

## Message #68: October 2002

Welcome to TechDirect. Since the September 1 message, TechDirect gained 153 new subscribers for a total of 14,690. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing to TechDirect may do so on CLU-IN at <http://clu-in.org/techdirect>. All previous issues of TechDirect are archived there.

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### ***Special Announcement***

U.S. Department of Energy (DOE) 2003 Small Business Innovation Research (SBIR) Open Solicitation. DOE has announced it will open its 2003 SBIR solicitation on October 15, 2002. Among the topics for which DOE is seeking proposals is measurement and monitoring technologies for subsurface environments AND reactive barriers and monitoring systems for subsurface remediation. The deadline for proposal submission is January 14, 2003. The solicitation information will be posted at <http://www.science.doe.gov/sbir/>.

### ***Upcoming Live Internet Seminars***

**NIEHS PCB Cleanup Technologies - October 9.** This seminar, sponsored by the National Institute for Environmental Health Sciences (NIEHS), will present the latest advances in PCB bioremediation research. This involves genome sequencing and other genomic tools to evaluate the consequences of pollutant exposure on the overall bacterial community genome. The health of this genome is critical for effective bioremediation of PCBs to a biologically acceptable endpoint. In addition, presenters will examine the lessons learned from the PCBs found in dated sediment cores taken from the Hudson River in New York and New Jersey. Cores from depositional areas have been used to determine the history of PCB contamination, the progress of in situ dechlorination of PCBs, and the extent of influence of PCB inputs to the upper Hudson. For more information and to register, see <http://clu-in.org/studio>.

**ITRC Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices - October 15.** The

seminar focuses on the basic information one needs to determine and document the conditions necessary for natural processes to be an effective part of remediating chlorinated solvents in ground water. For more information and to register, see <http://www.itrcweb.org> Or <http://clu-in.org/studio>.

**ITRC Systematic Approach to In Situ Bioremediation in Groundwater: Nitrates, Carbon Tetrachloride & Perchlorate - October 17.** This course presents a decision tree for reviewing, planning, evaluating, and approving in situ bioremediation (ISB) systems in the saturated subsurface. It defines site parameters and appropriate ranges of criteria necessary for characterization, testing, design and monitoring of ISB technologies. For more information and to register, see <http://www.itrcweb.org> Or <http://clu-in.org/studio>.

**Field-Based Geophysical Technologies Seminar: Part I, October 24.** The Geophysical Technologies seminar now has two parts, both updated and improved based on participant input from previous editions. The October 24th seminar covers Magnetism, Resistivity, Conductivity and Borehole techniques. Learn to identify and understand factors to be considered in scoping, executing, or reviewing projects that involve these geophysical instruments and techniques. Several case studies serve to highlight the strengths and weaknesses of each tool. In the near future we will offer part II, on Seismic and Ground Penetrating Radar tools. For more information and to register, see <http://clu-in.org/studio>.

**ITRC Phytotechnologies - October 29.** This ITRC seminar focuses on the ITRC Phytotechnologies Technical and Regulatory Guidance and Phytoremediation Decision Tree. It provides technical and regulatory information to help you understand, evaluate and make informed decisions on phytotechnology proposals. For more information and to register, see <http://www.itrcweb.org> Or <http://clu-in.org/studio>.

## ***New Documents***

**Arsenic Treatment Technologies for Soil, Waste, and Water (EPA 542-R-02-004).** This new report available from EPA's Technology Innovation Office (TIO) contains current information on the treatment technologies for wastes and environmental media containing arsenic. It summarizes information on 13 technologies used to treat arsenic, identifies sites and facilities where arsenic treatment has been used, and provides references to more detailed arsenic treatment information. The information can be used to help identify and screen treatment technologies that can meet the lower arsenic maximum contaminant level (MCL). The technologies included in the report to address soil and solids are:

solidification/stabilization, vitrification, soil washing/acid extraction, pyrometallurgical treatment, and in situ soil flushing. Technologies for water include: precipitation-coprecipitation, membrane filtration, adsorption, ion exchange, permeable reactive barriers, and biological treatment. Two technologies discussed in the report address soils, other solids, and water: electrokinetics and phytoremediation (September 2002, 200 pages). View or download at <http://clu-in.org/arsenic>.

**Engineering and Design: Soil Vapor Extraction and Bioventing (EM-1110-1-4001)**. This manual, developed by the U.S. Army Corps of Engineers, provides practical guidance for the design and operation of soil vapor extraction (SVE) and bioventing (BV) systems. It is intended for use by engineers, geologists, hydrogeologists, soil scientists, chemists, project managers, and others who possess a technical education and some design experience but only the broadest familiarity with SVE or BV systems (June 2002, 424 pages). View or download at <http://www.usace.army.mil/usace-docs/eng-manuals/em1110-1-4001/toc.htm>. Options to view/download by chapter or entire document.

**Systematic Approach to In Situ Bioremediation: Nitrates, Carbon Tetrachloride and Perchlorate (ISB-8)**. This document was produced by the Interstate Technology and Regulatory Council (ITRC). It describes what information is needed for any ISB evaluation; provides a flow diagram that defines the primary decision points; and provides characteristics used to evaluate monitored natural attenuation or enhanced ISB application as remediation options. Examples of how to apply this document, including respective decision trees, for nitrate, carbon tetrachloride, and perchlorate are included (August 2002, 158 pages). View or download at <http://www.itrcweb.org/user/isb-8.pdf>.

**Technical Approaches to Characterizing and Redeveloping Brownfields Sites: Municipal Landfills and Illegal Dumps (EPA 625-R-02-002)**. The guidance document gives assistance to communities, decision-makers, states and municipalities, academia, and the private sector to address issues related to the redevelopment of Brownfields sites, specifically municipal landfill and illegal dump sites. The document helps users to understand the problems associated with redevelopment of these sites, the sources of information which may help to assess the sites, and the regulatory groups which should be involved in the process. The guidance has appendices of relevant terms, references, and applicable technologies (January 2002, 70+ pages). View or download at <http://www.epa.gov/ORD/NRMRL/Pubs/625R02002/625R02002.htm>.

**Information on Open-Path Measurement Technologies.** As part of its Monitoring and Measurement Technologies for the 21st Century (21M2) initiative, the Technology Innovation Office has developed an Internet focus area on open-path technologies. The site provides general descriptions of the technologies and identifies information resources and literature available to better understand their application. As part of the 21M2 project, TIO is helping to support several open-path field projects, and the technology focus area is intended to augment this work. The three open-path technologies featured are: UV-DOAS (Ultra-Violet Differential Absorption Spectroscopy); FT-IR (Fourier Transform-Infrared Spectroscopy); and LIDAR (Light Detection and Ranging). The new "Open Path Technologies" Focus Area is located on the 21M2 Internet site at <http://clu-in.org/21m2> under "Technology Focus Areas".

**Superfund Remedy Decisions Internet Web Page.** This site was developed by the U.S. EPA Office of Emergency and Remedial Response. It provides a comprehensive compilation of all remedy-related guidance and policy documents that deal with CERCLA remedy decisions. While this page provides information specifically geared to CERCLA actions it may also provide information of use under other cleanup programs. See

<http://www.epa.gov/superfund/action/guidance/remedy/index.htm>.

**Remediation Technologies Development Forum Update - August 2002 (EPA 542-F-02-011).** The issue of RTDF Update announces the formation of the NAPL Alliance Team, and provides progress reports for five other RTDF Action Teams (August 2002, 4 pages). View or download at <http://clu-in.org/download/rtdf/updt0802.pdf>

**Citizen's Guides.** EPA's Technology Innovation Office and the Office of Emergency and Remedial Response have recently updated the popular citizen's guide fact sheets. The two page fact sheets provide a general description on individual technologies and clean up approaches that can be used at contaminated waste sites. Each fact sheet answers five questions about each clean up approach: What is it?, How does it work?, Is it safe?, How long will it take?, and Why use it?. There are a total of 22 guides; 14 are also available in Spanish; the remaining 8 should be available in Spanish by November 1. All the citizen's guide fact sheets are available to view or download at <http://www.clu-in.org/products/citguide>. For hard copies, contact (800) 490-9198 or (513) 489-8190 or fax to (513) 489-8695.

## ***Conferences and Symposia***

**Reminder! ITRC/RTDF Accelerated Bioremediation of**

**Chlorinated Solvents, October 8-9, Charlottesville, VA.** This training class is sponsored by the Interstate Technology and Regulatory Council (ITRC). This class is a logical follow-on to the highly acclaimed training series on "Natural Attenuation of Chlorinated Solvents in Groundwater." The new course examines the roles of site characterization, modeling, design, monitoring and regulatory interaction in applying in-situ engineered bioremediation. Lectures, case studies, hands-on exercises and structured discussion sessions are used to give students knowledge and information that can be put to use immediately. For additional information, see <http://www.itrcweb.org> or contact Paul Hadley (916)324-3823. Additional offering November 14-15, Oakland, CA.

**Reminder!! Biological Treatment of MTBE Contamination in Groundwater: Ex-situ and In-situ Challenges, October 17 San Jose.** This conference, sponsored by the Ground Water Association of California, will showcase experts discussing recent reports of both ex-situ and in-situ MTBE bioremediation case studies. Speakers will focus on the use of molecular, isotopic and other innovative tools for evaluating the success of in-situ bioremediation in the field, and the program will provide information via a panel of speakers on the regulatory acceptance of bioremediation as a remedial action for MTBE. For more information, see <http://www.grac.org>.

**Registration Open!! NAPL Remediation Seminar, December 10-12, Chicago.** EPA's Technology Innovation Office, in cooperation with EPA Region 5 and the Interstate Technology and Regulatory Council will present a technology transfer seminar on current experience and future directions in Non-Aqueous Phase Liquid (NAPL) Remediation. Speakers will include nationally- known technology researchers, federal and state regulators, and experienced vendors of remediation services. Basic scientific and engineering principles and case studies will be provided on: in situ thermal, in situ chemical oxidation and in situ surfactant/cosolvent flooding. Information will also be provided on recent work in the application of bioremediation in NAPL source zones as either a stand-alone remedy or as a complement to more aggressive source removal technologies. Afternoon poster sessions will follow the day's presentations. The seminar will be of particular interest to regulators, responsible parties and consultants involved in the remediation of petroleum refineries, wood treaters, former manufactured gas plant sites, dry cleaners, and sites with chlorinated solvent contamination. For agenda, logistics information, and to register, see <http://www.emsus.com/napl/regform.cfm>.

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