

Message #85: March 2004

Welcome to TechDirect. Since the February 1 message, TechDirect gained 236 new subscribers for a total of 18,260. The March issue kicks off the eighth year for TechDirect. During the last seven years, we strived to keep subscribers informed of new developments related to contaminated site clean-up. Hopefully, we have hit the mark with information relevant to your occupations. 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/techdirect> . All previous issues of TechDirect are archived there.

The purpose of TechDirect is to identify new technical, policy and guidance resources related to the assessment and remediation of contaminated soil 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.

Solicitations/Demonstrations

U.S. EPA National Student Design Competition for Sustainability. This EPA-sponsored competition will provide grants to teams of college students to research, develop, and design solutions to sustainability challenges. P3 highlights people, prosperity, and the planet - the three pillars of sustainability - as the next step beyond P2 or pollution prevention. The P3 Award program is a partnership between the public and private sectors to progress toward sustainability by achieving the mutual goals of economic prosperity, protection of the natural systems of the planet, and providing a higher quality of life for its people. EPA and its affiliates offer the P3 Award competition to respond to the technical needs of the developed and developing world in moving towards the goal of sustainability. Applications must be received by March 25, 2004. For more information, see <http://www.epa.gov/ncer/P3> .

EPA SITE Demonstration. The Superfund Innovative Technology Evaluation (SITE) program will conduct a demonstration of dioxin monitoring and measurement technologies beginning the week of April 26 at the Green Point Nature Center near Saginaw MI. The

demonstration will include six technologies that will be used to analyze more than two hundred soil and sediment samples for dioxins, furans, and coplanar PCBs. There will be a visitors' day Wednesday, April 28 in the auditorium of the Nature Center, the public is invited to attend. The demonstration and quality assurance project plan will be available after April 1st. For additional information regarding the SITE program, see <http://www.epa.gov/ORD/SITE> or contact Stephen Billets at 702-798-2232.

Internet Seminars

NIEHS Biosensors for Environmental Monitoring, March 16. This seminar is sponsored by the National Institute for Environmental Health Studies. This seminar will present work in the development of miniaturized, fast, sensitive bioassay systems for use in environmental research and monitoring at hazardous waste sites. Advances in nanotechnology and the use of MEMs (Micro Electro Mechanical system) fabrication techniques to make a micro-sized instrument for optical detection of trace amounts of chemicals in aqueous solutions will also be presented. To reserve a spot on the seminar, register at <http://clu-in.org/studio> .

ITRC Munitions Response Historical Record Review (MRHRR), March 18. This training introduces participants to the ITRC Technical and Regulatory Guidance Document: Munitions Response Historical Record Review (UXO-2). It assists reviewers in assessing the adequacy of an MRHRR review of property potentially impacted by the use of military munitions. The course teaches the purpose, content, and terminology of munitions historical research; provides a uniform technical approach and useful tools for reviewing an MRHRR document independent of regulatory framework or authorities; and communicates state regulator expectations to those initiating, planning, and executing an MRHRR document. To register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

ITRC Constructed Treatment Wetlands, March 30. This course, developed by the Interstate Technology and Regulatory Council (ITRC), is based on Technical and Regulatory Guidance for Treating Storm Water and Wastewater Using Constructed Treatment Wetlands (WTLND-1). It describes the physical, chemical, and biological mechanisms operating in wetlands treatment systems, the contaminants to which they apply, the characteristics of sites suitable to treatment in this fashion, and relevant regulatory issues. To register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

New Documents

Methodology for Estimating Times of Remediation Associated with Monitored Natural Attenuation (USGS Water-Resources Investigations Report 03-4057). This report was published by the U.S. Geological Survey. It outlines a method for estimating timeframes required for natural attenuation processes, such as dispersion, sorption, and biodegradation, to lower contaminant concentrations and mass to predetermined regulatory goals in groundwater systems (2003, 58 pages). View or download at

<http://water.usgs.gov/pubs/wri/wri034057/pdf/WRIR-03-4057.pdf> .

ESTCP Cost and Performance: Natural Pressure-Driven Passive Bioventing (CU-9715). This report was produced by the DoD Environmental Security Technology Certification Program (ESTCP). It provides information needed for comparing passive bioventing to conventional bioventing on the basis of performance, installation and operating costs, and implementation issues. The primary demonstration objective was to identify a site where passive bioventing would be successful. The secondary objective was to measure the rate of airflow and radius of oxygen influence as the result of operating a pilot-scale passive bioventing system that consisted of one vent well with a one-way passive valve and soil-gas monitoring points (January 2004, 43 pages). View or download at

<http://www.estcp.org/documents/techdocs/CU-9715.pdf> .

Continuous Treatment of Low Levels of TNT and RDX in Range Soils Using Surface Liming (ERDC/CRREL TR-04-4). This project, conducted by the U.S. Army Corps of Engineers, investigated surface application of agricultural lime to hydrolyze residual energetic materials (including TNT, RDX, HMX, and 2,4-DNT) that had been deposited on shallow soils at a hand grenade training range. Laboratory experiments conducted using soil samples from the range indicated that lime could be used to destroy all of the TNT and most of the RDX. Results of the laboratory experiments were used to guide field trials at the range. Unfortunately, the heterogeneous distributions of residual TNT and RDX were so great that statistically significant results could not be demonstrated using samples collected from shallow surface soil. Lime applications are continuing at this site. Samples from below the depth of active soil deposition and mixing (cratering) should be collected in the future using remote-controlled equipment. Such samples should reveal whether the lime treatment reduces the downward migration of energetics residuals from the surface (February 2004, 24 pages). View or download at

http://www.crrel.usace.army.mil/techpub/CRREL_Reports/reports/TR04-4.pdf .

Technology News and Trends February 2004 (EPA)

542-N-04-001). This quarterly update is produced by the EPA Office of Superfund Remediation and Technology Innovation. It features a combination of articles on innovative, in-situ technologies for the characterization and treatment of soil, sediment, and ground water. This issue's articles focus on sites that used Steam Injection Combined with Electrical Resistance Heating, Biological Permeable Reactive Barrier Used for Perchlorate Degradation in Ground Water, and Integrated Methods for Characterizing a Fractured-Rock Aquifer (February 2004, 4 pages). View or download at <http://clu-in.org/techpubs.htm> .

Groundwater Remediation Strategies Tool (Pub No. 4730). This report was published by the American Petroleum Institute. This guide provides strategies for focusing remediation efforts on the change in contaminant mass flux in different subsurface transport compartments (e.g. the vadose zone, smear zone or a zone within an aquifer of interest) and the change in remediation timeframe. In this approach, groundwater flow and contaminant concentration data are combined to estimate the rate of contaminant mass transfer past user-selected transects across a contaminant plume. The method provides the user with a means to estimate the baseline mass flux and remediation timeframe for various transport compartments and then evaluate how different remedies reduce the mass flux and the remediation timeframe in each transport compartment (December 2003, 80 pages). View or download at http://api-ec.api.org/filelibrary/4730_Final.pdf .

Light Non-Aqueous Phase Liquid (LNAPL) Parameters Database (Pub. No. 4731). This database was produced by the American Petroleum Institute. The Light Non-aqueous Phase Liquid (LNAPL) Parameters Database is a collection of information about samples that have had their capillary parameters determined, as well as other physical parameters measured. Capillary properties are critical in multiphase calculations, and those results have very high sensitivity to these properties. The primary purpose of this database is to provide information to users who are trying to characterize the movement and distribution of LNAPL within a site that has a limited set of direct observations of the capillary properties of the site. For access to the database, see <http://groundwater.api.org/lnapl/database/> .

Sampling for Contaminants in Sediments and Sediment Pore Water. This report is a survey of the equipment that can be used to collect sediment and pore water samples. It is not meant to be a "how to" on sampler use or sediment site characterization planning, but rather a basic reference for screening methods for further investigation. This report is located on the Monitoring and Measurement Technologies for the 21st Century website at <http://clu-in.org/programs/21m2/sediment/> .

Conferences and Symposia

Call for Papers! National Environmental Monitoring Conference, Washington, DC, July 19-22. NEMC provides the principal forum for addressing policy and technical issues affecting monitoring in all environmental media (i.e., water, air, soil, and wastes) and across all environmental programs. Organized by U.S. EPA and ACIL's Independent Laboratories Institute, jointly with Instant Reference Sources, Inc., the focus of this year's conference includes new approaches for analyzing for conventional and emerging pollutants in water, soil, and air as well as homeland security issues as they apply to environmental monitoring for terrorism agents. You are invited to submit a one-half page abstract by March 31, 2004 in MS Word or Word Perfect format to: larrykeith@earthlink.net. View abstract instructions and conference information, including on-line registration forms and exhibitor registration information, at <http://www.nemc.us> .

EPA RCRA National Corrective Action Conference, Orlando, May 11-12. One of the primary purposes of the this event is to bring together industries subject to the RCRA regulations, consultants, State regulators and EPA regional project managers. EPA encourages open and frank discussions of actions that make a difference with respect to corrective action progress. The Conference will focus on the most significant issues pertaining to RCRA Corrective Action, including: 2005 and 2008 Environmental Indicators, streamlining RCRA Reforms, state cleanup programs, emerging technologies, EPA policy and guidance, EPA Regional success stories and strategies, partnerships with industry, as well as many other important issues. For more information and to register, see <http://www.nationalcaconf.com/default.html> .

NOTE: 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. 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.