Message #120: February 2007

Welcome to TechDirect. Since the January 1 message, TechDirect gained 398 new subscribers for a total of 27,110. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing may do so on CLU-IN at http://clu-in.org . All previous issues of TechDirect are archived there. The TechDirect messages of the past can be searched by keyword or can be viewed as individual issues.

TechDirect's purpose is to identify new technical, policy and guidance resources related to the assessment and remediation of contaminated soil, sediments and ground water.

Mention of non-EPA documents or presentations does not constitute a U.S. EPA endorsement of their contents, only an acknowledgment that they exist and may be relevant to the TechDirect audience.

Open Solicitation

ESTCP Solicitation!! The DoD Environmental Security Technology Certification Program (ESTCP) is seeking innovative environmental technology demonstrations as candidates for funding beginning in Fiscal Year (FY) 2008. This solicitation was released on January 4, 2007. It requests pre-proposals via Calls for Proposals to Department of Defense (DoD) organizations and Federal (Non-DoD) organizations, and via a Broad Agency Announcement for Private Sector organizations. The DoD Call for Proposals requests pre-proposals related to each of the ESTCP focus areas: (1) Environmental Restoration; (2) Munitions Management; (3) Sustainable Infrastructure; and (4) Weapons Systems and Platforms. Note that descriptions of these Topic Areas are included in Appendix A of the DoD Instructions. The Non-DoD Federal Call for Proposals and the Broad Agency Announcement requests pre-proposals in the following topics only: (1) Military Munitions Detection, Discrimination, and Remediation; (2) Sustaining Natural Resources on Training and Testing Lands; (3) Remediation of Contaminated Groundwater; (4) Remediation of Contaminated Sediments; and (5) Energy Efficiency and Renewable Energy for DoD Installations. Note that descriptions of these Topic Areas are included in Appendix A of the instructions for both the Federal (Non-DoD) organizations and for Private Sector organizations. The due date for all pre-proposals is March 15, 2007. For more information, see http://www.estcp.org .

Upcoming Live Internet Seminars

ITRC An Overview of Direct-push Well Technology for Long-term Groundwater Monitoring - February 6. Direct-push wells have been used for temporary groundwater monitoring purposes for many years but are generally prohibited for use as long-term groundwater monitoring wells. Recent research indicates that direct-push wells are as well suited for long-term environmental groundwater monitoring purposes as conventionally constructed wells. This training introduces ITRC's The Use of Direct-push Well Technology for Long-term Environmental Monitoring in Groundwater Investigations (SCM-2, 2006), provides a background in the principles of direct-push wells, and presents the state of the art regarding recent research. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

ITRC Characterization, Design, Construction and Monitoring of Bioreactor Landfills - February 8. Bioreactors are landfills where controlled addition of non-hazardous liquid wastes, sludges, or water accelerates the decomposition of waste and landfill gas generation. This training, based on the ITRC's Characterization, Design, Construction, and Monitoring of Bioreactor Landfills (ALT-3, 2006), teaches the principles used to make critical decisions during permitting, operating, and monitoring a bioreactor landfill. This training also provides a general understanding of the biological degradation of solid wastes under aerobic and anaerobic waste conditions and the degradation products associated with each process. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

Nanotechnology - Metals Remediation - February 13. The Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA), presents "Nanotechnology - Metal Remediation" the 2nd session of the 2007 edition of Risk-e-Learning "Nanotechnology: Applications and Implications for Superfund." This session will highlight the potential of nanotechnology-based approaches to remove metals from drinking water. Dr. Mason Tomson, Professor of Chemical and Environmental Engineering (Rice University, Houston, TX) will introduce the use of nano-magnetite to remove arsenic from drinking water. Nano-magnetite has been found to be a good adsorbent for arsenate and arsenite. Dr. Tomson overviews results from research at the Center for Biological and Environmental Nanotechnology in collaboration with Drs. Vicki Colvin and Paul Laibinis. In addition, Dr. Shas Mattigod, Senior Research Scientist (Pacific Northwest

National Laboratory, Richland, WA), will introduce his research using functionalized nanoporous ceramic sorbents for removal of mercury and other contaminants. This talk overviews the synthesis of self-assembled monolayers on mesoporous silica (SAMMS) and describes how functionalized surface chemistry can be used for adsorption of particular metal species of mercury, chromium and arsenic. Dr. Mattigod will cover treatment costs, waste form stability, and potential applications and commercialization of this approach. For more information and to register, see http://clu-in.org/studio .

ITRC Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills - February 15. This training, based on ITRC's Technical and Regulatory Guidance: Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills Based on Site-Specific Data Evaluations (ALT-4, 2006), describes a method to evaluate the performance of Post Closure Care at a landfill and determine when leachate recovery, landfill gas management, groundwater monitoring, and cap maintenance can be reduced or even ended based on threats (to human health and the environment) posed by the closed landfill. The training and document describe custodial care as those requirements the property owner must follow after post closure care has been ended. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

Innovative Air Monitoring at Landfills Using Optical Remote Sensing with Radial Plume Mapping - February 22. Landfill gas (LFG) emissions can be a large contributor to local air problems; and they are the largest source of methane emissions in the United States. EPA researchers will show how Optical Remote Sensing (ORS) and Radial Plume Mapping (RPM) can be used together to characterize LFG emissions, by using the example of ORS and RPM in action at a landfill demonstration in North Carolina. In addition to the lessons learned at this and other demonstration sites, this work has produced several research articles, a general method for characterization of emissions from non-point sources (OTM-10), and EPA guidance for evaluating LFG at closed and abandoned landfills. For more information and to register, see http://clu-in.org/studio .

ITRC Planning and Promoting of Ecological Land Reuse of Remediated Sites - February 27. This training is based on the ITRC Technical and Regulatory Guideline: Planning and Promoting Ecological Land Reuse of Remediated Sites (ECO-2, 2006). The document presents a process to promote ecological land reuse activities considering natural or green technologies instead of more traditional remedies. The guidance demonstrates that natural or ecological end-uses are valuable alternatives to conventional

property development or redevelopment. Ecological benefits and a process for calculating their value are included in the guidance and reviewed in this training. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

Field Study: Catalytic Destruction of Vapor Phase Chlorinated Compounds in Recovered Gas Streams from Soil Vapor Extraction Methods - February 28. The NIEHS Superfund Basic Research Program is sponsoring this one-hour seminar. Dr. Eric Betterton (University of Arizona) will describe recent laboratory and field studies of catalytic destruction of PCE and TCE in soil vapor. Often, soil vapor contaminants are not destroyed on-site. They are commonly absorbed from the gas phase onto granular activated carbon, which in turn must be transported and treated off- site as a hazardous waste. Clearly there is a need for a soil vapor treatment technology that destroys the contaminants on-site. Here we report our experience developing just such a system to treat PCE and TCE - an automobile catalytic converter operated under controlled redox conditions. The results of laboratory studies and a pilot field study conducted at an old dry-cleaning facility in Tucson, AZ, will be discussed. For more information and to register, see http://clu-in.org/studio .

New Documents and Web Resources

New Perchlorate Analytical Methods. The U.S. EPA published two new methods for perchlorate analysis in ground water, surface water, wastewater, salt water, and soil by HPLC/MS or HPLC/MS/MS (Method 6850) and IC/MS or IC/MS/MS (Method 6860). These methods confirm perchlorate detection and overcome many of the interference problems encountered when using IC/conductivity suppression analysis for perchlorate (Method 9058). Both methods have been rigorously evaluated in a variety of challenging, real-world matrices via round robin testing, in which more than twenty laboratories voluntarily participated. As per the Methods Innovation Rule (FR 70, No. 113, June 14, 2005), the methods allow analytical flexibility - a variety of chromatographic conditions and analysis options have been validated and are provided in the test methods. To get these and other new methods, see http://www.epa.gov/epaoswer/hazwaste/test/new-meth.htm .

Revitalizing America's Mills: A Report on Brownfields Mills Projects (EPA 560-R-06-001). This U.S. EPA report highlights examples of successful mill redevelopment, identifies common challenges, describes innovative solutions, and suggests tools and resources available to assist in mill redevelopment (November 2006, 32 pages). View or download at

http://www.epa.gov/docs/swerosps/bf/policy/Mill_Report_110306.pdf .

Grant Guidelines To States For Implementing The Public Record Provision Of The Energy Policy Act Of 2005 (EPA 510-R-07-001). The U.S. Environmental Protection Agency (EPA), in consultation with states, developed these grant guidelines to implement the public record provision in Section 9002(d) of the Solid Waste Disposal Act (SWDA), enacted by the Underground Storage Tank Compliance Act, part of the Energy Policy Act of 2005 signed by President Bush on August 8, 2005. EPA's Office of Underground Storage Tanks (OUST) is issuing these grant guidelines to establish the minimum requirements for a state receiving Subtitle I funding (January 2007, 13 pages). View or download at

http://www.epa.gov/oust/fedlaws/final_pr.htm .

Grant Guidelines To States For Implementing The Financial Responsibility And Installer Certification Provision Of The Energy Policy Act Of 2005 (EPA 510-R-07-002). EPA and states, working closely with other stakeholders, developed the financial responsibility and installer certification grant guidelines, which include definitions, requirements, criteria, and options for states choosing to implement the financial responsibility and installer certification or secondary containment requirements. States receiving federal funds must implement the financial responsibility and installer certification requirements by February 8, 2007. EPA regions will incorporate the guidelines into their future grant agreements with states (January 2007, 10 pages). View or download at http://www.epa.gov/oust/fedlaws/final_fr.htm .

The ITRC Enhanced Attenuation of Chlorinated Organics (EACO) Case Study Database Web Page housed on the AFCEE Technology Transfer web site, is now available online. The web page is being used to collect case studies of both successful and unsuccessful technology demonstrations using enhanced attenuation (EA) in combination with monitored natural attenuation (MNA). The case studies collected in the EACO database will be published as an appendix in the ITRC EACO Team (http://www.itrcweb.org/teampublic_EACO.asp) Technical and Regulatory document to be published in early 2008. The document will act as a technical guidance intended to broaden the use of enhanced attenuation as a bridge between more aggressive treatments and MNA. Additionally, the case studies will form the basis for many of the EACO Team's evaluations of EACO applications. If there is a particular remediation strategy that lacks documentation or that is not properly considered in the traditional MNA protocol, inclusion in the EACO database is an excellent

chance to bring it to the attention of many regulators, remediation professionals, site owners, and other stakeholders. All interested parties are encouraged to visit the EACO Case Study Web Page, apply for an account, and enter their EACO case studies. The web page is currently scheduled to be available online through March 2007. To access the database, see http://www.afcee.brooks.af.mil/products/techtrans/info/ .

Frequently Asked Questions about Ecological Revitalization of Superfund Sites (EPA 542-F-06-002). This fact sheet, the first in a series on ecological revitalization, addresses many frequently asked questions about ecological revitalization and revegetation of Superfund sites. The information in this fact sheet is intended for EPA site managers, state agency site managers, consultants, and others interested in restoring disturbed sites. Various information sources used to prepare this fact sheet are listed at the end (December 2006, 12 pages). View or download at http://clu-in.org/techpubs.htm .

Technology News and Trends (EPA 542-N-06-007). Environmental contamination by persistent organic pollutants (POPs) poses significant challenges due to their chemical stability, tendency to bioaccumulate, and ability to easily disperse. Of the 12 globally recognized POPs, nine are pesticides and the remaining three are industrial chemicals (PCBs) or industrial byproducts (dioxin and furans). As highlighted in this issue of Technology News and Trends, degradation or destruction of POPs often relies on ex-situ technologies combining thermal, physical, and/or chemical processes, but increasing numbers of less costly bioremediation and thermal applications are successful in-situ (January 2007, 6 pages). View or download at http://clu-in.org/techpubs.htm .

Advancing Best Management Practices: Applying the Triad Approach in the Superfund Program to Reference Documents/Internet Resources. This EPA memorandum requests Regional cooperation in the Office of Superfund Remediation and Technology Innovation's (OSRTI) effort to expand the use of the Triad approach to save time and money in the Superfund program where appropriate. Specifically, OSRTI is asking each Region to name a staff contact to serve as the Superfund Regional Triad Lead, who would coordinate ongoing and future Triad efforts in their Region and serve on a new Superfund Triad Workgroup, and to nominate at least two Superfund sites at which to initiate use of the complete Triad process during FY 2007 (September 2006, 12 pages). View or download at http://www.triadcentral.org/ref/ref/documents/Triad_Policy_Memo.pdf .

Industry Residuals: How They Are Collected, Treated and Applied. This document was prepared by Ashley Corker during an internship with the U.S. Environmental Protection Agency,

sponsored by the Environmental Careers Organization. The report is intended to provide an overview of industry residuals that are normally considered a waste but may be extremely useful in the remediation of disturbed soils. Application on land of these residuals not only provides remedial advantages, but also decreases pollution and the need for landfill space. This document is not intended to act as regulatory guidance, but simply to give an overview of alternate solutions to the reclamation of contaminated lands (August 2006, 62 pages). View or download at http://clu-in.org/techpubs.htm .

Status Report on Innovative In Situ Treatment Technologies Available to Treat Perchlorate-Contaminated Groundwater. This document was prepared by Jennifer Raye Hoponick, a National Network of Environmental Management studies grantee, under a fellowship from the U.S. Environmental Protection Agency. This report is intended to provide information regarding the in situ remediation of perchlorate-contaminated groundwater. This report focuses on, but is not limited to, using in situ bioremediation as a low-cost treatment technology shown to be effective in treating perchlorate under multiple configurations and different site types. The case studies are designed to serve as examples of successful in situ bioremediation projects that were designed differently and located at separate sites (August 2006, 88 pages). View or download at http://clu-in.org/techpubs.htm .

Nanotechnology for Site Remediation: Fate and Transport of Nanoparticles in Soil and Water Systems. This document was prepared by Beshoy Latif during an internship with the U.S. Environmental Protection Agency, sponsored by the Environmental Careers Organization. This document focuses on the use of nanomaterials in site remediation. Nine current EPA Office of Research and Development (ORD) Science to Achieve Results (STAR) grants aim at increasing our understanding of the fate and transport of nanomaterials as they are used for desirable processes in the environment. The immediate question of concern becomes: do we understand the physiochemical properties of nanoscale materials well enough to effectively apply them towards remediation? This document will attempt to answer this question by providing information on recent research (August 2006, 16 pages). View or download at http://clu-in.org/techpubs.htm .

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. See the following link to access the following documents: http://www.eugris.info/Whatsnew.asp .

Proceeding of Nordrocs. First Joint Nordic Conference on the Remediation of Contaminated sites. 20-21 September 2006, Malm&#65533;,

Sweden. Parallel sessions on: contaminated waters and sediments; contaminant leaching; state-of-the-art projects from the Nordic countries; remediation technologies; risk assessment.

Underground Under Threat: the State of Groundwater in England and Wales. The UK Environment Agency aims to raise the profile of groundwater and give priority to its protection and management. In this first report on the state of groundwater, the Agency outlines the uses of groundwater as a water resource and then looks at the risks to this resource from pollution and over exploitation (October 2006, 24 pages).

Underground, Under Threat. Groundwater Protection: Policy and Practice. 4 parts:

- Part 1 - Overview : Our overall position at the UK Environment Agency on the management and protection of groundwater and an overview that identifies our goals
- Part 2 - Technical Framework: A basic introduction to groundwater and its place in the water cycle; Key principles and concepts; Description of the threats from human activities
- Part 3 - Tools: Introduction to the tools available for analyzing and assessing the risks to groundwater; A brief overview of the use and application of each tool and where to obtain it
- Part 4 - Position Statements: Key groundwater legislation and how we interpret it; Position Statements on activities that pose a risk to groundwater and how we plan to deal with them

Conferences and Symposia

The 2007 Conference on Design and Construction Issues at Hazardous Waste Sites, April 4 - 5, Philadelphia. This conference is hosted by the US EPA and the US Army Corps of Engineers. The conference will provide a forum for discussion between the private sector and the federal, state, local, and tribal governments regarding design and construction issues at hazardous waste sites, including effective methods, lessons learned, application of technologies, and field approaches. To register please see http://hq.environmental.usace.army.mil/rdra-07 .

Call for Papers! US EPA/NGWA Conference on Remediation in Fractured Rock, September 24-26 Portland, Maine. Theevent is the third in a series of international consortiums to highlight innovative remediation and monitoring technologies for contaminated sites in fractured rock settings. The conference features 10 invited speakers, platform and poster sessions, four panel discussions, remediation technology and geophysics workshops, industry display area, and a field trip. Accepted papers

shall be published in a full proceeding. The last meeting in Portland had 600 attendees. The deadline for abstract submissions is April 10. To learn more and submit your abstract, see http://www.ngwa.org/e/conf/0709245017.cfm .

NOTE: For TechDirect, we prefer to concentrate mainly on new documents and the Internet live events. However, we do support an area on CLU-IN where announcement of conferences and courses can be regularly posted. Currently there are 120 conferences and courses featured. We invite sponsors to input information on their events at http://clu-in.org/courses . Likewise, readers may visit this area for news of upcoming events that might be of interest. It allows users to search events by location, topic, time period, etc.

If you have any questions regarding TechDirect, contact Jeff Heimerman at (703) 603-7191 or heimerman.jeff@epa.gov. Remember, you may subscribe, unsubscribe or change your subscription address at http://clu-in.org/techdrct at any time night or day.