Message #69: November 2002

Welcome to TechDirect. Since the October 1 message, TechDirect gained 290 new subscribers for a total of 14,866. 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.

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.

Upcoming Live Webcasts

NIEHS/EPA PCBs - Monitoring and Detection, November 13. This is the second in a series of seminars on PCBs sponsored by EPA and the National Institute of Environmental Health Sciences (NIEHS). It will discuss the limitations of Aroclor (commercial PCB mixture) analysis and why congener analysis provides for better decision-making with regards to human health and ecological risks of exposure to polychlorinated biphenyls (PCBs). The pros and cons of each type of congener analysis will be discussed as well as the cost. The presentation will also include a discussion on current work to develop genetically engineered cell-based biosensing systems. For more information and to register, see http://clu-in.org/studio .

ITRC Systematic Approach to In Situ Bioremediation in Groundwater: Nitrates, Carbon Tetrachloride & Perchlorate, November 19. 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 .

In Situ Treatment of Groundwater Contaminated with NAPL, December 10-12. We are planning to webcast sessions from this Chicago conference (see event below). If you cannot join us in Chicago, you may participate via the CLU-IN web site. You may register for one or more of the conference's four topical sessions over the three-day period. For more information and to register for one or more webcast sessions, see http://clu-in.org/studio .

New Documents and Databases

Elements for Effective Management of Operating Pump and Treat

Systems (EPA 542-R-02-009). This fact sheet was produced by the EPA Office of Solid Waste and Emergency Response. It summarizes key aspects of effective management for operating pump and treat systems. It was developed from lessons learned from conducting system evaluations at 20 operating Superfund pump and treat sites. The lessons learned should be relevant to most pump and treat systems whether or not the system is operated under Superfund (October 2002, 18 pages). View or download at http://clu-in.org/techpubs.htm .

Economic Analysis of the Implementation of Permeable Reactive Barriers for Remediation of Contaminated Ground Water (EPA 600-R-02-034). This report was produced by the U.S. EPA National Risk Management Research Laboratory. It presents an analysis of the cost of using permeable reactive barriers to remediate contaminated ground water. When possible, these costs are compared with the cost of pump-and-treat technology for similar situations. Permeable reactive barriers are rapidly maturing and may be considered as a standard remediation technology, similar to pump-and-treat (June 2002, 42 pages). View or download at http://www.epa.gov/ada/download/reports/epa_600_r02_034.pdf . For hard copies, contact Kay Cooper at (580) 436-8651 or fax (580) 436-8503.

Long-term Performance of Permeable Reactive Barriers Using Zero-valent Iron: An Evaluation at Two Sites (EPA 600-S-02-001). This research brief presents findings over the past four years at two sites where detailed investigations by the U.S. EPA have focused on the long-term performance of PRBs under a Tri-Agency Permeable Reactive Barrier Initiative (TRI). A survey of existing PRBs indicated that the two main challenges facing the technology were (1) uncertainties associated with the longevity (geochemistry) of a PRB and (2) ensuring/verifying hydraulic performance (March 2002, 19 pages). View or download at http://www.epa.gov/ada/download/briefs/epa_600_s02_001.pdf .

Evaluating Hydrocarbon Removal from Source Zones and its Effect on Dissolved Plume Longevity and Concentration (API 4717). This report was published by the American Petroleum Institute (API). It provides information for regulators and practitioners interested in understanding the possible benefits of free-product removal. It provides theory and concepts needed to evaluate LNAPL source distribution, chemistry, dissolution and the effects various remediation strategies may have on risk-reduction for the groundwater and vapor exposure pathways. The companion software, API-LNAST, links the multiphase and chemical processes controlling in situ LNAPL distribution, mobility, and cleanup to quantify estimates of the time-dependent concentrations within the LNAPL source and the down gradient dissolved plume. API-LNAST users can screen whether incremental LNAPL removal provides any risk-reduction benefit over a time frame of interest, e.g., 30 years (September 2002, Full Report 274

pages). Various download options, see http://www.api.org/lnapl .

Environmental Effects & Dredging and Disposal Database (E2-D2). This database was developed by the U.S. Army Corps of Engineers. E2-D2 is a literature database comprised of technical references covering a diverse range of topics related to environmental effects of dredging and dredged material disposal projects. The database focuses on broad topics such as beneficial uses of dredged material, contaminated sediments, and effects of sediment resuspension and sedimentation on aquatic organisms and their habitats. Much of the technical literature pertaining to dredging and dredged material disposal is found in the "gray" literature, i.e., non-peer-reviewed federal or state agency publications, or proceedings of symposia and specialty conferences. For more information, see http://www.wes.army.mil/el/e2d2/index.html .

NICOLE Discussion Paper: Need for Sustainable land Management - The Role of a Risk Assessment Based Approach. NICOLE (The Network for Industrially Contaminated Land in Europe), since its start in 1996, has been striving to provide technical support for a "Site Specific, Risk Assessment" based approach as the fundamental basis for sound management of contaminated land. This Discussion Paper has been prepared to provide constructive contribution to the debate and hopefully help readers to improve their understanding of the subject. The questions and answers on risk-based contaminated land management in Section 4 will help to clarify terminology and hopefully resolve doubts (March 2002, 12 pages). View or download at http://www.nicole.org/ .

RODS Database. RODS contains full-text Records of Decision (RODs), ROD Abstracts, ROD Amendments, and Explanations of Significant Differences (ESDs). A ROD provides the justification for the remedial action (treatment) chosen at a Superfund site. It also contains site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope and role of response action, and the remedy selected for cleanup. Using RODS, you can search by state, site name, or EPA ID for specific ROD documents, or by keyword (such as a contaminant or remediation type) across all ROD documents. For more information, see http://cfpub.epa.gov/superrods/ .

One-Stop Shopping for USGS Information on Remediation Projects. A new series of web pages is available on U.S. Geological Survey (USGS) information on projects and activities related to the remediation of contaminated sites. The projects are categorized by type (e.g., testing of remediation technologies, natural attenuation evaluation, performance monitoring, site characterization) and contaminant. This is the first time that this USGS information has been available in one place. This series of web pages and links is sponsored by the USGS's Toxic Substances Hydrology Program. You can view the pages at

http://toxics.usgs.gov/topics/remediation.html .

Conferences and Symposia

Reminder! ITRC/RTDF Accelerated Bioremediation of Chlorinated Solvents, November 14-15, Oakland, CA. 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.

SERDP and ESTCP Annual Technical Symposium, Washington DC, December 3-5. The Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) will hold the Partners in Environmental Technology Technical Symposium & Workshop. It will feature technical sessions that will illustrate how SERDP and ESTCP research, development, demonstration and validation efforts are assisting the Department of Defense to address increasingly complex environmental challenges. For additional information, visit http://www.serdp.org/symposiums/symposiums.html or call (703) 736-4548.

In Situ Treatment of Groundwater Contaminated with NAPL, 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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