



U.S. EPA Engineering Forum Strategic Plan

February 2013



Technical Support Project

<http://www.epa.gov/superfund/remedytech/tsp/engforum.htm>

U.S. EPA Engineering Forum Strategic Plan

Introduction

This Strategic Plan highlights the purpose, mission, goals, and objectives of the U.S. Environmental Protection Agency (EPA) Engineering Forum (EF). It sets forth the principles that guide the EF's decision-making, helps clarify the EF's priorities, and positions the EF to support EPA's strategic goals. The EF attempts to update it annually.

Engineering Forum Mission

As one of the EPA Technical Support Project's (TSP) three technical forums, the EF provides technical support on engineering issues to the Regional offices and serves as a line of communication between the Regions, Headquarters, and the laboratories of EPA's Office of Research and Development (ORD). The Engineering Forum encourages information exchange among these entities regarding innovative site cleanup and characterization technologies as well as site-specific engineering issues, including problems encountered, solutions, and lessons learned. The EF is a team of experienced Regional engineers and scientists who are knowledgeable and interested in environmental engineering technologies and technical issues, and who have experience implementing technologies within the EPA administrative and regulatory framework.

This combination of engineering background and practical field experience is a unique resource that is utilized by EPA Regions, Headquarters and laboratories to:

- review technical guidance documents,
- gather information from Regional project managers on various technologies,
- disseminate cutting-edge technical information in site assessment and remediation,
- encourage more efficient and effective cleanup of contaminated sites across Regions and across programs, and
- promote Regional consistency.

Through this work, the EF endeavors to assist site managers in every Region to achieve our shared national strategic goal of cleaning up and revitalizing contaminated land as a fundamental objective in EPA Strategic Plan Goal 3, Restoring Land.¹ EF members perform these functions on a volunteer basis within the ten EPA Regions, in addition to their primary functions and responsibilities.

Engineering Forum Past Accomplishments

In this section, we've included some accomplishments of the EF from 2006-2012. Members of the EF were not primary authors of most of the issue papers, but assisted with their preparation.

Publications:

- In Situ Treatment Technologies for Contaminated Soil
- In Situ and Ex Situ Biodegradation Technologies for Remediation of Contaminated Sites
- In Situ Chemical Oxidation
- Management and Treatment of Water From Hard Rock Mines
- Selecting Treatment Process Design Data to Collect at Hazardous Waste Sites
- Guide To Online Remediation Technologies Databases and Resources
- Indoor Air Vapor Intrusion Mitigation Approaches
- Technology Performance Review: Selecting and Using Solidification/Stabilization Treatment for Site Remediation,
- Obtaining Assistance from the EPA Technical Support Centers

¹ "2011-2015 U.S. EPA Strategic Plan," Goal 3, Objective 3.3, Restore Land, <<http://www.epa.gov/planandbudget/strategicplan.html>>, and also Appendix 5 of this document.

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- Vertically Engineered Barriers Fact Sheet
- Methodology for Understanding and Reducing a Project's Environmental Footprint
- TSP Expertise Directory (online)

Training presented by the EF at recent National Association of Remedial Project Managers (NARPM) conferences include these sessions:

- Vapor Intrusion – Remedial Design
- Remedial Technologies Overview/Update (2)
- Online Technology Resources
- Engineering Design Considerations for Vapor Intrusion Mitigation
- Nanotechnology: Solutions, Challenges and Implications for Superfund
- Green Remediation sessions for NARPM 2008, 2009, 2010 and 2011
- Green Remediation Webinar series for NARPM 2008, 2009, 2010 and 2011 sessions
- Ask the Engineering Forum Flash Mentoring Session (2010, 2011)
- Chemical Oxidation Panel Session
- In Situ Chemical Oxidation (ISCO) Training
- Outreach at Brownfields 2011 and Sixth Annual Conference on Design and Construction Issues at Hazardous Waste Sites (both in Philadelphia)
- Engineering Forum Case Studies (2012)
- RECs, Renewables, and Remediation: What Does It All Mean and How Do I Do It? (2012)
- Critical Analysis of Issues at ISCO Sites (2012)
- Greener Cleanups – Environmental Footprint Methodology (2012)
- Greener Cleanups and the Role of BMPs (2012)
- DNAPL/LNAPL Source Zone Treatment Path to Closure: ISTT and Combining Remedies to Get it Right the First Time (2012)

Documents Reviewed:

- A Cost Comparison Framework for Use in Optimizing Ground Water Pump and Treat Systems

- Options for Discharging Treated Water from Pump and Treat Systems
- Environmental Security Technology Certification Program's Frequently Asked Questions Document (FAQ) on Dense Non-Aqueous Phase Liquids (DNAPLs)
- Superfund Green Remediation Strategy
- Green Cleanup Standards
- Control of Subsurface Contaminant Migration by Vertical Engineered Barriers
- Energy, Greenhouse Gas & Air Pollutant Footprint Analysis
- USEPA Road Map for Establishing a Common Approach to Site Level Green Remediation Evaluation
- Guidelines for 5-Year Reviews of Groundwater Remedies
- Green Remediation Best Management Practices Fact Sheet Series Numbers 1-6
- 21 Citizen's Guides Fact Sheets
- Methodology for Understanding and Reducing a Project's Environmental Footprint
- Engineering Issue: Technology Alternatives for the Remediation of PCB Contaminated Soils and Sediments
- Guidance for Addressing Petroleum Vapor Intrusion at Leaking Underground Tanks Sites
- Sustainable Materials Management BMP Fact Sheet
- Vapor Intrusion Guidance: Chapter 6, Mitigation & Subsurface Remediation and Appendix F, Pre-Emptive Mitigation
- Draft In Situ Thermal Green Remediation BMP Fact Sheet
- In-Situ Bioremediation of Groundwater
- Soil Vapor Extraction System Optimization, Transition, and Closure Guidance (DOE pub with ORD contribution)

Engineering Forum Strategy

The EF's plan of action for the future is outlined in this document, which is updated as needed (typically annually). We maintain an "Evergreen List" (Appendix 1) of present and future tasks. We continually seek ways to

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enhance outreach to our peers and potential members, and to find better ways to bring site managers the information they need to improve the job of cleaning up the nation's contaminated lands. We aim to continually improve our collaboration and outreach to address future environmental challenges. As a team composed entirely of volunteers, the EF's primary resource is our collective knowledge and experience in environmental engineering technologies. We continue to focus our resources on innovative solutions to address challenges and encourage technical excellence in environmental cleanup projects across EPA.

Engineering Forum Goals

The EF's goals are outlined below, under four workgroup goals, with objectives and actions following each of the four goals. Note that the Engineering Forum will continue with various efforts on Greener Cleanups, through the Engineering Forum Greener Cleanups Sub-Committee (EFGCS), by serving as a "Go To" group, or key contact point for access to technical information on this developing field as it applies to hazardous waste site cleanup. Rather than add a new goal for this cross-cutting Greener Cleanups effort, the Engineering Forum's activities planned for 2013 in the area of Greener Cleanups are listed below under Forum Goals.

Forum Goal #1:

Maintain communication on technical and engineering issues between the EPA labs, EPA Headquarters and Regional site managers.

Objective A:

Maintain technical interchange between the EPA labs, EPA Headquarters, and the regional site managers. Also, develop and maintain a network to share technical information with Superfund, the

Resource Conservation and Recovery Act (RCRA) and Brownfields programs, which are also involved in site cleanup and greener cleanups work.

Actions:

- Encourage membership in the EF from these groups.
- Hold monthly conference calls and periodic face-to-face EF meetings, with NARPM being our first priority.
- EF Members and Friends are encouraged to invite others from their offices to attend monthly conference calls when we have a guest speaker.

Objective B:

Facilitate resolution of technical problems encountered by site managers and other interested regional personnel.

Action:

- Encourage submission of "Technical Topics" from regional site managers so that discussion and assistance can be provided by the EF.

Objective C:

Enhance technology transfer from our EF and EFGCS meetings (including from NARPM).

Actions:

- Disseminate EF information to site managers by making available teleconference and meeting summaries on the Technical Support Project webpage located at <http://epa.gov/superfund/remedytech/tsp/engforum.htm> and distribute the "Highlights" newsletter (from face-to-

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face meetings) to alert site managers to recent Forum activities.

- Conduct training and/or panel sessions on current technical topics at the annual NARPM Conference.

- Help maintain and update the contact list of all Greener Cleanups Groups.

- Be available for tech support to staff who found EF contacts through the Tech Support Project "Expertise Directory" of all Forum members. The directory is located here:
<http://epa.gov/superfund/remedytech/tsp/download/expertise.pdf> .

Forum Goal #2:

Support EPA site managers and Headquarters by developing technical issue papers, reviewing technical guidance documents, gathering information, and identifying technical support needs.

Objective A:

Develop technical issue papers and Flash Bulletins identified by forum members as regional needs.

Actions:

- As of January 2013, the EF is assisting with the preparation of the following publications:

- Vertical Engineered Barriers for Containment Issue Paper,*
- Lessons Learned from ERH/Thermal Remedies*
- *Material Management BMP Fact Sheet / Issue Paper*
- Flash Bulletins (as needed)*
- Other publications deemed appropriate to the EF's work.*

- Strategize how to integrate optimization into Superfund cleanup and assist with application of OSRTI methods.

- Low temperature thermal desorption performance data compilation and possible develop issue paper.

- RE Work: (1) Compile cost information on renewable energy alternatives in remedial actions at contaminated sites. (2) Evaluation of renewable energy cost/feasibility economics.

- Document various techniques for estimating cleanup times, final concentrations, etc. for the more common remedial technologies or families of technologies (e.g., SVE, air sparging, ISCO, in-situ bio, in-situ thermal, P&T, MNA).

- Publish engineering forum issue paper to focus on vertical engineered barriers and the longevity of slurry walls.

Objective B:

Review technical guidance documents.

Actions:

- Review technical guidance documents when they are sent to the EF For review by Headquarters, EPA Labs, other TSP Forums, or other appropriate parties.

- Provide technical assistance with evaluating carbon/energy footprints for various site cleanup technologies.

- Review technical guidance documents developed for Greener Cleanups at EPA Headquarters request.

- Continue to push for ORD publication of PCB Engineering Issue Paper.

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- Potentially be point-of-contact for regional staff on "High Resolution Site Characterization" (HRSC) issues, as requested by OSWER during NARPM 2012.

Objective C:

Support EPA site managers and Headquarters by gathering information or identifying technical support needs.

Actions:

- Update the EF Expertise Survey list of training needs from 2005 (see Appendix 4), preferably expanding it to include RCRA corrective action project managers.

- Notify Headquarters (e.g., through inclusion in the monthly call notes) of any technical support needs identified by the EF.

- Host technology verification pilot project with ERT

Forum Goal #3:

Work to interact with and exchange technical information with other organizations involved in hazardous waste site cleanup and green remediation

Objective A:

Interact with and exchange technical information with the Interstate Technology and Regulatory Council (ITRC) as well as state government agencies and other federal government agencies.

Actions:

- Host specific topics related to guidance and policy interpretation on

site cleanup issues on monthly calls and/or at national meetings;
- Provide case studies or "lessons learned" information related to a specific guidance document or policy.

- Exchange technical issue papers with other agencies.

- Conduct peer review of guidance and policy coming out of other agencies.

- Conduct the EF National Meeting in coordination with another agency or agencies.

- Encourage participation by targeted state personnel in the EF.

- Exchange information with other workgroups involved with Greener Cleanups efforts in both the public and private sectors.

- Participate in Federal Remediation Technology Roundtable (FRTR) quarterly events when possible (available via webinar).

- Encourage EF members' participation in other organizations.

- Participate in ITRC Green and Sustainable Remediation Team (a second "case studies" GSR team is proposed for 2013).

- Keep abreast of ASTM Green and Sustainable Remediation activities and standards.

- Marketing EPA Environmental Footprint Estimating Methodology. Phase 2 gets underway in 2013 and includes technical support as the first priority followed by compilation on how other regions are using the methodology.

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- Host occasional tech topics on monthly EF call. Here is a list of the 2012 tech topics presented on the EF calls.

February – “Dewind One-Pass Trenching” (Mark van Hoose, Dewind, Inc.)

March – “REGENESIS In Situ Chemical Oxidation (ISCO) Technologies - RegenOx® and PetroCleanze™” (Dr. Ben Mork, Regenesis)

April – CETCO Remediation Technologies (Dave Dazé, CETCO)

August – Long Term Performance of Phytotechnology Caps (Dr. Wai Kwan, Roux Associates)

September - In situ geochemical stabilization (ISGS) (Dr. Jim Mueller, FMC Environmental Solutions)

October - Lessons Learned from Incorporation of Green and Sustainable Remediation into Army Environmental Remediation: Pilot Project Results. (Carol Dona, US ACE)

Actions:

- Conduct surveys among site cleanup managers in regional offices and labs to identify technical support and training needs as part of the TSP and NARPM meetings.

- Accept input from management to prioritize tech support and/or training needs.

-The EFGCS should discuss findings of the 2011 National Academy of Sciences report *Sustainability and the U.S. EPA* and find issues applicable to the goals and function of the EF.

- At the May 2012 TSP Meeting in Oklahoma City, the EF brainstormed a number of issues for future consideration. Over the subsequent months, they honed this list down to practical and non-duplicative items, and these are now part of the Evergreen List. They are peppered throughout the actions in this Plan, and when complete, will meet various objectives. Repeat this process at least annually.

Forum Goal #4:

Assess and work to meet future technical support and training needs of site managers.

Objective A:

Analyze future technical support needs as EPA programs change and develop. These needs could include technology transfer to state environmental agencies or other federal agencies or increased technical support to site managers. Discuss how EF can assist in bringing Agency goal of incorporating sustainability into cleanup’s engineering efforts, and work to support this goal.

Objective B:

Meet the training needs identified based on input from site managers, and assist in training or technical presentations.

Actions:

- Conduct training sessions at NARPM and other venues. The following training was made available at NARPM 2012 (November 26-30), with the Engineering Forum playing a part:

- Engineering Forum Case Studies

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- RECs, Renewables, and Remediation: What Does It All Mean and How Do I Do It?
- Critical Analysis of Issues at ISCO Sites
- Greener Cleanups – Environmental Footprint Methodology
- Greener Cleanups and the Role of BMPs
- DNAPL/LNAPL Source Zone Treatment Path to Closure: ISTT and Combining Remedies to Get it Right the First Time

Appendices:

1. "Evergreen List" as of January 2013
2. EF Qualifications and Responsibilities
3. EF Organizational Procedures
4. Training Needs from EF Expertise Survey
5. Excerpt from 2011-2015 EPA Strategic Plan, including Goal 3, Objective 3.3, Restore Land
6. 2007 Call for Membership
7. Example State Solicitation Letter
8. EF Brochure (May 2011 version)
9. Technical Support Project Expertise Directory

- Develop a list of Greener Cleanups expertise and experience of Forum members to be used as "mentors" for site managers. This list will include info on specific topics, and will be used as a resource for training or technical presentations.

- Continue to compile and make available on the Environmental Science Connector (or future cloud-based tool) technical presentations from monthly calls and/or national meetings.

- Make use of the online webinar tools (currently Adobe Connect) whenever possible.

-Update the results of the Training needs, which were last collected in December, 2005.

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Appendix 1: Evergreen List (as of January 17, 2013)

<u>Priorit y</u>	<u>Task/ Title</u>	<u>Purpose</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Next Steps/ Meeting/ Issues</u>
High	Marketing EPA Environmental Footprint Estimating Methodolog y	Marketing through seminars	Julie Santiago Mike Gill Hillary Thornton Stephanie Vaughn	<p><i>+Notes: Nov 2009 – May 2012</i></p> <p>Nov 2012: Phase 2 of this project was discussed at NARPM EF Business session. Tasks for Phase 2 include: setting up training, case studies [e.g., amount of effort, cost of CO2 avoided, etc.], and suggested approaches for using results [e.g., balancing potential impacts between waste, energy, H2O, etc.], ongoing outreach. Technical support is the first priority followed by compilation on how other regions are using the methodology.</p>	<p>The creation a spreadsheet listing how other regions are using the methodology and a living document on Green Remediation FAQs that can be a reference for EF members.</p> <p>Work with U.S. Army Corps of Engineers (USACE) members on the Engineering Forum to identify opportunities for expanding outreach efforts to the USACE District RPMs.</p>

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<u>Priorit y</u>	<u>Task/ Title</u>	<u>Purpose</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Next Steps/ Meeting/ Issues</u>
High	Optimization	Strategize how to integrate optimization into Superfund clean up and assist with application of OSRTI methods	Kimberly White* R1 Julie Santiago R9 Fran Costanzi R8 Joy Jenkins R8 Kira Lynch R10 Sandra Bourgeois, R8	<i>+Notes: Nov 2010 – April 2012</i> May 2012: Optimization Strategy is going to be signed. On-going pilots in every region; Regional liaisons have a list of projects – Kim to send list of regional contacts. Mathy Stanislaus, provided revisions on the draft strategy; would like to see the program applied to Emergency Response.	
High	Lessons Learned from ERH & Thermal	Write fact sheet and have EF review	Kira Lynch* Jim Brown Stephanie Vaughn	<i>+Notes: Jul 2010- May 2011</i> Nov/Dec 2012: A copy of the fact sheet has been sent to EF members and posted on ESC for review and comment.	Comments on fact sheet due to Kira Lynch by Feb. 1, 2013
Medium	Hosting Technology Verification Pilot Project with ERT		Stephanie Vaughn* Joy Jenkins Andy Palestini Nate Nemani	Nov 2010: Interested in requesting a long-term case study. October 2011: within next month Stephanie to organize meeting	
Medium	New Approaches to Existing Technologies	Looking at the way we do things and identify lessons learned	Bill Rothenmeyer* Kim White Matthew Jefferson Raji Josiam	<i>+Notes: Feb 2011 – February 2012</i> March 2012: Conf call held on Feb27 to discuss scope of workgroup. Next meeting not scheduled May 2012: Kim to talk to Bill R.	

Periodic PROJECTS

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Task/ Title	Workgroup	Status/ Progress	Issues/ Other
State Recruitment Increase state representation on forum	Raji Josiam* Mike Gill Donna McCartney	+Notes: <i>Feb 2011 – Nov 2012</i> Nov 2012: Mike G. indicated that there is an interest from Massachusetts; a letter will be sent to them Dorothy Allen. Suzanne D. indicated that there is a potential RPM in Kansas DEQ that is interested.	
Strategic Plan Update	Hilary Thornton Mike Gill	+Notes: <i>May 2009 – Oct 2011</i> November 2011: Mike, Michelle, and Donna volunteered to update the EF Strategic Plan in early December. Hilary and Julie will help them update the greener cleanups goals and objectives. January 2012: Posted on ESC on December 13; next update in the fall of 2012 Nov 2012: Next update of the Strategic Plan to be led by Mike Gill	revisit on annual basis and update as needed
Flash Bulletins <i>(formerly titled: Lessons learned from use of ...)</i> Gather lessons learned about a given remedial technology from a variety of sources (clu-in.org, frtr.gov, 5YR Reviews, optimizations, removals, etc.) and synthesize them into a single document on the order of 10 pages.	Raji Josiam* Kira Lynch	+Notes: <i>July 2007 – Jan 2011</i> September 2011: Flash Bulletins will be added to Tech Direct/ Highlights; Currently no bulletins in cue to be posted.	

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Peer Review PROJECTS			
<u>Task/ Title</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Issues/ Other</u>
“Vertical Engineered Barriers for Containment” paper (15 pages) + 2 page fact sheet version	Eva Davis (ORD)* Donna McCartney Kira Lynch Stephanie Vaughn Terry Burton Michael B. Davis (several others on this workgroup; only ORD lead & EF members are listed)	+ <i>Notes: Aug 2008 – May 2010</i> July 2010 - Two page fact sheet is finished and posted on the following web site: http://www.epa.gov/nrml/pubs/600f10017/600f10017.pdf . Work will continue on the longer issue paper with ORD as lead. Jan 2011: Workgroup continues to hold conference calls with case study presentations on containment remedies every few months. Interested parties should contact Eva Davis to be added to the workgroup and distribution list. May 2011: Issue Paper in progress <i>February 2012:</i> Eva Davis is still working on issue paper.	?New Project: *Vertical barriers paper—MDEQ, O&M issue paper? GW forum/E. Davis paper? Mitigation, monitoring strategies, performance issues, construction mgmt QA/QC. See NRC, EPA reports. Kristi Z.
Pre-emptive Vapor Intrusion and VI Operation, Maintenance & Mitigation	Mo Salam Gary Miller	+ <i>Notes: Nov 2010 – March 2012</i> May 2012: Dave B. paper for review on April 16; Comments due mid-May. Mike will find out if can post on ESC	guidance document for Vapor Intrusion, to be published by Nov 30, 2012

Eliminated PROJECTS			
<u>Task/ Title</u>	<u>Purpose</u>	<u>Status/ Progress</u>	<u>Issues/ Other</u>
Communities of Practice (<i>Searchable Forum</i>)	N/A	N/A: This task was eliminated. Existing technical support mechanisms plus an expanded expertise directory should be sufficient.	

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Eliminated PROJECTS			
Task/ Title	Purpose	Status/ Progress	Issues/ Other
Engineering Best Management Practices (Design/Build Projects)	Provide formal way to access BMPS	N/A: This task was eliminated. It was turned over to the NARPM co-chairs.	NARPM responsible for this.

PROJECTS on the HORIZON			
Task/ Title	Purpose	Status/ Progress	Issues/ Other
Low temperature thermal desorption performance data compilation		*Compile low-temperature thermal desorption performance data—site-specific case studies, R2,?update ITRC doc. With new info? Possible issue paper.	
		*Soil vapor extraction (continue Michelle. Simon paper) [Malot NARPM presentation outcomes tie to paper] presenting @ EF case studies session. Guidelines on closure criteria, performance issues. White paper? See 2006 EF Issue Paper.	
		Characterization of perchlorate in bedrock, distinguishing sources (fingerprinting)—Julie/Herb L., case study or issue paper when investigation complete. Search serdp.gov, estcp.gov for paper similar. Two issues—fingerprinting and characterization. Distinguishing perchlorate signatures. MG & JSO to follow up.	
High resolution site characterization		High resolution site characterization—using all available site data for CSM, role for EF, training forthcoming. Collaboration with Groundwater Forum. EF would be involved in reviewing / concurring on HRSC content prepared by Carlos Pachon's contractor that would be eventually posted on the clu-in website.	

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PROJECTS on the HORIZON			
<u>Task/ Title</u>	<u>Purpose</u>	<u>Status/ Progress</u>	<u>Issues/ Other</u>
		Phytotechnology demonstration (R2 RARE project?) RARE proposal—EF paper or sponsor a test cell? [EF discuss ability to support after September]	
		<p>Compiling cost information on renewable energy alternatives in remedial actions/at contaminated site. See Smart Energy Resources Guide as a start</p> <p>Evaluating site-scale renewable energy [aka Repowering America and siting renewable energy on the site, fact sheet on approach w/ S. Jones?]</p> <p>Evaluation of renewable energy cost/feasibility economics, any guidance? [case studies, lessons learned, what are issues to get started with RE?, check Repowering America and state RE doc][Sept. tech talk]</p>	

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PROJECTS on the HORIZON			
<u>Task/ Title</u>	<u>Purpose</u>	<u>Status/ Progress</u>	<u>Issues/ Other</u>
Estimation of time frames for cleanup and achievable concentrations, tools, and models	The focus of this project is to document various techniques for estimating clean -up times, final concentrations, etc. for the more common remedial technologies or families of technologies (e.g., SVE, air sparging, ISCO, in -situ in -situ thermal, P&T, MNA).	<p>EF members proposed cataloging existing resources and compiling them in a fact sheet. This would include:</p> <ul style="list-style-type: none"> • document various techniques for estimating clean-up times, final concentrations, etc. for the more common remedial technologies or families of technologies (e.g., SVE, air sparging, ISCO, in-situ bio, in-situ thermal, P&T, MNA) • develop some type of questionnaire and follow-up interviewing of EPA RPMs to compile as many estimating techniques as possible for these various technologies that they have seen used in FSs, etc. for their CERCLA sites and consider reasonable approaches to continue to use - ranging from quick and dirty back of the envelope calculations to more sophisticated pilot study and isotope or other bench scale or field analyses to modeling software like REMCHLOR or RTD3. • If known, it would be helpful to compile lessons learned feedback regarding key parameters needed, limitations of estimating technique, accuracy versus actual field implementation, compilation of actual cleanup times and starting/ending COC concs for completed remedies, final clean-up concs or mass removal achieved, etc. • Focus on developing as much info as possible that can be used as a reference for practitioners of remedial technology comparative analyses, FSs, projections of timeframes to meet RAOs, etc. (Proposed by Mark Rothas, USACE) 	

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PROJECTS on the HORIZON			
<u>Task/ Title</u>	<u>Purpose</u>	<u>Status/ Progress</u>	<u>Issues/ Other</u>
	This project will focus on vertical engineered barriers and the longevity of slurry walls.	<p>Nov 2012: Discussed possible end product for this project as an engineering issue paper. Tasks identified to be done in order to develop the scope of work included:</p> <ul style="list-style-type: none"> • Review past work such as fact sheets, by Eva Davis and John McCartney fact sheet and paper, NRC report + EPA report (10 years ago), & Kelly issue paper (6-7 years ago?) to develop a focused scope (e.g., focus on the engineering issues). • Avoiding policy issues/calls in the scope of work. • Survey RPMs on any issues/lessons learned on slurry wall/vertical barriers. <p>(Proposed by Kristi Zakrzewski)</p>	

PROJECTS RECENTLY COMPLETED			
<u>Task/ Title</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Completion Date</u>
Solidification/Stabilization TPR (ORD Lead)	Felicia Barnett (STL,R4) Dave Reisman	http://www.epa.gov/nrmrl/pubs/600r09148/600r09148.html	Nov 2009
NARPM 2010 (2nd Annual)	Raji Josiam	November 16, 2009 The EF's full-day training at NARPM 2009 (Atlanta) was re-packaged by the EF as three 2-hour webinars, which aired in Oct, Nov, and Dec 2009. They were very well attended and well liked by attendees.	2009
NARPM Redux Webinar Series (3rd Annual)	Mike Gill Raji Josiam Hilary Thorton Susan Davis	<p>EF's full-day training at NARPM 2010 is being re-packaged by the EF as three 2-hour webinars.</p> <p>March 2011. We successfully finished the third of 3 webinars on Feb 10. In total, we trained over 600 people from 12 countries during these webinars.</p>	Final two were presented on Jan 11 and Feb 10.
Evapotranspiration Covers	Steve Rock (Author) Doug Grosse	<p><i>+Notes: Jan 2008 – Nov 2009</i></p> <p>May 2010: Doug Grosse and Dave Reisman reported that Steve</p>	

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PROJECTS RECENTLY COMPLETED			
<u>Task/ Title</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Completion Date</u>
<i>(ORD Lead)</i>	Marti Otto Bernie Schorle	Rock's most recent draft still requires considerable work before it will be ready to go to the EF For review. Jan 2011: Addressing comments ; almost done; expect to completed by February	
Expertise Directory <i>(developed from Expertise Survey workgroup) -</i> Provide an online list of Forum members' expertise/ experiences	Mike Gill* Julie Santiago	<i>+Notes: Sept 2008 – Aug 2011</i> September 2011: directory posted as of August 30; it will be updated quarterly. TSP & NARPM co-chairs will be publicized on the directory. October 2011: 54 TSP members are in the directory. The website has been updated – counter was added to keep track of # of hits(327 to date);	
2011 NARPM Series - EF to host webinars NARPM	Julie Santiago Mike Gill Raji Josiam Hilary Thornton Andy Palestini	Four EF seminars planned: Three 3-hour Green Remediation; <i>+Notes: Mar 2011 – Oct 2011</i> November 2011: NARPM series webinars have not yet been scheduled. Hilary Thornton (Region 3) is working with Matt Jefferson (Region 7, NARPM co-chair) and the presenters to schedule the remaining two NARPM series webinars early next calendar year. January 2012: Looking for someone to support effort March 2012: The remaining two NARPM series greener cleanups webinars have been scheduled for April 17 and 23 May 2012: Webinars completed.	May 2012

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PROJECTS RECENTLY COMPLETED			
<u>Task/ Title</u>	<u>Workgroup</u>	<u>Status/ Progress</u>	<u>Completion Date</u>
PCB Engineering Issue (ORD Lead)	Doug Grosse Gary Miller Mo Salam	<p><i>+Notes: Oct 2008 – Jan.2012</i></p> <p>February 2012: Mike reported that Doug Grosse (NRMRL-Cinc.) and his contractor are addressing comments on the PCB engineering issue paper. Although this document is not an EF product, forum members want to ensure that their comments are addressed.</p> <p>March 2012: EF review the draft final PCBs document and associated response to comments. Comments should be submitted to Mike by COB April 6th.</p> <p>May 2012: Greg D – final comments to be addressed by the end of month; paper will be finalized shortly thereafter.</p> <p>November 2012: PCB issue paper revised, in ORD currently review/signoff</p>	

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Appendix 2: Engineering Forum Qualifications and Responsibilities

A. MEMBERSHIP QUALIFICATIONS

Membership is subject to the approval of the co-chairs and is contingent upon the following criteria:

- 1) Each member must be a permanent employee of the U.S. Environmental Protection Agency.
- 2) Each member must be either an engineer or technical professional having at least 3 years experience working in hazardous waste remediation. The Engineering Forum encourages regions to involve members from RCRA, CERCLA, Brownfields, etc.

B. FRIENDS OF THE FORUM

- 1) Other persons interested in participating in the Engineering Forum, but who do not meet the membership criteria above may, at the discretion of the Co-chairs, be granted the non-voting status of "Friend of the Forum." Friends of the forum can come from States, the US Army Corps of Engineers, EPA headquarters, the Office of Research and Development (ORD), and the Environmental Response Teams. This list is not intended to exclude participation in the Engineering Forum by other engineers or technical professionals.
- 2) Those who do meet the membership criteria but are not able to fully participate in the Engineering Forum may also request that they be granted "Friend of the Forum" status.

C. MEMBERSHIP RESPONSIBILITIES

- 1) Each member is expected to make a good faith effort to participate in monthly conference calls and biannual TSP meetings. Co-chairs will monitor participation and work to resolve participation issues. Co-chairs may, at their discretion, remove a member for non-participation.
- 2) Each member must join and actively participate in a forum workgroup or activity. (Participation is defined as being involved in at least one Engineering Forum work product in a year. A work product is an item such as issue paper, reviewing and commenting on guidance documents, providing training or technical assistance, etc.). Members are to report on the progress of the work group or product during the conference calls. In addition, members may be asked to report on their participation and accomplishments biannually, to support the Forum's report to Headquarters.
- 3) Members are responsible for finding an alternate member or replacement who will carry out their responsibilities if they are unable to do so.
- 4) Members will be required to disseminate information on national and technical issues within the individual regions and regionally incorporated States, as applicable.

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5) Members will raise regional technical issues to the Forum during the monthly conference calls. Members will seek to identify inter-regional technical engineering problems. Solutions, suggestions, and/or recommendations will be developed within the Forum and/or directed to the EPA laboratories for further research. Where appropriate, the problem will be raised to OSWER to develop policy or guidance.

6) Members may act as intra- and inter-regional engineering resources.

7) Under no circumstances may individual Forum members issue a position statement, oral or written, which represents the Forum at large. It is the responsibility of the individual forum members to ensure that their individual position statements not be construed as representing the Forum as a whole.

D. CO-CHAIR RESPONSIBILITIES

1) All membership issues will be referred to and resolved by the Co-chairs.

2) Co-chairs will preside over monthly conference calls and general meetings.

3) Co-chairs will develop the agendas for the conference calls and meetings mentioned above, in consultation with the membership at large.

4) Co-chairs will monitor the activities and progress of the Engineering Forum, including work group activities, issue papers, document reviews, etc.

5) All official correspondence will be generated by the Co-chairs.

6) Co-chairs will act as the central point of contact for inter- and extra-Forum activities. All documents being sent to or from other organizations for review or comment must be sent first to the EPA HQ TSP staff, who will pass them along to the Co-chairs.

7) The Co-chairs will communicate, in writing, the official position statements of the Forum. Official position statements will be developed by the Co-chairs following a consensus of the Forum at large. Co-chairs may delegate the authority for issuing a specific position statement to the relevant work group chair(s).

8) The Co-chairs will be responsible for leading the effort to plan and present training on topics that will be of interest to the attendees of the annual NARPM conference.

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Appendix 3: EF Organizational Procedures

A. CONFERENCE CALL AND MEETING SCHEDULE

- 1) The general conference calls will be held on the first Wednesday of every month, from 12:30 to 2:00 p.m. (EST), unless otherwise indicated. Conference call minutes are typically taken by the contractor supporting the Technical Support Project.
- 2) Workgroup conference calls and meetings will be held on an as needed basis.
- 3) Engineering Forum business meetings will be held two times annually. One meeting is typically held in conjunction with the National Association of Remedial Project Managers (NARPM) conference and the other during the Fall Technical Support Project (TSP) meeting. The lead for planning the TSP meeting rotates among the Engineering, Ground-Water and Federal Facilities Forums. The next time the EF will take the lead for a TSP meeting will be in Fall 2013, although this may be delayed until 2014 due to budget constraints. In November 2012 (NARPM), Jim Woolford stated that he wants to keep the annual meeting schedule for NARPM. But due to budget cutbacks, the TSP meeting may scale back from two meetings per year to one (preferably with NARPM).
- 4) The Engineering Forum Greener Cleanups Subcommittee, formed in mid-2010, held separate monthly calls for about two years. As of mid-2012, separate calls were discontinued and their business is now discussed as part of the monthly EF call agenda.

B. CO-CHAIR ELECTION PROCESS

- 1) Three Co-chairs shall be elected for 2-year terms. Typically, expiration of these terms is staggered so that only one Co-chair vacancy occurs at a time, preserving institutional knowledge. Elections will be finalized during one of the two annual meetings if possible. The Co-chairs shall be responsible for maintaining a schedule for the elections. Election support is typically provided by the contractor supporting the Technical Support Project.
- 2) Each Region shall have two votes divided among all eligible members. The two votes should be determined prior to the election.
- 3) Nominations for the Co-chair position will be open until one month prior to the TSP meeting and one month prior to the joint NARPM/TSP meeting, or such other date as determined by the Co-chairs and announced to the EF. Only members or "friends" in good standing are eligible for nomination.
- 4) One representative from each Region will cast that Region's two votes during a secret ballot election to be held during the business sessions at the TSP meeting and, when applicable, joint NARPM/TSP meetings. A majority vote will determine the Co-chair. In the event that an election is not held in conjunction with either meeting, eligible voting members should email their votes to the contractor providing support to the TSP by a date to be determined by the Co-chairs. The contractor will tally the results and send them to the Engineering Forum Co-chairs, who will announce the winner.

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- 5) Newly elected Co-chairs begin their term immediately following the announcement of the election results, or such other date as agreed to by the Co-Chairs (e.g., at the end of the upcoming TSP meeting).
- 6) If a Co-chair is no longer able to fulfill his/her duties prior to the end of their term, a special election for the remaining portion of that term will be held if the term remaining is greater than three months.

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Appendix 4: Training Needs from EF RPM Expertise Survey

The EF published an expertise survey in December 2005, which tabulated results from surveys filled out by Superfund RPMs in the regional offices. One of the questions from that report was about training needs. Here are the results, which can still serve as a guide today for EF training needs.

The top training needs are:

- 1. Groundwater Modeling, 43 requests*
- 2. Indoor Air/Contaminated Groundwater Plume, 41 requests*
- 3. Bioremediation, 40 requests*
- 4. Technical Impracticability Waivers, 38 requests*
- 5. Sediment Issues, 34 requests*
- 6. Permeable Reactive Barriers, 34 requests*
- 7. DNAPLs, 31 requests*
- 8. Geophysical Characterization, 28 requests*
- 9. Explosives Sites, 27 requests*
- 10. Air Monitoring, 27 requests*
- 11. Chemical Treatment, 27 requests*
- 12. Pesticides, 25 requests*
- 13. Stormwater Runoff, 25 requests*
- 14. Slurry Walls, 25 requests*

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Appendix 5: Excerpt from 2011 - 2015 EPA Strategic Plan (Objective 3.3, Restore Land) (<http://www.epa.gov/planandbudget/strategicplan.html>)

Objective 3.3: Restore Land. Prepare for and respond to accidental or intentional releases of contaminants and clean up and restore polluted sites.

Strategic Measures:

Deepwater Horizon BP Oil Spill: Oil Spill Program Review

- ◆ By 2015, in response to the Deepwater Horizon BP oil spill in the Gulf of Mexico, EPA will conduct a thorough assessment of its rules, guidelines, and procedures relating to all relevant aspects of EPA's oil spill program, including prevention of, preparedness for, response to, and recovery efforts, and update them as needed, and ensure that the Agency has the appropriate tools to respond to environmental disasters of this scale.

Emergency Preparedness and Response

- ◆ By 2015, achieve and maintain at least 80 percent of the maximum score on the Core National Approach to Response (NAR) evaluation criteria. (Baseline: In FY 2009, the average Core NAR Score was 84 percent for EPA headquarters, regions, and special teams prepared for responding to emergencies.)²
- ◆ By 2015, complete an additional 1,700 Superfund removals through Agency-financed actions and through oversight of removals conducted by potentially responsible parties (PRPs). (Baseline: In FY 2009, there were 434 Superfund removal actions completed including 214 funded by the Agency and 220 overseen by the Agency that

end of FY 2009, the migration of contaminated groundwater was controlled at 58 percent of all 3,746 facilities needing corrective action.)

- ◆ By 2015, increase to 56 percent the number of RCRA facilities with final remedies constructed. (Baseline: At the end of FY 2009, all cleanup remedies had been constructed at 32 percent of all 3,746 facilities needing corrective action.)
- ◆ Each year through 2015, reduce the backlog of LUST cleanups (confirmed releases that have yet to be cleaned up) that do not meet risk-based standards for human exposure and groundwater migration by 1 percent. This means a decrease from 21 percent in

were conducted by PRPs under a voluntary agreement, an administrative order on consent, or a unilateral administrative order.)

- ◆ By 2015, no more than 1.5 million gallons will be spilled annually at Facility Response Plan (FRP) facilities, a 15 percent reduction from the annual average of 1.7 million gallons spilled from 2005–2009.

Cleanup Contaminated Land

- ◆ By 2015, complete 93,400 assessments at potential hazardous waste sites to determine if they warrant Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) remedial response or other cleanup activities. (Baseline: As of 2010, the cumulative total number of assessments completed was 88,000.)³
- ◆ By 2015, increase to 84 percent the number of Superfund final and deleted NPL sites and RCRA facilities where human exposures to toxins from contaminated sites are under control. (Baseline: As of October 2009, 70 percent Superfund final and deleted NPL sites and RCRA facilities have human exposures under control out of a universe of 5,330.)⁴
- ◆ By 2015, increase to 78 percent the number of Resource Conservation and Recovery Act (RCRA) facilities with migration of contaminated groundwater under control. (Baseline: At the

2009 to 14 percent in 2015. (At the end of FY 2009, there were 100,165 releases not yet cleaned up.)

- ◆ Each year through 2015, reduce the backlog of LUST cleanups (confirmed releases that have yet to be cleaned up) in Indian country that do not meet applicable risk-based standards for human exposure and groundwater migration by 1 percent. This means a decrease from 28 percent in 2009 to 22 percent in 2015.
- ◆ By 2015, ensure that 799 Superfund NPL sites are "sitewide ready for anticipated use." (Baseline: As of October 2009, 409 final and deleted NPL sites had achieved "sitewide ready for anticipated use.")⁵

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Appendix 6: Engineering Forum Call for Membership (2007)

This call for members was sent to regional staff in March 2007 and could be reused for future membership drives (after updating).

Engineering Forum

We're Looking For a Few Good Engineering Professionals.....

A national workgroup, known as the Engineering Forum, is soliciting for new members from the regional Superfund and RCRA staff.

The Engineering Forum is one of the three Forums established under the Office of Solid Waste and Emergency Response (OSWER) and the Office of Research and Development (ORD) as the Technical Support Project (TSP) back in 1987. The other Forums are the *Ground Water Forum* and the *Federal Facilities Forum*. EPA headquarters, ORD, the US Army Corps of Engineers, and state personnel also participate on the Forums. Forum members work to improve communications and assist in technical transfer between EPA regional and laboratory staff on nationally significant topics. Members participate in monthly conference calls and meet semi-annually to discuss technical and policy issues, new technologies, and to network with academic experts and other federal agencies. In addition to providing technical assistance to regional staff, products generated typically include "Issue Papers" or other reference materials.

For more information, go to -> <http://epa.gov/superfund/remedytech/tsp/index.htm> .

The Engineering Forum consists of engineers and other technical staff that support the Superfund and RCRA programs in each of the ten EPA regional offices. The group was organized to exchange up-to-date information related specifically to engineering remediation issues at Superfund and RCRA sites. The goal is to have at least two members per region on the Forum - one Superfund and one RCRA. **This solicitation is to fill some empty slots.** The time commitment is between 2-5% and regional travel expenses are minimized since the Office of Superfund Remediation and Technology Innovation (OSRTI) picks up member lodging costs for the semi-annual meetings. Some of our current topics have included:

- updating 8 issue papers covering numerous treatment topics;
- tech talks (perchlorate, ZVI-clay technology, solar-powered remediation); and
- agenda preparation for upcoming meetings (including a nanotech session)

The last TSP meeting was held in conjunction with the Groundwater Resources Association of California in Long Beach in November 2006. The meeting covered "High Resolution Site

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Characterization and Monitoring". The TSP project meets jointly with the National Association of Remedial Project Managers (NARPM), including this May (2007). Minutes from previous meetings can be found on the TSP website:
(<http://www.epa.gov/tio/tsp/meetings.htm>).

If you are a Superfund or RCRA engineer or scientist and are interested in being involved in technical issues that are of national importance, please consider joining the Engineering Forum. Please contact any of the current co-chairs, Jon Bornholm of Region 4 (404-562-8820), Mike Gill of Region 9 (415-972-3054), or Steve Kinser of Region 7 (913-551-7728), or your regional rep (see below) with any questions. Engineering Forum Regional Representatives (as of March 2007

(The original list from the document was removed, as it was out of date. Please see the following website for the most up-to-date EF membership information:
<http://epa.gov/superfund/remedytech/tsp/engmembe.htm>)

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Appendix 7: Example State Solicitation Letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

Date: xx/xx/xxxx

Addressee

Address

Dear xxx:

The Engineering Forum (EF) of the US EPA Technical Support Project would like to provide you with some information about our organization and invite you to become a Friend of the EF. We have many opportunities for our members to exchange information regarding innovative site cleanup and characterization technologies as well as site-specific engineering issues, including problems encountered, solutions, and lessons learned.

In addition, a subcommittee of the EF, the Engineering Forum Greener Cleanups Subcommittee (EFGCS), was formed to facilitate the flow of information among EF members and various technical staff of the EPA about incorporating greener cleanup methods into remediation process. The EFGCS is open to the members and friends of the EF.

Also, both the EF and the EFGCS develop, facilitate, and moderate different technical sessions in the annual training program of the National Association of Remedial Project Managers (NARPM).

We would like to invite you to join us in our monthly conference calls held on the first Wednesdays of the month from 12:30 am – 2:00 pm Eastern Time. The EFGCS monthly calls takes place the fourth Wednesdays of the month from 1:00 pm – 2:00 pm Eastern Time.

Attached is the EF brochure which provides more information. Please contact me if you have questions at xxx-xxx-xxxx.

Sincerely,

XXXXXXXXXX
Engineering Forum Co-Chair

Attachment: EF Brochure

Electronic cc:

xxxxxxx – EF Co-Chair

xxxxxxx – EF Co-Chair

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Appendix 8: Engineering Forum Brochure

(This is the February 8, 2013 version of the two-sided tri-fold brochure the EF has distributed at recent NARPM conferences. This brochure was updated prior to publication of this February 2013 plan.)

TRAINING

The EF has provided training at the National Association of Remedial Project Managers (NARPM) Conference in recent years; which includes the Greener Cleanups one-day workshops, coordinated by the EFGCS, and In-Situ Chemical Oxidation sessions. The EF has provided two flash-mentoring sessions to answer any engineering questions the RPMs may have. For three years, the EFGCS offered the NARPM Greener Cleanups one-day workshops as post-conference webinar series. Close to 1000 people from across the country and the globe have participated in the webinar series. These training workshops spread knowledge of greener cleanups and other engineering practices throughout the remediation programs, promote regional and cross-program consistency, and encourage speaking with one EPA voice on these issues.

- EF members and Friends of the Forum come from EPA Regions, EPA HQ, State and Federal partners
- EF has monthly conference calls with frequent technical talks via the web
- Depending on budgets, the EF holds up to two face-to-face business meetings per year - one with NARPM and the other with other Forums

(Nov. 2010) After each launch, a Space Shuttle's external fuel tanks are ejected and fall into the Atlantic Ocean. The EF tour group listens as the guide from Cape Canaveral Air Force Base explains how these huge tanks are carefully cleaned and prepared for re-use.



MEMBERS AND FRIENDS

If you have a site-specific engineering issue you would like the Engineering Forum to address, please contact one of the following regional Engineering Forum members or friends of the forum located on this website: <http://www.epa.gov/superfund/remedytech/tsp/engforum.htm>

JOIN THE DISCUSSION!

If you are a Brownfields, Superfund, RCRA, or State engineer or technical professional and are interested in being involved in technical issues please talk to your regional Forum representative about joining the Engineering Forum.

Membership to the EFGCS is not exclusive to members of the Engineering Forum. Members come from Regions, Headquarters, other EPA offices, and from State offices.



Engineering Forum attendees at NARPM and the Technical Support Project meeting in Henderson, NV, November 2012

ENGINEERING FORUM:



Providing Technical Support to Regional Site Managers



February 2013

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WHO WE ARE

As one of the EPA Technical Support Project's three technical forums, the **Engineering Forum (EF)** provides technical support on engineering issues to the regional offices and serves as a line of communication between the regions, headquarters, and the laboratories of EPA's Office of Research and Development (ORD). The Engineering Forum encourages information exchange among these entities regarding innovative site cleanup and characterization technologies. Site-specific engineering issues, which include problems encountered, solutions, and lessons learned, are elements of the Engineering Forum's focus.

Forum membership is comprised of regional engineers and other technical professionals who are knowledgeable and interested in environmental engineering technologies. In addition, "Friends of the Forum" representing the ORD laboratories, headquarters program offices, state agencies, and the US Army Corps of Engineers participate actively in forum activities. Included activities consist of monthly web / teleconferences, technical meetings, and the development of issue papers, reports, and other forum products.

The Technical Support Project webpage is found at <http://www.epa.gov/superfund/remedytech/tsp/>

Through its monthly meetings, the Engineering Forum aims to:

- * *Facilitate* resolution of technical problems encountered by site personnel
- * *Develop and Present* training and technical presentations to meet needs of site managers
- * *Maintain and Enhance* technology transfer among cleanup programs within EPA
- * *Formulate and Review* issue papers, flash bulletins and other technical documents
- * *Provide* EPA programmatic and regional personnel with a focal point for site information exchange and technical support
- * *Interact* and exchange technical information among EPA regions, State and Federal partners

RECENT ENGINEERING FORUM ISSUE PAPERS

- ◆ Obtaining Assistance from the EPA Technical Support Centers. 2009
- ◆ Indoor Air Vapor Intrusion Mitigation Approaches. EPA 600-R-08-115, October 2008
- ◆ Online Hazardous Waste Cleanup Technical Resources. EPA 542-F-08-003, April 2008

All papers are here:

<http://www.epa.gov/superfund/remedytech/tsp/issue.htm#EF>



The EF visited passive hydrologic treatment basin at Canaveral AFB to learn how the Air Force is cleaning up large solvent plumes on the base using little energy. An alligator was pleased enough to start calling one "home".



EF GREENER CLEANUP SUBCOMMITTEE

The EF formed a Greener Cleanup Subcommittee (EFGCS) in 2008 to facilitate the flow of information about greener cleanups among Office of Solid Waste and Emergency Response (OSWER) programs and our State and Federal partner organizations.

The EFGCS is involved with EPA HQ's Office of Superfund Remediation and Technical Innovation as a key technical reviewer in the development of guidance and training for the Remedial Project Managers (RPM) on Best Management Practices (BMPs) for incorporating greener cleanups into the remediation process. On the monthly EF call, the EFGCS provides an update on the latest greener cleanup issues. Major milestones of the EFGCS include hosting a national Green Remediation Coordination Workshop (Oct 2010), assisting with BMP fact sheet publications (2011-2102) and publishing a methodology on environmental footprints (2012).

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Appendix 9: Technical Support Project Expertise Directory

This is taken from page 1 of the posted directory located at this website:

<http://www.epa.gov/superfund/remedytech/tsp/download/expertise.pdf>

Technical Support Project (TSP) Expertise Directory

(Last Update: January 18, 2013)

This directory provides a snapshot of the various types of expertise possessed by the current members of the three Technical Support Project Forums (Ground Water, Federal Facilities and Engineering). It is based on input provided by the members themselves.

EPA established the TSP in 1987 to provide technical assistance to Regional Remedial Project Managers, Corrective Action Staff, and On-Scene Coordinators. The TSP consists of the network of Forums and specialized Technical Support Centers located in ORD laboratories and with OSWER's Environmental Response Team. The Forums work to improve communications and assist in technical transfer between the Regions and the Centers. The Forums also act as technical resources, and disseminate information resulting from the Project to their Regional colleagues. That's where this Directory fits into the scheme.

The experience level of the Regional technical personnel in the three Forums is quite impressive. This Expertise Directory has been compiled (with input from members) to make that experience available to staff. It gives staff a way to connect to the right people; those who possess the technical expertise that is currently needed can be accessed.

This directory is searchable, but not sortable. A list of all areas of expertise that are currently listed in the directory is included on the next page to improve your searches. If there are any errors, please report them to any Forum co-chair, as denoted by an asterisk on the [members list](#).