



U.S. ENVIRONMENTAL PROTECTION AGENCY

TechDirect, March 1, 2015

Welcome to TechDirect! Since the February 1 message, TechDirect gained 223 new subscribers for a total of 34,658. 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.

> Funding Opportunity

ESTCP Installation Energy Solicitation Released. The Department of Defense's (DoD) Environmental Security Technology Certification Program (ESTCP) is seeking proposals for demonstrations of energy technologies on DoD installations as candidates for funding in FY 2016. All federal and private sector organizations may submit pre-proposals for demonstrations of innovative energy technologies in the following topic areas: energy generation, storage, dispatch and management on military installations; and cybersecure connectivity for energy system components and military installation energy infrastructure. All pre-proposals are due by April 2, 2015. Details for submissions from DoD organizations, federal organizations outside DoD, and industry, academia, and state organizations, as well as a recording of the February 13 webinar presented by the ESTCP Director and Energy and Water Program Manager are available at <https://www.serdp-estcp.org/Funding-Opportunities/ESTCP-Solicitations/Installation-Energy-Solicitation>.

> Upcoming Live Internet Seminars

ITRC Issues and Options in Human Health Risk Assessment - A Resource When Alternatives to Default Parameters and Scenarios are Proposed - March 10, 2015, 1:00PM-3:15PM EDT (17:00-19:15 GMT). After participating in this ITRC training course, the learner will be able to apply ITRC's Decision Making at Contaminated Sites: Issues and Options in Human Health Risk (RISK-3, 2015) document when developing or reviewing site-specific risk assessments by: identifying common issues encountered when alternatives to default parameters and scenarios are proposed

during the planning, data evaluation, toxicity, exposure assessment, and risk characterization and providing possible options for addressing these issues; recognizing the value of proper planning and the role of stakeholders in the development and review of risk assessments; and providing information (that includes links to additional resources and tools) to support decision making when alternatives to default approaches, scenarios and parameters are proposed. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

Live Q&A Session for Best Management and Technical Practices for Site Assessment and Remediation - March 11, 2015, 1:00PM-2:30PM EDT (17:00-18:30 GMT).

The Office of Underground Storage Tanks (OUST) joined with EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) in 2014 to develop the previously recorded training on best practices for site assessment and remediation. At the request of several state partners the course was developed to explore experiences and resulting best practices from extensive work at underground storage tank (UST), Brownfields, and Superfund sites. Topics in this course include innovative analytical techniques, sampling strategies, and remediation technologies that can be applied at sites contaminated with petroleum hydrocarbons, chlorinated solvents or other constituents. After viewing the archived webinar, participants can submit questions to the instructor through the online webinar environment. Questions submitted by March 6, 2015 will be addressed during the live Question and Answer Session with Stephen Dymont scheduled for March 11, 2015. Replay the archived Best Management and Technical Practices for Site Assessment and Remediation Webinar at <http://www.clu-in.org/conf/tio/bmp/>. For more information and to register for the live Q&A session with Stephen Dymont on March 11, see <http://clu-in.org/live>.

ITRC Mining Waste Treatment Technology Selection - March 12, 2015,

1:00PM-3:15PM EDT (17:00-19:15 GMT). ITRC's Mining Waste Team developed the ITRC Web-based Mining Waste Technology Selection site to assist project managers in selecting an applicable technology, or suite of technologies, which can be used to remediate mine waste contaminated sites. Decision trees, through a series of questions, guide users to a set of treatment technologies that may be applicable to that particular site situation. Each technology is described, along with a summary of the applicability, advantages, limitations, performance, stakeholder and regulatory considerations, and lessons learned. Each technology overview links to case studies where the technology has been implemented. In this associated Internet-based training, instructors provide background information then take participants through the decision tree using example sites. Project managers, regulators, site owners, and community stakeholders should attend this training class to learn how to use the ITRC Web-based Mining Waste Technology Selection site to identify appropriate technologies, address all impacted media, access case studies, and understand potential regulatory constraints. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

NARPM Presents...The Superfund Job Training Initiative (SuperJTI) - March 16, 2015, 1:00PM-3:00PM EDT (17:00-19:00 GMT).

The Superfund Job Training Initiative (SuperJTI) is a job readiness program that provides training and employment opportunities for people living in communities affected by Superfund sites. Many of these areas are Environmental Justice communities - historically under-represented minority and low-income neighborhoods and areas burdened with significant environmental challenges. EPA's goal, through SuperJTI, is to help these communities develop job opportunities that remain long after a Superfund site has been cleaned up. By participating in the webinar, participants will: understand how the SuperJTI program works; hear how the SuperJTI program has been implemented; discuss how SuperJTI programs benefited multiple stakeholders including the local community, contractors, EPA and especially participants; brainstorm sites that may be eligible for SuperJTI projects; and receive information about how to contact SuperJTI staff and begin a SuperJTI program at their site/community. For more information and to register, see

<http://clu-in.org/live>.

ITRC Integrated DNAPL Site Strategy - March 17, 2015, 1:00PM-3:15PM EDT (17:00-19:15 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 measurable; 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>.

ITRC Biochemical Reactors for Treating Mining Influenced Water - March 19, 2015, 1:00PM-3:15PM EDT (17:00-19:15 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>.

Quantitative Framework and Management Expectation Tool for the Selection of Bioremediation Approaches at Chlorinated Solvent Sites - March 19, 2015 12:00PM-1:30PM EDT (16:00-17:30 GMT). Of the upcoming webinars in March, a session will take place on March 19, 2015 on developing a quantitative framework for selecting bioremediation approaches at chlorinated solvent site. Dr. John Wilson and Ms. Carmen Lebrón will give presentations on Thursday March 19 on an ESTCP-funded project where data from more than 90 sites were evaluated to establish correlations between naturally attained rate constants and the abundance of specific parameters. A framework was then developed into an easy-to-apply screening tool for use at sites contaminated by chlorinated solvents. To register for this and other upcoming free webinars, please visit the SERDP and ESTCP webinar series website at <https://serdp-estcp.org/Tools-and-Training/Webinar-Series/03-19-2015>.

NARPM Presents...Analytical Laboratory Data - Electronic Data Assessment - March 24, 2015, 1:00PM-3:00PM EDT (17:00-19:00 GMT). In Superfund or other environmental clean-up and monitoring projects, data validation is the process of examining analytical data to ensure the data is precise, accurate, and adequate for the intended use. EPA Quality Policy requires that all environmental decisions are supported by data of known and documented quality, thus any data used to support Superfund site decisions should undergo some type of data validation. Data validation

can be expensive and labor-intensive, especially in the traditional format where hundreds of pages of analytical data and associated laboratory quality assurance and quality control information are examined manually by an experienced chemist, who then makes a determination on the usability of the data for the project. Although imperative, the data validation process can delay crucial site decisions and increase costs. The mission of the EPA Contract Laboratory Program (CLP) is to provide data of known and documented quality for Superfund site decisions. The EPA CLP program uses the Electronic Data Evaluation and Exchange Software (EXES) tool for automated data review and evaluation. The EXES tool is programmed to automatically identify potential data quality and usability issues, thus reducing the time necessary for manual data validation. The EXES tool can be adapted to any chemical analytical method. When the EXES tool is used correctly by experienced chemists and data validators, the software can significantly reduce the time, effort, and cost of data validation. The EPA CLP is working to provide access to the EXES tool to EPA Regional laboratories and other Superfund data validators and end users. This CLU-IN session will provide an overview of data validation, and outline ways that Superfund Remedial Project Managers, site contractors, data validators, or end data users can incorporate the EXES tool and electronic data assessment tools into their clean-up monitoring projects to increase efficiency and lower costs. For more information and to register, see

<http://clu-in.org/live>.

SRI Webinar Series: Risk Management and Assessing Liability: Helping Communities Pursue Reuse Opportunities at Contaminated Properties - March 25, 2015, 2:00PM-4:00PM EDT (18:00-20:00 GMT).

Parties involved in the assessment, cleanup and revitalization of contaminated properties often have questions and concerns about how they may incur liability operating at these sites. This webinar is intended to share two critical resources to guide municipal governments, developers, investors and communities in how to mitigate risk and achieve local land revitalization goals. Presenters will share available information in EPA's Revitalization Handbook Revitalizing Contaminated Lands: Addressing Liability Concerns and in EPA's Process for Risk Evaluation, Property Analysis and Reuse Decisions (PREPARED) Workbook. For more information and to register, see <http://clu-in.org/live>.

Adaptation of Superfund Cleanup to Climate Change - April 1, 2015,

2:00PM-4:00PM EDT (18:00-20:00 GMT). This webinar will provide an overview of climate change vulnerability analyses and adaptation at contaminated sites. In some circumstances, climate change may result in vulnerabilities in the protectiveness of contaminated site remedies. The course focuses on how such a vulnerability may be better understood and on the means of achieving increased remedy resilience through adaptation measures. The course builds upon a general understanding of the Superfund process, but is relevant to most cleanup programs. By taking the course, participants will gain a better understanding of the following topics: overview of Superfund-specific climate change action plan; framing site-specific analyses to understand remedy vulnerabilities throughout the life of a remedy, and of adaptation measures that may increase remedy resilience; tapping existing and relevant information resources when evaluating the potential impacts of climate at Superfund sites; and regional case studies of Superfund sites that have been impacted by a major weather event. For more information and to register, see <http://clu-in.org/live>.

Small Business Funding Opportunities (SBIR/STTR) for Environmental Technologies at NIEHS SRP, EPA, and NSF - April 2, 2015, 1:00PM-3:00PM EDT (17:00-19:00 GMT).

This webinar is designed to help small businesses and academic researchers better understand the different agencies that fund environmental technologies, and the fundamental goals of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. The SBIR and STTR programs are one of the largest sources of funding for domestic small businesses to develop innovative high technical risk technologies that have potential for

substantial commercial or societal benefits. The webinar is hosted jointly by the SBIR/STTR programs within the National Institute of Environmental Health Sciences Superfund Research Program (NIEHS SRP), the U.S. Environmental Protection Agency (EPA), and the National Science Foundation (NSF). Hear agency experts - Heather Henry from NIEHS SRP; April Richards from EPA; and Prakash Balan from NSF - highlight the unique characteristics of each of their environmental funding options, details of their SBIR/STTR programs, and tips on how to develop a successful SBIR/STTR application. A majority of the time will be dedicated to a Q&A session at the end of the webinar, which will be moderated by Kirsten Mease from NIEHS. The NIEHS SRP SBIR/STTR programs fund the development of technologies for the detection and remediation of hazardous chemicals at contaminated Superfund sites.

The EPA SBIR program funds small businesses focused on technologies for the treatment of drinking water and wastewater; air quality sensors, filters, and pollution reduction; and innovative green manufacturing and green materials. The NSF SBIR/STTR environmental programs fund any innovative technologies which have a significant, beneficial impact on the environment and enhance sustainability.

Technologies include, but are not limited to: innovations in energy and bioenergy; biotechnology; separations; green chemistry-based products and byproducts; water conservation and reuse; agriculture; and chemical, food, and pharmaceutical processing. For more information and to register, see <http://clu-in.org/live>.

> New Documents and Web Resources

Combining Remedies for More Effective Site Cleanup. These case studies provide examples of the use of multiple technologies to develop remedial approaches that address contamination resulting from the release to the subsurface of non-aqueous phase liquids (NAPLs) and other chemical species. Combining remedy approaches can be a two-part process. The first part ensures that the chosen technology or technologies are the ones best suited for the problem both initially and as the cleanup process evolves. The second part of the process is observational. It recognizes that the continued application of a cleanup technology in and of itself changes the subsurface conditions from the conditions that were present when the technology was first applied. Monitoring data need to be evaluated periodically to ensure that the original technology is still the most effective option for the current conditions and is not simply operating as designed. Combined remedies and/or treatment trains are deployed most effectively when the hydrogeological and chemical contaminant conditions in the subsurface are well defined. EPA has developed the Triad approach to gather data more cost effectively and recommends using tools that provide for high-resolution site characterization. View the case studies at <http://clu-in.org/products/combinedremedies/>.

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:

- An Evaluation of Remote Sensing Technologies for the Detection of Residual Contamination at Ready-for-Anticipated-Use Sites
- Decision Making at Contaminated Sites: Issues and Options in Human Health Risk Assessment
- Biodegradation and Bioremediation of Oiled Beaches: A Primer for Planners and Managers

- Subsurface Oil Detection and Delineation in Shoreline Sediments, Phase 2: Final Report
- Enhanced Amendment Delivery to Low Permeability Zones for Chlorinated Solvent Source Area Bioremediation
- Optimized Enhanced Bioremediation Through 4D Geophysical Monitoring and Autonomous Data Collection, Processing and Analysis
- New Approaches to Evaluate the Biological Degradation of RDX in Groundwater
- Proof-of-Concept Study: Novel Microbially Driven Fenton Reaction for In Situ Remediation of Groundwater Contaminated with 1,4-Dioxane, Tetrachloroethene (PCE) and Trichloroethene (TCE): Phase I
- Bioavailability and Methylation Potential of Mercury Sulfides in Sediments
- Operation and Maintenance of Passive Acid Mine Drainage Treatment Systems: A Framework for Watershed Groups
- 3PE: A Tool for Estimating Groundwater Flow Vectors

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 18 resources, events, projects and news items were added to EUGRIS in February. 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:

Phyto2Energy Phytoremediation Driven Energy Crops. The scientific and technological goal of the project is to develop and validate a novel approach combining phytoremediation and biomass production on heavy metal contaminated (HMC) sites which could be then safely used as local energy carrier. The innovation is to demonstrate a complex solution which will cover the whole value chain: from setting the brownfield management target through successful crops production, biofuel feedstock preparation up to conversion to energy in a local small scale gasification installation.

View more information about this project at <http://www.phyto2energy.eu/>.

> Conferences and Symposia

Registration Now Open! ITRC 2015 Spring Meeting, Pittsburgh, PA, April 20-24, 2015. The 2015 Spring Meeting offers environmental professionals from across the country an opportunity to network and collaborate on innovative approaches to solving environmental challenges. The meeting offers work sessions for all 2015 ITRC Teams, information about ITRC's direction from the ITRC Board of Advisors and Director, and opportunities to expand your network in the environmental community. For more information and to register, see <http://www.itrcweb.org/Meetings/Upcoming>.

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training, Denver, CO, April 7-8, 2015; Seattle (area), WA, September 15-16, 2015; Austin, TX, November 18-19, 2015. 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>.

Call for Proposals! 2015 Community Involvement Training Conference, Atlanta, GA, August 4-6, 2015. This biennial conference is for EPA staff and other Agency stakeholders who plan and implement community involvement programs. The theme of this year's conference is "Making a Visible Difference in Communities," which is one of EPA Administrator Gina McCarthy's core goals. The overall goal of the conference is to provide an exceptional conference that both informs and trains EPA staff, as well as the Agency's stakeholders, in best practices to enhance community involvement. In keeping with both our conference theme and goal, we are asking for proposals focusing on topics, ideas, challenges, and opportunities within one of four tracks: Where to Begin: Creating and Maintaining Effective Community Involvement; The Art of Leveraging Existing Capacity and Resources in Community Involvement; Healthy Environment & Healthy Economy = A Sustainable Community; and Communication & Community Engagement: Traditional Methods to Contemporary Technologies.

Proposals must be received by March 4, 2015. For more information and to view the call for proposals application, see http://epa.gov/superfund/community/ciconference/cfp_instructions.htm.

Registration Now Open! 2015 National Brownfields Training Conference, Chicago, IL, September 2-4, 2015. Brownfields 2015 promises something for all levels of stakeholders and practitioners. The conference program includes speakers, discussions, mobile workshops, films, and other learning formats that are calibrated to provide you with case study examples, program updates, and useful strategies for meeting your brownfield challenges head on. For more information and to register, see <http://www.brownfieldsconference.org/en/registerinfo>.

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. To unsubscribe, send a blank email to [\\$subst\('Email.UnSub'\)](mailto:$subst('Email.UnSub')). 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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