subcontracts in compliance with the FAR within 30 days. The award of subcontracts has typically taken 90 to 120 days in the past.

Full involvement of the community affected by the site was another important goal of the projects. Public meetings and open houses were held where local elected officials were briefed, local media was contacted, and fact sheets were prepared and mailed to interested parties. In essence, all of the efforts that are normally associated with public outreach over the 4.5 years between NPL addition and ROD were carried out at these sites in the first year. The results of these intensive community involvement events have been rewarding for EPA and the local communities.

Improved working relationships between EPA and the States have resulted from collaborative efforts to solve issues created by the pilot projects. The very speed of the Lightning ROD pilots created numerous problems for State and EPA staff. State technical staff assigned to the projects had difficulty in responding to the two week turnaround requested on technical documents and found it difficult to participate in internal government meetings. The speed of the projects also presented State and EPA policy makers with difficult decisions to make faster than they might have anticipated. The immense volumes of contaminated material at the American Creosote site also created policy issues for EPA and the State. After extensive deliberation, a composite remedy that also introduced the innovative concept of in-situ biological treatment was developed by the Region and the State. This "final" proposed plan was jointly announced by EPA and the State of Louisiana on March 1, 1993, for a 30 day comment period.

Region 6

SACM Demonstration and Regional Decision Team, National Zinc, Oklahoma Site

PROJECT DESCRIPTION

The goal of this pilot is to form Regional Decision Teams (RDTs) comprised of managers representing the various elements of the program to screen sites for early acceleration and integrated action; to integrate technical requirements for sampling and analysis for the pre-remedial, removal, remedial, and enforcement components of the program; and expand the use of early actions using removal authority to address obvious problems as early as possible.

Preliminary findings indicate that using the pilot process, coordinated sampling that was conducted will provide over 90 percent of the data needed for the Remedial Investigation and Feasibility Study (RI/FS) and Remedial Design (RD). The RDT organization ensured project team coordination of all aspects of the process at this site. The Region anticipates reduced sampling costs, and reduced time to define the remedy. The RDT has proven to be an important forum for communication that did not exist.

Under the traditional approach, removal and remedial sampling are done separately and remedial sampling is separated between Expanded Site Investigation (ESI), RI/FS and RD sampling, and numerous independent efforts required to move site through the process.

The RDT has been established to include six core members: Superfund Programs, Management and Enforcement Branch Chiefs, Senior Regional Representative for the Agency for Toxic Substances and Disease Registry (ATSDR), Senior Associate Regional Counsel and Branch Chief for Waste, and the Emergency Response Branch Chief. In addition, other staff members from EPA participate as appropriate. Representatives from the States of Texas, Oklahoma, Arkansas, Louisiana, and New Mexico as well as Tribal Representatives have also participated in meetings. The RDT has met nearly every month since beginning in October 1992.

PILOT STATUS

The Region has developed site screening criteria to help staff understand the Superfund Accelerated Cleanup Model (SACM). The RDT has screened over 60 sites for potential integrated or accelerated action. Of equal importance is the increased level of coordination between the States, Tribes, and EPA.

The Region has applied this pilot by using combined sampling and Total Quality Management (TQM) techniques to develop a proposed remediation plan within six months of the proposed National Priorities List (NPL) addition of the National Zinc site in Bartlesville, Oklahoma, a former lead smelter. The Region used the removal program to gather the data for the site assessment and site investigation. The data from the removal action will constitute most of the FS.

The project team was established, and the team defined individual roles (e.g., write work plan, community relations). Participants included a Remedial Project Manager (RPM), a removal On-Scene Coordinator (OSC), an enforcement RPM, a Regional Counsel attorney, a Site Assessment Manager, a Regional ATSDR representative, an Oklahoma State Department of Health Manager, a RCRA enforcement representative, a Community Relations specialist, and an EPA toxicologist.

The data collected will be used for the Hazard Ranking System (HRS) package and will provide most of the data for the remedial investigation (RI). The National Zinc site was listed on the NPL in May 1993.

The Region has finished removal work in higher access areas of the site. They are waiting for the blood-lead data to be analyzed. Private homes will be visited to identify children with high blood-lead levels and to do excavating in their yards. EPA will go to each home and explain data packages and their

meaning for their particular yard. EPA will explain options to reduce exposure to the children.

Potentially Responsible Parties (PRPs) are going through the notice process; however, EPA is going to conduct the risk assessments. EPA is putting off the RI report until they know if the PRPs will join the effort.

The current site owner was not the owner when the contamination took place. The Region is experiencing a significant number of 104(e) information requests. This process has been slowed down because there have been a number of bankruptcies and a number of companies are not viable making the PRP search difficult.

The removal action has been completed. Excavation of soil has helped reduce risk and gather data for future remedial work. All data required for the RI have been gathered and the site remedy should be prepared by May 1994. Information letters have been sent to municipalities and there was little opposition.

There is a high level of community involvement and there are environmental justice issues that will be thoroughly addressed. Two groups have applied for Technical Assistance Grants and the Region is working with them to facilitate a joint application.

EVALUATION PLAN

Region 6 will evaluate the SACM demonstration pilot using the same measures as the Lightning ROD pilots. The primary distinction will be the effect of removal actions at the National Zinc site on the four goals of:

- Completing all preparation for the RI/FS and RD before the site is proposed for inclusion on the National Priorities List.
- Defining the total site remedy in the first year through technical, policy, and process improvements.
- Defining responsibility for remedial action in the second year after addition to the NPL.
- Starting remedial action within three years of the site's proposal to the NPL.

RESULTS

Preliminary positive results experienced by the Region include bringing the State of Oklahoma in early at the National Zinc site; the State reviewed documents, facilitated meetings, and has been able to make a significant contribution.

One of the problems in using the removal program was funding. The Region experienced difficulty with moving pilot funding to the removal program. There is a need to fund projects more quickly.

The RDT has resulted in a much better relationship between Superfund and the five states that make up Region 6. This increased cooperation and communication can lead to faster cleanups as problems are identified and solved more quickly. The Region anticipates that integrated sampling can lead to faster cleanups at a reduced cost.

Region 7

Remediation Goals and Presumptive Remedy Initiative

PILOT DESCRIPTION

The Region 7 pilot focuses on developing guidance on standard cleanup goals, remedy types, Record of Decision (ROD) and Statement of Work (SOW) language for grain storage sites, Polychlorinated Biphenyl (PCB) sites, and coal gasification sites. These sites represent significant problems in Region 7 as well as other Regions. Nationally, and within the Region, the universe of each site type is large. There is potential for approximately 1500 grain storage sites, 50 PCB sites, and 265 coal gasification sites to benefit by the application of this initiative in Region 7. Once the guidance documents are completed, pilot sites will be selected in Region 7 for application of the standards to evaluate their success. The three workgroups working on the pilot are: the grain storage workgroup, the PCB workgroup, and the coal gasification workgroup.

The pilot initiative provides an opportunity to expedite the process while ensuring consistency at sites where the contaminants and contaminated media are similar, or where a limited range of cleanup alternatives are available. This would be accomplished through the development of guidance supporting standard remediation goals and remedial technologies.

Traditionally, arriving at the decision to select a remedial alternative for a Superfund cleanup is a lengthy process which can take in excess of three years to complete. Often sites are investigated and managed as unique problems to be solved, so there is little opportunity to benefit from past experience. Novice project managers are expected to execute an extremely complex process without any formal mechanism for learning from more experienced project managers or sharing information with other staff.

The expected benefits from use of the guidance documents include: shortening the investigation and negotiation time frames; improving the consistency with which cleanup decisions are made; earlier RODs; and quicker removal. In addition, standardized

remedy selections are expected to shorten the negotiation process with PRPs and encourage more early settlements and voluntary cleanups at sites that are not NPL-caliber.

PILOT STATUS

Over the past year, the three workgroups have been developing cleanup goals based on risk, available technology, existing guidance, and Applicable or Relevant and Appropriate Requirements (ARARs) for sites contaminated with grain fumigants, PCBs, or coal gasification plant wastes. They are also developing a set of presumptive remedial action alternatives based on standard cleanup goals for these three site types. They are creating standard language for RODs and Remedial Investigations/Feasibility Studies (RI/FSS), Remedial Design (RD) and Remedial Action (RA) Statement of Work (SOW) documents and standard risk assumptions and risk computation guidelines. In addition, a method will be developed to update these standards as the knowledge base changes. The three workgroups will provide technology justification and why alternatives are not effective. The workgroups' goal is to build a documentation case for why a particular technology is presumptively acceptable for use at a particular site. The workgroups will also examine factors such as the source, location, and media; risk and existing standards; and contaminant concentration.

Regional Project Managers (RPMs), On-Scene Coordinators (OSCs), and attorneys with experience in the negotiation or implementation of cleanups at grain storage, PCB, or coal gasification sites are participating on the workgroups to develop the indicated standards and guidelines. The initiative will also determine what resources are available nationally to develop guidance and standards for remediation goals and remedy selection. The following is the process each workgroup is following for pilot development: 1) ROD review/preliminary data analysis; 2) preliminary remediation goals; 3) detailed data gathering (technology assessment and site data

needs); 4) final data analysis; 5) report writing (technology information, data collection needs, and RI/FS/ROD draft language); and 6) approval and publication.

PCB Workgroup. The PCB workgroup accomplished an extensive ROD search, examining over 150 RODs for information regarding remedies chosen, cleanup levels selected, and other information pertaining to PCB sites. This research resulted in finding that the more recent RODs tend to be consistent with cleanup levels specified in the *Guidance on Remedial Action for Superfund Sites with PCB Contamination*. The workgroup has developed soil Preliminary Remediation Goals (PRGs) which are consistent with the guidance document. Sites with special or unusual circumstances may require alternate remediation goals. The workgroup is in the process of reviewing the cleanup levels that have been achieved by various treatment technologies and the costs and other factors generally associated with these technologies. Once the workgroup has completed its review, it will write a draft report on its findings that will be reviewed by Headquarters.

Coal Gasification Workgroup. The primary contaminants of concern for coal gasification plants are coal tar, specifically Polycyclic-Aromatic Hydrocarbons (PAHs) in the soil. Therefore, the workgroup is concentrating their efforts on PAH source control. The coal gasification workgroup performed a ROD review similar to that done by the PCB workgroup. However, there was little consensus found on selection of cleanup levels and remedial technology in these RODs. The workgroup conducted telephone interviews with a number of RPMs responsible for the sites which had RODs. Preliminary remediation goals were developed by the workgroup for soil in residential and occupational settings. The workgroup is examining applicable treatment technologies. This guidance may be useful not only at NPL sites but also in accelerating voluntary cleanups and in making the SACM approach of integrating removal and remedial activities more effective.

Grain Storage Workgroup. One of the reasons Region 7 chose grain storage sites as a component for their pilot project is that the Department of Agriculture is a potentially responsible party (PRP) at almost every grain bin site within Region 7.

Therefore, there is a potential to speed up negotiations if the Department of Agriculture accepts the proposed presumptive remedies for all grain bin sites. The main contaminant of concern associated with grain bins is carbon tetrachloride. The most predominant problems associated with these sites tend to be with the groundwater. There are a limited number of directly applicable RODs. The emphasis of the research will be placed on examining the effectiveness of treatment technologies. Cleanup levels will most likely be determined by Applicable or Relevant and Appropriate Requirements (ARARs) (i.e. Maximum Contaminant Levels [MCLs]).

Next steps include finalizing guidance and beginning to implement those guidances at selected sites in FY 94. This pilot project is expected to be completed by May 1994.

EVALUATION PLAN

The evaluation plan for this pilot addresses the measures and other concerns that could be monitored if the program actually implements the guidance and standard documents being produced by this pilot. It is anticipated that use of presumptive remedies will improve program effectiveness, efficiency, and equity, as follows:

- Overall effectiveness will be enhanced because the availability of standardized remedies will accelerate cleanup for standard site "types".
- Efficiency will be improved since the known remedy and the standardized language for documents will speed the process, facilitate reviews, and allow for more focused activities at sites at every stage of the pipeline.
- Equity will be enhanced because site types will be treated similarly throughout the country.

Evaluation measures that should illustrate the expected improvements in efficiencies include:

- Time duration from NPL listing to RI/FS completion and ROD signature should be reduced significantly.

- Time required for each major phase, including RI/FS and RD.
- Cost of these major phases, both extramural costs and intramural oversight costs, should be reduced.
- Accelerated negotiations with PRPs
- Increase the number of voluntary cleanups

The expected qualitative benefits include:

- Improved consistency of chosen remedies at similar site types across the nation.
- Reduced contention during post-ROD PRP negotiations due to an early, clear understanding of the remedial action contemplated at the site. If the remedy has been used successfully at many sites in the past, it may be more acceptable to the PRP.
- More voluntary cleanups since a responsible party may be more likely to volunteer to clean up a site if the remedy for their particular site already exists and a lengthy and costly feasibility study is not needed.

RESULTS

The purpose of this pilot was to develop guidelines, not to field-test them. Therefore, no actual results that might indicate the impacts of the presumptive remedy approach exist yet.

Region 8

Accelerated Cleanups Initiative

PILOT DESCRIPTION

The goal of the Accelerated Cleanups Initiative pilot is to identify the best candidate sites for accelerating existing cleanup schedules to reach construction completion in each fiscal year and to evaluate how obstacles to accelerated completion can be overcome.

Before the pilot was implemented there was no process in the Region for attempting to accelerate construction completions. The traditional process relies on the site team and the project manager at a site to plan when the construction completion should be reached and it is up to the project manager to reach the goal. There was little Regional oversight to ensure sites were accelerated to reach construction completion before the pilot was initiated.

Region 8 used a Total Quality Management (TQM) approach to evaluate a number of sites and to determine which sites required additional management attention and resources. In addition to the pre-designation evaluation, the pilot includes constant evaluation to foster communication and coordination

between site team members. This evaluation ensures that all obstacles to accelerated cleanup are dealt with effectively and quickly.

As a final evaluation step, all issues concerning each site are brought before senior management officials to help foster their involvement with all concerned parties and to facilitate timely and quality work. For each identified site, EPA provides evidence to the State or community that the acceleration of cleanup will not compromise the reduction of risk. EPA must also convince PRPs to cooperate with accelerated cleanups. The PRPs will usually cooperate if they obtain some benefit through acceleration; however, some PRPs may believe that they benefit by delaying the process.

The pilot does not supersede adherence to the NCP, CERCLA, SARA, and other relevant statutes and EPA regulations.

PILOT STATUS

The sites chosen for the pilot are listed in the Table 15 with the corresponding savings in time achieved or expected.

Site	Scheduled Completion (Year/Quarter)	Accelerated Completion (Year/Quarter)	Time Saved (In Quarters)
Woodbury Chemical	94/2	92/2*	+2
White Wood Creek	93/4	92/4*	+4
Marshall Landfill	93/4	93/4	0
Arsenic Trioxide	93/2	92/4*	+2
Rose Park	92/4	92/3*	+1
Libby Groundwater	99/4	93/4*	+24

TABLE 15

Note: * indicates actual construction completion

In addition to the actual and planned time savings for the 1992 and 1993 sites, the Region expects 25 quarters of further accelerated time frames for sites in 1994.

In 1992 four sites were completed, and in 1993 three sites are projected for completion.

The pilot project was completed on September 30, 1993.

Through the accelerated cleanups initiative, cleanups will be expedited and sites removed from the National Priorities List (NPL) quicker than they were under the traditional process. This reduces risk to the public health and environment and assists the EPA and Region to reach the national goal of 650 construction completions by the year 2000.

EVALUATION PLAN

The evaluation of this pilot centers upon whether the Region meets the completion goals for FY 92 through FY 94. Thus this pilot addresses effectiveness as the primary objective.

The Region will monitor, collect information on, and evaluate the following measures:

- Number of construction completions in FY 93 and FY 94; the target or baseline is four sites in FY 92, three in FY 93 and five in FY 94.
- Time saved from scheduled completion to actual completion -- baseline targets on a per site basis are referenced above for 1992 and 1993 completions.
- The Region will also identify the management strategies and other improvements that were most effective in accelerating completions.

RESULTS

Region 8 has met its specified completion goals for FY 92 and 93. This will decrease the number of sites on the NPL; increase community acceptance due to the increased number of sites taken off the NPL; decrease the risk posed by NPL sites through the

completion of work at the sites; and assist the Region and EPA in reaching the goal of 650 site completions.

EPA may have to convince communities that accelerated cleanup will not compromise the quality of the work or the level of risk reduction achieved.

The pilot encourages constant coordination and communication between site team members to ensure that all obstacles to accelerated construction completion will be dealt with effectively and quickly. Lessons learned from accelerated site experiences will be transferred to other sites nation-wide through a manual of good ideas.

Through acceleration of site completions, in FY 1992 the Region was able reach construction completion at six sites:

Arsenic Trioxide:	completed fourth quarter FY 92 (2 quarters saved)
Rose Park:	completed third quarter FY 92 (1 quarter saved)
Whitewood Creek:	completed fourth quarter FY 92 (4 quarters saved)
Woodbury Chemical:	completed second quarter FY 92 (2 quarters saved)
Marshall Landfill:	completed fourth quarter FY 93 (0 quarters saved)
Libby Groundwater:	completed fourth quarter FY 93 (24 quarters saved)

By reaching construction completion at the sites *quicker than the Region would have under the traditional process*, the Region decreases the costs through less EPA oversight and extramural dollars spent cleaning up the sites.

Region 8

RI/FS Acceleration Pilot

PILOT DESCRIPTION

The goal of the remedial investigation and feasibility study (RI/FS) accelerated pilot is to demonstrate that for NPL-caliber sites, a more focused and compressed investigation can yield considerable time and cost savings.

This acceleration process expedites the overall Superfund cleanup process by conducting these phases simultaneously. This pilot concept is designed to accomplish Superfund phases in a more efficient manner and deliver results the public will value including quick reduction of acute risks at all Superfund sites (removal and remedial) and restoration of the environment over the long-term. Due to the intensified site investigations and sampling done for the HRS package and the RI/FS prior to listing, EPA will be able to move quickly towards the selection and implementation of remedial actions after listing.

Under the traditional phased approach to Superfund cleanups, the RI/FS workplan would not be developed until the HRS review was complete and the site was officially listed on the NPL.

This accelerated approach to the cleanup process differs from baseline practices because more data are collected and studied before the site becomes listed on the NPL. The Region may achieve their goal of accelerated actions, accelerating risk reduction and restoring the environment by using this new approach. Intensified sampling and analysis earlier in the process decreases the likelihood that contaminants will be discovered late in the process and the need to redo workplans and work already accomplished.

PILOT STATUS

The Summitville Mine site located in Rio Grande, Colorado is a large tonnage open pit heap for leaching gold. The owner of the heap declared bankruptcy and abandoned the site in December, 1992. The site is

now a Fund-lead site. The pond containing the contamination is 44 acres in area and more than 100 feet deep. The heap is estimated to have 170 to 200 million gallons of cyanide and heavy metal. The potential contamination to irrigation sources and drinking water emphasizes the need to expedite the cleanup. The community has also expressed concern about release into the nearby Alamosa river.

An emergency response is being conducted at the site by the Emergency Response Branch. A Potentially Responsible Party (PRP) search is currently underway, and the HRS package has been processed and the site has been proposed for the NPL.

The response activities at the site involve two major strategies. The first divides the problems posed by the site into time- and non-time-critical according to the likely response action. Time-critical problems are being evaluated and addressed by removal actions. The non-time-critical problems, such as potentially contaminated groundwater, will be evaluated in the RI/FS workplan and addressed by future subsequent removal or remedial actions. The second strategy starts the development of the RI/FS workplan while the HRS package is under review and prior to the site's listing on the NPL.

The pilot is estimated to be complete on September 30, 1994 or when the site is listed as final on the NPL.

EVALUATION PLAN

In evaluating this pilot Region 8 will examine the efficiencies due to an integrated (remedial and removal) program and from conducting parallel listing and RI/FS activities. Acceleration of the RI/FS phase and preparation of the HRS package should accelerate the site through the cleanup process to construction completion.

In addition, more efficient data collection is planned since some data collected prior to listing for the HRS

package preparation are also appropriate for the RI/FS, and also should enable a more focused RD.

Region 8 will examine the following quantitative evaluation measures:

- Time to prepare listing package
- Time duration from NPL listing to RI/FS start
- Time duration from site discovery to time-critical action; risk reduction measures
- Time and cost savings of conducting early actions (compared to remedial actions)
- Extramural costs of integrated ESI and RI/FS versus combined cost of historical ESI and RI/FS.

The time duration from site investigation to listing is not chosen as a measure although early listing would seem to address this. The concern is that this time duration for a given site usually reflects priorities and resource decisions rather than efficiencies or inefficiencies of the Superfund process.

RESULTS

Only two weeks were needed to prepare the HRS package for this site compared to the estimated national and Regional averages of three to six months. (One additional person worked on the package 50% of his time for two weeks.) The final listing is expected to take about six months, which will be quicker than the national and Regional averages.

It is estimated that the pilot approach will reduce the time it takes to cleanup the site by *more than one* year. This will be accomplished by expediting the RI/FS, decreasing the time necessary to select a remedy, making efficient use of contractors for assessment and characterization and of remedial and response activities at the site, and sharing data for the Remedial Investigation and the HRS assessment.

The baseline for comparison of efficiency measures is listed in Table 13, on the next page, for the Summitville SACM pilot site.

Time and cost estimates based on the Summitville Project Plan, July 13, 1993

The baseline reflects historical numbers from the remedial program instead of from the removal program, since progress at NPL sites is the goal of this pilot.

Summitville Mine Site Data

Measure	National Average	Region 8 Average	Pilot
Prepare Listing Package	3-6 months	3-6 months	6 weeks
Listing to RI/FS Start	19.9 Quarters	17.4 Quarters	1 day
Discovery to Time Critical Action	Not Available (NA)	NA	2 weeks
Time Savings from Early Action	NA	NA	9 years
Cost Savings from Early Action	NA	NA	\$13,300,000
Extramural RI/FS Costs	\$940,000	\$350,000	\$1,300,000
ESI Costs	\$250,000	NA	\$400,000

TABLE 13

Region 8

Sandy Smelters, Utah Pilot

PILOT DESCRIPTION

The goal of the Sandy Smelter Study pilot is to demonstrate that integrating different site assessment activities will save costs over the long-term as compared to the traditional Superfund process. All data gathering needs for the preliminary assessment (PA) process through risk assessment are combined into a single sampling process. This site is an abandoned mining smelter and a site investigation has demonstrated that on-site residential soils have been contaminated with heavy metals.

The pilot will integrate the traditionally separate steps of the PA/SI, RI, RD and if necessary the removal assessment into one assessment. This should significantly decrease the amount of testing required and decrease duplicative testing. Where appropriate, presumptive remedies will be used to implement large scale remediation through non-time critical removals.

PILOT STATUS

The project was conducted in two phases: a screening phase and a detailed assessment of smelters. The screening phase began in October 1991. There were 34 abandoned smelters discovered in Salt Lake County. The Utah Department of Environmental Quality (UDEQ) requested that the Region 8 Emergency Response Branch assess the smelters. Sixteen of those sites needed further assessment. They were grouped into five areas. The Region 8 Emergency Response Branch collected samples from these five areas to see if contamination actually existed. The Murray and Sandy Smelter Areas required additional assessment.

Phase two began in the Fall of 1992. It is a detailed assessment of the Sandy and Murray Smelter Areas. The Sandy Smelter Area was chosen for the pilot in the SACM project because the land is primarily a residential area. Murray, however, is an industrial/commercial site and was not chosen as a

SACM site. The exposures at the Murray Smelter Area are not considered to be as significant.

The Sandy Smelter Area has had a technical assessment of soils, groundwater, interior dust of homes, interior and exterior house paint, and demographics surveys in homes with children ages 7 and under. The goal of phase two is to obtain preliminary assessment and site investigation (PA/SI) information, remedial investigation and feasibility study (RI/FS) data, remedial design (RD) data, and risk assessment (RA) information together, using site-specific parameters and the IUBK model. This provides a broader range of risk management choices, rather than using default values.

Only one Potentially Responsible Party (PRP) identified by the State is interested in participating in the project. The accomplishments at the site include: completion of field work; performance of demographic health surveys of children in the area; surface and ground water sampling which show no contamination; performance of extensive community relations work; and negotiations which commenced in June, 1993.

The completion date for the pilot is estimated for February 1994.

EVALUATION PLAN

Region 8 will monitor and collect data on efficiencies expected from decreasing the time for each step in the remedial process up through the RI/FS. Some cost savings are expected from integrating the preliminary testing at the site into one process and ensuring that the work is effective. By integrating assessments the Region defines a new and efficient process for cleaning up sites.

The Region will collect data on the following:

- Time duration from beginning of PA to completion of RI/FS
- Extramural costs of integrated assessment for PA/SI-RI/FS.

The established baseline reflects historical numbers. The Region will also estimate what the extramural cost of the PA/SI/RI/FS would have been for the pilot site because of the large difference between the national and Regional averages for RI/FS costs.

The baseline for comparison of efficiency measures is a combination of the measures included by the Region in the evaluation plan and some CERCLIS measures and can be found in Table 14.

Measure	National Average	Region 8 Average
Time from PA to RI/FS Completion	N/A	3 years
Time for RI/FS (Fund Lead)	14.5 Quarters	15.2 Quarters
Time for RD (Fund Lead)	9.4 Quarters	10.4 Quarters
Extramural Cost of RI/FS	\$938,980	\$349,932
Cost of PA/SI	TBD	TBD

TABLE 14

RESULTS

A three year process was decreased to one year. The estimated one year it took for the PA/SI-RI/FS is less than national and Regional averages by at least two years.

The extramural cost of the combined assessments was \$750,000. This is higher than the Regional average. Also, two rather than one project manager indicates higher intramural costs than is typical. In the final assessment, whether the accelerated process was worth these extra costs -- assuming that the averages are an appropriate baseline -- should be evaluated.

Further time savings are expected. An estimated two to six months will be required for the RD -- by using the RD from a similar site. This also is less than national and Regional averages.

Region 8

PRP Incentives

PILOT DESCRIPTION

The goal of the PRP Incentives pilot is to identify PRP incentives that will increase the number of, accelerate, and improve the quality of PRP-lead NPL site cleanups. The initial pilot objective was to identify financial incentives for PRPs to accelerate cleanup activities and to encourage PRPs to enter into settlements with EPA.

PILOT STATUS

Region 8 is attempting to develop realistic and workable incentives for accelerating PRP lead activities through the use of the Total Quality Management (TQM) approach. Possible incentives which may be used by the Region include: financial (i.e. mixed funding, reduction of past costs or future costs, etc.); process/non-financial (i.e. special notice waivers, use of non-Superfund authorities); disincentives (i.e. enforcement, penalties, etc.); intangible incentives (i.e. public recognition, de-emphasis of liability issues); listing/non-listing (deferrals or delayed listing); and good management incentives (i.e. building credibility, use of early negotiations).

The pilot's early attempts to offer financial incentives was not completely successful. Armed with these initial results and information gathered by a similar pilot in EPA's Region 1 office, the Region 8 pilot was re-evaluated. The Region decided to gather direct input from PRPs.

To identify incentives, the Region held a national conference with PRPs and their representatives on April 15, 1993. At the conference EPA gained valuable insight into PRP's views on incentives. The Region and the PRPs discussed the types of incentives that will encourage accelerated cleanups. A conference report has been published which describes a multitude of Superfund processes and Agency streamlining activities that will accelerate cleanups and expedite settlements.

EVALUATION PLAN

Initially two sites were pilot tested. These selected incentives were expected to expedite settlement and accelerate cleanup, leading to earlier risk reduction.

RESULTS

Financial incentives (such as the possibility of reduced cost recovery for future oversight costs) were described to a PRP cleaning up a North Dakota Superfund site. Due to the PRP's concern about publicity, they did not accept the financial incentive; however, the PRP did accelerate cleanup activities and shortened the duration by 11 months. The average time from listing to construction completion is 39.5 quarters (national average) and 23.1 quarters (Region 8 average). Thus the 11 month time savings significantly expedited the schedule and reduced EPA's oversight costs.

At the other site where the Region proposed to offer reduced past and future oversight costs, the PRP refused to sign the Agency's Consent Decree because they felt the conditions were too onerous. During negotiations, the PRP provided no flexibility in this position, thus the financial incentives were not offered. Negotiations were not successful, however, the PRP is implementing the terms of an administrative order unilaterally issued by EPA.

The PRP Incentive Conference held on April 15, 1993, offers significant insight into the needs of PRPs and their ideas on ways to expedite cleanups and settlement. The most promising incentives are to streamline the administrative procedures leading to Remedial Design. Region 8 has distributed the Conference report to HQ offices for communication to other Regions and the States.

Region 8

Comprehensive Site Management

PILOT DESCRIPTION

Region 8 is managing an enforcement pilot for a comprehensive cleanup covering all phases of the CERCLA process from discovery of and investigative studies through cleanup and operations and maintenance. The goal of this pilot is to expedite the Superfund process by use of a single Consent Decree with the primary Potentially Responsible Party (PRP). Full compliance by the PRP with the Consent Decree would have superseded the need to list the site on the National Priority List (NPL).

The focus of the proposed Consent Decree was an innovative enforcement mechanism by which all remedial and removal activities at a mega-site could be covered in a single enforcement action. The pilot site is quite large (120 square miles) and is likely to have approximately 20 operable units. It is an active mining operation which has produced a wide variety of wastes over its 130 year mining history. Because cleanup decisions have not been made, the proposed Consent Decree described the processes and concepts EPA would use to make these decisions.

The first activity envisioned in the pilot would be development of a Study Area Management Plan which delineates operable units, proposes whether to use the removal or remedial process for each and schedules the activities at each site. Site-wide risk assessment, quality assurance plans, single site assessments, and generic remedies will be developed to eliminate duplicative studies and paperwork. Permits from other state and federal programs would be incorporated into Records of Decision and Action Memos eliminating duplicative oversight by multiple programs.

Schedules involving cleanups at operating facilities can be developed far in advance so that arrangements can be made to facilitate operational needs. Community participation is encouraged by including community representatives on various task forces and work groups, and providing grants to communities and citizen groups to defray the costs of participation.

The pilot represents an effort to use innovative enforcement, site management, and community relations approaches at a mega-site without the community and corporate stigma associated with listing on the NPL.

PILOT STATUS

The pilot was slated for testing at a mining site in Utah. Consent Decree negotiations were started in November 1991 and were discontinued in January 1993. The PRP rejected the proposed Consent Decree in August 1993. However, EPA hopes to use many of the technical and administrative innovations from the negotiations in a more traditional enforcement framework.

During the period of negotiations (1991 - 1993), seven removals, under order and with EPA oversight, were started, and three are completed.

EVALUATION PLAN

Qualitative evaluation will include assessment of technical and administrative innovations for their feasibility of implementation at Superfund sites and mega-sites. Quantitative evaluation will examine the time and costs incurred by the enforcement negotiations in comparison to times and costs of more typical individual agreements.

RESULTS

The major PRP, has already begun to conduct removals at the site. Some removals are under order with EPA and state oversight and others are being conducted on a voluntary basis without EPA and state oversight.

The only other PRP, has begun removal work on the areas for which it is responsible, under two removal orders from EPA.

Two Task Forces have been formed which have community representation. A Land Use Conference was held to determine what the communities, county, state and PRP envision for future land use on and near the site. EPA has received praise for its involvement of local communities in site activities and planning.

The concept of negotiating a single enforcement instrument for all site activities did not work at this site. This concept would be more appropriate for smaller, less complicated sites. There were too many cost and legal uncertainties for use at mega-sites. It was clear, however, that the communities and the state considered the concept to be a good idea.

Region 8

Cross Program/Multi-Media Approach Annie Creek, South Dakota Site

PILOT DESCRIPTION

The goal of this pilot is to clean up a Superfund site using a cross-program/multi-media approach. The Annie Creek Mine Tailing Site was proposed for the NPL and, as such, the pilot was designed to use an innovative approach to expedite, yet follow, the CERCLA process. The resourceful approach used alternative authorities by sending a request for information under the Clean Water Act Section 308 and Clean Air Act Section 114 (CWA/CAA) to initiate the remedial investigation.

The Region and the PRP saved time and resources using the CWA/CAA request to initiate the investigation instead of negotiating traditional Superfund orders. Further, this approach created a less adversarial environment and allowed all parties to focus on technical resolutions to site cleanup which resulted in the PRP conducting site work within one month of the request.

The innovative approach also uses PRP incentives to expedite the project. The incentive for agreement to initiate site work under the CWA/CAA request, not only included cost savings by avoiding negotiation of orders, the Region's policy was that Water Management Divisions oversight of the CWA/CAA request would not be included in Superfund costs reimbursement. The Region would seek costs associated only with Superfund's oversight. The policy proved to be successful, but it does represent the cost reimbursement concern associated with the use of statutory authorities other than CERCLA.

Following initiation of the work plan, the team's technical approach is to use removal process (non-time critical). The use of the removal as opposed to the remedial process is estimated to substantially reduce the time to implement the action. While using the removal authority, the Region was careful to incorporate all substantive aspects of the remedial program to ensure a comprehensive approach to site cleanup. In anticipation of a final action, full

documentation supporting all remedial procedures is expected. As such, the Annie Creek EE/CA is functionally equivalent to an RI/FS as it contains full media characterization, Baseline Risk Assessment (conducted by EPA - including human and ecological sections), ARARs, and a focused alternative analysis.

PILOT STATUS

The Site was proposed for the NPL in July 1991, but has not been finalized. The CWA Section 308/CAA Section 114 request was issued on May 11, 1992 for site characterization. With the cooperation of the PRP, the EE/CA was completed September 27, 1993 and is available for public comment (10/12/93 - 11/11/93). The main contaminant of concern is arsenic. The preferred remedy includes revegetation, drainage diversion and institutional controls. EPA anticipates the final remedy will be implemented under a removal AOC. The physical construction is expected to be complete in September 1994 adding to the Agency's list of construction completions. The close out of the site will be determined at a later date as the site is not yet finalized on the NPL.

EVALUATION PLAN

The Region has identified several measures of success for the site and has estimated preliminary results. The pilot effectively used a single innovation, alternative authorities (CWA/CAA), to initiate the Superfund investigation, but more importantly set a positive tone of cooperation with the PRP. Further, the team utilized available tools to encourage PRP cooperation by developing incentives and establishing

open communications with the PRP to institute a win-win approach for EPA, PRP and the public without compromising the Superfund process. The Region will track the following:

- Time from NPL proposal to RI start
- Time from NPL proposal to Remedy proposal to public
- Time from NPL proposal to decision document
- Time from NPL final to site deletion
- Time from Agency enforcement action to RI start
- Time from Agency enforcement action to remedy proposal to the public
- Time from Agency enforcement action to construction complete
- Overall Superfund costs (FTEs, contractor, State, etc.) for enforcement of site cleanup
- Percent of costs recovered and time to recover costs
- EE/CA time frame versus typical RI/FS time frame
- EE/CA completion to action start versus typical RI/FS time frame for design complete to action start
- Removal AOC negotiations versus typical remedial RD/RA negotiations
- Time from NPL Proposal to NPL delisting

The Region will use typical time frames in Region 8 and time frames, duration of activities, and pricing factors in the 1994 SCAP manual for baseline comparison. The baseline is essentially the time frame and costs associated with a traditional NPL site.

RESULTS

The Region estimates that more than six months have already been saved as compared to the planned dates for a traditional RI/FS. Savings to EPA for the entire cleanup are projected to be at least 2 years and at least \$250,000. The PRP may also realize significant cost savings.

Region 9

SACM Site Assessment Pilot

PILOT DESCRIPTION

The purpose of the Region 9 SACM Site Assessment pilot is to determine how much information can feasibly and cost effectively be collected through a single integrated site assessment process to satisfy other Superfund remedial and response program needs. The SACM Site Assessment process incorporates multi-program data gathering at the front-end of the Superfund investigation process. Depending upon the site, the single integrated assessment may be designed to satisfy up to four sampling objectives: 1) Preliminary Assessment and Site Inspection (PA/SI) sampling for the Hazard Ranking System (HRS); 2) data to both determine the appropriateness of a time critical or emergency response, and allow the Region to complete the action(s); 3) information to assist in determining the scope of a non-time critical removal; and 4) for sites with apparent long-term impacts to human health or the environment, the early assessment will better characterize the extent of the problem, provide information so that a long-term action may be taken early in the process, and assist in the selection of the appropriate remedy (the Remedial Investigation/Feasibility Study [RI/FS]).

The pilot introduces two phases, the Integrated Assessment (IA) and the Expanded Site Inspection/Remedial Investigation (ESI/RI). However, the principle focus of the Region 9 pilot has been narrowed to the IA only. The IA is a single continuous assessment that begins with the evaluations of available records and may also include field sampling to more accurately determine if a site is National Priorities List (NPL)-Caliber. If the site does not score after the available records search, a PA document is generated. If the site may potentially score based on the evaluation of available records, the site will move directly into field sampling and an IA document is prepared (PA/SI). The scope of both the traditional PA and SI data gathering has been expanded to include human health, ecological, and emergency response information. If after the records review it is determined that field sampling is required, a multi-program scoping session is conducted and the

site moves directly into the field sampling stage. Generally, the information gathered in the field stage will be focused to allow the Region to take time critical or, in some instances, non-time critical removals. The multi-program scoping session includes On-Scene Coordinators (OSCs), Remedial Project Managers (RPMs), toxicologists, and representatives from other Superfund support programs, and is used to identify the incremental information required to determine if a site is NPL-caliber and support decision making for early action(s). The ESI/RI is a much more comprehensive investigation than the IA and will typically be used on sites that are clearly NPL-caliber. The ESI/RI may be used to gather ESI/RI/FS and/or Engineering Evaluation and Cost Analysis (EE/CA) Information.

The pilot evaluated sites that fall into one of three following categories: 1) newly discovered sites; 2) sites that have been assessed but still require additional data to determine if they are NPL-caliber; and 3) sites that are NPL-caliber and may be a high priority for NPL listing and early action. The use of these categories ensures that the entire pilot process (from initial assessment through early action recommendations to the Regional Decision Team [RDT]) is tested in a relatively short time-span. Work began on the category one sites (newly discovered) in December, 1992. Scoping sessions began on the category two sites (IA field sampling) and category three sites (ESI/RI) on February 10, 1993.

Under the SACM Site Assessment pilot, the Region is collecting significantly more samples in the IA and ESI/RI than would typically be taken in a CERCLA SI or ESI, respectively. Also the Region is using the Field Analytical Support Program (FASP) on-site laboratory and other screening techniques to analyze field samples whenever possible. The Contract Laboratory Program (CLP) is used in the pilot to verify select field samples for the HRS or for developing information for risk-screening decisions. Also, an applicability checklist is currently being developed to aid OSCs in determining if a site is NPL-caliber (does the site have a long-term

component) at the Removal Assessment stage. The checklist will use generic HRS decision criteria to determine which sites have obvious long-term considerations and would benefit from early HRS, Risk Assessment, an/or RPM input. This applicability checklist would be used to determine if multi-program IA scoping sessions should be conducted on Removal lead sites. Once this checklist is developed, a test period will be conducted to test the effectiveness of the checklist for identifying NPL-caliber sites with limited and/or subjective data.

The pilot project modifies the traditional cleanup process by expanding the investigative work and analysis done before the site becomes listed on the NPL. The goal is to start cleanup before, or in lieu of, the NPL rulemaking process.

PILOT STATUS

Background

The primary pilot sites have been selected for each of the three categories. The Region identified and prioritized the sites for the category one from a list of 50 newly discovered sites using surrounding population and proximity to drinking water wells for assigning priority. The category two and three sites were determined through internal prioritization and input from the RDT. Alternative sites were identified in the event that sites prematurely fall out of the pilot by not requiring further investigative work. The progress on these sites has been routinely evaluated by a cross-program subcommittee comprised of members of the Region 9 SACM Pilot Workgroup. The purpose of this review has been to obtain a real time evaluation of the process so that improvements to the pilot could be made.

The pilot field work began in December, 1992, and the Region expects to have completed all of the field studies by December, 1993. An interim findings report and final report will be developed by the Region. These reports are discussed in the Results section.

Current Status

A total of ten sites received the expanded records search of the IA. Eight of these sites were non-scoring and were closed out with a PA document. Two sites moved into the field sampling portion of

the IA. Additionally, five sites began at the sampling phase of the IA. These sites are summarized below.

An IA was conducted at Dodson Brothers Oil, an unpermitted treatment, storage and disposal facility for waste fuel, waste oil and other liquid hazardous wastes. A comprehensive workplan was developed for this site, however, due to the high cost, the workplan was rewritten and the scope narrowed to gather only data to support early decision-making. The RPM requested that three vertical borings be completed to a depth of 50 feet below the ground surface through three surface impoundments. Also, the RPM requested that the presence of an underground storage tank be determined. Significant contamination was detected at this site and a full 10,000 gallon underground storage tank was discovered during the field portion of the IA. The Region is exploring the option of a removal at this site.

An IA was conducted at the Nevaco, Inc. site. This site is an abandoned printing facility located on the Pyramid Lake Indian Reservation, in Washoe County, Nevada. The sampling at this site included groundwater, surface and subsurface soils near a drywell and sediment sampling for potential ecological/human health receptors. Sampling results indicate that no further action is appropriate for this site.

An IA was conducted at the Sobex site, the location of a former oil recycler. The workplan for this site was also narrowed after comment from the scoping team. This sampling included groundwater, surface and subsurface soils, and the sampling of a waste pile. Also, the Region is working cooperatively with the State to provide site access and split samples for State cleanup of CERCLA exempt substances. The results of this sampling have not been thoroughly evaluated.

An IA was conducted on the Sierra Pacific site, located in Hayfork, California. This site is a former wood treating facility. The IA included the use of Rapid Immunoassay Screening (RIS) procedures for Pentachlorophenol (PCP) in soils and sediments. The RIS procedures were used to target locations for sediment and soil sampling. Also, the toxicologist requested total organic carbon and grain size studies on the sediments to support a future risk-screen.

An IA was conducted on the Indian Wells Estates site, in South Gate, California. The Region is currently evaluating possible early actions at this site.

There were two other IA sites evaluated in the pilot, however, neither site required field sampling.

An ESI/RI was conducted at Bowles Flying Service, in Live Oak, California. This was the first site in the Region 9 pilot process and the workplan for field investigations required considerable revision. Because of concerns raised over the projected cost of the initial workplan versus the projected cost of site cleanup through a removal, the scope of the investigation was rewritten and narrowed. The Remedial Project Manager requested that the traditional ESI sampling be expanded to include development of three on-site monitor wells; performance of a slug test; expansion of the number of wells sampled; expansion of the list of contaminants sampled to include Organophosphate and Carbamate/Urea pesticides; a well survey for site specific groundwater height and flow directions; and a survey of the site for potential soil removal. The toxicologist requested expanding the sampling to include Contaminants of Concern for ecological receptors, expanding the number of sediment samples and adding to organic carbon and alkalinity test for fate and transport of contaminants in the sediments. There were no specific data gathering requirements requested by the removal program for this site. Final recommendations for this site are still being formulated.

EVALUATION PLAN

The Region has developed an extensive evaluation plan to analyze the results of the pilot. It is expected that the expanded data gathering process will yield considerable benefits to the Region's approach to site cleanup. Increases in effectiveness and efficiency stem from the following:

- The total amount of sampling required at the Site Assessment stage will be increased, but the total amount of sampling required to get to cleanup, when compared to the traditional Superfund process, will be much less. This is largely because it will be known much earlier in the process what level of contamination exists at the site.

- A quicker more comprehensive Site Assessment process is initially conducted. This has been accomplished in part by combining the traditional PA and SI into one continuous investigation.
- Information obtained in the Site Assessment process will be immediately available to support remedial and removal decision-making. Cleanup will occur much earlier in the Superfund process because delays that may occur later in the cleanup process due to insufficient data will be eliminated.
- The Region estimates that under the SACM Site Assessment process, the expanded data collection and evaluation of the IA will take approximately three months, the field sampling phase of the IA will take approximately six months, and an ESI/RI will take approximately nine months.

The anticipated outcome of this single site assessment process will be evaluated using the following tangible measures:

- The time required from site discovery to when a final decision is made for pilot sites, compared to national and regional averages. The Region anticipates the pilot process will be much shorter than historical Superfund evaluations.
- The additional cost of expanded data gathering in the pilot review of available records compared to the number of hours required for Regional and National PAs. The Region expects that there will be an incremental increase in costs due to expanded data gathering, however, this cost will be off-set if decisions for cleanup on scoring sites can be made earlier.
- The additional cost of field sampling at the IA versus National and Regional sampling SI costs. Because additional sampling is required, the Region expects an increase in assessment costs. Again, the Region believes these costs will be off-set due to early actions.
- The average number of additional samples required to support other program decision-making when compared to the Regional and National average number of samples for HRS purposes only. The Region expects that the total number of samples obtained in IA sampling events will be

significantly higher. However, the vast majority of the sampling will utilize low costs screening equipment. For this reason, the total analytical costs may actually be lower.

- The additional time and costs required for an ESI/RI compared to a traditional ESI. It is anticipated that the total cost and time required for an ESI/RI will be greater than a traditional ESI. However, the ESI/RI will be much shorter than a traditional RI, resulting in a net savings.

The Region will also attempt to evaluate the more intangible measures of pilot success, such as:

- Whether the data gathered at the early assessment phase was useful for RDT decision-making.
- Whether the data quality objectives for early sampling are sufficient for future data uses, including the HRS/NPL listing.

The baseline for comparison can be found in Table 16.

For the Region 9 Swift process the average time from site discovery to final decision on a site is 10.8 months. The average LOE for a Swift PA/SI is 443 hours.

While the Region expects the time required to complete a SACM IA will approach the 10.8 months required for a Swift Site Assessment, the actual average for time and LOE are still to be determined.

The Region will collect information for comparison to the baselines found in Table 16 on the following variables:

- Time from discovery until a final decision is made.
- Hours for an IA record search
- Hours for IA field sampling
- Hours for a full IA
- Hours for an ESI/RI

Tradition Superfund Averages

Measure	National Average	Region 9 Average
Time from discovery until a final decision is made	To Be Determined	31.7 months
Level of Effort (LOE) for a traditional PA	135 hours	122 hours
LOE for a traditional SI	440 hours	431 hours
Total LOE for a traditional PA/SI	575 hours	553 hours
LOE for an ESI	1100 hours	TBD
LOE for an RI/FS	TBD	TBD

TABLE 16

RESULTS

The Region has developed a process and decision making flow diagram, a Human Health and Ecological Concerns Data Booklet and developed a removal program data gathering process. The flow diagram identifies the major SACM concepts and how the SACM Site Assessment process is completed within the organization. The Human Health and Ecological Concerns Booklet was developed through interviews with toxicologists and is used by field personnel in the initial investigation to gather specific information to support a future risk-screen. The removal program data gathering process is used by field personnel to gather information in determining if a site is eligible for a removal action and assist OSCs in determining the appropriateness of a removal. This criteria is defined in the National Contingency Plan (NCP).

Although an ESI/RI was completed in the Site Assessment pilot study, one of the early lessons of the pilot was that the ESI/RI is much more costly and complex than an IA and, therefore, it is more appropriate for sites with a long-term component. For this reason, the Region decided that the RDT should have input on whether an ESI/RI will be conducted. Also, because the ESI/RI will typically be conducted on sites with a long-term component, more RPM input would be required. In the future, all ESI/RIs will be conducted at the recommendation of the RDT and will be RPM lead.

An integral part of the SACM Site Assessment pilot is the role of screening to determine the appropriate location for obtaining data to support decisions. The Region is expanding the role of screening data and using the CLP for confirmatory purposes. Data obtained for documenting an observed release for the HRS will receive full validation on 100 percent of Regular and Special Analytical Services. All other data will be screening level. Data gathered for Remedial use includes field screening with confirmation of 10 percent of the samples. Data gathered for the removal program will be confirmed by the CLP only on an as needed basis.

As discussed previously, an interim and final report will be developed by the Region. The interim reports will discuss the pilot process in detail and provide a brief discussion of some of the major lessons learned.

The interim reports is tentatively scheduled for the 2nd quarter of FY 94. The final report will present the findings of the pilot, including an analysis of site specific SACM activities, costs and schedules, a discussion of unresolved issues, and potential barriers to implementation. The final report is tentatively scheduled for second or third quarter of FY 94.

Region 9

Plug-in Rod Indian Bend Wash South, Arizona Site

PILOT DESCRIPTION

The Plug-in Approach is a way of structuring a remedy for Superfund sites such as Indian Bend Wash-South Superfund Site (IBW-South) in Tempe, Arizona. The approach can be used when a Superfund site contains multiple areas or "subsites" that are similar physically and share similar contaminants. Each subsite exhibits contamination that must be addressed. This Approach is being applied to the IBW-South site, where up to 30 multiple and separate facilities may have contributed Volatile Organic Compound (VOC) contamination to groundwater. IBW-South covers about three square miles. VOCs in soils at all subsites will be addressed by the single operable unit ROD as part of this pilot. This pilot combines two innovative approaches, the Plug-in Approach and the Presumptive Remedy, to compress the time required to reach the remedial design stage at the IBW-South "mega-site."

The plug-in remedy identifies Soil Vapor Extraction (SVE) as a standard Remedial Action (RA), and then defines a process that will be used to determine where the remedial action shall be applied. The ROD does not select an RA for a specific subsite. Rather, the ROD selects an RA to apply to any subsite exhibiting certain conditions. The ROD defines what these conditions are, and selects a process of determining whether or not they exist.

A Plug-in remedy is selected prior to fully characterizing the subsites. Subsides will be characterized concurrently or at different times. If the conditions at a subsite match predefined conditions, then the subsite will "plug-in," or attach, to a remedial action. Each subsite will be subject to a separate Plug-in decision. The ROD fully contains the basis and process to be used for all Plug-in decisions. Therefore, simply following the prescribed process in the ROD completes the remedy for any particular subsite. The Plug-in remedy contains a blueprint directing decisions as to its own application.

By separating selection of SVE, the cleanup technology, from a decision about its application at a particular subsite, EPA can verify that the cleanup technology is appropriate for a subsite after all sampling data about it have been collected. At the same time, EPA does not have to evaluate and select a separate remedy for each subsite.

After plugging in, the RD and RA can begin at a subsite. Subsides not matching the conditions and criteria are not plugged in, but still can be addressed, if necessary by other remedies, removal actions or through modifications to the remedy. Because "surprises" may occur during Focused RI work at a subsite, the plug-in approach is designed to be flexible enough to adjust to unexpected conditions.

Remedial action will occur at some subsites while investigation work continues at other subsites. Thus site-wide, remedial investigation and remedial action occur concurrently.

PILOT STATUS

The Feasibility Study, Proposed Plan, and Administrative Record were made available for public comment in June 1993. EPA has held the required public meetings. The public comment period was extended 30 days and will close in August 1993. The region anticipates the Plug-in ROD will be signed by the end of FY 93. The main body of benefits of this pilot will not accrue or be measurable until after the ROD is signed.

EVALUATION PLAN

Region 9 performed a very detailed evaluation of projected benefits from this pilot, in January 1993 (*Preliminary Assessment of Potential Value of Plug-in Remedy/Presumptive Remedy at the Indian Bend Wash Superfund Site*). This evaluation presents both tangible and intangible benefits to the plug-in approach. While quantifiable, tangible benefits are important, there are many intangible benefits which can be just as important and must be considered. In addition, the attached evaluation discusses some of the difficulties in directly quantifying the benefits of the Approach, even though there is a sound basis for assuming they will exist.

Quantitatively, the above-referenced document predicted that the following may be accomplished by the pilot, given certain assumptions outlined here:

- Save a decade of time in overall soil site response time;
- Begin RD one to five years sooner, depending on which approach would have been taken had EPA not used this approach; and
- At least double the rate at which subsites enter RD.

The following is a brief summary of some of the generalized benefits expected from this pilot:

- Redundant remedy selection processes (Operable Unit [OU] FSs and OU RODs) are eliminated; RD and cleanup can begin immediately where the most common conditions exist.
- Remedial Action Starts Sooner and Proceeds at a Greater Rate. The approach allows RI and RD work to proceed simultaneously, and most subsites move directly from RI to RD. Therefore, not only is the entire RI/FS/ROD process completed sooner, but actual cleanup work starts even sooner and moves at a faster pace. (Note that the Plug-in approach does not imply eliminating the Feasibility Study [FS] - a full FS still supports the Plug-in ROD) .
- The RI and FS are decoupled; cleanup work is not held up. Non-synchronous RI schedules among

individual subsites significantly delay mega-site projects, when the FS and ROD depend on progress or completion of RI work. Under Plug-in, no single subsite's RI work holds up the overall Superfund process.

- Value of the Concept Itself. Obviously, the concept of Plug-in, could be used elsewhere and could initiate new thinking and new approaches to multi-source-site management in Superfund. The effect of this cannot be quantified, but it may ultimately be the approach's greatest benefit. It is important, therefore, not to judge the concept solely on its performance at the specific situation at IBW-South.
- The approach provides an earlier focus for Data Collection. Because all the elements of the remedy have been laid out ahead of time, all subsequent RI work after the ROD is more focused on the remedy. Should a subsite be determined as needing the plug-in, much of the RI data will already double as RD data, and so the RD process will be shortened. This shortening is difficult to quantify, but should be substantial as it is realized over multiple subsites.
- Public/PRP Perception & Cooperation Benefit. The approach directly counters the public perception at mega-sites that "nothing is happening." By establishing the cleanup early, there is a much more substantial perception of the "bottom line" and EPA's direction, which will increase public confidence and decrease future community relations problems. These factors cannot be quantified, but are nonetheless extremely valuable to EPA and to overall progress at multi-source sites.
- Reduction in Transaction and Oversight Costs. Costs are expected to be greatly reduced simply because of the reduction of time involved in completing the project. Costs can be correlated with time because basic contractor activities are strongly time-dependent. The same holds true for EPA internal costs such as payroll and travel. Also, because multiple major deliverables (FS for each subsite, OU ROD for each subsite, proposed plan for each subsite, response summary for each subsite, AR for each subsite, etc.) are not being produced under this approach, the costs associated

with developing, overseeing, redrafting, commenting, disseminating, document indexing/management, responding to Freedom of Information Act (FOIA) and public inquiries, etc., for all these documents are eliminated.

For more details, see *Preliminary Assessment of Potential Value of Plug-in Remedy/Presumptive Remedy at the Indian Bend Wash Superfund Site*.

Measures for FY 94

Because of the huge numbers of factors which contribute to the time and funds required to execute mega-site projects (such sites are actually many subsites within a site), a comparison of IBW-South with other mega-sites as an evaluation of the Plug-in approach would be largely a meaningless exercise. Likewise, because this is the first Plug-in ROD, it has understandably taken longer to achieve than Plug-in RODs will require in the future, once guidelines and procedures are established. Finally, at IBW-South, five years passed before the Plug-in Approach was implemented. Therefore, a measure based on total time to execute the project as a whole and reach final cleanup for all facilities is not feasible and is not recommended.

The following means for providing some quantitative evaluation for this pilot in the next fiscal year is planned:

- The amount of time for each individual facility to go through the Plug-in process will be compared with a national average for remedy selection at small sites requiring soil vapor extraction remedies for VOCs in soils.

The measure for Plug-in will be the amount of time required for an individual facility (subsite) to move from RI completion to initiation of remedial design. As the remedy is "preselected" by the Plug-in ROD, all that is needed for such a facility is to apply the Plug-in process in the ROD to that facility, and make a "plug in determination."

The measure for the national-averaged "VOC in soil" site will be the amount of time required to move from RI completion through an FS (or OU FS) and a ROD process (or OU ROD process) to initiation of remedial design.

This time savings can then be multiplied (roughly) by the number of facilities "plugging in".

The first subsite is not expected to Plug-in until late 1993 and so this evaluation will not be possible until that time.

RESULTS

The previously referenced preliminary assessment shows several results that can already be assumed to be accruing due to the use of this Approach. Both quantifiable and unquantifiable results are estimated.

Because the Plug-in ROD is not yet signed, the major results from the pilot cannot yet be directly measured. There is one definite result: under a more traditional approach, a ROD would not have been possible at this site for soils for perhaps another three years or more. By using the approach, a ROD was possible immediately, freeing the site for some RD/RA activity as early as 1993.

Region 9

Early *De Minimis* Settlement, Operating Industries, Inc., California Site

PILOT DESCRIPTION

The Operating Industries, Inc. (OII) in Monterey Park, California Early *De Minimis* pilot project involves designing and implementing an early settlement strategy for the 3,500 *de minimis* Potentially Responsible Parties (PRPs) that disposed of hazardous waste at the OII landfill. The goal is to complete the settlement by the end of the first quarter of FY 1995, before the final remedy is selected and the final Remedial Design/Remedial Action (RD/RA) Consent Decree (CD) negotiations.

A *de minimis* settlement will facilitate the final RD/RA negotiations with the major PRPs and protect *de minimis* PRPs from third party negotiations. (Traditionally, *de minimis* notice letters would be sent out a year later (mid-1995) than they are for this pilot.) At final settlement with the major PRPs, the "handling" of the *de minimis* parties will not be an issue because their *de minimis* settlements will already have taken place. The final negotiations will be more generic due to the avoidance of the arguments of different interests. Under this new method of negotiating, both the major and *de minimis* parties are given independent opportunities to present their concerns without being overshadowed by the other party.

This new process of conducting negotiations with the *de minimis* and the major PRPs separately is somewhat different than the traditional process of negotiating with all of the parties at the same time. Using the traditional process, it would be necessary to take into account the interests of these very different parties. The negotiations become lengthy and costly because of the need to accommodate the diverse parties. Under the pilot process, the Region anticipates a time and money savings because the individual negotiations proceed at a faster pace due to the similar interests of the parties involved. The new process has an equitable effect by ensuring that all parties' interests are met.

PILOT STATUS

The 190-acre OII site is an inactive municipal landfill in Monterey Park, California. Surrounding land use is primarily industrial, however, 53,000 residences are located within three miles of the site. On-site disposal activities began in 1948, and continued until 1984. Wastes accepted at the landfill included household and organic refuse, scrap metal, non-decomposable inert solids, and liquid wastes. The landfill was capped with a soil cover after operations ceased. Two 1987 Records of Decision (RODs) addressed site control, monitoring, and leachate management. A third ROD, signed in 1988, addressed landfill gas collection and treatment system. Each ROD represents an Operable Unit (OU) which can be defined as a treatment phase conducted at the site. Since that time, continued settling of on-site landfill wastes and the occurrence of subsurface fires have decreased the integrity of the existing landfill cap. As a result, oxygen and precipitation have intruded landfill wastes. A 1990 ROD amended the original 1988 landfill gas migration control ROD to include the addition of an upgraded landfill cap. The amended selected Remedial Action (RA) includes capping the landfill to reduce surface gas emissions, to prevent oxygen intrusion and surface water infiltration, and to provide for erosion control; installing landfill gas extraction wells around the perimeter and on the top of the cap; collecting and treating landfill gas by incineration; and dewatering saturated landfill zones. The primary contaminants of concern affecting the air are Volatile Organic Compounds (VOCs) including benzene, polychloroethylene (PCE), tetrachloroethylene (TCE), and toluene.

The OII landfill is divided by the Pomona Freeway into two areas, a south parcel and a north parcel. The south parcel is approximately 145 acres in size and is characterized by 43 acres of relatively flat top deck and 102 acres of sloped areas. The majority of the 145-acre south parcel was used for waste disposal

whereas approximately 15 acres of the western area of the north parcel were used for waste disposal.

The landfill is covered by a soil layer of variable thickness. The cover tends to be thicker on the top deck and thinner on the slopes and consists of varying amounts of clay, sand, and silt. The engineering characteristics of the cover are highly variable and, generally, are not adequate for landfill closure. Surface cracking, depressions, and evidence of erosion exist at many locations around the landfill. The primary deficiencies of the existing cover are that it does not: 1) prevent gaseous surface emissions; 2) prevent oxygen intrusion into the refuse; 3) limit infiltration of surface water; or 4) provide for adequate erosion control and stormwater management.

The selected remedy protects human health and the environment through extraction and thermal destruction of landfill gas and installation of landfill cover. The thermal destruction will permanently remove 99.99 percent of the contaminants in the landfill gas. The landfill cover will be designed to reduce surface gas emissions and odors; prevent oxygen intrusion into the refuse, which will allow the gas systems to work more effectively; prevent surface water infiltration, which will assist in leachate management; and promote erosion control. Short-term risks associated with the selected remedy, as addressed in the original gas ROD, can be readily controlled. In addition, no adverse cross-media impacts are expected from the remedy.

EPA has undertaken the following enforcement activities since September 1988. In May 1988, a partial CD between the United States, the State of California, and approximately 120 PRPs was entered in the District Court for the Central District of California, *United States, et al v. Chevron Chemical, et al*. The partial CD resolved claims for some State and Federal past costs, EPA oversight costs, and the implementation of the first two OUs, Site Control and Monitoring and Leachate Management. In July 1989, EPA sent General Notice letters to approximately 91 additional PRPs representing five percent, by volume, of the manifested liquid wastes. The waste generators noticed represent approximately 85 percent, by volume, of the manifested liquid waste. In March 1990, EPA extended an offer to the 91 PRPs noticed in July 1989 and to previous non-settlers for settlement of the same issues as the first (past costs to

June 1, 1988, liability for the first two OUs, and EPA oversight cost for the two OUs). The offer closed August 3, 1990. The settlement resulted in a second partial CD. The third CD was entered into on March 30, 1992 for the costs of the third OU which consisted of gas control and landfill cover for the site. Only the major PRPs, those responsible for 85 percent of the waste, were involved in these settlements. Those major PRPs that did not settle will be ordered to do cleanup work that was not covered in the earlier OUs. EPA uses this settlement technique as an incentive to encourage those parties that EPA has not previously ordered to do cleanup work to settle during the final negotiations. The estimated value of the three CDs totalled \$205 million.

General notice letters were sent to top 28 (by volume) *de minimis* PRPs who were determined by the manifests. The purpose of this letter was to encourage some of the largest *de minimis* PRPs to form a steering committee early in the *de minimis* settlement process. Two Regional Project Managers (RPMs) working on the site, an Office of Regional Counsel (ORC) attorney, and a Department of Justice (DOJ) attorney met with these parties in November. The PRPs who attended the meeting asked that, prior to deciding whether to participate in a *de minimis* steering committee, they receive a copy of the total volume of waste attributed to each of them after initial volume adjustments were made by EPA in order to determine their individual liability.

Based on these initial adjustments, EPA determined that 55 PRPs originally in the *de minimis* category now have waste above the *de minimis* limit. Thirteen of the 55 PRPs were sent general notice letters as part of the 28 top *de minimis* parties. These parties are given the opportunity to challenge their EPA-adjusted volumes prior to the negotiations. Once the volume adjustment challenges are incorporated, the *de minimis* parties will be sent their special notice letters informing them of their settlement opportunity.

This pilot project completion date has not yet been determined.

EVALUATION PLAN

This pilot is developing ideas that may be attempted in practice at a future time. Expected improvements in effectiveness, efficiency and equity if the pilot ideas are implemented include:

- Lower transaction costs for *de minimis* parties, since the period during which EPA will negotiate with them will not include negotiations with major PRPs. The negotiations will be more efficient because they are only addressing the interests of similar parties.
- Prevention or reduction of the number of future third party lawsuits, possible by thousands because once the *de minimis* parties agree to settle, they are protected against third party lawsuits. This process has the effect of treating the parties equitably.
- Perception of fairness and equity on the part of all PRPs and the public because EPA is not excluding the small parties from negotiations (and contribution protection), but not including them in a group that would place the *de minimis* parties' need behind those of bigger PRPs.
- Better working relations with major PRPs because they requested that EPA address the *de minimis* parties. By answering their request, the major PRPs may be willing to be more cooperative during negotiations with the EPA. Major PRPs benefit by not having to file suit against *de minimis* parties who settle. The major PRPs do not want to be treated as if they are the only parties that may be held responsible for the cleanup.
- The pilot will set an example for other Regions to use for handling small parties short of funds.
- EPA will be able to pay more attention to public policy issues during the negotiations. During the *de minimis* party negotiations, EPA can devote more time on the concerns of the small parties such as churches and schools.

The anticipated success of this early negotiation process can be evaluated using the following measures which the Region will collect data on:

- The time required to mail general notice letters is less than the national and Regional averages.
- The time required to conduct RD/RA negotiations is less than the national and Regional averages because the issue of *de minimis* involvement in the cleanup has already been addressed.
- The time required to conduct PRP steering committee meetings is less than the national and Regional averages because of the unique interests of the similar parties involved (i.e., *de minimis* party steering committees are held separately from major party steering committees).
- The time required for cost recovery is less than the national and Regional averages because of the better cooperation of all parties during negotiations.
- A reduction in costs required to mail general notice letters compared to the national and Regional averages.
- A reduction in costs required to conduct RD/RA negotiations compared to the national and Regional averages because the issue of *de minimis* involvement in the cleanup has already been addressed.
- A reduction in costs required to conduct PRP steering committee meetings compared to the national and Regional averages because of the unique interests of the similar parties involved (i.e., *de minimis* party steering committees are held separately from major party steering committees).

RESULTS

Initial preliminary results indicate that the Early *de minimis* process will yield considerable benefits to the Region's approach to site cleanup. One of the benefits to date includes equity responsiveness. Due to the major PRPs extensive participation, they will be reluctant to return to the final negotiations with a complete offer unless the other PRPs also participate. Subsequent to the latest negotiations, the settling PRPs filed suit against the noticed but non-settling parties for contribution to the clean-up costs, an

indication of the difficulty ahead should a successful *de minimis* settlement not occur prior to the final RD/RA negotiations. Therefore, the Region's ability to conduct negotiations with the *de minimis* parties has reassured the major parties that EPA is equitably treating all parties involved.

The Regional staff was able to implement a new method for the noticing strategy which entails a process for notifying the *de minimis* parties separately from the major parties. They also learned how to productively listen and react to the concerns of the different parties. In order to do this productively, negotiations with parties that have different interests must take place at separate times. The Regional staff gained experience notifying and settling with Federal, state and local entities.

In addition, Region 9 gained experience with the volume adjustment process for the parties. They also developed a "fair" settlement scheme for major and *de minimis* parties. The major PRPs are more willing to come to the negotiation table if they know that they will be treated equitably. Specifically, the major PRPs want to be assured that the *de minimis* parties will not "get off the hook" and that they will pay their share of the liability. In return, the *de minimis* parties are encouraged to settle early because it relieves them of further liability by third party lawsuits. The Regional staff also gained experience dealing with small parties with extremely limited resources. A major lesson learned from this pilot was the Region's ability to equitably address large numbers of *de minimis* parties and achieve cost recovery in an expeditious manner.

This pilot process is applicable to sites that have large numbers of *de minimis* parties and good volume records. The increased cost of processing and negotiating an early *de minimis* settlement should increase the possibility of achieving a successful settlement with the major PRPs for the implementation of the final remedy. The *de minimis* parties will benefit the most from this pilot project because the EPA Regional office is willing to take the time to meet with them, educate them, and offer them contribution protection. In return, EPA learns about the special interests and needs of *de minimis* parties. In addition, the citizens will benefit because they do not want to see the small businesses harmed.

The pilot findings that could best be transferred to other sites are: 1) the notice strategy which encourages *de minimis* PRPs to form steering committees which assist the Region in better communicating with the major PRPs; and 2) the volume adjustment process with a steering committee which develops default volumes. These ideas can best be communicated through meeting and educating the *de minimis* PRPs.

Region 10

Accelerate Cleanup Through Removal Yakima Plating, Washington Site

PILOT DESCRIPTION

Region 10 designed a pilot to streamline the Remedial Action (RA) to accelerate cleanup. Regional staff believe this pilot saved a considerable amount of time and resources and met the concerns of the public. This post-Record of Decision (ROD) RA was completed using Region 10 removal program authorities.

This pilot project has been completed with the following results: completion of the cleanup in a timely manner; cost savings associated with a reduced remedial design (RD); elimination of the need for institutional controls at the site; early designation of the site as "construction completion"; and planned early de-listing of the site from the National Priorities List (NPL).

PILOT STATUS

The Yakima Plating site is located in Yakima, Washington. The Yakima Plating facility occupied the western 0.94 acres of a two acre parcel shared with a separate auto repair business. The site is located approximately three miles northeast of the Yakima Municipal airport in central Yakima County, Washington, in a mixed neighborhood of light commercial and residential buildings.

The facility conducted electroplating operations of automobile bumpers from the early 1960s until 1990. Yakima Plating operated from three buildings, including a concrete block structure used for plating operations, a corrugated metal-sided structure used as an office and storage, and a wood-frame, plywood-sided structure also used for storage. Yakima Plating used above-ground holding tanks, which were stored within the plating building. These tanks were used during the electroplating operation for cleaning, plating, and rinsing processes. Rinse water and spent plating tank solutions were disposed into a plating room floor drain which was connected to an

underground sedimentation tank and drain field line that collected the sedimentation tank overflow and distributed the wastewater to subsurface soil. The wastewater system operated from 1965 until plating operations ceased in 1990. Wastes contained a variety of metals including nickel, cadmium, and chromium.

Because the Remedial Investigation and Feasibility Study (RI/FS) indicated that the extent of site contaminants was clearly defined and that excavation and off-site disposal would be straightforward, site remediation, as outlined in the ROD, was accomplished through the EPA removal program as a pilot program. The Removal was formally initiated on June 15, 1992, upon approval of the Action Memorandum. The Removal was conducted as a combined effort between multiple EPA contractors. The Alternative Remedial Contracting Strategy (ARCS) support activities included advising the Remedial Project Manager (RPM), documenting field activities, and providing sampling support to verify attainment of the cleanup goals for the site. The Technical Assistance Team (TAT) provided support to the EPA On-Scene Coordinator (OSC), which included performing sampling, providing field analytical screening, and conducting air monitoring. The EPA Emergency Response Cleanup Service (ERCS) contractor provided personnel and equipment to excavate contaminated soil and containerize plating wastes. ERCS also subcontracted for laboratory analytical, transportation, and disposal services. The EPA and the State of Washington conducted a final inspection on September 30, 1992. Region 10 continues to monitor the groundwater and has not shown contamination.

CERCLA requirements for public participation include releasing the RI/FS Reports and the Proposed Plan to the public and providing a public comment period on the FS and Proposed Plan. EPA met these requirements in August 1991 by placing both documents in the public information repositories for the site and mailing copies of the proposed plan to

individuals on the mailing list. EPA published a notice of the release of the RI/FS and proposed plan in the *Yakima Herald* on August 12 and September 1, 1991. Notice of the 30 day public comment period and the public meeting discussing the proposed plan were included in the newspaper notice. A public meeting was held on August 21, 1991. The public comment period ended on September 11, 1991, with one letter from the public.

The effort consisted of the following activities: excavating 2,567 cubic yards of contaminated soil and gravel (this was a five fold increase from the FS estimate) to the cleanup levels specified in the ROD, followed by off-site disposal to a hazardous waste landfill; excavation and removal to a hazardous waste landfill of three sedimentation tanks; demolition and/or removal of three on-site buildings; and neutralization, and containerization of approximately 34 drums of miscellaneous plating-derived waste for off-site disposal. All containerized wastes were removed from the site and taken to a Hazardous Waste Treatment, Storage and Disposal Facility for treatment and/or final disposal.

All actions met site cleanup goals and significantly reduced the risks posed by the site.

EVALUATION PLAN

The evaluation plan for this pilot is based on comparison of the time and cost savings resulting from performing a removal at a remedial site. In general, the costs and delays associated with a Remedial Design (RD) could be avoided. In addition, a removal approach offers more flexibility in handling changes in site conditions, which are typically encountered during soil excavation work. The Region's evaluation plan recommended, and the Region will collect data for, the following measures:

- Time to conduct the removal versus time to perform an RD and RA;
- Extramural cost to conduct the removal versus cost to perform an RD and RA;
- Intramural cost (measured by actual time using FTEs) to oversee a removal versus projected oversight of an RD and RA.

In addition, the effectiveness of the remedy, including the overall reasonableness of the approach given the extent of the contamination, was to be reviewed.

The Region constructed the baseline for this pilot. As this pilot is largely complete, the baseline numbers for comparison are presented in the results section.

RESULTS

The estimated time saved by conducting a removal at this site was approximately 15.5 months. It took 3.5 months to complete the removal. The time to conduct a remedial design/remedial action effort was originally estimated to be 19 months. This estimate of 19 months was based on FS estimates and best professional judgement; it included one month for preparation of RD scope of work, two months to develop the RD workplan, six months to develop the actual RD, four months for the bid process, and six months to implement the RA. The average pipeline durations in Region 10 in quarters is 2.61 quarters (7.83 months) for the ROD to RD; 6.53 quarters (19.59 months) for the RD; 7.38 quarters (22.14 months) for the RA; and a total of 16.52 quarters (49.56 months) for the post-ROD process.

With respect to cost savings, the Region did not incur the cost of a formal RD. The estimated cost savings, based on best professional judgement are \$100,000 for a response of this magnitude. In addition, intramural savings were realized because only 0.3 FTE were used as opposed to 0.8 FTE as would normally be the case. The total extramural cost for the removal was approximately \$900,000. The volume of waste removed was higher than originally estimated (2,567 cubic yards found versus 540 cubic yards estimated). In addition, several buildings had to be demolished during the removal. The Region estimates that the actual removal costs were comparable to a remedial action (i.e. unit costs would have been similar using a remedial contract).

Although not the primary focus of this pilot, an issue of some relevance to the results is the type of contract vehicle used. Removal contractors operate under cost reimbursement type contracts while remedial contractors are covered by fixed price contracts. The removal contracts are already in place and, therefore, can be quickly implemented. Remedial contractors

must go through a procurement process to establish a contract at a site and, therefore, have that additional step to complete before work can begin. In addition, change orders must be developed for remedial contractors if the size of work changes also lengthening the duration of the project.

Region 10

Accelerate Cleanup Through Removal Allied Plating, Oregon Site

PILOT DESCRIPTION

This pilot project involves pre-ROD remediation activities at the Allied Plating site. The Allied Plating site was remediated with a pre-ROD removal performed by the Region 10 removal program. The goal of the pilot was that a no further action ROD would be prepared for signature once the removal was successful in meeting site remediation goals. Upon completion of the no further action ROD, the site would be eligible for "construction completion." An early "construction completion" status will result in an early de-listing of the site from the National Priorities List (NPL).

Under this accelerated pilot approach, the remediation activities took place prior the signing of the ROD. Using the traditional cleanup process, the Remedial Action (RA) for a site takes place after the ROD is signed. During the removal phase, the Region was able to complete their remediation efforts.

PILOT STATUS

Allied Plating site located in Portland, Oregon, was the site of a chrome plating facility from the 1950s to 1984. Wastewater from the facility was discharged to a low lying area on the property forming a surface impoundment. The metals from the plating wastewater precipitated out leaving a layer of plating waste covering the impoundment and surrounding area. The Remedial Investigation (RI) indicated that *this was the only area of contamination on the property*. The Region also concluded that groundwater contamination was no longer a problem, and determined that the plating waste was limited to the top six to twelve inches of the contaminated soil.

The site is flooded for approximately nine months per year. A problem existed in that if the site cleanup was not completed by November, the work would have to be postponed until the next summer due to the onset of the rainy season. Two potential solutions

were to attempt a pre-ROD removal that would lead to a no further action ROD, or to complete a ROD and then proceed to an expedited design construction phase with an in-house design accomplished by the U.S. Army Corps of Engineers (USACE). The Region decided to conduct the pre-ROD removal.

When the pilot was accepted by EPA Headquarters, removal contract capacity was not available in the Region. Instead, EPA used the USACE and their Rapid Response Contractor to perform the removal. Therefore, in addition to a means to expedite site cleanup, EPA investigated an alternative contractor mechanism. The removal took place from October 20 to November 10, 1992. Approximately 1200 cubic yards of contaminated soil and debris were removed from the site. The majority of the material was disposed of using the debris exemption, as most of the material consisted of clumps of grass and leaf mold. A few minor hurdles were quickly handled during the removal. The pond was slurred out and the solids removed by filter press. When it was found that the solids were not separating, a sample was sent to the OHM lab and a coagulant mix was developed. As the test occurred during a weekend, no down time occurred. The water from the pond did not meet treatment standards for discharge to the Publicly Owned Treatment Works (POTW). On-site treatment was attempted, but when the water did not meet standards, it was disposed of off-site.

The Quality Assurance Plan (QAP) for the removal was not given to EPA to review until the action was ongoing. Upon review it became apparent that the proposed QA process would not necessarily produce evidence quality data. Rather than lose time by having the USACE redevelop their plan, EPA took splits of all of the validation samples, prepared a QAP, and had the validation samples analyzed by an EPA lab. The removal met the action levels for the project and the objective of having the cleanup completed before the start of the rainy season was achieved. The State and the Potentially Responsible

Party (PRP) informally agreed in advance of the removal, with the measures to be taken by the EPA.

This pilot project was completed; the removal action was accomplished in November, 1992 with a no further action ROD in June 1993. EPA and the USACE are currently projecting cost and time savings and accomplishing follow-up activities. The final Regional report will be completed when the USACE submits site information.

EVALUATION PLAN

The evaluation plan for this pilot is based on comparison of the time and cost savings resulting from performing a removal at a pre-ROD site, leading to a "No action" ROD. In general, the time and costs associated with a remedial pipeline could be avoided, leading to greater efficiency. The Region's evaluation plan recommended comparison to show greater efficiencies against the following measures for which they will collect the data:

- Time to conduct the removal from planning through execution and complete the no action ROD versus time to complete a ROD and perform a standard RD/RA;
- Extramural cost to conduct the removal versus costs of other site remedies discussed in the draft FS, i.e., to perform an RD/RA; and
- Intramural cost (measured by actual time using FTEs) to manage the pilot versus projected time to oversee a Fund lead RD/RA.

In addition, the effectiveness of the removal is to be reviewed, including the overall reasonableness of the approach given the nature and extent of the contamination.

RESULTS

The results from the pilot include:

- The successful cleanup of a site by using a pre-ROD removal and eliminating the need for an RD/RA.
- Estimated time saved in remediating the site via a removal is approximately 16.5 months based on comparison of actual time required to complete the removal (2.5 months) versus the predicted time to conduct an RD/RA effort (19 months). Actual time represents time from signing of the Interagency Agreement with the USACE (August 31, 1992) through completion of the field removal (November 10, 1992). Total estimated time is based on the following assumed durations: one month for preparation of RD scope of work, two months to develop RD workplan, six months to develop actual RD, four months for the bid process, and six months to implement RA. Estimated times are based on best professional judgement since the draft FS did not contain estimates of time required to implement various remedy options. ROD preparation time is not included in either the actual or estimated durations since the activity would have been required in either case.
- The actual cost of conducting the pre-ROD removal using the USACE Rapid Response program was approximately \$1.1 million (including contractor costs, disposal costs, and USACE oversight/overhead costs). Estimated cost for implementing site cleanup via on-site containment was approximately \$1.5 million. Therefore, it is estimated that use of a pre-ROD removal resulted in a savings of approximately \$400,000. In addition, the Region saved at least \$100,000 by not conducting a formal RD (based on best professional judgement for a response of this magnitude).

Region 10

Demonstration Pilot Alaskan Battery Enterprises, Alaska Site

PILOT DESCRIPTION

This pilot project involves pre-Record of Decision (ROD) remediation activities. Regional staff conducted pre-ROD remediation of the site chosen for pilot application via a Superfund Innovative Technologies Evaluation (SITE) demonstration project. The SITE program designated the Alaskan Battery Enterprises (ABE) site as a demonstration pilot for a new soil washing technology that removes lead contamination from soil. The objective of the pilot was to clean all soil at the site to levels below EPA's action level. If successful, EPA could issue a ROD for no further remedial actions at this site and achieve early construction completion and avoid the need for a subsequent Remedial Design and Remedial Action (RD/RA). The SITE demonstration involved: 1) excavation and soil washing of all site soils exceeding cleanup goals, 2) backfilling of excavated areas with clean, treated soil, and 3) off-site disposal of all treated soil that did not meet cleanup goals.

Under the pre-ROD SITE process, remediation activities are conducted prior to the ROD. The traditional Superfund cleanup process provided for remediation activities to occur after the ROD is signed. The Region estimates that time and money can be saved through the implementation of this pilot process because the RA does have to wait until after the ROD phase; there is no delay waiting for the ROD to be signed.

PROJECT STATUS

The Alaskan Battery Enterprises (ABE) site is a one acre battery manufacturing/recycling facility located in Fairbanks, Alaska. It operated during the period of 1962 to 1988. The manufacturing and recycling operations at the facility resulted in elevated levels of lead in the soil from buried battery castings and releases of used battery acid.

EPA conducted a removal in 1988-89 in which approximately 4,000 cubic yards of soil were taken to a hazardous waste disposal facility in Utah. The site was placed on the National Priorities List (NPL) in 1989. EPA started a Remedial Investigation and Feasibility Study (RI/FS) in 1991 which sampled surface and subsurface soil and groundwater from nine monitoring wells to determine the extent of remaining lead contamination. Results showed that there were areas that contained lead above EPA's cleanup action level of 1,000 ppm. Groundwater contained elevated levels of lead, but this was apparently bound to silt particles due to incomplete well development. The RI/FS reports were completed in August 1992.

In March 1992 the ABE site was selected as the location of a SITE demonstration. A public comment period for the SITE demonstration was conducted during May, 1992, and a public meeting was held. Comments received indicated that the community and the Potentially Responsible Parties (PRPs) were in favor of the proposed soil washing demonstration. In September, 1992, the SITE demonstration was completed and all soil above the action level, approximately 150 cubic yards, had been excavated and treated. The excavated areas were backfilled with clean soil and the treated soil which did not meet the cleanup goal was placed in drums and will be taken to a hazardous waste disposal facility in June, 1993.

A public comment period and public meeting occurred in November, 1992 to receive community response to the proposed plan for this site. The community was in favor of no further action. A no further action ROD was issued in March, 1993. The groundwater will be monitored for two years to confirm that no human health risks exist. The site will be listed as construction completed.

EVALUATION PLAN

The evaluation plan for this pilot is based on comparison of the time and cost savings resulting from performing a removal at a remedial site, leading to a no further action ROD. In general, the time and costs associated with a remedial pipeline could be avoided, leading to greater efficiency. In addition, the removal action demonstrated a new technology, which aids overall program effectiveness. The Region's evaluation plan recommended comparison to show greater efficiencies against the following measures:

- Time to conduct the SITE demonstration and complete the no further action ROD versus time to complete a ROD and perform an RD and RA;
- Extramural cost to conduct the SITE demonstration versus cost to perform an RD and RA;
- Intramural cost (measured by actual time using FTEs) to manage the SITE demonstration versus projected time to negotiate a Consent Decree and oversee an RD and RA.

In addition, the effectiveness of the SITE demonstration is to be reviewed, including the overall reasonableness of the approach given the nature of the contamination and soil type.

The Region constructed the baseline for this pilot. As the no further action ROD was completed in March, 1993, the baseline numbers for comparison are presented in the results section.

RESULTS

The pilot approach showed considerable savings in time. The use of the soil washing technology expedited the cleanup process by ten months. Actual time required for cleanup was approximately twelve months. The predicted time for cleanup was approximately 22 months based on the FS estimates and best professional judgement assumptions. (See Region's Evaluation Plan for details.)

The funds spent by the Office of Research and Development through the SITE program to conduct the soil washing demonstration (\$1.3 million),

exceeded the FS cost estimate to remediate the site by excavation and off-site disposal (\$500,000). However, funds spent by the SITE Program are not recoverable or site-specific costs, but are intended to promote the use of innovative remedial technology at other Superfund and hazardous waste sites across the country. The cost of conducting the SITE demonstration at the ABE site included the following elements: 1) developing a Sampling and Analysis Plan for the demonstration; 2) preparing the site staging area; 3) on-site supervision by EPA's contractor of the test runs conducted by the technology vendor; 4) sampling and analysis costs for the test runs; and 5) data evaluation and final technical report preparation. The volume of soil actually exceeding the cleanup goal and requiring treatment by soil washing during the SITE demonstration (140 cubic yards) was less than had been conservatively estimated in the FS (500 cubic yards).

Cost of the demonstration and no further action ROD was lower than average national and Regional remedial costs, which average as follows:

	<u>National</u>	<u>Regional</u>
Extramural costs of RD	\$694,176	\$1,000,500
Extramural costs of RA	\$4,105,828	\$5,496,188

Comparison to these remedial averages adds perspective to the results of this pilot.

Region 10

Outreach Specialist

PILOT DESCRIPTION

The goal of the Outreach Specialist Pilot project is to enable the public to make informed judgments about the Superfund program and to develop an understanding of the Superfund Accelerated Cleanup Model (SACM) within the Region. The objective of this pilot is to develop and oversee a focused outreach agenda aimed at enhancing the Region's Superfund outreach efforts. Going beyond site-specific community relations, the Region will also coordinate with Headquarters to communicate Superfund accomplishments on a larger scale. Using this initiative, an Outreach Specialist will ensure that the public, broadly defined to include most of EPA's customers, routinely receives factual information about Superfund.

Under the Outreach Pilot, regional staff are conducting more general types of Superfund outreach, with emphasis on responding to the public and media quickly and more efficiently. An Outreach Specialist has been designated to promote effective communication regarding Superfund activities across the Regions.

The designated activities for the pilot include: 1) defining and identifying target audiences/customers; 2) creating tools and vehicles for communicating legitimate successes of the Superfund program; 3) updating the Region 10 Superfund Accomplishments Report; 4) establishing a public networking system for Superfund outreach; 5) developing a network system between Region 10, EPA Headquarters, and the other Regions to promote a national Superfund outreach campaign; and 6) identifying specific sites and issues for targeted success stories.

This pilot goes beyond traditional approaches because it emphasizes the importance of all program staff participation in outreach activities. Under the pilot initiative, Region 10 public outreach activities are better coordinated, and more effectively and efficiently communicated to the public.

PILOT STATUS

In November, 1992, an Outreach Specialist was hired by the Region. Her office is in the Hazardous Waste Division, Program Management Branch, Community Relations Section. While other community relations coordinators focus primarily on site specific work, this person is currently focusing on outreach. Target audiences throughout the Region have been identified, which include Congressional and State offices, health agencies, environmental organizations, media sources and public awareness groups. Some of the tools used are Superfund Fact Sheets, including a SACM Fact Sheet, which describes how SACM will be implemented at the Regional level. In addition, the Region is developing an overall accomplishment report containing success stories, such as the Yakima Plating site and the Allied Plating site in a form where the data is clearly understood.

A focus group was held in February, 1993, to gather information about how members of the public perceive Superfund. Environmental groups, industries and state governments were represented.

Two Regional forums were held for all employees during which members of the Regional Decision Team answered questions on SACM. The forums focused on how to use SACM to accomplish tasks, and raised Regional awareness about SACM.

EVALUATION PLAN

Evaluation of this pilot will be largely subjective. The expected benefits from the pilot that should increase program effectiveness are listed below.

- Establish a public involvement culture that extends beyond site-specific community relations. A change in culture will provide outreach opportunities at the regional and national levels that will be informative to interest groups, the press, and Congressional offices, regarding the

EPA's commitment to streamline the Superfund program by employing SACM principles.

- The Region expects to inform well organized critics of the Superfund program of the success in the program.
- Benefits will continue to arise from this pilot since emphasis is placed on participation in outreach by all Program Staff.

Attempting to define a quantitative variable for this pilot is very difficult since nationally available standards of time and cost to use for comparison are not available except at an extremely gross level. Region 10 is developing a questionnaire targeted for distribution in early September. This questionnaire will be distributed to Remedial Project Managers (RPMs), On-Scene Coordinators (OSCs), and Site Assessment Managers (SAMs). It will help assess the impact of the attitudes towards SACM and the effectiveness of the outreach pilot. The results of the survey will be reported in the pilot's final report.

RESULTS

This pilot process has yielded considerable results regarding the Region's approach to site cleanup. There is less misunderstanding of SACM in the Regions because of a designated contact person.

Using this pilot approach, the Region hopes to balance criticism of the Superfund program and SACM by communicating the realities of the process and accomplishments of the program to the public. Designating a person within the Community Relations Office as the Outreach Specialist has provided for additional focus on outreach. The tools of communication, such as Fact Sheets, are an effective means of conveying Superfund accomplishments.

Establishing a public involvement culture that extends beyond site-specific community relations will provide outreach opportunities at the regional level and the national level that will be informative to interest groups, the press, and Congressional offices.

As part of the pilot, in February, 1993, Region 10 invited a number of people to participate in a focus group to discuss the overall mission of EPA's

hazardous waste programs and how to measure success. Focus group attendees included representatives from state agencies, industry, and non-profit groups. A number of ideas were communicated and there appeared to be consensus that activities such as construction completions could be an effective measure of success.

The Region believes that the benefits of having an Outreach Specialist will continue to accrue from this pilot because of the emphasis placed on participation in outreach by all program staff.

Region 10

PRP Search Initiative

PILOT DESCRIPTION

Region 10 developed this pilot project to speed and facilitate Superfund settlements, unilateral enforcement actions, and civil judicial referrals by improving the quality and timeliness of Potentially Responsible Party (PRP) searches. The PRP search is a report that combines information collection and legal analysis for the purpose of identifying parties who may be liable for cost recovery under Section 107 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Section 107 sets the liability for those found responsible for release of a hazardous substance.

In the past, some PRP searches were not completed in a timely manner and some were not thoroughly completed, leading to delays in the negotiation process. For a limited number of cases, the Department of Justice needed to request additional search support late in the process and the searches had to be reworked expeditiously. These "emergency" requests were not an efficient use of resources, and illustrated the need for a better definition of PRP search accomplishment expectations. The pilot also addresses the consideration of environmental equity issues during the search process. The project was proposed under the Total Quality Management (TQM) process using a Quality Action Team (QAT).

The QAT recommended that two civil investigators (CIs) be hired on a "term" basis to supplement the Region's three permanent CIs, that an Enforcement Support Group (ESG) be established, and that a full-time PRP Search Coordinator (PRP SC) position be created. The two new investigators would be dedicated to conducting PRP searches on Superfund sites, and an Enforcement Support Group (ESG) be established to provide assistance to the PRP Search Coordinator who would have responsibility for managing Superfund PRP searches thereby enhancing the Region's capacity for investigative and litigation support.

In recognition of resource limits, the QAT structured the Region 10 ESG differently than similar groups in other regions by presuming that a commitment of 0.1 Full Time Equivalent (FTE) from each ESG member will be sufficient to provide adequate support to the PRP SC. The QAT proposed that the ESG would be comprised of PRP search experts from all involved Branches: Superfund Remedial, Superfund Response and Investigations, Office of Regional Counsel (ORC) Hazardous Waste, and from the Engineering and Investigation Program within our Environmental Services Division (ESD).

To promote efficiency, the QAT drafted a step-by-step Standard Operating Procedure (SOP) for implementing PRP searches. The SOP draft defines roles and responsibilities for case team members and establishes management review points that are integrated with enforcement and remedial procedures.

The pilot project also addresses the need to improve the use of contractors to perform discrete portions of PRP searches, thereby allowing our CIs to perform the more sensitive tasks, such as adversarial interviews.

PILOT STATUS

In response to Region 10's request, the Superfund Revitalization Office (SRO) provided two years of funding for two CIs. The investigators began working during the last quarter of FY 92. The presence of these term-appointed civil investigators enabled more PRP searches to be undertaken, and allowed more time for the permanent CIs to participate on the QAT and work to help define the SOP.

The QAT recommendation for the establishment of a PRP SC supported by Region 10 management and the position was filled competitively June 1, 1993. The establishment of the ESG was completed this October and the Region is now organizing that group under the leadership of the PRP SC. Their first job will be

to finalize the draft SOP incorporating consideration of the SACM approach.

The PRP SC is responsible for eliminating the potential for missed opportunities to identify viable PRPs and to pursue recovery of funds spent for site activities. His duties have been communicated to the staff and are listed below.

1. Control Flow of PRP Search Work: Coordinate all requests for PRP search work for Remedial Project Managers (RPMs), On-Scene Coordinators (OSCs), ORC, and DOJ. Meet regularly with the CIs and with PRP search teams to discuss specific work needs.
2. Prioritization of PRP Searches: Attend meetings of SRB, PMB, Superfund Response and Investigations Branch (SRIB), ORC management and CIs to discuss prioritization of PRP Search work.
3. Forward Planning: Track upcoming SCAP commitments and Statute of Limitation deadlines. Collect information and inform CIs of upcoming remedial, removal, and cost recovery targets.
4. Tracking: Track the status of ongoing PRP searches, and schedule updates of prior PRP searches when necessary for negotiations or cost recovery referrals.
5. Contract Work: Create generic Statements of Work (SOW) for certain aspects of PRP search work. Serve as Work Assignment Manager (WAM) for some PRP search work assignments and monitor the performance of the PRP search contractor.
6. Expert Function: Develop institutional memory in form of PRP SC manual and library. Act as a source of information to RPMs, OSCs, and other users for current guidance, important court decisions, and any new information relevant to PRP searches.

7. Establish PRP Search Procedures: Establish guidance on performing PRP searches, e.g.: how work is to be prioritized within a single search, when searches should be stopped, when to pursue *de minimis* parties, Freedom of Information Act concerns, etc.

8. Training: Provide training to Region 10 staff on current headquarters and regional policy affecting PRP searches.

The services of one of the term appointed CI are being retained through February 1994. The CI will be working on the Blackbird Mining Site, partially due to the extended transition period between the old and new Enforcement Contracts.

PILOT RESULTS

Implementation of this project has improved the Region's capacity for completing PRP searches in a thorough, timely manner, and for providing support to investigations and litigation.

Two early accomplishments of the project have improved our PRP search process by strengthening enforcement efforts and supporting the principle of "the polluter pays." The first accomplishment was the hiring of the two term-appointed civil investigators with the use of pilot project funds obtained from Superfund Revitalization Office. The work done by these two investigators directly contributed to at least five PRP searches being completed much sooner than they otherwise could have been. The second accomplishment was the creation of the full-time PRP Search Coordinator position by the Hazardous Waste Division.

The pilot has enhanced enforcement fairness by facilitating our ability to readily pursue *de minimis* settlements with small volume waste contributors. Full inclusion of SACM principles in Region 10 procedures will soon be accomplished with SOPs. The addition of the PRP SC is enabling us to make more efficient use of our contract support resources. The Coordinator is managing a contractor work assignment to create a database that will capture information from Hazardous Waste Manifests. The database will be used to sort and track site

information useful for dealing handling small volume waste contributors in *de minimis* settlements.

Although still in its nascent phase, the project has resulted in quantitative improvements at a number of sites. To support this assertion a number of involved parties were queried and their responses follow.

- The senior CI reports that the overall management of PRP searches was enhanced by the addition of the two term-appointed CIs provided under the pilot. His section has completed five PRP searches since hiring the additional CIs, and he anticipates completion of two more searches. Without the funds provided by the Superfund Revitalization Office, none of these searches would have been completed before the third quarter of 1994. The potential for cost recovery on these sites is high because of the quality of the evidence of liability, thorough identification of the PRPs and better documentation of financial viability. DOJ has requested assistance on some previously referred cases, which the CIs have been called on to provide follow-up support. Future requests for litigation support from DOJ, however, on the seven sites mentioned above should be minimal because of the high quality. Eight more work requests made in FY 93 were completed by September 30, 1993. The FY 93 total of sixteen is a significant increase over the eleven completions of FY 92. According to Finance Office reports, CIs devoted 7,738 hours to Superfund support, an 89 percent increase over the 4,088 hours for FY 92.

The Cost Recovery Coordinator reports that in FY 93 thorough PRP search reports (made possible by the addition of the term-appointees) enabled the Region to close out three cases by issuing decision memos to not pursue cost recovery actions due to non-viable PRPs. The decisions were made well ahead of the Statute of Limitations; therefore, had the PRPs been viable, EPA could have pursued them in a timely manner.

- A representative from the removal section said that before the project, PRP search support for the removal program was (justifiably) a low priority based on low cost recovery potential and low site costs. The PRP search support by CIs to the removal section was generally limited to what was

needed for access and Administrative Order on Consent (AOC) documentation. By providing additional resources, the pilot project assisted the removal program by enabling five cost recovery packages to be accelerated and prepared for closure much sooner than usual.

- The Remedial Project Manager (RPM) at a site involving groundwater contamination said that the addition of the two investigators complemented the on-going initiative of using SACM at the site, and enabled the Region to quickly complete the PRP search without which the SACM initiatives could not have been attempted.
- The Region 10 attorney handling one of the Region's largest sites (a municipal landfill) stated that the addition of the investigators was responsible for accomplishing Tier I PRP search activity prior to actual listing of the site. The completion of that task expedited the early issuance of Section 104(e) information request letters at the end of the public comment period for the listing proposal. The transactional documents received from the landfill operator in response to the early Section 104(e) letters were entered into a database and ranked by volume. PRPs identified from that search have since agreed to perform the Remedial Investigation/Feasibility Study (RI/FS) under an administrative order. EPA assisted the PRPs by establishing an allocation agreement which used the volumetric database, with shares presented during Special Notice negotiations in the form of a "non-binding interim allocation proposal."
- A Superfund section chief described how the early, more complete PRP search results permitted serious consideration of fairness and equity in the decision-making process on three of our most complex sites leading to a more equitable allocation of responsibility. The first site is the landfill mentioned above and the other two sites involve very large areas of contaminated marine sediments. On those two sites the Region elected to hold PRPs liable only for the problem areas in which they are located, rather than to more broadly apply the CERCLA liability scheme holding them liable for the entire site. This discretion in fairly noticing appropriate PRPs and

separating liability will speed and facilitate the settlements and reduce transaction costs.

PILOT EVALUATION

In addition to the benefits mentioned in "Pilot Results", the Region will evaluate the following three measures comparing pre-pilot and post-pilot accomplishments:

Time required to conduct PRP searches. The addition of a PRP Search Coordinator has allowed the CIs to focus more on conducting investigations and less on managing contractors and performing administrative duties. This specialization of labor will reduce the amount of time required for each search. A quantitative analysis will not be available until the new SOP has been in place long enough to fully impact post-pilot PRP searches.

Costs of conducting PRP searches. The implementation of the SOP, closer management of contractor resources, and the time-savings cited above will reduce the costs of PRP searches. A quantitative analysis will not be available until the new SOP has been in place long enough to fully impact post-pilot PRP searches.

Communication between parties involved in PRP search process. The region has started conducting regular prioritization meetings with participation by ORC, SRB, PMB, SRIB, and the CIs from ESD.

The PRP Search Coordinator is facilitating exchange of information among those involved in the PRP search process by arranging for cross-programmatic awareness briefings.

Those involved in the PRP search process are now operating from the same list of sites and site priorities.

The establishment of the ESG will insure that each Branch knows something about what the other branches are doing or planning at each site, and has an opportunity to contribute ideas.

FUTURE PILOT EVALUATION

Evaluations will be conducted at six-month intervals beginning in the middle of 1994. We will reevaluate the time, cost, and communication measures. This will include surveying customers of PRP searches. The evaluation of the PRP SC will be conducted as a normal part of the performance appraisal process.