



# HIGHLIGHTS

## HIGHLIGHTS OF THE FALL 2006 TECHNICAL SUPPORT PROJECT MEETING

EPA's Technical Support Project (TSP) teamed their Fall 2006 meeting (November 13-16) with the symposium, *High-Resolution Site Characterization and Monitoring*, sponsored by the Groundwater Resources Association of California. Members of the TSP's three technical forums—Engineering, Federal Facilities, and Ground Water— participated in the symposium, which promoted state-of-the-science practices in efficient, high-resolution, subsurface site assessments and remediation monitoring.

Below are highlights from the symposium as well as summaries of the forum business sessions during which members discussed current and future technical outreach activities.

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### Become a Member!

The TSP always welcomes new members to the forums. The Engineering Forum is particularly seeking new representatives from Regions 2, 7, and 10, and the Federal Facilities Forum needs a member from Region 4. If you are interested in participating in forum activities, please contact your regional TSP representative or a forum co-chair listed at the end of this newsletter. For more information on the TSP, visit [www.epa.gov/tio/tsp](http://www.epa.gov/tio/tsp).

### High-Resolution Symposium

The agenda for the *High-Resolution Characterization and Monitoring Symposium* (available at <http://www.grac.org/hiresagenda.pdf>) included 29 presentations, 12 posters, and an all-day outdoor session where vendors demonstrated the use of a variety of drilling, geophysical logging, and sampling equipment. For detailed information on the topics discussed, please contact your regional forum representatives for copies of abstracts and slide presentations. Overall themes of the presentations are summarized below.

Fine-grained geologic units should not be assumed to be aquitards that inhibit or preclude the downward migration of contamination. Field tests using appropriate techniques should be performed during site characterization or during 5-year reviews (as needed) to objectively determine that contamination has not entered or is being transported to aquifers underlying these fine-grained units.

Direct push technologies (DPT) have revolutionized site characterization, and new instruments that use DPT continue to be developed. Their benefits include improved cost effectiveness of site investigations and monitoring.

The use of vertical profiling in transects normal to ground-water plume flow is viewed as the preferred method of determining contaminant distribution and transport pathways in unconsolidated aquifers. This approach applies to both site characterization and monitoring remedial progress.

Contaminant migration in fractured rock should not be assumed to be limited to weathered bedrock, shallow bedrock, or by some arbitrary depth in competent bedrock. Appropriate field testing is needed to accurately characterize, remediate, and determine potential risk from contaminated ground water.

Moderate levels of contamination in high-permeability zones may pose a greater risk than high concentrations in low-permeability zones. Thus, investigations may need to focus more

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## Next TSP Meeting

The TSP will rejoin the National Association of Remedial Project Managers (NARPM) at their annual conference for their spring 2007 meeting. NARPM 2007 is scheduled for May 21-25 in Pittsburgh, PA.

The Engineering Forum plans to sponsor at least two information sessions at the NARPM conference. Proposed topics include the use of nanotechnology in site remediation and a review of recent forum issue papers for purposes of facilitating technology transfer. The Federal Facilities Forum will sponsor a training session on sampling and analysis issues associated with explosives and perchlorate. The Ground Water Forum is proposing to offer five training courses and information sessions: Introduction to Contaminant Hydrogeology; performing remediation system evaluations (RSEs) at facilities with ground-water remedies; subsurface characterization to supplement the new vapor intrusion guidance; performing ground-water assessments in 5-year reviews; and high-resolution characterization and monitoring.

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on contaminant flux than on contaminant concentrations alone.

Recent field data suggest that there may not be much seasonal variation in soil-gas concentrations. If this finding is also valid at other locations in a variety of climatic zones, there may be less need to collect seasonal concentration data to evaluate vapor intrusion potential.

## Ground Water Forum

The Ground Water Forum (GWF) began its business session with technical presentations by John Wilson (Office of Research and Development) and Paul Philp (University of Oklahoma). These presentations are summarized below and are followed by a summary of the GWF's business topics.

Dr. Wilson showed how statistics can be used in long-term monitoring of ground water at sites where monitored natural attenuation (MNA) is being implemented. Using sampling data from point-of-compliance wells at the St. Joseph, Michigan, Superfund site, he

applied statistical methods to estimate attenuation rates and the time frame that MNA would attain MCLs for a TCE plume and its daughter products at a 95% confidence interval. Dr. Wilson suggested that these methods may be used to help guide more cost-effective monitoring efforts without diminishing technical uncertainty.

Dr. Wilson asked the GWF to beta test this method on MNA sites around the country with several years of sampling data (at a minimum, 10-12 sampling rounds are needed). The results of these analyses will be used as the basis for an issue paper that illustrates the use of the statistical methods presented.

Dr. Philp explained the emerging use of stable isotopes for source discrimination and source allocation in ground-water investigations. Stable isotopes also are useful for assessing the extent of biodegradation of ground-water plumes (particularly MTBE, chlorinated solvents, BTEX, and 1,4-dioxane); the microbial biodegradation of these contaminants results in the enrichment of heavier carbon-13 and

chlorine-37 isotopes (relative to carbon-12 and chlorine-35) content as biodegradation proceeds.

Bernie Zavala (Region 10) encouraged GWF members to become involved in ORD's Land Research Coordination team as an opportunity to shape future ORD research on the topics of ground water, site characterization, engineering, sediments, and human health.

GWF workgroups are continuing to shepherd several issue papers through the review and publication processes including *Understanding the Uncertainties Associated with Ground-Water Cleanup Timeframe Calculations*, *Site Characterization for MNA*, *Assessment and Delineation of DNAPL at Hazardous Waste Sites*, *Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems*, *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities: Unified Guidance*, *Subsurface Characterization for the Vapor Intrusion Guidance*, *Ground-Water/Surface Water Interactions*, and *Measurement of Field Parameters in Ground-Water Sampling*.

## Engineering Forum

The Engineering Forum's (EF) business session focused on reviewing the status

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## In the Spotlight

Forum co-chairs recently acknowledged TSP members Rob Alvey (Region 2, GWF), Harry Craig (Region 10, FFF), and Mike Gill (Region 9, EF) for their outstanding service to the forums in 2006. Congratulations to Rob, Harry, and Mike, who received On-the-Spot awards for their efforts!

of forum products and planning future efforts.

#### Forum Products

The *In-Situ Treatment Technologies for Contaminated Soil* issue paper, which summarizes a wide variety of in-situ technologies for the treatment of contaminated soil in both the vadose zone and saturated and unsaturated zones, has been published and is available at <http://www.epa.gov/tio/tsp/download/542f06013.pdf>.

The EF issue paper *In Situ and Ex Situ Biodegradation Technologies for Remediation of Contaminated Sites*, which focuses on bioremediation technologies for treating contaminated media at hazardous waste sites, will be published in early 2007.

The *In-Situ Chemical Oxidation (ISCO)* issue paper was published in August and is available at <http://www.epa.gov/ada/download/issue/600R06072.pdf>. This paper provides an up-to-date overview of ISCO remediation technology and fundamentals, and was developed based on peer-reviewed literature, EPA reports, web sources, current research, conference proceedings, and other pertinent information.

The information paper *Selecting Treatment Process Design Data to Collect at Hazardous Waste Sites* is undergoing review and should be ready for publication in early 2007.

A draft of the *Evapotranspiration Covers (ETCs)* issue paper currently is available for review and comment by EPA employees on the Agency's Intranet at <http://intranet.epa.gov/nrmintra/etsc/papers.html>. This paper addresses issues related to final closure of landfills with ETCs.

#### Future Efforts

In terms of new projects, the EF discussed creating a case study file as a means of facilitating technology transfer. Each case study would address a different engineering or design issue, and would include background information on a particular technology or process, describe remedial site activities, and present lessons learned. These case studies would be made available on the TSP web site.

In addition, EF members discussed creating an online resource guide indexed by topic that would serve as a clearinghouse for individuals looking for information on specific technologies or issues. In addition, a companion web page would list relevant remediation web sites and would describe what these sites offer in terms of information on topics relevant to engineers.

Steve Kinser (Region 7) and Sandra Bourgeois (Region 8) will review available data on completed 5-year reviews to look for commonalities among their findings. This information could then be used in preparing a lessons-learned document that would assist in future 5-year review efforts and a standard operating procedure for operation and maintenance reporting.

#### Federal Facilities Forum

Representatives from EPA's Federal Facilities Restoration and Reuse Office (FFRRO) updated the Federal Facilities Forum (FFF) with news from Headquarters. Gail Cooper began by noting that FFRRO's 2007 budget for Superfund and Base Realignment and Closure (BRAC) reimbursable work has increased slightly to \$31.5M. She thanked the FFF for helping EPA to meet their FY 06 Federal Facilities

Response Program targets and summarized the targets for FY 07 and 08 and sites that are candidates for a final record of decision, construction completion, and 5-year reviews.

Gail also summarized FFRRO's munitions projects. She and Jim Woolford are reviewing the method of performing hazard assessments for munitions and explosives of concern (MEC) and hope to have the method finalized soon. FFRRO wants to offer Region 6's explosives workshop to other EPA regions. This workshop covers munitions components, types of explosives residues, geophysical investigation techniques, and remedial technologies.

Harry Craig (Region 10) will write a fact sheet on changes to SW-846 Method 8830. Method 8330b, trace analysis for explosives and propellant residues, differs in that nitroglycerine and pentaerythritol tetramitate (PETN) have been added to the analysis list. The sample size requiring sieving also has changed, and different types of detections (e.g., mass spectrometry) have been added.

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#### New Co-Chairs

Congratulations to Mike Gill (Region 9), Paul Ingrisano (Region 2), and Luanne Vanderpool (Region 5), recently elected co-chairs of the EF, FFF, and GWF, respectively. Also, many thanks to outgoing co-chairs Sharon Hayes (Region 1), Christine Williams (Region 1), and Howard Orlean (Region 10) for their valuable leadership and commitment to the forums!

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Gail emphasized the importance of data entered into CERCLIS. It must be up to date and accurate. RPMs with data quality issues should call Brendan Roache (703-603-8704).

The Docket Coordinator's Reference Manual should be finalized soon. The manual will help new docket coordinators understand the updating process and should promote regional consistency.

Monica McEaddy (FFRRO) noted that the Office of Inspector General recently completed a review of the 5-year review

process for Superfund sites, which concluded that OSWER has made progress, but further work is needed. The 2005 Report to Congress identifies federal facilities where reviews are pending and lists the protectiveness statement of each site. Gail encouraged RPMs to write a letter to the services if they disagree with a protectiveness statement.

Trina Martynowicz summarized a cross-program reuse measure in which FFRRO needs to track the acres of federal facility sites available for reuse. FFRRO needs to know the acreage of any site on which resources have been

expended, how many acres are protective for current conditions, and how many acres are meeting the ready for anticipated reuse standard.

FFRRO is developing fact sheets for a number of emerging contaminants and will ask the FFF for assistance in determining which contaminants to include. The FFF plans to write an issue paper on sample collection and preparation procedures for explosives. They are also exploring the possibility of a webcast of their training planned for NARPM 2007.

## Technical Support Project Regional Contacts

	GROUND WATER FORUM	FEDERAL FACILITIES FORUM	ENGINEERING FORUM
REGION 1	Bill Brandon Richard Willey	Carol Keating Ginny Lombardo Christine Williams	Jim Brown Ray Cody Sharon Hayes
REGION 2	Robert Alvey Ruth Izraeli Kevin Willis	Paul Ingrisano*	Stephanie Vaughn
REGION 3	Kathy Davies Joel Hennessy	Steve Hirsh Frank Vavra	Fred MacMillan Andrew Palestini Hilary Thornton
REGION 4	Dave Jenkins Bill O'Steen Kay Wischkaemper	Michelle Thornton	Jon Bornholm* Leo Romanowski
REGION 5	Gwen Massenburg Luanne Vanderpool*	Karen Mason-Smith	Tony Holoska Bernard Schorle David Seely
REGION 6	Dave Abshire Greg Lyssy Vince Malott	Mike Overbay* Chris Villarreal Stephen Thzone	Gene Keepper Gary Miller Carlos Sanchez

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	GROUND WATER FORUM	FEDERAL FACILITIES FORUM	ENGINEERING FORUM
REGION 7	Dave Drake Lisa Gotto Jeff Johnson Bill Pedicino Brian Zurbuchen	Scott Marquess	Steve Kinser*
REGION 8	Helen Dawson Kendra Morrison	Jerry Cross Jim Kiefer*	Sandra Bourgeois Bill Rothenmeyer
REGION 9	Kathy Baylor Glenn Bruck* Rich Freitas Herb Levine	Rich Muza	Harold Ball Michael Gill*
REGION 10	Curt Black René Fuentes Marcia Knadle Howard Orlean Jonathan Williams Bernie Zavala	Harry Craig	Neil Thompson

\* Denotes Forum Co-Chair