U.S. ENVIRONMENTAL PROTECTION AGENCY

TechDirect, March 1, 2017

Welcome to TechDirect!

I am excited to continue the tradition of sharing resources and events related to hazardous waste site characterization and clean up through TechDirect. In my commitment to this cause, I have re-issued this edition of the newsletter as the initial delivery sent earlier this morning was missing a portion of the resources. I apologize for any confusion; thanks to our readers who were quick to point out the missing content.

Please join me in thanking Jeff Heimerman for his dedicated authoring of the newsletter for 20 years. As so many of you expressed in your comments, this monthly collection of technical webinars, publications and websites serves as an invaluable stream of information (read more at https://clu-in.org/techdirect/comments.cfm). Feel free to reach out to me at balent.jean@epa.gov should you have questions or comments on TechDirect.

Since the February 1 message, TechDirect gained 268 new subscribers for a total of 38,699. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing may do so on CLU-IN at https://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

ITRC Integrated DNAPL Site Characterization - March 2, 2017, 1:00PM-3:15PM EST (18:00-20:15 GMT). The Integrated DNAPL Site Characterization Team has synthesized the knowledge about dense nonaqueous phase liquid (DNAPL) site characterization and remediation acquired over the past several decades, and has integrated that information into a new document, Integrated DNAPL Site Characterization and Tools Selection (ISC-1, 2015). This guidance is a resource to inform regulators, responsible parties, other problem holders, consultants, community stakeholders, and other interested parties of the critical concepts related to characterization approaches and tools for collecting subsurface data at DNAPL sites. After this associated training, participants will be able to use the guidance to develop and support an integrated approach to DNAPL site characterization, including: identify what site conditions must be considered when developing an informative DNAPL

conceptual site model (CSM); define an objectives-based DNAPL characterization strategy; understand what tools and resources are available to improve the identification, collection, and evaluation of appropriate site characterization data; and navigate the DNAPL characterization tools table and select appropriate technologies to fill site-specific data gaps. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

ITRC Use and Measurement of Mass Flux and Mass Discharge - March 7, 2017, 1:00PM-3:15PM EST (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 or http://clu-in.org/live.

ITRC Geophysical Classification for Munitions Response - March 9, 2017, 1:00PM-3:15PM EST (18:00-20:15 GMT). This training class and supporting guidance document explain the process of geophysical classification, describe its benefits and limitations, and discuss the information and data needed by regulators to monitor and evaluate the use of the technology. This document and training also emphasize using a systematic planning process to develop data acquisition and decision strategies at the outset of a munitions response effort, as well as quality considerations throughout the project. Stakeholder issues that are unique to munitions response are also discussed. After this training class, participants will: understand the technology and terminology, be ready to engage in the planning process to address quality considerations throughout a project, find tools to transfer knowledge within organizations and to stakeholders, and start to transition mindset to decisions that leave non-hazardous items in the ground. An audience who understand current munitions response tools and procedures (for example, geophysical surveys, sensors, data analysis) will benefit most from this document and training. For more information and to register, see http://www.itrcweb.org or https://clu-in.org/live.

SERDP & ESTCP Award Winning Projects: Environmental Restoration Webinar on March 9, 2017, 12:00 PM EDT (16:00 GMT). Upcoming SERDP and ESTCP webinar will feature Department of Defense (DoD) research in the environmental restoration program area. The first seminar on award-winning projects will feature Dr. Andy Martin and Dr. Steven Larson of the U.S. Army Engineer Research and Development Center. Dr. Martin will present on the use of lime to immobilize metals and transform explosives found in soil and surface water runoff from active military training areas. Dr. Larson will discuss the use of a concentrated natural biopolymer for soil erosion control. For more information and to register for these free webinars, please visit https://www.serdp-estcp.org/Tools-and-Training/Webinar-Series.

Sustained *In Situ* Detoxification of Priority Chloroorganic Pollutants - March 13, 2017, 1:00PM-2:00PM EDT (17:00-18:00 GMT). Contaminated site cleanup and environmental stewardship are costly tasks and continued research and innovation can lower the financial burden to site owners and to the taxpayer. A variety of technologies addressing groundwater contamination emerged and have been implemented. Bioremediation takes advantage of naturally occurring microorganisms that detoxify contaminants and *in situ* implementation of this approach promises to meet cleanup goals at reasonable costs. While biostimulation and bioaugmentation have been successfully applied at numerous sites, the current approaches should be considered

brute-force, and more refined treatment (i.e., precision bioremediation) will result in a similar reduction of contaminant concentrations at substantially lower capital investment and lesser environmental impacts. Progress in understanding of the microbiology contributing to chlorinated solvent detoxification under anoxic conditions serves as an example how investments in fundamental research and translational efforts can advance bioremediation from an empirical practice to an approach with predictable outcomes. For more information and to register, see http://clu-in.org/live.

ITRC Integrated DNAPL Site Strategy - March 16, 2017, 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.

Superfund Redevelopment Initiative Series: Supporting Healthy Communities: A Superfund Opportunity - March 20, 2017, 2:00PM-3:30PM EDT (18:00-19:30 GMT). This webinar will share how the reuse of Superfund sites can transition properties from toxic legacies to places that encourage and support neighborhood health and well-being. Learn how sites are being used to support health and wellness facilities such as doctors' offices, and how the reuse of sites as recreational areas bolsters healthy activities. For more information and to register, see http://clu-in.org/live.

SERDP & ESTCP Monitoring and Risk Assessment of Environmental Risks Posed by Munitions Constituents in Aquatic Systems Webinar March 23, 2017, 12:00 PM EDT (16:00 GMT). SERDP and ESTCP webinar will feature Department of Defense (DoD) research in the environmental restoration program area. This seminar will focus on munitions constituent (MC) projects and will feature three speakers, Dr. Todd Bridges and Dr. Gui Lotufo (U.S. Army Engineer Research and Development Center) and Mr. Gunther Rosen (SPAWAR System Center). Dr. Bridges and Dr. Lotufo will discuss the review and synthesis of evidence regarding environmental risks posed by MC in aquatic systems. Mr. Rosen will describe the validation of passive sampling devices for monitoring MC in underwater environments. For more information and to register for these free webinars, please visit https://www.serdp-estcp.org/Tools-and-Training/Webinar-Series.

> New Documents and Web Resources

Long-Term Contaminant Management Using Institutional Controls. This Interstate Technology & Regulatory Council (ITRC) guide focuses on long-term contaminant management using institutional controls (ICs) to provide protection from exposure to contaminants on a site. This guide assists those who are responsible for ICs stewardship by describing critical elements and best practices for an IC management program based on the successes and lessons learned from established state and federal agency programs. To support cost-effective program development, ITRC

developed a downloadable tool that can be used to document critical information about an IC. The tool can help to create a lasting record of the site that includes the regulatory authority, details of the IC, the responsibilities of all parties, a schedule for monitoring IC performance, and other relevant information. The tool generates an editable long-term stewardship plan in Microsoft Word (December 2016). View and use at http://institutionalcontrols.itrcweb.org. Download the stewardship tool at http://www.itrcweb.org/Documents/team_ic/IC_Tool.zip.

Geospatial Analysis for Optimization at Environmental Sites. Geospatial analysis supports optimization activities throughout all stages of an environmental investigation or cleanup by improving performance of characterization and remediation activities, increasing monitoring efficiency, and justifying decisions. This Interstate Technology & Regulatory Council (ITRC) guide illustrates the practical application of geospatial analyses to support optimization activities and help practitioners apply geospatial analyses to their projects. This information will help state regulators and other practitioners to understand, evaluate, and make informed decisions about geospatial analyses for optimizing activities during environmental investigation or remediation. The material presented provides not only highly technical detail but also introductory information for those who may not have expertise in this area (October 2016). View and use at http://gro-1.itrcweb.org.

Superfund Research Program Research Brief 266: Using Surfactants to Enhance Bioremediation of PAHs in Soil. A second-stage treatment using low levels of surfactants, which are commonly used as dispersing agents, may be a promising method to maximize removal of polycyclic aromatic hydrocarbons (PAHs) at hazardous waste sites, according to findings from the University of North Carolina at Chapel Hill Superfund Research Program (SRP) Center. Researchers identified specific surfactants that enhanced the removal of PAHs from previously treated soil by making the chemicals more accessible for degradation by bacteria. Even though this second-stage treatment removed PAHs, it also increased soil toxicity in many cases, emphasizing the need to better understand toxic by-products of PAH remediation. For more information, see https://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=266. To get monthly updates on research advances from the SRP you can subscribe to their Research Brief mailing list at https://list.nih.gov/cgi-bin/wa.exe?SUBED1=SRP-BRIEF&A=1.

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 8 resources, events, projects and news items were added to EUGRIS in February 2017. 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.

> Conferences and Symposia

Call for Proposals! 2017 Community Involvement Training, Kansas City, MO, August 2017 (planned). This three-day training program brings together EPA staff, partners and the communities they serve to provide training on tools and techniques to address all aspects of public outreach and engagement. The training is designed for EPA staff, state, local, tribal and other federal partners who plan and implement environmental community involvement activities engagement, partnership, stewardship, outreach, and education programs. In keeping with the training theme, *Bringing People Together: 20 Years Investing in Communities*, we are asking for proposals focusing on topics, ideas, challenges, and opportunities within one of the four tracks: 1) Investing in Sustainable and Resilient Communities; 2) Innovative and Traditional Community

Involvement/Engagement Tools; 3) Building and Enhancing Collaborations and Coalitions; and 4) Identifying and Explaining Emerging Contaminants. Proposals must be received by Wednesday, March 8, 2017. For more information and to view the call for proposals application, see https://www.epa.gov/superfund/2017-community-involvement-training-program.

Call for Ideas! 2017 National Brownfields Training Conference, Pittsburgh, PA, December 5-7, 2017. Submit your ideas for dynamic educational sessions that encourage conversation and participation from attendees. The Brownfields 2017 educational program will motivate brownfields stakeholders to engage, learn, and share their experiences and knowledge of community revitalization challenges and solutions. The conference planning committee is looking for ideas in eight topic areas/tracks with seven session formats. Submissions are due by March 17, 2017. For more information and to submit an idea, see http://brownfields2017.org/education/callforideas/.

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 https://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 Jean Balent at (703) 603-9924 or balent.jean@epa.gov. Remember, you may subscribe, unsubscribe or change your subscription address at https://clu-in.org/techdirect at any time night or day.
