



TechDirect, October 1, 2012

Welcome to TechDirect! Since the September 1 message, TechDirect gained 270 new subscribers for a total of 32,621. 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 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

Practical Models to Support Remediation Strategy Decision-Making - October 11, 17, 24, 31, and November 7. The overall objective of this series of webinars is to explore and provide experience using publicly-available simulation and data analysis tools that can be used individually or in combination, to support remediation decisions and strategy development for sites contaminated by chlorinated solvents, petroleum hydrocarbons, or other constituents. The webinars will focus on questions such as: Will source remediation meet site goals? What will happen if no action is taken? Should I combine source and plume remediation? What is the remediation timeframe? What are achievable and reasonable remediation objectives? The discussion will focus on the unique features of selected models and how those features can support strategy development and effective remediation decisions. Emphasis will be on REMChlor and REMFuel, recent simulation tools developed for the U.S. EPA and DoD. These tools simulate both source and plume behavior and remediation options. By providing the ability to simulate sites where conditions change in space and time, REMChlor and REMFuel can provide information "equivalent" to the types of output from more sophisticated numerical models and can assist environmental professionals in rapidly and efficiently developing and optimizing strategies for cleaning up sites. For more information and to register, see <http://clu-in.org/live>.

ITRC Biofuels: Release Prevention, Environmental Behavior, and Remediation - October 2, 2012, 2:00PM-4:15PM EDT (18:00-20:15 GMT). This training, which is based on the ITRC's Biofuels: Release Prevention, Environmental Behavior, and Remediation (Biofuels-1, 2011), focuses on the differences between biofuels and conventional fuels specific to release scenarios, environmental impacts, characterization, and remediation. The trainers will define the scope of the potential environmental challenges by introducing biofuel fundamentals, regulatory status, and future usage projections. Participants will learn how and when to use the ITRC biofuels guidance document for

their projects. They will understand the differences in biofuel and petroleum behavior; become familiar with the biofuel supply chain, potential release scenarios and release prevention; be able to develop an appropriate conceptual model for the investigation and remediation of biofuels; and select appropriate investigation and remediation strategies. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

Brownfields Road Map to Understanding Options for Site Investigation and Cleanup - October 3, 2012, 2:00PM-4:00PM EDT (18:00-20:00 GMT). EPA recently released the new Brownfields Road Map publication and companion website which provide an outline of the general steps involved in the investigation and cleanup of brownfields sites and introduce stakeholders to technology options and available resources. During this Road Map webinar, EPA speakers will review its history, describe how the structure of the Road Map was redesigned to better meet the needs of a diverse audience, and review the online interactive guide to contaminants and technologies. Technical resources and tools available online will also be highlighted. A second segment of the webinar serves to summarize the core chapters focused on assessment, investigation, selection of cleanup options, and design and implementation of cleanup. Participants will also be introduced to technical and management topics covered in Road Map "spotlights." Participants are invited to submit questions during a Question-and-Answer session. For more information and to register, see <http://clu-in.org/live> .

ITRC Integrated DNAPL Site Strategy - October 4, 2012, 11:00AM-1:15PM EDT (15:00-17:15 GMT). The ITRC Integrated Dense Nonaqueous Phase Liquid Site Strategy (IDSS-1, 2011) technical and regulatory guidance document will assist site managers in development of an integrated site remedial strategy. This course highlights five important features of an IDSS including: a conceptual site model (CSM) that is based on reliable characterization and an understanding of the subsurface conditions that control contaminant transport, reactivity, and distribution; remedial objectives and performance metrics that are clear, concise, and measureable; treatment technologies applied to optimize performance and take advantage of potential synergistic effects; monitoring based on interim and final cleanup objectives, the selected treatment technology and approach, and remedial performance goals; and reevaluating the strategy repeatedly and even modifying the approach when objectives are not being met or when alternative methods offer similar or better outcomes at lower cost. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

Opportunities for Bringing Rapidly Emerging Technologies to Revolutionize Modeling of Chemical Contaminants in Coastal Waters - October 4, 2012, 2:00PM-3:30PM EDT (18:00-19:30 GMT). We live in an age awash in environmental data and computing power, yet many water quality models in common use were written when chemical contaminant data were scarce and run times limiting. This talk explores the idea that current water quality models do not fully exploit the information and computing revolutions, and argues that modeling that was once fantasy is now possible. Joel Baker Ph.D. is the Science Director of the Center for Urban Waters in Tacoma. His research interests center around the transport of organic contaminants in the environment. He was a lead author on a scientific review of PCBs in the Hudson River and a contributing author to the Pew Oceans Commission Report on Marine Pollutants in the United States. In 2010 he was awarded the Conservation Research Award by the Seattle Aquarium. For more information and to register, see <http://clu-in.org/live> .

US and EU Perspectives on Green and Sustainable Remediation, Part 5 - October 9, 2012, 10:00AM-12:00PM EDT (14:00-16:00 GMT). This seminar is the fifth in the series on international green and sustainable remediation (GSR) efforts (additional information on prior internet seminars can be found at <http://clu.in.org/global/>). This 2-hour seminar will address the upcoming Sustainable Remediation Conference 2012 in Vienna, Austria, and provide an overview of the presentations available within each of the conference tracks: 1) Conceptual Framework - considering sustainability within remedial

approaches; 2) Sustainability Assessment - methodologies, models, and tools for sustainable remediation; and 3) Sustainability Management - case studies of sustainable remediation projects. An open forum will be held throughout the seminar to respond to participant questions. For more information and to register, see <http://clu-in.org/live> .

Site Characterization for Munitions Constituents - October 10, 2012, 1:00PM-3:00PM EDT (17:00-19:00 GMT). The Federal Facilities Forum is a group of USEPA Scientist and Engineers who represent EPA Regional Program Offices and are responsible for the identification and resolution of technical/policy issues regarding the characterization and remediation of federal facility Superfund, Resource and Conservation and Recovery Act, and Base Realignment and Closure sites. In January 2012 the Federal Facility Forum with the support of the U.S. Army Corps of Engineers using an Interagency Agreement completed and published a technical issue titled, "Site Characterization for Munitions Constituents." This project was done in order to provide federal, state and private consultants site cleanup managers with detailed information on the nature of energetic residues on DOD training ranges, sampling strategies that provide representative samples, and the most current analytical methods that are used to characterize these samples. The issue paper is 149 pages and includes detailed discussions on residues at various types of DOD ranges (grenade, antitank, artillery, tank, bombing, and small arms), soil sampling studies/recommended protocols, and a review of other contaminants of concern. This document also includes, a glossary of common terms, figures, tables, photographs, site specific case studies, and references. The Webinar will review and highlight specific information found in the issue paper and focus on the following items: explain background information on the types of military ranges and the munitions and contaminants associated with them, describe sample preparation issues specific to energetic compounds and associated metals, illustrate the above sampling and sample management information with four case studies. For more information and to register, see <http://clu-in.org/live> .

ITRC Permeable Reactive Barrier: Technology Update - October 11, 2012, 11:00AM-1:15PM EDT (15:00-17:15 GMT). The ITRC Technical/Regulatory Guidance Permeable Reactive Barrier: Technology Update (PRB-5, 2011) and associated Internet-based training is intended to help guide state and federal regulators, consultants, project managers and other stakeholders and technology implementers through the decision process when a Permeable Reactive Barrier (PRB) is being considered as a remedy, or part of a remedy, to address contaminated groundwater; and to provide updated information regarding several technical aspects of the PRB using information attained from the more than 15 years that the PRB has been a viable and accepted in situ remediation technology for contaminated groundwater. The guidance and training provides an update on PRBs to include discussions of additional types of reactive media and contaminants that can be treated, design considerations, construction/installation approaches and technologies, performance assessment and longevity. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

ITRC Incorporating Bioavailability Considerations into the Evaluation of Contaminated Sediment Sites - October 18, 2012, 11:00AM-1:15PM EDT (15:00-17:15 GMT). ITRC's web-based Technical and Regulatory Guidance, Incorporating Bioavailability Considerations into the Evaluation of Contaminated Sediment Sites (Sed-1, 2011) and associated Internet-based training are intended to assist state regulators and practitioners with understanding and incorporating fundamental concepts of bioavailability in contaminated sediment management practices. This guidance and training describe how bioavailability considerations can be used to evaluate exposure at contaminated sediment sites, the mechanisms affecting contaminant bioavailability, available tools used to assess bioavailability, the proper application of those tools and how bioavailability information can be incorporated into risk-management decisions. This guidance and training also contain summaries of case studies where bioavailability has been assessed and considered in the contaminated sediment remedial decision making

process. This guidance and training provide insight on how bioavailability assessments can be used to understand, mitigate and manage risk at a contaminated sediment site, often at a reduced overall project cost. For more information and to register, see

<http://www.itrcweb.org> OF <http://clu-in.org/live> .

Arsenic - Health and Remediation Applications, Session 1 - October 19, 2012, 2:00PM-4:00PM EDT (18:00-20:00 GMT). This seminar is the first in a three part series that coincides with the Superfund Research Program's 25th Anniversary and the 10th Anniversary of the Superfund Research Program (SRP) Risk e-Learning webinars. The SRP chose this opportunity to highlight the Program's accomplishments in the area of arsenic research. Since its inception, the SRP has funded work to understand the consequences of exposure to arsenic at the molecular and population levels. Equally important, these researchers have developed unique and effective methods to detect arsenic in the environment and to minimize human exposure to arsenic from drinking water and food sources. In this session Joseph Graziano, Ph.D., will present a historical overview of the global human health issues related to drinking water. His presentation will focus on the sources and prevalence of arsenic exposures and the evolution of our understanding of the spectrum of human health impacts and how arsenic imparts negative effects. Margaret Karagas, Ph.D., will give a brief overview of her epidemiology work that focuses on etiologic mechanisms and prevention of human cancers and other adverse health outcomes. She will discuss recent findings from studies to develop biomarkers of arsenic exposure and susceptibility in a U.S. population that relies heavily on private drinking water systems where over 10% of the wells contain low to moderate levels of arsenic. She will also present information from her research, from her early studies investigating cancer risk to her more recent investigation into sources of arsenic exposure among pregnant women, e.g., via their consumption of rice and tap water, and the research translation activities that help raise awareness of the presence of arsenic in the drinking water supply. A. Eduardo Saez, Ph.D., will focus on his and Co-PI's (Eric Betterton, Ph.D.) latest research that involves the characterization of windblown dust from mine tailings and will also touch on the University of Arizona SRP's phytostabilization field study in the southwestern United States that uses native plants to successfully reduce the amount of dust coming off the tailings, thereby reducing potential aerial exposures. For more information and to register, see <http://clu-in.org/live> .

ITRC Use and Measurement of Mass Flux and Mass Discharge - October 30, 2012, 2:00PM-4:15PM EDT (18:00-20:15 GMT). The ITRC technology overview, Use and Measurement of Mass Flux and Mass Discharge (MASSFLUX-1, 2010), and associated Internet-based training provide a description of the underlying concepts, potential applications, description of methods for measuring and calculating, and case studies of the uses of mass flux and mass discharge. This Technology Overview, and associated Internet-based training are intended to foster the appropriate understanding and application of mass flux and mass discharge estimates, and provide examples of use and analysis. The document and training assumes the participant has a general understanding of hydrogeology, the movement of chemicals in porous media, remediation technologies, and the overall remedial process. For more information and to register, see <http://www.itrcweb.org> OF <http://clu-in.org/live> .

> New Documents and Web Resources

Technology Innovation News Survey Corner. The Technology Innovation News Survey contains market/commercialization information; reports on demonstrations, feasibility studies and research; and other news relevant to the hazardous waste community interested in technology development. Recent issues, complete archives, and

subscription information is available at <http://clu-in.org/products/tins/> . The following resources were included in recent issues:

- Practical Tool for Enhanced Reductive Dechlorination Design in Clay Till
- A Long-Term Stewardship State Conceptual Framework to Estimate Associated Cost
- Chemical Reactivity Worksheet
- Attenuation of Naturally-Occurring Arsenic at Petroleum Impacted Sites
- Demonstration and Evaluation of Solid Phase Microextraction for the Assessment of Bioavailability and Contaminant Mobility
- Investigation of the Potential Source Area, Contamination Pathway, and Probable Release History of Chlorinated-Solvent-Contaminated Groundwater at the Capital City Plume Site, Montgomery, Alabama, 2008-2010
- Proceedings: Snowman Network Conference on Monitored Natural Attenuation, November 7, 2011, Salon du Relais, Paris

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 28 resources, events, projects and news items were added to EUGRIS in September 2012. 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 resource was posted on EUGRIS:

RemS User Guide: Remediation Strategy for Soil and Groundwater Pollution RemS Decision Support Tool (2011). This decision support tool published by the Environment Department of Denmark, puts together the expectations of remediation efficiency, environmental impacts, costs and time, and can be used to support the choice and combination of remediation techniques to reduce soil and groundwater contamination at a given location. View or download at http://www.regionh.dk/NR/rdonlyres/6C6CCE88-A017-465F-B97C-C6E545CD6918/0/RemS_2_0_UserGuideandappendices.pdf

The Contaminated Issue (2012, Institution of Environmental Sciences). This issue explores some of the aspects referred to above and provides an overview of important topics within the contaminated land arena. Recent changes to government guidance are explained in detail and various facets of land contamination risk assessment, including the analysis of uncertainty, are reviewed. Currently available techniques for remediating sites are highlighted, as are the principles of sustainable remediation. Case study material is also provided, while the UKs contaminated land regulation is discussed in a thought-provoking manner. View or download at http://www.ies-uk.org.uk/sites/default/files/resources/env_sci_aug_12.pdf .

> Conferences and Symposia

Labs21 2012 Annual Conference, San Jose, California, October 2-4, 2012. The International Institute for Sustainable Laboratories (I²SL) hosts this annual conference in partnership with the U.S. EPA and U.S. Department of Energy to highlight recent advancements in laboratory efficiency and performance and to provide the sustainable laboratory community with a forum for information exchange and education. For more information and to register, see <http://www.i2sl.org/labs21/conference/conference2012.html> .

LNAPLs: Science, Management, and Technology ITRC 2-day Classroom Training, Novi, MI, October 16-17, 2012. Led by internationally recognized experts, this 2-day ITRC classroom training will enable you to develop and apply an LNAPL Conceptual Site Model (LCSM), understand and assess LNAPL subsurface behavior, develop and justify

LNAPL remedial objectives including maximum extent practicable considerations, select appropriate LNAPL remedial technologies and measure progress, and use ITRC's science-based LNAPL guidance to efficiently move sites to closure. Interactive learning with classroom exercises and Q&A sessions will reinforce these course learning objectives. For local, state, and federal government; students; community stakeholders; and tribal representatives, ITRC has a limited number of scholarships (waiver of registration fee only) available. For more information and to register, see <http://www.itrcweb.org/crt.asp> .

Hazardous Waste Management - An Overview of CERCLA, October 19, 2012, 11:30AM-1:00PM EDT (15:30-17:00 GMT). During this live webinar, students will hear an introduction to EPA's major site-cleanup statute presented by Senior Attorney Mike Northridge. The target audience for this live webinar presentation is federal employees. For more information and to register, see <http://www.clu-in.org/neti121019> .

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. 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/techdirect> at any time night or day.

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