

INTERSTATE TECHNOLOGY & REGULATORY COUNCIL Quarterly Update

March 2003



ITRC welcomes your proposals to the Five-Year Program Plan

You can help determine which technical areas ITRC will pursue over the next few years by submitting a project proposal to ITRC. In 2000, ITRC launched a multiyear planning process to establish a more strategic approach to defining and achieving goals. This process is also a democratic way to ensure that a broad cross section of member and stakeholder concerns is considered when planning ITRC's future activities.

Anyone may submit a project proposal. Instructions for submitting a proposal and the proposal format are on the Five-Year Program Plan (FYPP) page of the ITRC Web site (www.itrcweb.org). All proposals submitted to ITRC through June 1, 2003 will be considered for inclusion in the next FYPP update, which will cover 2004–2008. The ITRC Board of Directors will make the final decision on which projects to include in the FYPP in August 2003 following the ITRC midyear review. The board will rely on ranking recommendations from the state POCs, assessment of performance of ongoing 2003 projects, perspectives of ITRC funding sponsors, and forecast revenues for the 2004–2008 period in determining which projects can proceed in 2004 and which projects will be scheduled to begin in subsequent years as current projects are completed and funding becomes available for new project starts.

2003 ITRC Internet-based training schedule set

In 1999, ITRC began offering Internet-based training courses in conjunction with USEPA's Technology Innovation Office. The ITRC training sessions (typically two hours) are based on ITRC-developed guidance documents and state-of-the-art technical and regulatory information associated with innovative environmental technologies. ITRC training events reach a geographically dispersed group of regulators, consultants, federal agencies, industry, and other members of the environmental community. These training events, along with the ITRC guidance documents and network of experts, provide resources to assist the environmental community in making quality, expedited decisions when determining the appropriateness of environmental technologies as part of effective environmental waste management.

The following ITRC Internet-based training courses are scheduled for 2003:

- Advanced Techniques on Installation of Iron-Based Permeable Reactive Barriers and Noniron-Based Barrier Treatment Material
- A Systematic Approach to In Situ Bioremediation: Nitrates, Carbon Tetrachloride, and Perchlorate
- Characterization and Remediation of Soils at Small Arms Firing Ranges
- Constructed Treatment Wetlands
- In Situ Chemical Oxidation
- Munitions Response Historical Record Review
- Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices
- Passive Diffusion Bag Samplers for Volatile Organic Compounds in Groundwater
- Phytotechnologies
- Radiation Risk Assessment: Updates and Tools
- Surfactant/Cosolvent Flushing of DNAPL Source Zones

The schedule for 2003 ITRC Internet-based training is available at www.itrcweb.org. For additional information, contact Mary Yelken at (402) 325-9615, myelken@earthlink.net.

State Engagement Update

The ITRC State Engagement Team is focusing on bringing ITRC benefit and value to member states by matching ITRC tools and resources to contaminated sites. The State Engagement Team, made up of a point of contact (POC) from each state environmental agency active in ITRC, serves as a central point for ITRC communications and outreach in the states, ensures the quality of ITRC products and services, and assists in implementing ITRC products and services in member states. POCs have a wide range of responsibilities, including identifying state priorities and developing proposals for the ITRC Five-Year Program Plan, facilitating state review and concurrence on ITRC technical and regulatory guidance documents, identifying and documenting ITRC successes and lessons learned, recruiting ITRC team members, and marketing ITRC products and services within their states. State POCs will soon be developing action plans to ensure ITRC tools and resources are available to assist in the decision-making process when innovative technologies and approaches are considered at sites in their states.

POCs coordinate state review, comment, and concurrence on new ITRC technical and regulatory guidance documents

During 2003, state POCs are working to provide state review, comment, and concurrence on ITRC technical/regulatory documents. The following documents are the focus for the remainder of 2003:

- *A Systematic Approach to In Situ Bioremediation in Groundwater* (ISB-8)
- *Characterization and Remediation of Soils at Closed Small Arms Firing Ranges* (SMART-1)
- *Munitions Response Historical Records Review* (UXO-2)*
- *Technical and Regulatory Guidance for Constructed Treatment Wetlands* (WTLNDs-1)*
- *Technical and Regulatory Guidance for Surfactant/Cosolvent Flushing of DNAPL Source Zones* (DNAPLs-3)*
- *Technology Overview Using Case Studies of Alternative Landfill Technologies and Associated Regulatory Topics* (ALT-1)*

* To be published in 2003.

POCs reinforce their states' priorities through the ITRC Five-Year Program Plan

State POCs play an important role in setting the strategic direction for ITRC. POCs identify priority needs in the states, organize groups of states interested in specific project areas, draft proposals, and make priority recommendations to the ITRC leadership. Until June 1, 2003, states and others have an opportunity to submit a proposal(s) to the ITRC Five-Year Program Plan (FYPP). During June, POCs will rank the proposals in the FYPP based on their states' priorities and the ability of ITRC to impact the issue. This state ranking information, along with input from other ITRC participants and sponsors, will be used to determine which ITRC teams will be active during 2004–2008. Information on the ITRC FYPP process is available at www.itrcweb.org by clicking on "FYPP."

Documenting success

Why do we need to know about your successes? Not only do teams, documents, and training courses provide information; they also foster interaction within the environmental community. ITRC is a catalyst for people thinking creatively and exploring better solutions to problems, increasing people's level of confidence and trust in innovative technologies and leading to a more efficient decision-making process. Success stories are how your successes get translated into ideas for others facing similar issues. Success is getting sites cleaned up and changing behaviors regarding the consideration and appropriate implementation of inno-

vative technologies and approaches. Your success story could change the way states do business, positively influencing the decision-making process for site characterization and remediation. Your success helps ensure the application of the tools and resources available to decision makers because the ITRC network exists. Become a part of the ITRC success legacy—fill out a feedback form via www.itrcweb.org or contact Gary Garrett at garrett@sseb.org with your success!

We welcome our new state POCs!

As in any other year, there has been some turnover in the membership of the POC network. We want to welcome Narendra Dave (La.), who replaces Hall Bohlinger; Renée Sanford (Wis.), replacing Mark Giesfeldt; and Qazi Salahuddin (Del.), replacing Alex Rittberg. Welcome to our new POCs, and thanks and best wishes to those who are moving on to new assignments and opportunities.

If you would like more information on ITRC State Engagement activities, please refer to the ITRC Web site at www.itrcweb.org or contact Paul Hadley, ITRC State Engagement coordinator, phadley@dtsc.ca.gov, (916) 324-3823 or ITRC program advisors, Mary Yelken, myelken@earthlink.net, (402) 325-9615 or Gary Garrett, garrett@sseb.org, (770) 242-7712. Your ITRC state POC is your ITRC resource in your state. State POC contact information is available at www.itrcweb.org by clicking on "Contacts."

Technical Team Updates

Alternative Landfill Technologies (ALT)

During 2002, the Alternative Landfill Technologies Team collected and analyzed case studies of alternative landfill caps from around the United States. The team concludes from its analysis that alternative landfill cover designs can contribute substantially to the waste management industry and be as protective and economically feasible as traditional capping technologies. The ALT Team compiled its case studies into a technology overview document—*Technology Overview Using Case Studies of Alternative Landfill Technologies and Associated Regulatory Topics* (ALT-1). This document is accessible online and available in hard copy through the "Guidance Documents" page of the ITRC Web site (www.itrcweb.org).

As a follow-on activity, the ALT Team is drafting technical/regulatory guidance to increase awareness about new cover designs and encourage proper application of this innovative technique among the regulatory community, consultants, and stakeholders. The guidance will address regulatory flexibilities, critical design parameters, construction considerations, monitoring, and postclosure care of capped landfills.

As part of its research for the technical/regulatory guidance early in 2003, the ALT Team surveyed the 44 states that participate in ITRC to gain a better understanding of the regulatory issues that constrain the use of innovative landfill covers. The team has clearly determined that while federal requirements do not prohibit the use of alternative capping on solid, municipal, or hazardous waste landfills, exemptions from standard requirements must be obtained. The team has found that states are often unaware of this exemption or may disallow exemptions from conventional capping technologies. The team survey shows that 71% of RCRA-authorized states have adopted the same flexibilities the federal government offers in RCRA, thus solving much of the problem of flexibility among states. From its analysis of the results of the survey, the ALT Team has learned the following:

- Seven states have applied this flexibility to hazardous waste alternative landfill cover projects.
- Eighteen states have applied this flexibility to solid waste alternative landfill cover demonstration projects.
- Eight states have applied this flexibility to mixed waste alternative landfill cover demonstration projects.
- Nine states have applied this flexibility to full-scale solid waste alternative landfill cover projects.
- Seventy-one percent of the states surveyed will approve the full-scale operation of a landfill without construction and evaluation of a test pad or modeling results.

The survey also shows that states vary in how they measure landfill cap performance: flux through the cover, total leachate collection, liner leakage rate, and groundwater monitoring. These results form an important part of the technical/regulatory guidance document the team is currently drafting, and much of this data will inform the regulatory barriers section. The ALT Team plans to complete this document in fall 2003, with training beginning in spring 2004. Future plans call for the ALT Team to address bioreactors and alternative methods of postclosure care. For more information on this team, please contact ALT Team leader Charles Johnson (Colo.) at (303) 692-3348, charles.johnson@state.co.us.

Brownfields

In January, the Brownfields Team had a productive meeting in Tampa, Fla., where the team brainstormed about its continued role within ITRC and reevaluated its five-year plan. Work plans were developed and discussed in detail at the spring meeting in Charlotte. Some areas of interest to the team are preparing a question-and-answer document for brownfields practitioners, developing a case study for the cleanup and redevelopment of former Department of Defense facilities that integrates existing ITRC products, investigating options for monitoring and maintaining engineering and institutional controls at brownfields, preparing

guidance for communitywide planning on brownfields, and linking with other ITRC teams. A conference call was held on March 3 to discuss subteam work plans and to prepare for the Charlotte meeting.

The first product of the Brownfields Team will be a background document on indoor air impacts at brownfields. At the Tampa meeting, the team discussed the efforts of the subteam looking at this issue. The document, which will present materials to enable brownfields professionals to understand the issue of vapor intrusion, will explain how risks are estimated and present federal and state approaches for regulating indoor air vapor exposure.

The Tampa meeting also included the opportunity to meet with the Sampling, Characterization, and Monitoring Team to discuss similarities in the teams' interests in the Triad Approach. Since many brownfields cleanup projects are on the fast track because of development time pressures, Triad is a very relevant technology to streamline characterizations, lower costs, and improve the process to obtain usable data. The teams discussed how they could best work together to collect and present data on the Triad Approach and decided that Brownfields Team members will continue to work with the Sampling, Characterization, and Monitoring Team but will not prepare its own document on using the Triad Approach at brownfields.

Brownfields Team members will prepare an ITRC-led session during Brownfields 2003, the annual conference hosted by the U.S. Environmental Protection Agency that addresses brownfield issues and technologies. Brownfields 2003 will be held in Portland, Ore. in October 2003. The session will provide other ITRC teams with the opportunity to present their work to the brownfields community. The Brownfields Team discussed the plans for the Brownfields 2003 session in Charlotte and has contacted ITRC team leaders to offer the opportunity to present at this important conference.

The Brownfields Team continues to work with the U.S./German Bilateral Working Group to investigate a broad spectrum of activities related to brownfields redevelopment, including the analysis of scientific, economic, and social issues that impact brownfields reuse. Last year the Brownfields Team was asked to nominate brownfield sites as candidates for the working group to use in developing case studies for its Site-Specific Management Approach and Redevelopment Tools (SMART) guidance. Sites were selected and a schedule was devised to interview all individuals that had a role in the remediation and ultimate redevelopment of the sites. Individuals interviewed included elected officials, community organizations, developers, financial institutions, and state and federal regulatory personnel. When these interviews are completed in April, data will be evaluated to determine the important elements in the

cleanup and redevelopment of brownfields across the country. The Brownfields Team thanks the SCM Team for the help of its program advisor, George Hall, in arranging the Tampa meeting venue. Christine Costopoulos (N.Y.) leads the Brownfields Team and can be reached at (518) 402-9711, cjcostop@gw.dec.state.ny.us.

Constructed Wetlands

The Constructed Wetlands Team met in San Antonio, Tex. during early February to conduct a final team review of *Technical and Regulatory Guidance for Constructed Treatment Wetlands (WTLNDs-1)*, which addresses the issues associated with the construction of manmade wetlands for treating contaminants in water that flows through them. The document contains decision trees for determining the applicability of constructed treatment wetlands for storm-water control; municipal, industrial, and agricultural waste treatment; remedial activities waste; and treatment of acid mine water, including metals. Each application includes a description of the use of either surface and/or subsurface flow wetlands to treat a variety of contaminants or to change water conditions such as pH. Theory of wetlands flow, suitable site characteristics, and various treatment mechanisms are described with chapters on design criteria, construction, operation and maintenance, and monitoring wetlands' sustainability and performance. The team is rewriting the design and construction section. The document will include tables describing the contaminants typical to each application, common concentrations prior to treatment, and the expected performance of a wetlands system.

Wetlands are not usually the primary treatment system but may provide secondary treatment or a polishing step. They are, however, an attractive alternative since they contribute toward an appealing landscape and may provide habitat for wildlife. Unfortunately, attracting wildlife can be problematic for wetlands or surrounding communities. Mosquitoes are a common problem, and accumulation of metal may harm waterfowl. However, with proper design, the mosquito population and waterfowl habitation can be controlled at constructed wetlands.

Cost is another attractive aspect of wetlands compared to other techniques. On the downside are the extensive area needed for constructing wetlands, the time it takes for wetlands to get established, and possibly longer treatment periods. The team document describes these advantages and limitations, as well as others.

The first draft of the associated Internet-based training is complete, and practice sessions are being scheduled. The team expects to complete the document by July, with a dry run scheduled for POCs on August 8. For more information on constructed treatment wetlands or mitigation wetlands, contact Wetlands Team leaders Bob Mueller (N.J.)

or Dib Goswami (Wash.). Reach Bob at (609) 984-3910, bob.mueller@dep.state.nj.us and Dib at (509) 736-3015, dgos461@ecy.wa.gov.

Contaminated Sediments

The Contaminated Sediments Team is preparing an overview document of issues involving investigation, remediation, and risk assessment of sediments. The team received startup funding in 2002 to develop a plan and is eager to begin work in 2003. The team met at the ITRC spring meeting in Charlotte. Team leader Rich DeWan attended the Team Leaders Meeting in January and has decided to consider partnering opportunities with the Alternative Landfill Technologies and Constructed Wetlands teams. To that end, the team plans on another meeting in June in Monterey, Calif. in collaboration with those teams. The team's membership has slowly grown and solidified during 2002 and now includes a good cross section of state, federal, and industry personnel. This is a new and exciting area for ITRC, and many other agencies and organizations are also working on contaminated sediments guidance and technology documents. Contaminated sediments exist in great quantities worldwide, and their very nature (underwater sediments) makes for very challenging and expensive remediation. This topic is a great opportunity for the team to tackle a challenge. Richard DeWan (N.J.) can be reached at (609) 984-4426, richard.dewan@dep.state.nj.us.

Dense Nonaqueous Phase Liquids (DNAPLs)

The DNAPLs Team worked hard in 2002 to write several new documents, and that hard work is expected to pay off this year with the publication of several new documents and an Internet-based training. *Technical and Regulatory Guidance for Surfactant/Cosolvent Flushing of DNAPL Source Zones (DNAPLs-3)* is almost ready for publication, and the team's first Internet-based training is being prepared on that subject. The DNAPL characterization overview document is also about ready to publish. Ana Vargas (Ariz.) has taken the lead on the surfactant document and training, and Michael Smith (Vt.) has been the lead on the characterization document. Team leader Eric Hausmann (N.Y.) has taken the lead on a thermal technologies document, which has evolved into a case study document of performance metrics. The team is also considering including case studies of performance metrics for other technologies in the document.

The team has held recent partnering discussions with the In Situ Bioremediation Team to discuss including biotechnologies in future DNAPLs Team products. The team has a lot of exciting paths to consider for the future, including efforts on a DNAPLs treatment-train document and performance assessment metrics. The team met at the ITRC spring meeting in Charlotte and will meet again in late April in Seattle

with USEPA's Technical Support Project's Groundwater and Engineering Forums. Eric Hausamann (N.Y.) leads the DNAPLs Team and can be reached at (518) 402-9759, eghausam@gw.dec.state.ny.us.

Diffusion Samplers (DS)

A primary goal of the Diffusion Samplers Team for this year is the preparation of an ITRC technical/regulatory guidance document, which would undergo a formal ITRC state concurrence process. The team has already prepared a draft of the document, which will be discussed at the March team meeting in Charlotte, N.C. The team is currently conducting a survey to assess the regulatory environment for diffusion samplers and planning to distribute a final draft for state review by the end of May.

The Diffusion Samplers Team now has four subgroups. Mark Malinowski of the California Department of Toxic Substances Control (CA DTSC) is leading a subgroup that is evaluating the performance of polyethylene diffusion bags in monitoring PCE. The minimum volumes subgroup, headed by Dee O'Neill of Columbia Analytical Services, will define the minimum sample volumes needed for various lab analyses, which has a direct influence on the size of diffusion sampler bags. Bob Genau of Dupont is heading a subgroup to examine the costs of implementing and converting to diffusion sampler technology. Case studies are being assembled, and an interactive spreadsheet is being developed that will allow comparison of the costs of diffusion sampling with other methods. Finally, George Nicholas is leading a subgroup that is performing an extensive survey of state and federal regulations that might impact the use of diffusion samplers.

As the Diffusion Samplers Team is working through the technical/regulatory guidance document, it is broadening its focus to other passive samplers, especially those that can deliver samples for target compounds other than the volatile organic compounds collected by the passive diffusion bag sampler.

The team had three half-day meetings at the March ITRC meeting in Charlotte. In addition to discussion of current work by subgroups and the technical/regulatory guidance document, there were several technical presentations on current technology and new applications of passive samplers and groundwater flow and homogeneity within a sampling well.

The Diffusion Sampler Resource CD, containing nearly 70 articles and presentations on various diffusion samplers, as well as the ITRC training video and the AFCEE/Parsons field sampling video, was included with membership materials in a mailing to ITRC members. Many of the publica-

tions are available on the ITRC Diffusion Sampler Information Center Web site at <http://ds.itrcweb.org>, but the CD has more sophisticated search capabilities. Copies of the CD can be requested from the diffusion sampler Web site. Articles and information related to diffusion samplers are being solicited for the next update of this resource.

The next Internet-based training on diffusion sampling will take place Tuesday, April 29, 2003, 2:00–4:00 p.m. Eastern time. The Internet-based training content was presented live at the ITRC spring meeting in Charlotte.

The Diffusion Samplers Team has expanded its membership to 44. Recent additions include Dr. Tom Ballesterio (University of New Hampshire), Sandy Britt (CA DTSC), Dr. Ana Carvalho (Geoprojectos Ltde, Brazil), Diane Easley (USEPA Region 7), Joe Gibson (Alabama Department of Environmental Management), Ed Kellar (MACTEC Consulting), and Jennifer Ronk (Applied Environmental Solutions). Welcome to all. Diffusion Samplers Team leader George Nicholas (N.J.) can be reached at (609) 984-6565, george.nicholas@dep.state.nj.us.

In Situ Bioremediation (ISB)

In August 2002, the In Situ Bioremediation Team released a technical/regulatory guidance document—*A Systematic Approach to In Situ Bioremediation in Groundwater* (ISB-8)—that helps site decision makers systematically examine site parameters and criteria for the effective characterization, testing, design, monitoring, and implementation of ISB technologies. The team successfully presented three live Internet-based training courses on this document, with three more courses to be offered in 2003.

The challenge in 2003 for the ISB Team is two fold. First, the team will continue to work to ensure that the document is widely used by getting it off the shelf and into the hands of consumers. Among the ways the team will promote the document are to represent the document and ITRC at conferences and workshops, guide ITRC's points of contact network in presenting the document to state environmental agencies, and track and monitor how successful use of the document leads to more ISB deployments. Secondly, since the document was developed to be applied to any contaminant and site as it relates to ISB, the ISB Team will partner with the DNAPLs Team in applying this systematic approach to DNAPLs, specifically to chlorinated DNAPLs. The two teams will evaluate ISB for sites that have undergone treatment with DNAPL source treatment technologies, as well as for sites where ISB can be directly used for DNAPL treatment. For more information about the ISB Team, contact team leader Bart Faris (N.M.) at (505) 841-9466, bart_faris@nmenv.state.nm.us.

In Situ Chemical Oxidation (ISCO)

The In Situ Chemical Oxidation Team plans to develop an updated version of the original technical/regulatory guidance document, ISCO-1. The team met at the ITRC spring meeting in Charlotte to continue work on this document. Coleaders are Tom Stafford (La.) and Pat Quinn (Mo.). Team member Wilson Clayton of Aquifer Solutions is the lead instructor for the Internet-based training and, along with Pat Quinn, presented a live version of the training in Charlotte. Coleader Pat Quinn attended the Team Leaders Meeting in January and sees potential opportunity to partner with the DNAPLs Team. New oxidants have become commonly used since ISCO-1 was written in June 2001, and the team plans to include a discussion of these new oxidants and additional case studies in the future ISCO-2 technical/regulatory guidance document. Reach ISCO Team leader Tom Stafford at (225) 765-0462, t_stafford@deq.state.la.us. Pat Quinn can be reached at (573) 751-3553, nrquinn@mail.dnr.state.mo.us.

MTBE-Contaminated Groundwater

The MTBE Team entered 2003 as a fully funded ITRC work group. With only \$30,000 in 2002 exploratory funding, the group managed to attract 30 members representing seven states, two federal agencies, 12 industry/consulting firms, two major universities, and one community stakeholder group. Generous contributions of time and money enabled the team to successfully complete a working case study database and a draft technology overview document. Both products are scheduled for official release during the next two quarters.

Team leader Fred McGarry (N.H.) reports that the MTBE Team has attracted approximately \$65,000 in direct financial support since its 2003 inception. Donations from the American Petroleum Institute (API), the U.S. Environmental Protection Agency, and Tighe & Bond Consultants (representing Lyondell Industries, Inc.) have been provided to ITRC. Additional 2003 funding is necessary to host a Web-based version of the case study database as well as to sponsor one classroom training event in mid-December. Joe Haas (N.Y. Department of Environmental Conservation) has indicated his state's interest in cohosting the training event at the Long Island Groundwater Research Institute. New Hampshire and API have also expressed cosponsor interest.

The primary focus of the 2003 MTBE Team is to continue developing a series of technical and regulatory tools designed to assist state regulators, community stakeholders, and the regulated community with expedited evaluation and implementation of innovative MTBE and TBA (tert-butyl alcohol) site investigation and groundwater remediation technologies. Ex situ water treatment systems, wellhead pro-

tection technologies, and analytical techniques will be included as necessary. MTBE/TBA in soils (especially source control issues in saturated and unsaturated zones) and non-MTBE/TBA soil and groundwater contamination issues may be added to team scope in later years, pending member interest and resource allocation. The MTBE Team continues to serve as a leading forum for state-led efforts to regulate MTBE as well as to promote clear national guidance on MTBE risk standards. Fred McGarry, MTBE Team founder, can be reached at (603) 271-4978, fmcgarry@des.state.nh.us.

Permeable Reactive Barriers (PRBs)

Formed in 1996, the Permeable Reactive Barriers Team is one of the oldest ITRC teams still active in seeking ways to widen the deployment of an innovative environmental technology. The PRBs Team has completed several documents on its own or in partnership with other groups. Over the last four years, the team has actively provided training in both classroom and Internet formats. The team is planning to offer Internet-based training again this year.

The PRBs Team participated with a tri-services group (DOE, USEPA, and DoD) in a three-year project, which ended in 2002, on the long-term monitoring of PRBs. The team reviewed several documents and participated in meetings and conference calls. The three-year effort will culminate soon in the publication of a case studies report that evaluates the longevity and hydraulic performance of barriers installed at sites under the agencies' purview. The PRBs Team is using new data from the case studies to update its advanced PRB Internet-based course.

In 2003, the PRBs Team is planning to participate in ongoing PRB research that addresses research needs identified over the previous three years of work. The PRBs Team will partner with DoD on this project, and therefore the project is dependent on funding sources other than ITRC. If funding is obtained, the additional research is expected to continue for two years. Team leader Matt Turner (N.J.) can be reached at (609) 984-1742, matthew.turner@dep.state.nj.us.

Radionuclides (Rads)

Tom Schneider (Ohio) and Carl Spreng (Colo.), who lead the Radionuclides Team, attended the ITRC Team Leader/Program Advisor Kick-off Meeting in Denver in January. In addition to identifying alliances and joint efforts with other teams/team leaders, they worked on the Rads Team work plan for 2003. The Rads Team has extended the long-term stewardship challenges survey to state regulators and stakeholders. The team also reviewed and commented on DOE's proposed policy and guidance on the risk-based end-state vision. The Rads Team took the lead in gathering the comments and compiling an ITRC response to DOE, which was sent at the end of January.

The team presented two papers at the ITRC spring meeting in March. Both papers relate to products the team is working on. One paper is about real-time characterization; the other paper is about the long-term stewardship survey findings. The Rads Team continues to work on preparing Internet-based training on radiation risk assessment, which will be offered this fall. Rads Team leaders Tom Schneider can be reached at (937) 285-6466, tom.schneider@epa.state.oh.us, and Carl Spreng can be reached at (303) 692-3358, carl.spreng@state.co.us.

Remediation Process Optimization (RPO)

The Remediation Process Optimization Team continued to spread the word on the value of conducting remediation process optimization reviews. New Jersey regulator and RPO Team leader Tom O'Neill presented an overview of the RPO Team's progress and upcoming activities at the AFCEE Environmental Technology Symposium in San Antonio, Tex. Other RPO Team members also provided presentations on how RPO assessments last year contributed to overall remediation enhancements and cost savings.

For those not familiar with what an RPO is, it is a technical and programmatic assessment of a remediation or long-term monitoring system by a multidiscipline team of experts. Many of the systems reviewed are specific to groundwater monitoring, but all systems related to site cleanup are assessed for enhancements or substitutions with state-of-the-art technologies. The emphasis while conducting an RPO is to ensure that a system is operating efficiently toward reaching the goal of site cleanup.

Team successes this quarter included refinement of the scope and schedule of the technical/regulatory guidance document that will be drafted this year; the recruitment of three new state team members from New York, Oregon, and Wisconsin; and team presentations at the spring ITRC conference.

Upcoming activities include conducting two additional RPO visits and participating in a visit to a state RPO site. The RPO Team welcomes new members and is actively seeking additional state, federal, and stakeholder members that might be interested in joining us at our next team meeting. Please contact team leader Tom O'Neill (N.J.) at (609) 292-2150, toneill@dep.state.nj.us for more information.

Risk Assessment Resources (Risk)

The only new project going into 2003 is the Risk Assessment Resources Team, which seeks to expand understanding of the variety of methods, assumptions, and issues surrounding risk assessment and management in corrective actions. Guidance for making risk-based cleanup decisions is unclear and confusing. States use different processes in

making risk-based decisions and rely on different screening levels to determine risk. These differences confuse the public and impede federal programs dealing with multiple regulatory jurisdictions. Invalid determinations of risk can lead to remedial responses that are either overly conservative or underprotective of human health and the environment.

The Risk Assessment Resources Team proposes to create a resource to identify and help alleviate unnecessary variability among states and federal agencies using risk determinations to manage cleanups. The team will begin this five-year project by working with USEPA Region 6—and possibly joining with other USEPA regions—in a pilot project to implement a Corrective Action Strategy, an alternative process for streamlining cleanups and democratizing the process. Involvement on the Corrective Action Strategy will provide a real-world forum for shaping and developing team activities, documents, and resources on the general topics of risk assessment and risk management.

The leader of the Risk Team is Steve DiZio (Calif.). The Risk Team reviewed and commented on DOE's proposed policy and guidance for a risk-based end-state vision and assisted the Radionuclides Team in compiling ITRC comments to DOE. At the spring meeting, the Risk Team discussed its work plan activities and coordinated with other ITRC teams in serving as a resource to other teams. Steve DiZio can be reached at (916) 255-6634, sdizio@dtsc.ca.gov.

Sampling, Characterization, and Monitoring (SCM)

The SCM Team held a joint meeting with the Brownfields Team in Tampa, Fla. during January 2003. The teams brainstormed on ways to partner and decided that a liaison member from each team will coordinate activities of the teams. The teams also went on a field trip together, hosted by Beth Parker of the Fla. Department of Environmental Quality, to examine two dry cleaner sites that had been remediated using the Triad Approach. The SCM Team is busy preparing two technical/regulatory guidance documents—one on the Triad Approach to environmental project management and the other on the use of direct-push wells. The Triad document is on schedule to be completed in 2003, and the direct-push wells document is expected to be completed early in 2004.

Team members presented three papers at the ITRC spring conference in Charlotte. One paper was presented on direct-push wells, and two papers were presented on the Triad Approach, including a case study on the application of Triad at a brownfields site. Team leader Stu Nagourney, along with USEPA's Technology Innovation Office, was recently involved in briefing the N.J. Department of Environmental Protection regarding policy for using Triad at New Jersey brownfields.

The team has a lot of exciting and innovative paths that it could pursue and has been invited to participate and present at the NORISC (Network Oriented Risk Assessment by In Situ Screening of Contaminated Sites) meeting in Cologne, Germany in December 2003. One of the innovative ideas being discussed includes a potential collaboration with NELAC (National Environmental Laboratory Accreditation Conference) and INELA (Institute for National Environmental Laboratory Accreditation) on the validation of field analytical methods to be used for expedited methods like Triad. Team leader Stu Nagourney (N.J.) can be reached at (609) 292-4945, stu.nagourney@dep.state.nj.us.

Small Arms Firing Range (SMART)

The Small Arms Firing Range Team has completed the first of two documents on managing lead at small arms firing ranges. *Characterization and Remediation of Soils at Closed Small Arms Firing Ranges* (SMART-1) has been printed and distributed. A copy can be downloaded from www.itrcweb.org. The first full training was held during the spring meeting in Charlotte on March 26. Please watch for announcements of additional offerings of this course on www.itrcweb.org.

The SMART Team met in San Antonio, Tex. in early February to learn more about existing technical documents and programs for assisting range owners in managing lead from shooting activities and in maintaining safe environmental conditions. Mark Begley from Massachusetts described the Massachusetts lead shot initiative and its performance. The Massachusetts state program has visited over 90 sites, 45 of which have implemented environmental stewardship plans. Mark explained that much of the program's success can be attributed to effective communication. State regulatory personnel regularly visit gun club meetings in the evenings and sportsmen's league meetings on the weekends. Mark explained the importance of visiting as many ranges as possible to transfer ideas from one range to another to make an impact on the entire industry within the state. Go to www.state.ma.us/dep/files/pbshot/pb_shot.htm for more information about this Massachusetts program.

Florida has developed *Best Management Practices (BMP) for Environmental Stewardship of Florida Shooting Ranges*. This BMP guidance document was completed in 2002 and can be accessed at www.dep.state.fl.us/waste/categories/hazardous/pages/lead.htm. Satish Kastury, Bureau Chief of the Hazardous Materials Section of Florida's Department of Environmental Protection, discussed the immediate results Florida is recognizing from its program.

George Meyer and Ed Guster from USEPA Region 2, the leading region in USEPA for management of lead at small arms firing ranges, explained that their *Best Management*

Practices for Lead at Outdoor Shooting Ranges is in its third printing and should be available by the end of April. The third edition, accessible at www.epa.gov/region2/waste/leadshot/, discusses the issue of on-site berm reuse.

Rick Patterson from the National Shooting Sports Foundation (NSSF) presented a video he uses to promote range stewardship. He also arranged a team site visit to the national shooting complex that houses the National Skeet Shooting Association and the National Sporting Clays Association near San Antonio. Matt W. Spahn, executive director of the complex, led the team through the site and demonstrated the sport of shooting clays. The NSSF charge is to provide education to range owners and operators on management techniques for maintaining a safe atmosphere and clean environment.

At its kickoff meeting, the team agreed on the following work plan for the remainder of 2003:

- Survey states to understand the national status of stewardship of lead on firing ranges. Determine from those states with formal or incidental programs how they do it, how well it works, and which ranges implement lead stabilization or recovery in the field. During conference calls, held twice each month, the team is developing a focused questionnaire, which should be ready by the end of April.
- Complete a review of available technologies for stabilizing, reclaiming, or recycling lead in soils at small arms firing ranges. USEPA and the U.S. Army Environmental Center are coordinating efforts to develop a baseline for this technology overview.
- Develop and/or update best management practices for environmental stewardship of outdoor ranges. The team has prepared and reviewed an outline for a best management practices document and will continue to refine it at the spring meeting in Charlotte. The team is aiming to complete the BMP for peer review in December 2003, including the creation of a training module describing standardized practices for state or local technical assistance programs for outdoor shooting ranges.
- Develop a two- to four-hour classroom-style training module for states that have little or no experience in technical assistance programs for outdoor shooting ranges.

SMART Team leaders are Dib Goswami (Wash.) and Bob Mueller (N.J.). Dib can be reached at (509) 736-3015, dgos461@ecy.wa.gov; Bob can be reached at (609) 984-3910, bob.mueller@dep.state.nj.us.

Unexploded Ordnance (UXO)

The Unexploded Ordnance Team has completed the draft final version of its first technical/regulatory guidance document, *Munitions Response Historical Records Review* (UXO-2) and initiated the state POC review process. This

guidance document will provide regulators and others the necessary background and education to effectively review and evaluate an historical records review for munitions response sites. The UXO Team will follow up the publication of this document with Internet-based training and will be offering its first public trainings in August and December of this year. The team's draft geophysical prove-out guidance document is also nearing completion. This document recently went out for team member review and is scheduled to be completed this summer.

Because of continued interest in the team's UXO Basic Training course, the team will be conducting classroom training again this year. The state of Alaska, Alaska Fire Service (Bureau of Land Management), and USEPA are all sponsoring classroom training this year.

Contacts

For questions or comments regarding ITRC, please contact Rick Tomlinson, ITRC program director, Environmental Council of the States, (202) 624-3660, rickt@sso.org.

In addition to preparing guidance documents and planning trainings, the UXO Team has also been busy briefing various groups on ITRC's and the team's accomplishments. Jeff Swanson, UXO coleader from the Colorado Department of Public Health and Environment, briefed the Defense Science Board's UXO Task Force in Washington, D.C. Jeff and Jennifer Roberts, coleader from the Alaska Department of Environmental Conservation, briefed the Munitions Response Committee in Denver. Nicole Sotak, group leader for the Munitions Response Historical Records Review Committee, briefed participants in USEPA's advanced unexploded ordnance course in San Francisco on the soon-to-be-published document. UXO Team coleaders are Jeff Swanson, who can be reached at (303) 692-3416, jeffrey.swanson@state.co.us, and Jennifer Roberts, who can be reached at (907) 269-7553, jennifer_roberts@dec.state.ak.us.

To provide comments, suggestions, or input for ITRC's *Quarterly Update*, please contact Elaine Specht, WPI, (540) 557-6071, elaine_specht@wpi.org.

Calendar

	Event	Location	Date	Contact
	ECOS Spring Meeting	Washington, D.C.	April 8–10	Lia Parisien lparisie@sso.org
ITRC MEMBERS ONLY	DNAPLs, ISB, and ISCO Team Meetings at USEPA's Technical Support Project Meeting	Seattle, Wash.	April 21–25	Applicable Team Lead(s)
	Tentative Rads Team Meeting	Charleston, S.C.	May 2003	
	MTBE Team Meeting at National Groundwater Association MTBE Conference	Baltimore, Md.	June 4	
	UXO Team Meeting	Washington, D.C.	June 24–25	
	RPO Team Meeting	Princeton, N.J.	June 17–19	
	Combined Demo with Sediments, Wetlands, and ALT Teams	Monterey, Calif.	June 17–20	
	Risk Team Meeting	Livermore, Calif.	3rd week of June	
	ITRC Fall Meeting	Monterey, Calif.	Sept. 29–Oct. 2	Denise Calore, (202) 362-8879, oppknock@aol.com

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2003 Schedule Internet and Classroom Training

All course dates are subject to change. Please check the ITRC Web site for the most up-to-date information (www.itrcweb.org).

Internet Training

A Systematic Approach to In Situ Bioremediation: Nitrates, Carbon Tetrachloride, and Perchlorate

April 22, 2003 (2:00 p.m.–4:15 p.m. Eastern)
August 21, 2003 (11:00 a.m.–1:15 p.m. Eastern)
October 21, 2003 (2:00 p.m.–4:15 p.m. Eastern)

Advanced Techniques on Installation of Iron-Based Permeable Reactive Barriers and Noniron-Based Barrier Treatment Material for Chlorinated Solvents

April 15, 2003 (2:00 p.m.–4:15 p.m. Eastern)
July 24, 2003 (11:00 a.m.–1:15 p.m. Eastern)

Characterization and Remediation of Soils at Closed Small Arms Firing Ranges

June 10, 2003 (2:00 p.m.–4:15 p.m. Eastern)
September 11, 2003 (11:00 a.m.–1:15 p.m. Eastern)
November 18, 2003 (2:00 p.m.–4:15 p.m. Eastern)

Constructed Treatment Wetlands

October 7, 2003 (2:00 p.m.–4:00 p.m. Eastern)
November 20, 2003 (11:00 a.m.–1:00 p.m. Eastern)

In Situ Chemical Oxidation

April 17, 2003 (11:00 a.m.–1:15 p.m. Eastern)
June 17, 2003 (2:00 p.m.–4:15 p.m. Eastern)
September 16, 2003 (2:00 p.m.–4:15 p.m. Eastern)

Munitions Response Historical Record Review

August 28, 2003 (11:00 a.m.–1:00 p.m. Eastern)
November 4 (2:00 p.m.–4:00 p.m. Eastern)

Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices

May 29, 2003 (11:00 a.m.–1:00 p.m. Eastern)
September 23, 2003 (2:00 p.m.–4:00 p.m. Eastern)

Passive Diffusion Bag Samplers for Volatile Organic Compounds in Groundwater

April 29, 2003 (2:00 p.m.–4:00 p.m. Eastern)
September 25, 2003 (11:00 a.m.–1:00 pm. Eastern)

Phytotechnologies

June 12, 2003 (11:00 a.m.–1:15 p.m. Eastern)
December 9, 2003 (2:00 p.m.–4:15 p.m. Eastern)

Radiation Risk Assessment: Updates and Tools

July 22, 2003 (2:00 p.m.–4:00 p.m. Eastern)
October 9, 2003 (11:00 a.m.–1:00 p.m. Eastern)

Surfactant/Cosolvent Flushing of DNAPL Source Zones

June 19, 2003 (11:00 a.m.–1:00 p.m. Eastern)
September 9, 2003 (2:00 p.m.–4:00 pm. Eastern)
October 23, 2003 (11:00 a.m.–1:00 p.m. Eastern)

Classroom Training

Most classroom training dates have not yet been set. Please check the ITRC Web site for up-to-date information (www.itrcweb.org).

Accelerated In Situ Bioremediation of Chlorinated Solvents

June 1, 2003—A short course at Battelle's 7th International Symposium on In Situ and On-Site Bioremediation in Orlando, Fla.

MTBE Training

December 15–19 in Long Island, N.Y.

Phytotechnologies: Mechanisms and Applications

Dates to be determined

UXO Basic Training (Unexploded Ordnance)

May 13–14, 2003 in Anchorage, Alaska
May 15 and 16, 2003 in Fairbanks, Alaska—Two half-day courses on ordnance identification and safety for firefighters.
May 21, 2003—A short course at the USEPA National Association of Remedial Project Managers Conference in Colorado Springs, Colo.

**Check the ITRC Web site
for additional details at
www.itrcweb.org.**