



TechDirect, March 1, 2014

Welcome to TechDirect! Since the February 1 message, TechDirect gained 373 new subscribers for a total of 36,809. 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.

> Upcoming Live Internet Seminars

CEC Hazard Ranking System (HRS) Webinar Series - March 10, 18, 20, 25, 27, April 1, 3, 8, 10. The CERCLA Education Center (CEC) is offering another Hazard Ranking System Webinar Series in March and April 2014 and has expanded the course from six to nine modules. The HRS webinar series is an intermediate-level course designed for personnel who are required to compile, draft and review preliminary assessments (PA), site inspections (SI), and HRS documentation records/packages submitted for proposal to the National Priorities List (NPL). **The course is intended for EPA Regional, state, tribal and contractor personnel, who support EPA in the Superfund site assessment/NPL listing process.** This course assumes a basic understanding of the HRS and its context within the site assessment process. The training course is intended to enable staff to prepare HRS packages for the NPL and to plan PAs and SIs to address future HRS scoring issues. This training course provides details of the structure and application of the revised HRS and information related to the preparation of HRS packages, including HRS scoresheets, documentation records and site summaries. The course will incorporate an interactive case study for each of the four pathways to provide practical application of the HRS. The webinar series consists of nine two- to three-hour sessions during March and April 2014. In order to receive credit for taking the course, participants must participate in each session. If you are unable to make one of the sessions, archived versions will be made available at www.clu-in.org that you can take to receive credit for the missed live session. In order to receive credit for a missed session, you must complete the missed session within 2 months of the originally scheduled date and submit an evaluation form from that archived module. For more information and to register, see <http://clu-in.org/live>.

ITRC LNAPL Training Parts 1, 2, and 3 - March 4, 6, 11. Light non-aqueous phase liquids (LNAPLs) are organic liquids such as gasoline, diesel, and other petroleum hydrocarbon products that are immiscible with water and less dense than water. LNAPLs are important because they are present in the subsurface at thousands of remediation sites across the country, and are frequently the focus of assessment and remediation efforts. Part 1 of this training course explains how LNAPLs behave in the subsurface and examines what controls their behavior. Part 1 also explains what LNAPL data can tell you about the LNAPL and site conditions. Relevant and practical

examples are used to illustrate key concepts. Part 2 addresses LNAPL characterization and site conceptual model development as well as LNAPL recovery evaluation and remedial considerations.

Specifically, Part 2 discusses key LNAPL and site data, when and why those data may be important, and how to get those data. Part 2 also discusses how to evaluate LNAPL recoverability. Part 3 uses the LNAPL conceptual site model (LCSM) approach to identify the LNAPL concerns or risks and set proper LNAPL remedial objectives and technology-specific remediation goals and performance metrics. Part 3 also provides an overview of the LNAPL remedial technology selection framework. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

ITRC Biofuels: Release Prevention, Environmental Behavior, and Remediation - March 20, 2014, 11:00AM-1:15PM EDT (15:00-17:15 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>.

Sustainable Remediation - April 15, 2014, 10:00AM-11:00AM EDT (14:00-15:00 GMT). A pre-conference workshop for the Sustainable Remediation Conference 2014. The webinar aims to stimulate international exchange by providing a venue for professionals and interested parties from multiple backgrounds to share experiences and perspectives on how contaminated sites can be remediated with a lower environmental footprint, and how their reuse can contribute to a more sustainable land development. The event builds on the Green Remediation Conference (Copenhagen, November 2009), the 2nd International Conference on Sustainable Remediation (Vienna, November 2012) and discussions alongside at ConSoil 2010 & 2013 as well as through virtual events hosted by U.S. EPA. For more information and to register, see <http://clu-in.org/live>.

ASTM Greener Cleanup Standard Guide: An Introduction - April 25, 2014, 1:00PM-3:00PM EDT (17:00-19:00 GMT). ASTM International, Inc. released its Greener Cleanup Standard Guide E2893-13, (the "Guide") in November 2013. The Guide offers remediation professionals a clear, step-wise approach to implementing green remediation projects, and is the most direct guidance of its kind. This webinar is provided through a collaboration of the Guide's Development Team and U.S. EPA. The Guide sets forth a 5-step decision-making process to reduce the environmental footprint of contaminated site assessment and cleanup projects. Through this webinar, participants will gain insight on the genesis of this ASTM effort, potential applications of the Guide, the mechanics of actually using it at a project, and how stakeholders are considering its use. This two-hour Webinar includes a 30-minute closing Q&A session and will be instructed by John Simon, lead of the Development Team, as well as Carlos Pachon and Deb Goldblum of U.S. EPA. For more information and to register, see <http://clu-in.org/live>.

> New Documents and Web Resources

Introduction to In Situ Bioremediation of Groundwater (EPA 542-R-13-018). In situ bioremediation (ISB) of groundwater involves the encouragement of indigenous bacterial populations to metabolize target contaminants through the addition of various amendments (biostimulation) to the subsurface environment. In addition to amendments, select strains of bacteria may be added to the subsurface to help treat some sites (bioaugmentation). Bacteria perform coupled oxidation/reduction (redox) reactions to live, and bioremediation exploits these

reactions to remove contaminants from contaminated media (soil, air, or groundwater). Bacteria can use different electron acceptors (oxidized compounds) and donors (reduced compounds) in the three major oxidation pathways - aerobic respiration, anaerobic respiration, and fermentation. ISB can use all of these pathways, and contaminant degradation may occur through direct metabolism, cometabolism, or abiotic transformations that may result from biological activities. This report is intended for U.S. EPA and state agency site managers and may serve as a reference to designers and practitioners (December 2013, 86 pages). View or download at <http://clu-in.org/techpubs.htm>

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:

- The Effect of Soil Properties on Metal Bioavailability: Field Scale Validation to Support Regulatory Acceptance
- BioReD: Biomarkers and Tools for Reductive Dechlorination Site Assessment, Monitoring and Management
- White Paper on PCBs in the Built Environment
- Technical Review Workgroup Recommendations Regarding Gardening and Reducing Exposure to Lead-Contaminated Soils
- Waste Lands: America's Forgotten Nuclear Legacy
- Design and Quality Assurance/Quality Control Considerations for In Situ Chemical Oxidation
- Best Practices for Injection and Distribution of Amendments
- Innovative Vapor Intrusion Site Characterization Methods
- Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions

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 February 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:

Reference Report on the management of contaminated sites in Europe (2014). The JRC has published a Reference Report led by the IES, which presents the current state of knowledge on the management of contaminated sites in Europe. The report outlines findings such as the following: " There are an estimated 2.5 million potentially contaminated sites in Europe, where soil contamination is suspected and detailed investigations are needed. " Of the circa 115 000 contaminated sites that have already been identified in Europe, nearly half of them (46%) have already been remediated. " Contaminated sites are mainly managed using traditional techniques such as excavation and off-site disposal, which together account for about one third of management practices. " Mining activities, metal industries and gasoline stations are the most frequently reported sources of soil and groundwater contamination. However, the range of polluting activities varies considerably from country to country. " The most frequently occurring contaminants are mineral oils and heavy metals. " Annual national expenditure for the management of contaminated sites is on average about €10 per capita. View or download at http://ies.jrc.ec.europa.eu/news/663/354/Reference-Report-on-the-management-of-contaminated-sites-in-Europe/d.ies_highlights_details.html

> Conferences and Symposia

ITRC 2014 Spring Meeting, Garden Grove, CA, March 24-28, 2014. Online registration is open through March 5 for the 2014 Interstate Technology & Regulatory Council (ITRC) Spring Meeting. The 2014 Spring Meeting will offer environmental professionals from across the country an

opportunity to network and collaborate on innovative approaches to solving environmental challenges. This week-long meeting will feature an informative plenary session, two project implementation sessions, as well as ITRC team meetings. In addition, this meeting provides an opportunity for you to: expand your network in the environmental community through participation in the Tuesday evening reception and other networking opportunities provided throughout the meeting, understand ITRC's direction through discussions with ITRC's leadership during the Wednesday morning Plenary Session, and engage with ITRC project teams during implementation sessions enabling members to discover more about innovative strategies teams are pursuing for 2014 and beyond. For more information and to register, see <http://www.itrcweb.org/Meetings/Upcoming> .

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training offered three times in 2014: Kansas City, MO (April 1-2); Lexington, KY (June 3-4); and Richmond, VA (October 29-30). 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> .

Groundwater High-Resolution Site Characterization (HRSC), Atlanta, GA, April 3-4, 2014.

This is a two-day training course that focuses on groundwater characterization and discusses (1) the impacts of subsurface heterogeneity on the investigation and cleanup of groundwater and related media, (2) the need for scale-appropriate measurements and adequate data density, and (3) the tools and strategies that are available to overcome the impacts of subsurface heterogeneity.

After taking this course, participants will be armed with information that will allow them to improve their subsurface investigation approaches and develop more realistic and comprehensive conceptual site models (CSM). CSMs developed based on HRSC strategies and tools will decrease site uncertainty, improve the remedy selection process for groundwater remedies, and better enable the evaluation, design, and implementation of targeted in situ and ex situ groundwater remedies. The recommended audience for this course includes EPA, federal, state, tribal, and private industry technical project managers, practitioners and other stakeholders involved in groundwater investigation and remediation. For more information and to register, see

<http://www.trainex.org/hrsc> .

Registration Now Open!! 2014 TRI National Training Conference, Arlington, VA, May 7-9, 2014.

Online registration is now open for the 2014 National Training Conference on the Toxics Release Inventory (TRI) and Environmental Conditions in Communities, which will be held May 7-9, 2014 at the Hilton Crystal City in Arlington, VA. The Dillard University Deep South Center for Environmental Justice and the U.S. EPA are co-sponsoring the conference, which aims to promote greater participation, collaboration, community awareness, and public involvement regarding data on toxic chemical releases and related environmental information. This year's conference agenda includes sessions on current and emerging right-to-know issues, pollution prevention, community engagement, tools and data, and environmental public health from a diverse group of presenters.

Conference participants will experience dynamic discussions, great networking opportunities, and a conference full of valuable information. For more information and to register, see

<http://www2.epa.gov/toxics-release-inventory-tri-program/2014-national-training-conference> .

Call for Abstracts!! 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. Abstracts for presentations and posters may be submitted electronically at <http://www.sustrem2014.com/mail.php> through April 25, 2014. For more information, visit

<http://www.sustrem2014.com/> .

Call for Abstracts!! National Conference on Mining-Influenced Waters: Approaches for Characterization, Source Control and Treatment, August 12-14, 2014, Albuquerque, NM.

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 on mining-influenced waters. One-page abstracts for oral and poster presentations may be submitted by March 28, 2014. To request a copy of the Call for Abstracts or to be added to the conference email distribution list, please contact Alina Martin, Leidos, at martinali@leidos.com or 571-244-1582 .

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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