



TechDirect, September 1, 2017

Welcome to TechDirect! Since the August 1 message, TechDirect gained 135 new subscribers for a total of 39,298. 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

SERDP & ESTCP PFAS Webinar - September 7, 2017, 12:00 PM EDT (16:00 GMT).

An upcoming SERDP and ESTCP webinar will feature Department of Defense (DoD) efforts on research and development needs for the management of DoD sites contaminated with per- and poly-fluoroalkyl substances (PFAS). First, Ms. Maureen Sullivan, Deputy Assistant Secretary of Defense for Environment, Safety and Occupational Health, will describe DoD policy and management issues associated with perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Second, Dr. Andrea Leeson, Deputy Director of SERDP and ESTCP, will present an overview of SERDP and ESTCP's efforts to better understand PFAS impacts, fate and transport, and treatment with a focus on outcomes from a recent expert workshop on PFAS-related research, development and demonstration needs. Finally, Professor David Sedlak of the University of California, Berkeley, will present an overview of PFAS remediation in groundwater using in situ chemical oxidation. For more information and to register, see <https://serdp-estcp.org/Tools-and-Training/Webinar-Series/09-07-2017>.

ITRC Remedy Selection for Contaminated Sediments - September 14, 2017, 1:00PM-3:15PM EDT (17:00-19:15 GMT).

ITRC developed the technical and regulatory guidance, Remedy Selection for Contaminated Sediments (CS-2, 2014), to assist decision-makers in identifying which contaminated sediment management technology is most favorable based on an evaluation of site specific physical, sediment, contaminant, and land and waterway use characteristics. The document provides a remedial selection framework to help identify favorable technologies, and identifies additional factors (feasibility, cost, stakeholder concerns, and others) that need to be considered as part of the remedy selection process. This ITRC training course supports participants with applying the technical and regulatory guidance as a tool to overcome the remedial challenges posed by contaminated sediment sites. Participants learn how to: identify site-specific characteristics and data needed for site decision

making, evaluate potential technologies based on site information, and select the most favorable contaminant management technology for their site. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

ITRC Integrated DNAPL Site Strategy - September 19, 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>.

ERTP Presents...Soil Sampling and Analysis for Volatile Organic Compounds (VOCs) - September 21, 2017, 1:00PM-2:00PM EDT (17:00-18:00 GMT). Careful there! Precise characterization of volatile organic compounds (VOCs) in soil is often critical since decisions for remediation are based on analytical measurement. Unfortunately, the acts of collecting and storing soil can subject soils to numerous variables that can alter VOC concentrations. These variables may enhance volatilization, biodegradation, and loss of VOCs in the sample. This webinar will show why proper sample handling and preparation methods are key to collecting high-quality soil samples for VOCs. In this webinar we will explore the properties of VOCs, soil sampling methodologies, collection devices, VOC laboratory analyses, and other considerations. During the webinar, we will further discuss: the collection of high-quality soil samples for VOCs; best practices for sampling techniques to minimize the loss of VOCs; the advantages and disadvantages of soil sampling devices such as Encore and TerraCore samplers. The intended audience for the Soil Sampling and Analysis for VOCs webinar are state and federal regulators, project managers, and consultant personnel responsible for and/or directly involved in developing, identifying, or applying soil sampling approaches at their sites. For more information and to register, see <http://clu-in.org/live>.

ITRC Integrated DNAPL Site Characterization - September 26, 2017, 1:00PM-3:15PM EDT (17:00-19:15 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 - September 28, 2017, 1:00PM-3:15PM EDT (17:00-19:15 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 - October 3, 2017, 1:00PM-3:15PM EDT (17:00-19:15 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>.

ITRC Issues and Options in Human Health Risk Assessment - A Resource When Alternatives to Default Parameters and Scenarios are Proposed - October 5, 2017, 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>.

> New Documents and Web Resources

Superfund Research Program (SRP) Research Briefs. 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>.

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 <https://clu-in.org/products/tins/>. The following resources were included in recent issues:

- Technical Report for the Demonstration of Wide Area Radiological Decontamination and Mitigation Technologies for Building Structures and Vehicles
- Use and Potential Impacts of AFFF Containing PFASs at Airports
- Protocol for the Sampling of Water as a Core Matrix in the UNEP/GEF GMP2 Projects for the Analysis of PFOS, Component 2: Abiotic Samples
- Current and Emerging Post-Fukushima Technologies, and Techniques, and Practices for Wide Area Radiological Survey, Remediation, and Waste Management
- Permeable Reactive Barrier Pilot Test Work Plan, Grenada Manufacturing, LLC, Grenada, Mississippi
- Demonstration and Validation of a Portable Raman Sensor for In-Situ Detection and Monitoring of Perchlorate (ClO₄⁻)
- Solar-Powered Remediation and pH Control: ESTCP Cost and Performance Report
- CHROTRAN: A Mathematical and Computational Model for In Situ Heavy Metal Remediation in Heterogeneous Aquifers
- Integrating Model Abstraction into Subsurface Monitoring Strategies
- Modeling of Radionuclide Transport in Freshwater Systems Associated with Nuclear Power Plants
- Remedy and Recontamination Assessment Array
- PAH Interactions with Soil and Effects on Bioaccessibility and Bioavailability to Humans
- Analysis of the Transport and Fate of Metals Released from the Gold King Mine in the Animas and San Juan Rivers
- Planning for Response Actions at Abandoned Mines with Underground Workings: Best Practices for Preventing Sudden, Uncontrolled Fluid Mining Waste Releases
- PCB Facility Approval Streamlining Toolbox (FAST): A Framework for Streamlining PCB Site Cleanup Approvals
- Manual to Identify Sources of Fluvial Sediment

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 16 resources, events, projects and news items were added to EUGRIS in August 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. The following resource was posted on EUGRIS:

Petroleum Hydrocarbons in Groundwater: Guidance on Assessing Petroleum Hydrocarbons using Existing Hydrogeological Risk Assessment Methodologies (2017). This document provides guidance on assessing the risks to groundwater and surface

water from petroleum hydrocarbon compounds. It complements the Environment Agency's guidance given in the Remedial Targets Methodology and should be read alongside that report and Groundwater Protection: Principles and Practice (GP3, Environment Agency, 2013). The objective of this guidance is to establish an effective, reliable and consistent approach to petroleum hydrocarbon assessment within hydrogeological risk assessments. This guidance has been prepared by a steering group led by Shell Global Solutions and has kindly been reviewed and supported by the Environment Agency, Natural Resources Wales and the Northern Ireland Environment Agency, an agency within the Department of Agriculture, Environment and Rural Affairs. View or download at www.claire.co.uk/phg .

> Conferences and Symposia

2017 Design and Construction Issues at Hazardous Waste Sites (DCHWS) - West, Denver, CO, October 23-25, 2017. As a result of the resounding success of last year's event and the enthusiastic feedback we received from attendees, the Society of American Military Engineers (SAME), Denver Post is co-sponsoring an expanded version of this event with the U.S. EPA to encourage dialogue and information sharing on design and construction issues relevant to hazardous waste sites in the western United States. The applications of engineering and science associated with cleaning up hazardous waste sites continue to evolve rapidly. Our goal is to facilitate an interactive engagement between professionals from government and the private sector related to relevant and topical issues affecting our field. We will make every effort to mirror all aspects of past conferences in terms of format and spirit. For more information and to register, see <https://www.samedmp.org/dchws-west>.

Groundwater High-Resolution Site Characterization (HRSC), Dallas, TX, November 15-16, 2017. This training course 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 Groundwater HRSC course is an advanced 2-day course. The recommended audience 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 <https://trainex.org/hrsc>.

Registration Now Open! 2017 National Brownfields Training Conference, Pittsburgh, PA, December 5-7, 2017. With the session selection process completed, Brownfields 2017 is set to offer attendees a robust and expansive conference experience. This year's conference programming and speakers will engage attendees on topics at the forefront of today's brownfields and economic development landscapes; challenging both emerging and seasoned professionals as well as a diverse range of brownfields stakeholders to think outside the norms when addressing land revitalization and redevelopment. Take advantage and register during the pre-registration period for the lowest conference registration fees. For more information and to register, see <https://www.brownfields2017.org/register/>.

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

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