

**FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE MEETING**  
**Arlington, Virginia**  
**May 13, 1997**

**TABLE OF CONTENTS**

INTRODUCTION .....	2
REMEDY SELECTION AND INNOVATIVE TECHNOLOGIES .....	2
Remedy Selection Process: The Key to Moving Technologies from Development to the Field . . .	2
The Concept of Performance-Based Remedy Selection: Case Studies .....	4
Performance-Based Contracting at DOE .....	5
The DOE Technology Deployment Initiative .....	6
EPA Efforts to Promote Performance-Based Remedy Selection at Federal Facilities .....	7
ACCELERATED SITE CHARACTERIZATION .....	8
Promoting an Understanding of Accelerated or Expedited Characterization Processes .....	8
Interagency Training/Opportunities .....	8
Presumptive Characterization and Expedited Process Inventory and Evaluation .....	8
EPA Training: Field-Based Characterization Technology Workshop .....	8
American Society for Testing Materials Standards for Expedited and Accelerated Site Characterization .....	8
DOE Training on Expedited Characterization .....	9
Accelerated or Expedited Characterization Efforts at Underground Storage Tank Sites .....	9
Petroleum Environmental Research Forum Rapid Site Assessment Program .....	9
DoD Efforts to Promote Expedited Site Characterization .....	9
Opportunities for Cooperation .....	10
FIELD ANALYTICAL CHARACTERIZATION .....	11
Navy/EPA Matrix on Available Field Analytical and Sampling Technologies .....	11
Update on the Consortium for Site Characterization Technology Verification Program .....	11
ONGOING ROUNDTABLE BUSINESS/PROJECTS .....	12
Update on Cost and Performance Subgroup Activities: New Case Studies .....	12
Treatment Technologies Screening Matrix/Federal Remediation Technologies Roundtable Homepage .....	13
Updates/Distribution of Roundtable Publications .....	13
FEDERAL AGENCY SUPPORT FOR BROWNFIELDS .....	14
White House Report: Action Agenda on Federal Agency Support for Brownfields .....	14
Federal Technology Development and Applications Support for Brownfields .....	14
WRAP-UP .....	15
Announcement/Discussion of Special Roundtable Meeting on Phytoremediation .....	15
Wrap-Up/Next Meeting .....	15
LIST OF ATTACHMENTS .....	16

**FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE MEETING**  
**Arlington, Virginia**  
**May 13, 1997**

**INTRODUCTION**

John Kingscott, EPA/Technology Innovation Office (TIO), welcomed all participants and introduced meeting chair Patricia Rivers, Deputy Assistant Under Secretary of Defense for Environmental Restoration. Federal agencies represented included:

U.S. Department of Defense	U.S. Environmental Protection Agency
U.S. Department of Energy	National Aeronautical and Space Administration
U.S. Air Force	U.S. Department of Agriculture
U.S. Navy	U.S. Department of Commerce
U.S. Army	

A complete list of participants is attached to this summary (see Attachment 1).

Ms. Rivers opened the meeting by reviewing the agenda and giving attendees a preview of the events planned for the meeting. She said that she has not been involved directly with the Roundtable over the years, but is very familiar with the valuable role played by the Roundtable and the products it has issued, especially the Remediation Technologies Screening Matrix and the Cost and Performance Reporting guidelines. She also noted that the Roundtable homepage provides an important link to information on remediation technologies, and cited the Roundtable's other significant outreach work, especially in working with states through the Interstate Technology and Regulatory Cooperation (ITRC) workgroup and the private sector through the Remediation Technology Development Forum (RTDF). Mr. Kingscott noted that his office has recently issued a publication entitled *Testing and Demonstration Sites for Innovative Ground-Water Remediation Technologies* that provides profiles of such sites around the U.S. and Canada.

**REMEDY SELECTION AND INNOVATIVE TECHNOLOGIES**

***Remedy Selection Process: The Key to Moving Technologies from Development to the Field***

Bob Furlong (U.S. Air Force, substitute for Col. John Selstrom) presented Col. Selstrom's briefing on the Air Force's plan to move to performance-based contracting for environmental restoration (see Attachment 2). This move is based on Principle #5 of the final report of the Federal Facilities Environmental Restoration Dialogue Committee, which reads: "Federal facility environmental cleanup contracts should be managed as efficiently as possible by using contract mechanisms that specify, measure, and reward desired outcomes and efficiencies rather than simply reimburse for effort or pay for an end product." Mr. Furlong said the DoD contracting community is not very creative or open to new ideas such as performance-based decision documents. The current system places a number of burdens, such as allocation of risk, wholly on the government and results in relatively few opportunities for market efficiencies to operate.

The Air Force would like to move to a system of firm fixed price contracts under which the Air Force negotiates to purchase a solution (a cleanup) and gets out of the business of selecting remedies and negotiating contracts to implement a particular solution. The goal in moving to the system is to see

better, faster, and cheaper cleanups through the introduction of market-based incentives into the system.

Issues raised to be answered under the revised system include:

- who selects the technical solution?
- who decides completion?
- what is the role of the remedial investigation/feasibility study (RI/FS)?
- how are risks allocated?

With the government no longer selecting the remedy, the lines between the parties with an interest in the management of the cleanup contract shift. The current management arrangement places the regulator (EPA) and the public on one side of the table, with the Air Force (with sole accountability for performance) and the Air Force's contractor on the other. By shifting accountability to the contractor under the performance-based management alternative, the Air Force in effect moves over to the same side of the table as the regulator and the public.

Mr. Furlong reviewed two alternative views on how performance-based cleanups could operate: either through a performance-based contract or a performance-based Record of Decision (ROD). Under performance-based contracting, the technical solution is proscribed and the contractor offers a price for implementing that solution. Under this approach, the only risk carried by the contractor is for the award fee. Under the performance-based ROD approach, the regulator establishes solution performance criteria and the contractor determines the particular technical solution. The contractor carries the risk of solution performance. This latter approach should promote the use of innovative technologies over the current system, which tends to favor the use of proven, relatively risk-free solutions (selected by regulators) and provides few incentives for opting for potentially more efficient remedies.

Mr. Furlong reviewed a number of outstanding issues. He recognized that smaller contractors with viable technical solutions may not be able to bear the risk of an entire cleanup and thereby be precluded from bidding. The details of who bears what burden in the event of solution failure need to be addressed. Regulator and public buy-in to an approach wherein contractors are selecting solutions is needed. The performance-based approach currently does not adequately cover issues such as the allocation of natural resource damages, the particulars of contract administration, or the allocation of bonding and insurance costs.

Regarding implementation of the approach, the Air Force has initiated discussions with a few installations and expects it will have two or three pilot sites operating under the approach within the next year. Ms. Rivers noted that Tim Fields (Acting Assistant Administrator, OSWER) has voiced his support for a performance-based ROD pilot for a generic site such as a firefighting training area.

Dennis Bernia (USAF/Armstrong Laboratory) asked whether the approach will be less expensive or more expensive in the long run. Mr. Furlong said that they expect the approach to save money once it has been operational for a while and the "bugs" in the systems are resolved. Scott Edwards (U.S. DoD) added that his office believes that the operation of competitive forces will lower costs and shorten the length of cleanups. John Riley (U.S. EPA) noted that contractors could opt for remedies that the public may not accept, such as incineration, and asked how EPA can ensure public buy-in. He said that this is

a major hang-up in obtaining EPA buy-in to the approach. Mr. Furlong acknowledged the issue and said it represents a major test for the approach. Ms. Rivers said the approach is meant to shift the current RI/FS paradigm. Rather than selecting a particular remedy at the end of the RI/FS process, a set or menu of remedies is selected, within which an acceptable solution should be available. Mr. Edwards said technically feasible solutions that are otherwise unacceptable (such as incineration) could be excluded.

Mr. Furlong was asked whether they expect award fees to increase, since contractors would now be assuming more risks. Stephen Warren (U.S. DOE) responded that technically there is no award fee that is severable from the contract price under the performance-based approach advocated by DOE. The government is buying a product (a cleanup), rather than covering a contractor's costs plus paying a fee. The profit realized by the contractor is not the government's concern. The government just wants to buy a cleanup at the least cost. Ms. Rivers said the approach allows the government a lot of flexibility in providing incentives such as awards for coming in under schedule or using innovative technologies. She noted that DoD is not necessarily doing away with cost-plus contracting, just restructuring it to increase the impact of market incentives. Mr. Warren said anything that can get innovative technologies deployed at more than the current 10% of sites nationwide will improve the system. The performance-based approach allows technology providers to become directly involved in cleanup deals. Johnette Shockley (U.S. Army Corps of Engineers) said the Corps' Alaska District has had some success using the performance-based approach.

Dan Powell (U.S. EPA/TIO) asked whether adopting the approach will require any changes to the Federal Acquisition Regulations (FAR) or existing Federal Facilities Agreements (FFAs). Mr. Furlong said the approach can be implemented under the existing regulations. He noted that language on final ROD selection in existing FFAs will need to be re-worked. Mr. Warren said changes are needed in the regulatory framework and EPA policy. EPA guidance that states that one solution must be selected in a ROD as written may only apply to fund-lead sites. In addition, a "decision" under CERCLA may encompass determining an acceptable set of solutions. The approach will also require some re-thinking of the role and timing of the ROD document. Mr. Warren offered three alternatives: 1) issue RODs that set the requirements of the cleanup and present a menu of technical alternatives, allowing contractors to select from this menu; 2) issue RODs that select a particular remedy after allowing contractors to fashion solutions based on criteria issued in the FS; 3) issue RODs according to the existing practice and use ROD amendments to accomplish the goals of the performance-based approach.

### ***The Concept of Performance-Based Remedy Selection: Case Studies***

Gary Hinkle (Air National Guard) said there are many ways to implement a performance-based approach, and presented a relatively simple two-step process similar to other construction contracts that the Air National Guard (ANG) has procured with success (see Attachment 3). Under the approach, the ANG issued a Request for Proposal (RFP) and then a Request for Cost Proposal. The initial RFP, similar to any other issued to obtain professional civil engineering services, described the site, the level of contamination, the level of site characterization, the required cleanup levels to be achieved, and other regulatory requirements. The information sought was technical and was to describe how the contractor would accomplish the cleanup while meeting the requirements. Essentially, the ANG presented the problem (in this case, cleanup of a firefighting training area) and asked the bidders for a solution. Contractors who survived the technical "cut" were invited to submit cost proposals. Cost proposals were received and reviewed by the same committee. The contract was for a firm fixed price.

Cost proposals ranged from approximately \$682,000 to \$1,600,000. The low bid was selected and awarded in May 1995. Actual cleanup work was in operation for 30 days and the final inspection was completed in August 1995. A NFRAP decision document for the site is being drafted. The total time from the day the RFP was issued to the final inspection was 150 days; however, Mr. Hinkle noted that it took a year prior to the issuance of the RFP to get the needed buy-in from regulators and added that ANG plans to continue using the approach.

Mr. Hinkle offered several suggestions on effective administration of the approach:

Representatives of relevant regulatory agencies should sit on the committee that reviews the proposals.

The award need not go to the low bid: technical proposals may be ranked and a balance may be struck between cost and technical approach.

A flexible, well-run contracting office is a key to success when using the performance-based approach.

Mr. Edwards said the approach described by Mr. Hinkle is the approach for procuring professional services used by the government for everything except environmental cleanup. Unlike most other civil engineering work contracted by the government, the government specifies most of the technical approach for environmental cleanup. He suggested that government contracting for environmental cleanup should be more similar to government contracting for other professional engineering services.

In response to a question from Ms. Rivers, Mr. Hinkle said the state regulatory agency with jurisdiction helped write the RFP but chose not to be involved in the selection of a contractor. He noted that the membership of the selection board can be quite broad and include community representatives such as Restoration Advisory Boards (RABs). In response to another question, Mr. Hinkle acknowledged that getting buy-in from the contracting office is necessary but not always easy.

Mr. Bernia asked who bears the risk of project failure. Mr. Hinkle said the selected contractor and all bidders must be bonded for the full dollar amount of the contract. In the event of failure either the contractor fixes the problem or the bonding company pays for a fix. This is standard for construction contracts. Mr. Hinkle added that this does not include indemnification for liability for injuries stemming from the failure. That liability is shared since the government owns the site and selects the contractor. Mr. Edwards added that the contractor is free to seek insurance if it chooses; what the contractor does with its overhead expenses is not the government's concern.

In response to a question from Ms. Rivers regarding unforeseen site conditions, Mr. Hinkle said the standard construction contract approach applies: the contract is renegotiated to account for actual site conditions. In response to a question on the promotion of innovative technologies, Mr. Hinkle said the ANG was not selecting a technological approach, it was selecting a proposal. The only requirement is that it meet the technical criteria.

### ***Performance-Based Contracting at DOE***

Stephen Warren said DOE plans to move toward performance-based contracting for environmental cleanup, using its Preferred Alternatives Matrices (P.A.M.s) to guide its work in bringing market solutions to the cleanup process (see Attachment 5). Under the P.A.M.s approach, future land use and

cleanup levels are determined upfront and inserted into the feasibility study. Then a range of existing technical alternatives are assembled based on criteria such as technical practicality, acceptability, etc. Each alternative is assigned a level of confidence based on cost and performance reports from other sites issued in accordance with the Roundtable's guidelines that are worked into the P.A.M.s. For example, a set of alternatives would not include incineration because it is not acceptable to the public. If that circumstance changes, the exclusion can change. Mr. Warren noted that the decision support data that underlie the P.A.M.s are available on the DOE homepage at <http://www.em.doe.gov/define>. Mr. Warren briefly reviewed the contents of the homepage.

Mr. Warren also reviewed the issues that have been raised during Congressional testimony on the work of his office. Specifically, the subcommittee chaired by Congressman Bliley has taken a detailed look at the consideration and selection of innovative technologies across the DOE complex. Information has been requested on technologies considered or under consideration, whether any of those are innovative, and the cost savings associated with using innovative technologies. DOE is scheduled to report to Congress on these issues on May 30. Mr. Warren said DOE's priority is to get the right technology at the right time to the right site via performance-based contracting. Innovative technologies are neither preferred nor rejected; they receive the same consideration as any other technology. The key is to create a process that allows the market to satisfy required performance under the regulatory framework. Mr. Warren added that he thinks DOE has enough data in hand to move forward with the approach.

Mr. Riley asked about the upfront investment required to enter into performance-based contracts. Mr. Warren said DOE believes the new approach will lead to cost savings in the long run, although upfront costs may be higher. Significant savings should be realized as the mechanisms of the contracts become "standardized" across projects such that the players do not have to "re-learn" the same things at each new site, as is the case under the current system. Mr. Warren said he sees the regime of cost-plus contracts as tantamount to an entitlement program for cleanup contractors. Rather, the government should balance the risks, establish bounding conditions, and let the market arrive at solutions.

Mr. Edwards agreed, noting that while the approach is not a "magic bullet," it should be a better way to do business, at least for more routine activities such as tank removals. The cost-plus approach may still serve more complex sites and activities where the conditions to be negotiated are largely unknown or unknowable until site work begins. Ms. Rivers said performance-based contracting needs to be distinguished from performance-based decision-making, as described by Mr. Furlong and others. Mr. Edwards added that a range of different decision-making approaches are needed: one for simple, generic sites (similar to EPA's presumptive remedy approach); one for complex sites (*e.g.*, Rocky Flats); and others dealing with the range of sites in between.

Tim Mott (U.S. EPA/OERR) asked how the P.A.M.s approach compares to issuing technologically-neutral RODs. Mr. Warren said in an ideal world DOE would issue technologically-neutral RODs, but in reality regulators and the public are not comfortable with the idea of letting DOE or their contractors make that call. RODs that include a menu of technologies to choose from should provide enough specificity and comfort.

### ***The DOE Technology Deployment Initiative***

Kurt Gerdes (U.S. DOE) gave a briefing on DOE's Technology Deployment Initiative (TDI) (see Attachment 6). TDI objectives include achieving multiple deployments of cleanup technologies and processes that expedite DOE's environmental management effort, obtaining third party validation of cost savings, facilitating the reinvestment of cost savings to increase participation in the program, and breaking down barriers to the implementation of new technologies. Mr. Gerdes reviewed the process through which candidates are selected for deployment and the composition of the proposal selection team. Proposals are screened through a number of criteria. The proposal must support DOE's environmental management mission, provide for multiple applications, include a Pricing Proposal that compares an estimated cost with that of a baseline technology, and accelerate or reduce the cost of that referenced baseline. The proposal must also include a written commitment from the proposing DOE site manager. TDI funding is for deployment rather than demonstrations.

Mr. Gerdes also reviewed the ranking criteria for applicants that are not screened, which are divided into four areas: impact/technical approach; business/management approach; stakeholder/regulatory management approach; and cost. Incentives to participate in TDI include the availability of funds to accelerate deployment and cleanup, increased visibility for the technologies through deployment and the generation of validated cost savings, multiple state acceptance of the technology, and the opportunity for reinvestment of cost savings. Information on TDI is available on the World Wide Web <<http://wastenot.inel.gov/tdi>>.

#### ***EPA Efforts to Promote Performance-Based Remedy Selection at Federal Facilities***

Bruce Means (U.S. EPA/OERR) reviewed the work EPA has done to promote performance-based remedy selection at federal facilities. He noted that the concept is still new to EPA Headquarters staff and there has been minimum investment in considering a framework for the approach, but he did have some observations on the subject.

Mr. Means said CERCLA does not proscribe a process for selecting technologies, nor does it identify risk targets or guidelines for future land use. The National Contingency Plan (NCP) provides processes in these areas, but no mandated approaches. The NCP also defines methods for obtaining input from states and localities, but does not mandate an approach. A Superfund reauthorization statute will probably include language bolstering "meaningful" community involvement. The task for EPA is to design an approach to performance-based remedy selection that can function under the rules and guidelines presented by the NCP (including the nine remedy selection criteria) and remain sensitive to community reactions.

Regarding ground water cleanup, EPA has released a two-stage presumptive response strategy for ground water contamination. The first priority is containment and characterization of ground water contaminants. Cleanup strategies are to be developed once the first step is completed. A performance-based remedy selection approach will have to be squared with this presumptive response strategy.

Mr. Means then introduced the subject of instituting administrative reforms to account for post-ROD technological advances that allow remedies to be improved without necessarily re-opening the ROD. He then passed the discussion to John Riley, who described a meeting he attended last January at the Office of Management and Budget (OMB). During that meeting, OMB representatives said they would like to see EPA get involved in performance-based contracting at federal facilities as part of the current comprehensive government procurement reform effort. OMB recommended that EPA initiate two

***Federal Remediation Technologies Roundtable Meeting, Arlington, Virginia, May 13, 1997***

---

performance-based contracting pilots (one for a removal project and one for a remedial project). EPA suggested issuing performance-based work assignments under existing contracts, and identified some candidate sites. OMB developed a draft checklist for selecting such sites (see Attachment 4). Mr. Riley will meet again with OMB next week to discuss progress. In response to a question, Mr. Riley said the pilot sites will be fund-lead sites contracted to the Corps of Engineers rather than DoD or DOE-lead sites since those agencies have made progress beyond the pilot stage in issuing performance-based contracts. Mr. Riley said EPA has yet to form a workgroup on the subject, and anyone interested in participating in the pilots should contact him directly.



## ACCELERATED SITE CHARACTERIZATION

### *Promoting an Understanding of Accelerated or Expedited Characterization Processes*

Guy Tomassoni (U.S. EPA/OSW) facilitated a discussion on accelerated and expedited site characterization processes that included brief presentations from representatives of various Roundtable member-agencies.

#### Interagency Training/Opportunities

Mr. Tomassoni opened the discussion by describing the work he has been recently tasked with to develop interagency training opportunities. He said his experience within the RCRA Corrective Action program has left him with two impressions of the current effort to characterize sites: the jobs take too long and result in too many expensive non-detects. He also believes the current approach misses a lot of contamination in heterogeneous areas. Mr. Tomassoni said he hoped the discussion today would lead to the formation of a Roundtable subgroup on expedited site characterization.

#### Presumptive Characterization and Expedited Process Inventory and Evaluation

Mike Hurd (U.S. EPA/OERR) described the pilot project he is heading to gather and analyze information and create an inventory of completed and ongoing expedited site characterization projects undertaken within the public and private sectors. The inventory will catalog what has been done, what has worked, and what has not worked and will be used to develop a generic expedited site characterization strategy if feasible. Mr. Hurd stressed that this is not geared toward developing presumptive approaches, but rather meant to guide expedited site characterization at generic sites through the issuance of fact sheets. Examples of generic site types include paint shops, steel working, and dry cleaning operations.

#### EPA Training: Field-Based Characterization Technology Workshop

Dan Powell described the Field-Based Characterization Technology Workshop, offered by EPA's CERCLA Education Center (CEC). CEC also offers a course on innovative treatment technologies. These courses provide training on the tools and options available for using new technologies. Mr. Powell noted that attendance at the initial offering of the course was around 30. Two more deliveries of the course are planned for 1997. Information on the course was included in the meeting package.

#### American Society for Testing Materials Standards for Expedited and Accelerated Site Characterization

Russell Boulding (American Society for Testing Materials (ASTM)) said ASTM has been working on two new provisional guides: *The ASTM Provisional Guide on Accelerated Site Characterization (ASC) for Confirmed or Suspected Petroleum Releases*; and *The ASTM Provisional Guide for Expedited Site Characterization (ESC) of Hazardous Waste Contaminated Sites*. The ASC guide was approved in 1995 and soon will be available as a full consensus standard. The ESC guide was approved in December 1996; ASTM expects it to be available as a full consensus standard in January 1998. Development of the ESC guide was facilitated by DOE funding, and received an unprecedented degree of review, including review by the full ITRC membership, which gave the guides the imprimatur of the states on that panel. Development of the ASC guide was facilitated by funding from the petroleum

industry, and went through a more typical ASTM review. The goal of issuing these guides is to inject sound science into these processes to optimize their effectiveness. Mr. Boulding said current technology allows for characterizations that can be completed in two mobilizations for most sites, and the guides are meant to provide users with the information and expertise needed to achieve that objective.

#### DOE Training on Expedited Characterization

Guy Tomassoni, substituting for Caroline Purdy (U.S. DOE), announced that DOE has developed a course on expedited site characterization that was held last January with two more course deliveries planned for 1997. The course parallels the expedited site characterization guide issued by ASTM. Mr. Tomassoni said DOE also supports partnering and other joint efforts. The training course is designed to resolve some needs within the DOE Operations Offices, including the basic need to provide their staff with information to help them deal with contractors better. The course is not meant to direct anyone toward particular technologies. Rather the focus is on improving the decision process.

#### Accelerated or Expedited Characterization Efforts at Underground Storage Tank Sites

Robert Hitzig (U.S. EPA/OUST) announced that his office has release a new manual on expedited site assessment tools for underground storage tank sites (see Attachment 7). The manual is written primarily for state regulators to familiarize them with expedited site characterization tools and technologies. Mr. Hitzig reviewed the subjects covered by the manual and noted that OUST also is conducting training in the states in conjunction with the manual.

#### Petroleum Environmental Research Forum Rapid Site Assessment Program

John Wilkinson (Exxon Research and Development Co.), who had presented background information on the work of the Petroleum Environmental Research Forum (PERF) at previous Roundtable meetings (see minutes of the 6/21/95 Roundtable meeting) presented a concept that has been floated by PERF to its members for instituting a Rapid Site Assessment Program (see Attachment 8). The goal of the effort would be to work the process down to one site assessment mobilization. Tufts University and ABB Environmental have completed studies of potential cost savings associated with rapid site assessment. Both studies came up with savings estimates of around 60%. Mr. Wilkinson said that PERF hopes to be able to work with an existing program (such as ASTM) in developing an approach. He noted that the members of PERF can provide a wide variety of sites for conducting research on both characterization technologies and associated "enabling" technologies such as data collection and decision support tools. Proposed deliverables under the program include a Rapid Site Assessment Guide for Petroleum Sites and a process for identifying innovative tools to enhance rapid site assessment.

#### DoD Efforts to Promote Expedited Site Characterization

Ted Zagrobelny (U.S. Navy/NAVFAC) reviewed DoD's work in promoting expedited site characterization. He said he was most aware of the Navy's work but hoped he could cover all of the military services. He described DoD's ability to engage in this and related environmental management efforts as a function of the interaction of funding, risk management priorities, and legal requirements. Mr. Zagrobelny said he has seen significant improvements within DoD's environmental management

structure, with a new emphasis on partnering, using measures of merit to close projects, improved data quality objectives to focus sampling, and better communication with the field installations. He noted that DoD has been “stealing” a lot of ideas from EPA and other agencies, especially in regard to underground storage tanks and verification programs like the Consortium for Site Characterization.

#### Opportunities for Cooperation

Guy Tomassoni polled the representatives of other agencies for updates on other work being done to promote expedited site characterization. Mr. Boulding mentioned that the Argonne National Laboratory will hold a two-day training course on expedited site characterization. He noted that regulators and parties responsible for cleanups need to be the driving force behind promotion of expedited site characterization since consulting engineers have few incentives for promoting cheaper, faster, better site assessment techniques. Mr. Wilkinson disagreed to some extent, noting that the consulting engineers who embrace new products that save their clients money will wind up getting the work. John Powell (U.S. Geological Survey) said the USGS toxics hydrology program has come up with some scientific findings that support deployment of field characterization techniques. USGS has conducted seminars and workshops on various technologies.

Mr. Tomassoni suggested that the review of the ASTM guides could be broadened to gather more input and publicize the documents. He noted that EPA has had much success working with ASTM on similar issues, such as underground storage tanks. Ms. Rivers noted that ASTM does not cover issues such as training and acceptance by regulators and said that the ASTM standards could serve as an axle around which to wrap technology transfer and other efforts to promote expedited site characterization. Dan Powell suggested three action items that an expedited site characterization subgroup could undertake:

- interagency assistance in the creation of an inventory of initiatives/processes as discussed by Mr. Hurd
- compilation of case studies and lessons learned in a format similar to TIO’s annual status report on remediation technologies
- development of a joint training course or curriculum

Mr. Warren agreed but emphasized the need to go beyond TIO and get all of EPA on board before embarking on the effort. He cited the example of performance-based contracting, which is a concept that has been around for years but which has only recently been acknowledged by EPA program offices other than TIO. Mr. Tomassoni assured Mr. Warren that the RCRA program wants to see increased use of expedited site characterization and noted that the other relevant EPA program offices were present at the meeting and have the same interest. Donna Kuroda (U.S. Army Corps of Engineers) asked whether the CSCT was covering these issues. Dan Powell said CSCT focuses on technology verifications. The subgroup would focus on “next steps” such as training and technology transfer.

Jim Hansen (Argonne National Laboratory) said his laboratory has succeeded in getting regulatory approval but noted that they have to “start over” in obtaining regulatory approval each time they try to deploy the same technology at a different site. Mr. Tomassoni agreed, adding that he has seen cases where the same product has to be sold to each individual RPM. He said training should help the matter, but it will also require a culture change in the way technologies are selected and deployed.

Ms. Rivers polled the member-agencies on whether they felt it was worthwhile to take a next step down this path. All of the member-agencies agreed that it is a step worth taking. Mr. Kingscott said he hoped the subgroup could move beyond coordination into cooperation similar to the Roundtable subgroup on cost and performance data reporting. Mr. Zagrobelny added that he would like to see a tie-in to expedited decision-making. Mr. Warren said the regulator community must be a major player and the subgroup should not become merely a convenient place for someone to park a pet project.

John Powell said he felt that a failure to act at this point would be a step backward and stressed the need to get state regulators, who hold the real power to make the plan work, on board. Ms. Rivers said DoD has a panel that works with the Environmental Council of the States (ECOS) and can establish links with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) to address Mr. Powell's concern. She asked Mr. Tomassoni to develop an announcement for gathering points of contact within the member-agencies to develop a new subgroup on expedited site characterization. Ms. Rivers closed the discussion by noting that the member-agencies are moving into a post-NPL world. She encouraged the subgroup to consider expanding the scope of their work to include programs such as brownfields and voluntary cleanup.

## **FIELD ANALYTICAL CHARACTERIZATION**

### ***Navy/EPA Matrix on Available Field Analytical and Sampling Technologies***

Ted Zagrobelny gave an update on progress in the development of the Field Sampling and Analysis Technologies Matrix and Reference Guide. The Matrix is designed to support decision-making at base closure and other cleanup sites that require characterization and could benefit from the deployment of field techniques. The Matrix is designed to be used by entry-level project managers (RPMs and others) who only have a basic understanding of the range of field tools available. The Matrix includes both conventional and newer technologies for comparisons. The only limit is that the technology must be commercially available.

Mr. Zagrobelny said the current draft Matrix is about 90% completed. The Reference Guide is not as far along. The Matrix is actually two posters: one on sample access and collection tools, the other on sample analysis tools. The format is similar to the Remediation Technologies Screening Matrix poster. Mr. Zagrobelny described the membership of the expert panel that has guided development of the Matrix, which included representatives from EPA, the Navy, other Roundtable member-agencies (USACE, USGS) and states (CalEPA).

Mr. Edwards asked whether the expert panel sought participation or approval of groups such as ITRC or ASTSWMO. Dan Powell said the Matrix is a reference tool rather than guidance, hence they have not sought "approvals." The Matrix, as a resource, will be made available to ITRC member-states. Mr. Edwards suggested that EPA and the Navy do more than mail it out and hope people use it. The members discussed distribution strategies and the possibility of accessing the Matrix via the World Wide Web. Mr. Warren noted that DOE's Preferred Alternatives Matrices may seem very similar to the Matrix, but actually contain different information for a different purpose. He added that DOE did not produce paper versions of the P.A.M.'s deliberately, as printing is expensive and updates of the information in the P.A.M.'s occurs frequently. Dan Powell mentioned that a pilot workshop on technology information resources for Navy RPMs and contractors will be held in August.

***Update on the Consortium for Site Characterization Technology Verification Program***

Dan Powell gave an update on activities of the Consortium for Site Characterization Technology (CSCT) and recent progress of the CSCT's Technology Verification Program (see Attachment 10), which has issued the initial sets of Technology Verification Statements and Reports. Verification Statements and Reports are available for two laser-induced fluorescence (LIF) technologies. Statements are available for seven X-ray fluorescence (XRF) technologies. Statements for gas chromatograph/mass spectrometer (GC/MS) technologies are due in the coming weeks. Each project consists of two separate demonstrations of the technology with independent verification and reporting. Demonstration plans for technologies in six new areas are under development. These areas include:

soil/soil gas sampling	decision support software
PCB analysis	field extraction
wellhead monitoring for VOCs	ground water sampling

Future solicitations for vendors will be worked around six technology tracks:

on-site chemical analysis	physical characterization
in-situ monitoring	decision support tools
sampling technologies	contaminated structure assessment

CSCT also has made progress on the information management and outreach front. The CSCT has established a network of representatives in the EPA Regions and coordinated efforts with the ITRC's Accelerated Site Characterization workgroup. Also, CSCT is near completion of the first Site Characterization Technology Annual Status Report, which is similar to the annual report on remediation technologies and will include information on about 100 sites.

In response to a question from Stanley Chanesman (U.S. Department of Commerce), Dan Powell noted that verification demonstrations differ from conventional demonstrations, such as proof-of-concept. Rather, these are demonstrations of latter-stage technologies that are approaching commercial availability if they are not already there.

**ONGOING ROUNDTABLE BUSINESS/PROJECTS**

***Update on Cost and Performance Subgroup Activities: New Case Studies***

Prior to Mr. Kingscott's update on activities of the Cost and Performance Subgroup, Ms. Rivers asked Mr. Zagrobelny whether NAVFAC is stressing the need for cost and performance reporting to its installations. Mr. Zagrobelny said the installations have been encouraged but not required to report cost and performance data. He said NAVFAC Headquarters has started to look for trickle of reports. Ms. Rivers asked whether the Corps of Engineers is reporting data for the work it is doing for others. Ms. Kuroda cited the guide specification issued by the Corps and said the Corps is reporting data when it can. Ms. Shockley said eleven projects are reporting data. Mr. Furlong said the Air Force completed a first round of cost and performance data reports, but in the future, if reporting is not required and funded, it could go by the wayside. He said reporting requirements could be built into performance-based contracts, but under the current system, he did not expect a lot of reporting. He added that the advantage of placing the requirements into contracts upfront is that the data is reported as it is issued.

Backtracking and gathering the data after the project is complete is expensive and time-consuming. Mr. Warren suggested that the reporting system include some sort of profit motive and a means of plugging numbers in as they are generated. Ms. Shockley added that a feedback mechanism is also needed.

Mr. Kingscott proceeded with the update and reviewed the origins and initial activities of the Subgroup, including the cost and performance data reporting guidelines and case studies. The Subgroup was recently reconstituted and met to consider next steps on May 1. The original focus of the Subgroup's work was on full-scale projects, with goals of defining the baseline information needed to document project cost and performance information, issuing case studies, and developing means of electronic access to the information via the Roundtable homepage. The May 1 meeting was intended to build on that work. The agenda included presentations on the experience of the members in applying the reporting guidelines, consideration of the adequacy of the current project scope and specific provisions of the Subgroup mission, enhanced means of electronic distribution, and next steps.

Mr. Kingscott said the Subgroup agreed that the project scope should expand to include technologies at the demonstration stage and containment technologies. Reporting on soil technologies should increase. Mr. Kingscott said the Subgroup expects to be near completion of revised reporting guidelines by the time of the next general Roundtable meeting. As for case studies, the Subgroup is ready to issue another round that includes 17 studies in two volumes: one on soil vapor extraction (SVE) and other in-situ technologies; the other on bioremediation and vitrification. Mr. Kingscott noted that one goal of reconstituting the Subgroup was to gather new commitments from the member-agencies to issue cost and performance reports. He had hoped to have many more studies to report. Ms. Rivers said DoD will focus more attention on the issue. Mr. Kingscott said the revision of the guidelines will include finding ways to simplify reporting without losing valuable data.

#### ***Treatment Technologies Screening Matrix/Federal Remediation Technologies Roundtable Homepage***

Johnette Shockley gave an online demonstration of the Roundtable homepage and reviewed some statistics on homepage use. She then turned the discussion over to Dennis Teefy (U.S. Army Environmental Center) and Julie Van Dueren (L.G.S. Turner & Associates) who gave an update on revisions to the Remediation Technologies Screening Matrix (see Attachment 11) and gave an online demonstration of the draft electronic version of the Matrix. He noted that the revision is a joint effort of Roundtable member-agencies, including all three DoD services, DOE-EM, EPA/TIO and NRMRL, and USGS. Release of version 3 of the Matrix is scheduled for October 1997. Mr. Teefy reviewed the milestones in the release schedule. Version 3 only will be published electronically since a print version would exceed 1,000 pages.

Mr. Teefy said they are still gathering reviewers and invited the attendees to contact him if they are interested in reviewing draft versions. The draft version can be found on the World Wide Web at <http://www.lgst.com/matrix/welcome.html>. During the demonstration of the draft, Ms. Van Dueren noted that information in the accompanying reference guide will be linked to other relevant information on the World Wide Web, including the Roundtable Cost and Performance Reports.

#### ***Updates/Distribution of Roundtable Publications***

Naomie Smith (U.S. EPA/TIO) proposed that the next editions of the Roundtable bibliography and guide to databases be combined into a single information resource document that is available electronically. The other Roundtable publication on federal programs and initiatives would be revised as a separate document. Ms. Rivers said the emphasis should be on an electronic version rather than mass production of a paper version and suggested that the document present a “quick hit” gateway to resources of the member-agencies. A one-page flyer should also be issued that describes the document. After a brief discussion, the attendees agreed that all three Roundtable publications should be combined into the new Roundtable information resource document.

## **FEDERAL AGENCY SUPPORT FOR BROWNFIELDS**

### ***White House Report: Action Agenda on Federal Agency Support for Brownfields***

Beau Mills (U.S. EPA/OERR) noted that Vice President Gore was announcing the National Brownfields Action Agenda that day in a White House ceremony attended by Administrator Browner, Treasury Secretary Rubin, and a number of city mayors (see Attachments 12 and 13). He reviewed EPA’s definition of brownfields and noted that most are urban. GAO estimates up to 450,000 brownfields around the country. 113 grants have been awarded under the pilot so far. The government has also dealt with related issues of liability associated with brownfield contamination (through administrative reforms) and has established tax incentives for brownfield development. EPA plans to issue grants to establish revolving loan funds to finance existing brownfield projects. Mr. Mills gave the URL for the website maintained by his office (<http://www.epa.gov/brownfields>) and also noted EPA’s plan to establish a Brownfield Showcase Communities program.

### ***Federal Technology Development and Applications Support for Brownfields***

Dan Powell held up a copy of *Roadmap to Understanding Innovative Technology Options for Brownfield Investigation and Cleanup* and said the document was intended to supply information on technologies to localities dealing with brownfields. The document ties technologies to specific resources. He also mentioned the National Brownfield conference to be held in September in Kansas City. He asked the attendees to consider what the Roundtable can do to pull together the technical and other information held by the member-agencies that could support brownfields redevelopment into a package that could be distributed at the Kansas City meeting. Mr. Warren said the issues related to brownfields may be too broad to make this a useful exercise, and suggested that a needs statement that identifies 10 or 12 issues be prepared first. Mr. Powell cited DOE’s Technology Deployment Initiative as an example of an approach. Mr. Mills said there is a profile of site types that may serve as a guide to the needs of the brownfields program.

Ms. Rivers said DoD has shared lots of information with localities as part of the Base Realignment and Closure (BRAC) program effort and suggested using the BRAC paradigm, which provides two-way channels for access to information and feedback between DoD and the local community. For example, the government should go beyond simply presenting a tool like the screening matrix and provide technical support in the use of the tools. She also noted that an important issue for the member-agencies is the answer to the question ‘what’s in it for me?’ The message the members need to take back to their home agency should focus on how support provided to brownfields redevelopment will be used in a meaningful way. The members should also recognize that the support they provide will be limited since it will be mostly ‘voluntary.’ One idea is to find ways to transfer information about

ongoing agency work that matches up with similar brownfields issues. Mr. Powell cited the example of lead paint removal, which the Air Force does all the time and which will have widespread applicability at brownfield sites, and asked the members to consider how can those two efforts be brought together to share the information. He also cited the example of expedited site characterization at building decontamination sites.

Ms. Rivers suggested that the Roundtable form a panel that will go to meetings such as the Kansas City conference and make presentations on what the various federal agencies can provide. She said she could link it to DoD's BRAC effort and thereby get DoD buy-in. Mr. Warren said his office has a brownfields specialist on staff who would be the appropriate panelist. Mr. Powell said one of TIO's main missions is to show that technologies are being deployed and where the markets are. Anything that would promote deployment of innovative technologies at brownfields would be a boon to his office.

## **WRAP-UP**

### ***Announcement/Discussion of Special Roundtable Meeting on Phytoremediation***

Dan Powell said that EPA would like to see the Roundtable convene a special meeting or workshop in the late summer or early fall on phytoremediation. He noted that the issue was going to be on the agenda for this meeting, but there would not have been enough time to cover the issue and get to the other Roundtable business. He added that he believes there is enough interest in the subject to make a special meeting worthwhile. Mr. Powell was asked whether phytoremediation has become acceptable to regulators and if he expects it to become a presumptive remedy. Mr. Powell said there is a lot of interest within EPA. Mr. Kingscott added that EPA believes regulators should be comfortable with phytoremediation. In response to a question from Mr. Warren, Mr. Kingscott said the purpose of the meeting is for member-agencies to exchange information on current applications rather than research and development. Dan Powell added that it should be an excellent opportunity for networking. Ms. Rivers suggested that the meeting be sponsored by a DoD facility and said she expects the Army to provide a lot of "demand pull" in the area. John Powell added that USGS is very interested in the subject. Mr. Powell said the names of possible meeting sponsors should be sent to Naomie Smith.

### ***Wrap-Up/Next Meeting***

Ms. Rivers said the next general meeting of the Roundtable should occur around mid-November and noted that it may be DOE's turn to chair the meeting. She thanked everyone for attending.

The meeting adjourned.



**LIST OF ATTACHMENTS**

- Attachment 1: Attendees
- Attachment 2: Air Force Cleanup/Performance Based Cleanup
- Attachment 3: Air National Guard Environmental Division Performance Based Contracting
- Attachment 4: Draft Performance-Based Service Contracting (PBSC) Contract Review Checklist
- Attachment 5: Moving Toward Performance-Based Contracting (DOE)
- Attachment 6: The New DOE-OST Deployment Initiative
- Attachment 7: New Product News: New Manual on Expedited Site Assessment
- Attachment 8: Potential PERF Rapid Site Assessment Program
- Attachment 9: Field Sampling And Analysis Technologies Matrix and Reference Guide
- Attachment 10: Activities Report: EPA Efforts to Advance the Use of Innovative Site Characterization Technologies
- Attachment 11: FRTR Remediation Technologies Screening Matrix and Reference Guide Update
- Attachment 12: Press Release: Vice President Gore Announces Expansion of Brownfields Initiative
- Attachment 13: Brownfields National Partnership Action Agenda (EPA 500-F-97-090)

## ATTACHMENT 1

### ATTENDEES FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE May 13, 1997

<u>Name:</u>	<u>Agency/Organization:</u>	<u>Telephone:</u>
Maria Bayon	NASA	202-358-1092 mbayon@hqsoops.nasa.gov
Paul Beam	U.S. DOE	301-903-8133
Dennis Bernia	USAF/Armstrong Laboratory	904-283-6275 dennis_bernia@ccmail.aleq.tyndall.af.mil
Mike Boeck	EMS, Inc.	301-589-5318 mboeck@emsus.com
Russell Boulding	Global Environmental Technology Foundation	812-336-8396 jtboil@iquest.net
Skip Chamberlain	U.S. DOE	301-903-7248 grover.chamberlain@em.doe.gov
Stanley Chanesman	U.S. Department of Commerce	202-482-0825 s.chanesman@doc.gov
Chester Clark	U.S. Navy	301-743-6599 cclark@pilot.ih.navy.mil
Subijoy Dutta	U.S. EPA	703-308-8608 dutta.subijoy@epamail.epa.gov
Scott Edwards	DoD	703-697-5372 edwards@acq.osd.mil
Doug Elstrodt	U.S. Navy	301-743-4871 delstrodt@pilot.ih.navy.mil
Ed Engbert	U.S. Army Environmental Center	410-612-6867 eengbert@osiris.cso.uiuc.edu
Ollie Fordham	U.S. EPA	703-308-0493 fordham.ollie@epamail.epa.gov
Bill Foshett	U.S. EPA/OUST	703-603-7153 foshett.bill@epamail.epa.gov
Bob Furlong	U.S. Air Force	703-697-3445
Kurt Gerdes	U.S. DOE	301-903-7234 kurt.gerdes@em.doe.gov
Mike Goldstein	U.S. EPA	703-603-9045 goldstein.mike@epamail.epa.gov
Tom Ham	HAZWRAP	423-435-3430
James Hansen	Argonne National Laboratory	202-488-2453
Robert Hitzig	U.S. EPA	703-603-7158 hitzig.robert@epamail.epa.gov
Mike Hurd	U.S. EPA	703-603-8836 hurd.michael@epamail.epa.gov
James Jenkins	Bregman and Co., Inc.	703-693-0644 jenkins@pentagon-accsim.army.mil
John Kingscott	U.S. EPA/OSWER/TIO	703-603-7189 kingscott.john@epamail.epa.gov
Gayle Kline	Radian International LLC	703-713-1500
Donna Kuroda	U.S. Army Corps of Engineers	202-761-4335

Nick Lailas	U.S. EPA/ORIA	202-233-9371 lailas.nick@epamail.epa.gov
Daniel Lopez	U.S. EPA	703-603-8769 lopez.daniel@epamail.epa.gov
Todd Margrave	U.S. Navy/NAVFAC	703-325-6460 tamargrave@hq.navy.mil
Bruce Means	U.S. EPA	703-603-8815 means.bruce@epamail.epa.gov
Jane Mergler	U.S. Army Corps of Engineers	202-260-4468
Terry Messenger	ESTCP	703-412-7408
Tim Mott	U.S. EPA/FFRRO	202-260-2447 mott.tim@epamail.epa.gov
John Murphy	L.G.S. Turner & Assoc.	703-916-7987 jmurphy@lgst.com
Francis Murray	Global Environment & Technology Foundation	703-750-6401 frank.murray@gnet.org
Robert Nash	U.S. Navy/NFESC/Port Hueneme	805-982-5070 rnash@nfesc.navy.mil
Carlos Pachon	U.S. EPA/OSWER/TIO	703-603-9904 pachon.carlos@epamail.epa.gov
Jim Peterson	U.S. Army Corps of Engineers	402-697-2612
Dan Powell	U.S. EPA/OSWER/TIO	703-603-7196 powell.dan@epamail.epa.gov
John Powell	U.S. Geological Survey	703-648-4169 jdpowell@usgs.gov
Clem Rastatter	Versar, Inc.	703-750-3000
John Riley	U.S. EPA/OERR	703-603-8733 riley.john@epamail.epa.gov
Pat Rivers	U.S. DoD	703-697-5371
Bonnie Robinson	U.S. EPA	703-308-8429 robinson.bonnie@epamail.epa.gov
Caroline Roe	USDA/Farm Service Agency	202-720-9964 croe@wdc.fsa.usda.gov
Henry Schuver	U.S. EPA/OSW	703-308-8656 schuver.henry@epamail.epa.gov
Brendan Shane	Walcoff	703-578-6149 bshane@walcoff.com
Johnette Shockley	U.S. Army Corps of Engineers	402-697-2558 shockley@usgs.gov
Ken Skahn	U.S. EPA/OERR	703-603-8801 skahn.ken@epamail.epa.gov
Francis Slavich	Radian International LLC	919-461-1100 francis_slavich@radian.com
Christine Spanard	Westinghouse Savannah River Co.	803-652-1851 christine.spanard@srs.gov
Dennis Teefy	U.S. Army Environmental Center	410-612-6860 dateefy@aec.apgea.army.mil
Guy Tomassoni	U.S. EPA/OSW	703-308-8622 tomassoni.guy@epamail.epa.gov
Debbie Tremblay	U.S. EPA/OSWER/FFRRO	202-260-8302

Julie Van Dueren	L.G.S. Turner & Assoc.	tremblay.deborah@epamail.epa.gov 703-916-7987
Paul Waesche	Clean Sites, Inc.	jvan@lgst.com 703-739-1271
Karen Waldvogel	USDA	202-260-6565 karen.waldvogel@usda.gov
Ming Wang	Mitretek	703-610-1743 mwang@mitretek.org
Charles Warburton	CFW Associates	301-493-6191 cf_war@worldnet.att.net
Stephen Warren	U.S. DOE	301-903-7673 stephen.warren@em.doe.gov
Richard Weisman	Radian International LLC	703-713-6444 rich_weisman@radian.com
John Wilkinson	Exxon Research and Engineering Co.	201-765-1633 john.b.wilkinson@exxon.sprint.com
Stan Wolf	U.S. DOE/EM-54	301-903-7962 stanley.wolf@em.doe.gov
Ted Zagrobelny	U.S. Navy/NAVFAC	703-325-8176 tzagrobelny@hq.navy.mil
William Zobel	U.S. EPA	703-603-8809 zobel.william@epamail.epa.gov
Fred Zoepfl	Mitretek	703-610-1757