

TechDirect, June 1, 2008

Welcome to TechDirect! Since the May 1 message, TechDirect gained 223 new subscribers for a total of 30,882. 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.

> Upcoming Live Internet Seminars

ConSoil 2008 Special Sessions on Green Remediation (June 5) and Brownfields, Bioenergy and Biofeedstocks (June 6). EPA is collaborating with the European Groundwater and Contaminated Land Information Portal to bring to you live, via Webcast, two 90-minute special sessions on sustainability and contaminated site cleanup. These sessions are being held at the 2008 ConSoil Conference in Milan, Italy. The sessions link two important emerging themes for contaminated land management, both connected with improving its sustainability and reducing its cost. The first theme is the integration of land management of large areas with re-use for non-food crops, ecosystem recovery and revenue generation. The second theme is what is termed "green remediation," which maximizes the net environmental benefit of contaminated land remediation techniques. For more information and to register, see <http://clu-in.org/studio>.

ITRC Performance-based Environmental Management - June 5.

Performance-based environmental management (PBEM) is a strategic, goal-oriented methodology that is implemented through effective planning and decision logic to reach a desired end state of site cleanup. The goal of PBEM is to be protective of human health and the environment while efficiently implementing appropriate streamlined cleanup processes. This ITRC training presents an overview of what PBEM is, explains how and when to implement it, and describes the issues that regulators are concerned about throughout PBEM's implementation. Case studies will be presented to illustrate successful PBEM projects. The course is valuable not only because PBEM is being proposed and implemented at many federal and private sites throughout the country, but also because PBEM provides an opportunity to enhance all site remediation. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio>.

Bioavailability of Organic Compounds: Methods and Case Studies - June 11. The Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA) Technology Innovation Program, presents "Bioavailability of Organic Compounds: Methods and Case Studies". Dr. Edward Neuhauser, Principal Environmental Engineer, National Grid, will present a PAH measurement method, the Solid-Phase Microextraction (SPME) method, that actually measures the true bioavailability of PAH's in sediments. The SPME method does not measure the total

amount of PAH's present in a sediment sample, but rather only that fraction of PAH's in sediments that are actually present in sediment pore water and are available to benthic organisms. Dr. Danny Reible, the Bettie Margaret Smith Chair of Environmental Health Engineering at the University of Texas, will focus on efforts to understand and quantify exposure and risk to contaminants in sediments, including access to those contaminants, the extent to which accessible contaminants are bioavailable and the extent to which contaminants accumulate in organisms of interest. For more information and to register, see <http://clu-in.org/studio> .

ITRC Perchlorate Remediation Technologies - June 12. This training introduces state regulators, environmental consultants, site owners, and community stakeholders to Remediation Technologies for Perchlorate Contamination in Water and Soil (PERC-2, 2008), created by ITRC's Perchlorate Team to assist reviewers in assessing the adequacy of perchlorate remediation projects. This course gives the student a background in the available remediation technologies to treat perchlorate contamination, discusses emerging technologies, and presents case studies of applications. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

Use of Bioavailability Information at Hazardous Waste Sites - June 18. The Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA) Technology Innovation Program, presents "Use of Bioavailability Information at Hazardous Waste Sites". Dr. Mike Beringer, U.S. EPA Region VII toxicologist, will summarize EPA's "Guidance for Evaluating the Bioavailability of Metals in Soils for Use in Human Health Risk Assessment" and the basis for the Office of Superfund Remediation and Technology Innovation's decision regarding the two methodologies for predicting lead relative bioavailability in "Estimation of Relative Bioavailability of Lead in Soil and Soil-like Materials Using In Vivo and In Vitro Methods." Dr. Mark Maddaloni, U.S. EPA Region II toxicologist, will present a case study for using bioavailability data to inform and refine site specific risk assessments at a RCRA Corrective Action site with arsenic-contaminated soil. For more information and to register, see <http://clu-in.org/studio> .

ITRC An Overview of Direct-push Well Technology for Long-term Groundwater Monitoring - June 19. 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 Enhanced Attenuation of Chlorinated Solvents: A Site Management Tool - June 26. This training on the Technical and Regulatory Guidance for Enhanced Attenuation: Chlorinated Organics (EACO-1, 2008) describes the transition (the bridge) between aggressive remedial actions and MNA and vice versa. Enhanced attenuation (EA) is the application of technologies that minimize energy input and are sustainable in order to reduce contaminant loading and/or increase the attenuation capacity of a contaminated plume to progress sites towards established remedial objectives. Contaminant loading and attenuation capacity are fundamental to sound decisions for remediation of groundwater contamination. This training explains how a decision framework which, when followed, allows for a smooth transition between more aggressive remedial technologies to sustainable remedial alternatives and eventually to Monitored Natural Attenuation. This training will demonstrate how this decision framework allows regulators and practitioners to integrate Enhanced Attenuation into

the remedial decision process. For more information and to register, see

<http://www.itrcweb.org> OR <http://clu-in.org/studio> .

A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems - July 21. This seminar presents a systematic approach for the evaluation of capture zones at pump and treat systems, and provides an overview of a recently published USEPA document on the topic (EPA 600/R-08/003, January 2008). The target audience for the course is project managers who review these analyses and/or make decisions based on these types of analyses. This course will highlight: the importance of capture zone analysis during ground water remediation, particularly for sites requiring containment; key concepts of capture, such as "target capture zones" and "converging lines of evidence;" and typical errors made in capture zone analysis. Examples will be used to demonstrate key aspects of capture zone analysis. For more information and to register, see <http://clu-in.org/studio> .

> New Documents and Web Resources

Detailed Hydraulic Assessment Using a High-Resolution Piezocone Coupled to the GeoVIS. The objective of this effort was to conduct a full-scale demonstration of the use of the high-resolution piezocone and GeoVIS to determine direction and rate of ground water flow in three dimensions. While the GeoVIS did not provide effective porosity values within the anticipated range, the high-resolution piezocone and resulting models fall within the quantitative tolerances set forth in this demonstration. Therefore, the sensor probe approach to determining hydrogeologic characteristics is deemed appropriate for the demonstration site characteristics. When compared to conventional approaches comprised of clustered well installations, aquifer tests, sample analyses, and three-dimensional and cross-sectional interpolations, cost savings for flux distribution determination using the high-resolution piezocone coupled with a membrane interface probe system exceeds 60 percent (April 2008, 360 pages). View or download at <http://clu-in.org/techpubs.htm> .

Incorporating Sustainable Practices into Site Remediation (EPA 542-F-08-002).

Green Remediation is the practice of considering all environmental effects of remedy implementation and incorporating options to maximize net environmental benefit of cleanup actions. This introduction is the first of a series of fact sheets on the opportunities for implementing best management practices (BMPs) of green remediation (April 2008, 2 pages). View or download at <http://clu-in.org/techpubs.htm> .

Emerging Contaminant Fact Sheets (2008). An "emerging contaminant" is a chemical or material that is characterized by a perceived, potential, or real threat to human health or the environment or a lack of published health standards. A contaminant may also be "emerging" because a new source or a new pathway to humans has been discovered or a new detection method or treatment technology has been developed. These fact sheets, developed by the U.S. Environmental Protection Agency (EPA) Federal Facilities Restoration and Reuse Office (FFRRO), provides brief summaries for emerging contaminants: 1,2,3-Trichloropropane (TCP) (EPA 542-F-07-008), 1,4 Dioxane (EPA 542-F-07-004), N-Nitrosodimethylamine (NDMA) (EPA 542-F-07-006), Perchlorate (EPA 542-F-07-003), Polybrominated Diphenyl Ethers (PBDE) and Polybrominated Biphenyls (PBB) (EPA 542-F-07-007), Tungsten (EPA 542-F-07-005). View or download at <http://clu.in.org/emergingcontaminants>

Technology News and Trends (EPA 542-N-08-003). This issue highlights green remediation. The applications in this issue demonstrate increased sustainability that can be gained through use of renewable energy sources to power treatment systems or

through well-designed biological systems complementing site reuse. Green remediation strategies closely evaluate a cleanup project's water requirements, material consumption, waste generation, ecosystem impacts, and long-term stewardship requirements in addition to energy consumption. (May 2008, 6 pages). View or download at <http://clu-in.org/techpubs.htm> .

Smart Energy Resources Guide (EPA 600-R-08-049). This document discusses many opportunities to reduce emissions due to energy use from remediation activities. Examples include energy efficiency upgrades, implementing on-site renewable energy projects, and carbon sequestration. An overview of renewable energy technologies is presented including costs, availability, applicability, estimated emissions reduction benefits, considerations, permitting, vendor information, funding resources and success stories. Renewable energy technologies covered in this guide are solar, wind, landfill gas, anaerobic digesters, and gasifiers. Additional methods for utilizing renewable energy are provided. Similar information is provided for diesel emissions reduction technologies and cleaner fuels. This document includes information on reducing diesel emissions through retrofitting diesel equipment, using cleaner and alternative fuels, and simple, low-cost practices such as idle reduction (March 2008, 200 pages). View or download at <http://www.epa.gov/nrmrl/pubs/600r08049/600r08049.pdf> .

FY 2007 Annual Report On The Underground Storage Tank Program (EPA 510-R-08-001). This report provides a snapshot of national underground storage tank program activities during fiscal year 2007. The report contains information regarding: tank program highlights in 2007; advances in preventing releases; progress in cleaning up leaks; efforts to enhance communication and information sharing; and a look ahead for next year and the future (April 2008, 8 pages). View or download at http://www.epa.gov/oust/pubs/OUST_FY07_Annual_Report-Final_4-08.pdf .

EPA and the Venture Capital Community: Building Bridges to Commercialize Technology (EPA 600-R-08-043). This report is the third in a series prepared since May 2006 by the Subcommittee on Environmental Technology of the National Advisory Council for Environmental Policy and Technology (NACEPT). The purpose of these reports is to improve the effectiveness of the U.S. EPA at stimulating the development of environmental technologies to achieve the objectives of protecting human health and the environment. This report summarizes the assessments and recommendations of nine leading representatives from the investment community who routinely review and engage in investment opportunities targeting early-stage environmental technologies. Together, they represent a valuable perspective on some key trends that dominate this investment market. (April 2008, 100 pages). View or download at http://www.epa.gov/etop/pdf/venture_capital_study_rpt04152008.pdf .

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 23 resources, events projects and news items were added to EUGRIS 1 - 27 May, 2008. These can be viewed at <http://www.eugris.info/whatsnew.asp> . Then select the appropriate month and year for the updates in which you are interested. The following reports were featured on EUGRIS:

The Definition of Waste: Development Industry Code of Practice (2008). The UK demonstration network CL:AIRE (<http://www.claire.co.uk>) is co-ordinating a consultation to develop a protocol for facilitating soil; re-use by defining when it is a 'product' rather than a 'waste'. This is the first consultation document for a Code of Practice View or download at http://www.claire.co.uk/index.php?option=com_content&task=view&id=149&Itemid=28

Breast cancer and exposure to hormonally active chemicals: An appraisal of the scientific evidence (2008). This report by UK researchers summarises the evidence for the link between breast cancer and environmental influences. Exposure to hormone-disruptive chemicals, such as hormone replacement therapy (HRT) drugs, is

thought to be a key factor, but there are other relevant chemicals found in the environment, such as pesticides and phthalates (widely used in consumer products, such as plastics). Individually, these may not cause breast cancer, but there is scientific concern about the 'cocktail effect', where exposure to a combination of these chemicals may interact with hormones to trigger cancer. View or download at http://www.chemicalshealthmonitor.org/IMG/pdf/Breast_cancer_and_exposure_to_hormonally_active_chemicals.pdf

> Conferences and Symposia

National Corrective Action Conference, New Orleans, LA, June 3-4, 2008.

Pre-registration is June 2, 2008 at the New Orleans Marriott Hotel. The theme of the Conference is: "Strategies for Meeting the 2020 Corrective Action Goals". The Conference agenda will be posted soon. There are 18 concurrent breakout sessions for this conference. Topics include, but are not limited to: Corrective Action 101 (a basic introduction to the Corrective Action Program), 2 sessions on Green Revitalization, 2 sessions on PCBs, Vapor Intrusion, Financial Assurance for Corrective Action, Selecting Smart Remedies: Complement Engineered Solutions with Institutional Controls, just to name a few. For more information and to register, see <http://epacaconf.com/>.

Triad Investigations: New Approaches and Innovative Strategies, Amherst, MA, June 10-13.

The June 2008 National Conference Triad Investigations: New Approaches and Innovative Strategies will feature three full days of conference presentations, Triad training sessions, specialized workshops, an interactive tool room, field equipment demonstrations, exhibitor hall, poster sessions, and an array of networking opportunities. The conference will include training sessions, platform sessions, and specialized workshops focused on implementation of new tools, approaches, and strategies for hazardous waste site characterization, site remediation, and site redevelopment. The conference also will feature new tools and techniques for sampling and monitoring related to real-time information, continuous monitoring, and long-term monitoring for site closure and stewardship. Best practices and lessons learned will be emphasized throughout the training sessions, platform sessions, and workshops. The complete conference program is available at http://www.umass.edu/tei/conferences/Triad_PDF/Program.pdf. For more information and to register, see <http://www.umass.edu/tei/conferences/triad.html>.

Environmental Measurement Symposium, Washington, DC, August 11-15, 2008.

This symposium will combine the National Environmental Monitoring Conference (NEMC) and the Forum on Laboratory Accreditation (the Forum). The NEMC, www.nemc.us, brings together scientists and managers from federal and state agencies, the regulated community, and laboratory and engineering support communities. It includes technical sessions, training courses, exhibits, and networking opportunities. The Forum, www.nelac-institute.org, consists of meetings of a number of committees of The NELAC Institute (TNI). The 2008 Symposium will include keynote speakers on Elemental Speciation in Environmental Monitoring, Nanotechnology, Laboratory Accreditation, and International Health Issues. Furthermore, 16 technical breakout sessions will cover such topics as metals speciation, homeland security, the performance approach, field measurements and organic and inorganic methods, NEMC 2008 will have three special sessions: Updates on Key EPA programs; Analytical Capability Needs of the Future; and Future Trends in Environmental Monitoring and with a technical program featuring over 100 technical presentations. For more information, please visit http://www.nemc.us/nemc_2008/index.html

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 175 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.

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