TechDirect, September 1, 2014

Welcome to TechDirect! Since the August 1 message, TechDirect gained 177 new subscribers for a total of 37,752. 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 groundwater.

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.

> Grant Award

$11 Million in Supplemental Funds to Clean up and Redevelop Contaminated Brownfields Sites Across the Country. The U.S. EPA announced $11 million in supplemental funding to help clean up contaminated Brownfields properties. The Revolving Loan Funds (RLF) will help 31 grantees carry out cleanup and redevelopment projects. These projects are expected to create more than 700 jobs and leverage over $57 million in cleanup and redevelopment, while utilizing unique financing mechanisms and partnerships to protect people's health and the environment. Revolving loan funds specifically supply funding for grant recipients to provide loans and sub-grants to carry out cleanup activities at brownfield sites. When these loans are repaid, the loan amount and any interest is then returned to the fund and subgranted or re-loaned to other borrowers, providing an ongoing source of capital for brownfields cleanup. The supplemental grants range in funding from about $200,000 to $500,000 with an average grant award of $350,000. For more information, see http://clu-in.org/rlf0914.

> Upcoming Live Internet Seminars

ITRC Soil Sampling and Decision Making Using Incremental Sampling Methodology Parts 1 and 2 - September 9 and 16, 2014. This 2-part training course along with ITRC's Web-based Incremental Sampling Methodology Technical and Regulatory Guidance Document (ISM-1, 2012) is intended to assist regulators and practitioners with the understanding the fundamental concepts of soil/contaminant heterogeneity, representative sampling, sampling/laboratory error and how ISM addresses these concepts. Through this training course you should learn: basic principles to improve soil sampling results, systematic planning steps important to ISM, how to determine ISM Decision Units (DU), the answers to common questions about ISM sampling design and data analysis, methods to collect and analyze ISM soil samples, the impact of laboratory processing on soil samples, and how to evaluate ISM data and make decisions. In addition this ISM training and guidance provides insight on when and how to apply ISM at a contaminated site, and will aid in developing or reviewing project documents incorporating ISM (e.g., work plans, sampling plans, reports). For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

NARPM Presents...Decision Support System for Matrix Diffusion Modeling - September 22, 2014, 1:00PM-3:00PM EDT (17:00-19:00 GMT). The objective of this internet seminar is to provide training on an accessible, easy-to-use, and useful tool for modeling matrix diffusion. Low-permeability (low-k) zones can serve as indirect, low-level sources of contamination to transmissive zones as a result of matrix diffusion. The potential for matrix diffusion effects can be seen at virtually any site with heterogeneity in the subsurface, dense non-aqueous phase liquids (DNAPL), or where persistent contaminant concentrations in groundwater after source-zone remediation have been observed. To better equip the community with accessible, useable, and practical models for evaluating matrix diffusion effects, the Environmental Security Technology Certification Program (ESTCP) funded development of the Matrix Diffusion Toolkit. The Toolkit provides planning level estimates of the (1) mass discharge caused by diffusion from a low-k diffusion-dominated unit into a high-permeability advection-dominated unit (estimates of concentration and mass remaining in the high-permeability unit, after the source is removed, are also provided); (2) contaminant transport via advection and transverse diffusion in the transmissive layer; and (3) transport via transverse diffusion in the low-k zone. Based on the Microsoft Excel platform, the Toolkit is an easy-to-use, comprehensive, free software tool that can assist site personnel to effectively and efficiently estimate the effects of matrix diffusion at their site, and transfer the results to stakeholders. Furthermore, the software can assist project managers in evaluating whether remediation goals are achievable in the short term. For more information and to register, see http://clu-in.org/live.

ITRC Biochemical Reactors for Treating Mining Influenced Water - September 23, 2014, 2:00PM-4:15PM EDT (18:00-20:15 GMT). Mining influenced water (MIW) includes aqueous wastes generated by ore extraction and processing, as well as mine drainage and tailings runoff. MIW handling, storage, and disposal is a major environmental problem in mining districts throughout the U.S. and around the world. Biochemical reactors (BCRs) are engineered treatment systems that use an organic substrate to drive microbial and chemical reactions to reduce concentrations of metals, acidity, and sulfate in MIWs. The ITRC Biochemical Reactors for Mining-Influenced Water technology guidance (BCR-1, 2013) and this associated Internet-based training provide an in-depth examination of BCRs; a decision framework to assess the applicability of BCRs; details on testing, designing, constructing and monitoring BCRs; and real world BCR case studies with diverse site conditions and chemical mixtures. At the end of this training, you should be able to complete the following activities: describe a BCR and how it works; identify when a BCR is applicable to a site; use the ITRC guidance for decision-making by applying the decision framework; improve site decision-making through understanding of BCR advantages, limitations, reasonable expectations, regulatory and other challenges; and navigate the ITRC Biochemical Reactors for Mining-Influenced Water technology guidance (BCR-1, 2013). For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

ITRC Environmental Molecular Diagnostics: New Tools for Better Decisions - September 24, 2014, 2:00PM-4:15PM EDT (18:00-20:15 GMT). Environmental molecular diagnostics (EMDs) are a group of advanced and emerging analytical techniques used to analyze biological and chemical characteristics of environmental samples. Although EMDs have been used over the past 25 years in various scientific fields, particularly medical research and diagnostic fields, their application to environmental remediation management is relatively new and rapidly developing. The ITRC Environmental Molecular Diagnostics Fact Sheets (EMD-1, 2011), ITRC Environmental Molecular Diagnostics Technical and Regulatory Guidance (EMD-2, 2013) and this companion Internet-based training will foster the appropriate uses of EMDs and help regulators, consultants, site owners, and other stakeholders to better understand a site and to make decisions based on the results of EMD analyses. At the conclusion of the training, learners will be able to determine when and how to use the ITRC Environmental Molecular Diagnostics Technical and Regulatory Guidance

(EMD-2, 2013); define when EMDs can cost-effectively augment traditional remediation data sets; and describe the utility of various types of EMDs during remediation activities. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

Borehole Geophysics Applied to Bedrock Hydrogeologic Evaluations - September 29, 2014, 1:00PM-2:15PM EDT (17:00-18:15 GMT). This presentation introduces the viewer to borehole geophysical tools commonly used in hydrogeologic investigations. These tools include gamma, temperature, conductivity, caliper, borehole video, acoustic and optical televiewers, heat-pulse flowmeter, and borehole deviation. Examples and case studies follow, illustrating the usefulness of data obtained through the utilization of these tools, especially when used to design packer tests and multi-level discrete-zone sampling strings. In addition, borehole tools commonly used in shallow oil/gas well abandonment are presented. For more information and to register, see http://clu-in.org/live.

ITRC Biofuels: Release Prevention, Environmental Behavior, and Remediation - September 30, 2014, 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.

Porewater Concentrations and Bioavailability: How You Can Measure Them and Why They Influence Contaminated Sediment Remediation - October 6, November 19, December 1, 15, 2014. NARPM Presents and Risk e-Learning are offering a four-part webinar series to help you understand why, how, and when to measure porewater concentrations and bioavailability as part of contaminated sediment assessment and management. Hosted jointly by the EPA Contaminated Sediments Forum and the National Institute of Environmental Health Science's Superfund Research Program, this webinar series will also focus on the use of passive sampling devices (PSD) and what they tell us about contaminant bioavailability. Previously held as a course at the National Association for Remedial Project Managers (NARPM) Training Program meeting, the webinar series features experts in the field of porewater and bioavailability and includes lectures and case studies, including practical tips to maximize the utility of porewater and bioavailability measurements. Presenters will explain the basics of chemical fate, transport, and uptake, with a focus on porewater as a key route of exposure and a strong indicator of bioavailability. PSDs are a promising technology for measuring porewater concentrations and assessing bioavailability, particularly for common sediment contaminants such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), chlorinated pesticides, and dioxin-like compounds. The webinar series will include information about direct measurements of porewater, such as centrifuging sediment samples, or Henry Samplers, which may also be used and are particularly useful for measuring metals. For more information and to register, see http://clu-in.org/live.

ITRC Green & Sustainable Remediation - October 2, 2014, 11:00AM-1:15PM EDT (15:00-17:15 GMT). Many state and federal agencies are just beginning to assess and apply green and sustainable remediation (GSR) into their regulatory programs. This training provides background on GSR concepts, a scalable and flexible framework and

metrics, and tools and resources to conduct GSR evaluations on remedial projects. The training is based on the ITRC's Technical & Regulatory Guidance Document: Green and Sustainable Remediation: A Practical Framework (GSR-2, 2011) as well as ITRC's Overview Document, Green and Sustainable Remediation: State of the Science and Practice (GSR-1, 2011). Beyond basic GSR principles and definitions, participants will learn the potential benefits of incorporating GSR into their projects; when and how to incorporate GSR within a project's life cycle; and how to perform a GSR evaluation using appropriate tools. In addition, a variety of case studies will demonstrate the application of GSR and the results. The training course provides an important primer for both organizations initiating GSR programs as well as those organizations seeking to incorporate GSR considerations into existing regulatory guidance. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

NARPM Presents...Exploring Recreational and Educational Opportunities at the Picayune Wood Treating Site - October 21, 2014, 1:00PM-3:00PM EDT (17:00-19:00 GMT). Three major ways that EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) Technology Innovation and Field Services Division (TIFSD) provides technical assistance for ecological revitalization and reuse of sites is through information exchange in "Eco-Forums," reuse planning and an educational eco-curriculum. These tools and support are done through interagency agreements, at a regional level, and directly with site stakeholders. This webinar will discuss the eco-curriculum framework that was developed to help integrate the scientific aspects of cleanup and remedial components into a curriculum for local schools and will look in depth at the TIFSD eco-curriculum pilot project at the Picayune Wood Treating Superfund Site in Mississippi, Region 4. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

> New Documents and Web Resources

Technology News and Trends (EPA 542-N-14-002). This issue highlights characterization and remediation strategies to address contaminants of emerging concern (CECs), which are chemicals or materials characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards. CECs typically are associated with certain classes of products, as ingredients or generated during processing or manufacturing, such as pharmaceuticals and personal care items, steroids and hormones, and pesticides. A contaminant also may be "emerging" due to the discovery of a new exposure pathway to humans, such as vapor intrusion into buildings, or the development of a more stringent regulatory standard. New toxicity information on frequent contaminants such as trichloroethylene (TCE) and tetrachloroethylene (PCE), for example, can lead to re-emergence of concern (Summer 2014). View at http://clu-in.org/tnandt/0814.

ITRC Publishes New Guidance Document on Contaminated Sediments Remediation. Remediation of contaminated sediments commonly targets the complementary goals of protecting human health and the environment and restoring impaired environmental resources to beneficial use. Remediating contaminated sediment sites is challenging from a technical and risk-management perspective. A new ITRC Web-based guidance document presents a remedy selection framework for contaminated sediments to help project managers evaluate remediation technologies and develop remediation alternatives based on site-specific data. General categories of contaminated sediment remedial technologies covered in the guidance document include monitored natural recovery (MNR) and enhanced monitored natural recovery (EMNR), in situ treatment, capping (conventional and amended), and removal (dredging and excavation). Additional factors that need to be considered as part of the

evaluation process are summarized (e.g., feasibility, cost, stakeholder and local government concerns, and others). ITRC offers a free corresponding Internet-based training course on contaminated sediment remediation as well. View the guidance document (August 2014, 514 pages) at http://www.itrcweb.org/contseds_remedy-selection/ and register for the training course at http://www.itrcweb.org/Training?topicID=4#consedRSCS.

Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Monitoring Well (OSWER Directive 9283.1-44) & Groundwater Statistical Tool. The purpose of this document is to recommend well-specific factors for EPA Regions and other stakeholders to consider in evaluating the groundwater in each monitoring well for purposes of the recommendations discussed in the groundwater restoration completion guidance (OSWER 9355.0-129). The Groundwater Statistics Tool is designed to help evaluate contaminant of concern (COC) concentrations on a well-by-well basis to determine whether a groundwater restoration remedial action is complete (August 2014, 18 pages). View, download, and use at http://www.epa.gov/superfund/health/conmedia/gwdocs/remedial.htm.

Superfund Radiation Risk Assessment: A Community Toolkit. This toolkit presents a collection of 22 fact sheets to help the general public understand more about EPA's risk assessment process used at radioactively contaminated Superfund sites. It also provides brief overviews on EPA's risk assessment calculators and provides information regarding radionuclides that are commonly found at Superfund sites. The toolkit is also supplemented by the existing 19-minute video, Superfund Radiation Risk Assessment and How You Can Help: An Overview. View the toolkit at http://www.epa.gov/superfund/health/contaminants/radiation/radtoolkit.htm and the video at http://www.epa.gov/superfund/health/contaminants/radiation/radvideo.htm.

Research Brief: Developments toward Low-Cost, Unattended Vapor Intrusion Monitoring. NIEHS Superfund Research Program (SRP)-funded scientists from the chemical sensor company Seacoast Science are developing an inexpensive vapor intrusion monitoring system. The system can operate repeatedly without user intervention and detect typical vapor intrusion chemicals at low detection limits, allowing many more sites to be monitored over longer periods. The newly developed Seacoast Science vapor intrusion monitor is inexpensive compared to common laboratory equipment, is portable for easy setup, and does not require compressed gases to operate, making it safe to leave unattended. Scientists continue work to develop the instrument so it can be manufactured for less than $2,000 and left operating unattended for up to 12 months, during which it can run repeating sample collection and analysis cycles. For more information, see http://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=236.

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:

- Determination of Polychlorinated Biphenyls (PCBs) in Sediment and Biota
- Field Demonstration, Optimization, and Rigorous Validation of Peroxygen-Based ISCO for the Remediation of Contaminated Groundwater: CHP Stabilization Protocol
- Demonstration of an In-Situ Friction-Sound Probe for Mapping Particle Size at Contaminated Sediment Sites
- Pilot Scale Evaluation of Soil Washing for Treatment of Arsenic Contaminated Soil (PSEMA)
- Application of Biofilm Covered Activated Carbon Particles as a Microbial Inoculum Delivery System for Enhanced Bioaugmentation of PCBs in

Contaminated Sediment: Phase 1 Final Report
- Assessing the Potential for Biorestoration of Uranium In Situ Recovery Sites
- Technical Resource Document on Monitored Natural Recovery
- Ground Water Issue Paper: Synthesis Report on State of Understanding of Chlorinated Solvent Transformation
- Evaluating Potential Exposures to Ecological Receptors Due to Transport of Hydrophobic Organic Contaminants in Subsurface Systems

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 11 resources, events, projects and news items were added to EUGRIS in August 2014. 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:

Contaminated Land - UK Government Web Page. This web page is the new gateway to contaminated land information across various government departments in the UK . For more inforation, see https://www.gov.uk/contaminated-land/overview.

> Conferences and Symposia

Registration Still Open! National Conference on Mining-Influenced Waters: Approaches for Characterization, Source Control and Treatment, Albuquerque, NM, August 12-14, 2014. Sponsored by the U.S. EPA, this free conference will provide a forum for the exchange of scientific information on current and emerging approaches to assessing characterization, monitoring, source control, treatment and/or remediation of mining-influenced waters. For more information and to register, see http://www.epa.gov/nrmrl/events/event08142014.html.

3rd International Conference on Sustainable Remediation 2014, Ferrara, Italy, September 17-19, 2014. This conference will focus on five topics concerning sustainable remediation: conceptual framing; tools, metrics and indicators; greening remediation, eco-efficient technologies and opportunities from synergy; case studies; and stakeholder involvement and participative approaches. For more information and to register, see http://www.sustrem2014.com/.

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training, Richmond, VA, October 29-30, 2014. 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/training.

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.

Modify Your Subscription | Questions & Comments | Technical Problems
Privacy and Security Notice
TechDirect Archives