TechDirect, November 1, 2013

Welcome to TechDirect! Since the October 1 message, TechDirect gained 42 new subscribers for a total of 35,700. 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 - November 12, 15, 18, 22, December 2, 4. The Hazard Ranking System (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 to provide practical application of the HRS. The webinar series consists of six two-hour sessions over three weeks. 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 .

CEC Training for OSCs...Oil Spill Response - November 6 and 7, 1:00PM-4:00PM EST (18:00-21:00 GMT). This two-part webinar training is designed to provide participants with the basic knowledge and understanding necessary to respond to an oil spill incident. Upon completion of the course, the participants have an understanding of: the EPA's statutory and regulatory authority for responding to oil spills; the physical properties of oil; the behavior, effects and fate of oil in aquatic environments; and the main tasks an OSC is responsible for during oil spill response. The webinar does not address oil spill response tactics and field techniques, as this is better suited to a face-to-face or field training. The target audience for this course is new and mid-career OSCs with an interest in learning about oil spill response. For more information and to register, see http://clu-in.org/live .

Using GIS Tools to Analyze, Compute, and Predict Pollution, Session I - Exposure Assessment in the Field and Links to Human Health - November 12, 2013, 1:00PM-3:00PM EST (18:00-20:00 GMT). Preterm birth, the leading cause of neonatal mortality in the U.S., may be associated with exposure to legacy and emergent contaminants in the environment. Puerto Rico has one of the highest rates of preterm birth, as well as density of Superfund Sites in the United States. As part of NIEHS's Superfund Research Program, the Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) is exploring the relationships between exposure to hazardous chemicals and preterm birth in northern Puerto Rico. Particular attention is given to chlorinated volatile organic compounds and phthalates, although biomarkers of phenols, metals, and parabens exposure are also being explored as precursors of preterm birth. Identification of associations between contaminants and preterm birth requires collection and integration of complex multi-disciplinary datasets. The first presentation will describe the data management system being developed by PROTECT to integrate, manage, analyze, and relate environmental, demographic, exposure biomarkers, and birth outcome data. The discussion will center on the applicability of the system, built on a foundation of Earthsoft's EQUIS®, to assess the extent of groundwater and tap water contamination, identify other modes of exposure, define patterns in biomarkers of exposure and birth outcomes from an ongoing birth cohort, perform relational queries, and map spatial patterns that can be directly visualized with ArcGIS. Toxic metals are widespread environmental contaminants that are known human carcinogens and/or developmental toxicants. The levels of metals in private well water are federally unregulated. The second presenter will describe two studies that used GIS mapping in North Carolina to examine 1) the spatial patterns of arsenic levels private wells, and 2) the association between private well levels of arsenic, cadmium, manganese, and lead and birth defects prevalence. The studies used a statewide database of private well contaminants collected by the North Carolina Department of Health and Human Services Division of Public Health as well as data from the North Carolina Birth Defects Monitoring Program. For more information and to register, see http://clu-in.org/live .

ITRC Environmental Molecular Diagnostics: New Tools for Better Decisions - November 13, 2013, 2:00PM-4:15PM EST (19:00-21:15 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 .

CEC Training for OSCs...Pesticide Emergencies (FIFRA ER for EPA OSCs) - November 13, 2013, 1:00PM-4:00PM EST (18:00-21:00 GMT). Accidental release or indiscriminate discharge of pesticides and pesticide wastes into the environment can harm people and contaminate soil, sediment, surface water and groundwater. Responding to these incidents can pose unique concerns because most pesticides are designed to harm or kill pests, and can similarly harm or kill people. This is a 3-hour webcast training that provides practical information on the characteristics of common pesticides and pesticide formulations, human health and ecological hazards associated

with sources of pesticide exposure, environmental fate of pesticides, identification and use of chemical-specific information, legal and regulatory considerations and emergency response involving pesticide incidents. The target audience for this course is new and mid-career EPA OSCs with an interest in learning about reasonable steps to respond quickly and decisively to threats posed by accidental release or indiscriminate discharge of pesticides and pesticide wastes. This course assumes some CERCLA response experience and is well suited to OSCs with 2 to 7 years of experience, or any OSC with a specific interest in a response involving pesticides. The webcast should also be of interest to State and local emergency responders. For more information and to register, see http://clu-in.org/live .

CEC Training for OSCs...Pipeline Emergencies - November 14, 2013, 2:00PM-5:00PM EST (19:00-22:00 GMT). Approximately 327,000 miles of natural gas transmission pipelines, 1.8 million miles of natural gas distribution pipelines and 161,000 miles of liquid pipelines safely transport natural gas and a range of liquid petroleum products daily. Like any industry that deals with hazardous materials, there are potential risks in the manufacturing and transportation processes. Pipeline Emergencies is a 3-hour webinar training course that provides practical information on how to respond safely and effectively to pipeline incidents and emergencies. The purpose of the course is to provide participants with the knowledge and understanding of the EPA's regulatory authority regarding pipeline emergency planning and response operations, how pipelines operate, the common products that may be transported through both transmission and distribution pipeline systems, the various roles and responsibilities among emergency responders and government and industry when responding to an incident and pipeline emergency response operations. The target audience for this webinar course is new and mid-career On-Scene Coordinators (OSC) with an interest in learning about pipeline emergencies. This webinar does not address tactics and field methodology as that information is better suited for face-to-face or field demonstration training. For more information and to register, see http://clu-in.org/live .

ITRC Biofuels: Release Prevention, Environmental Behavior, and Remediation - November 19, 2013, 2:00PM-4:15PM EST (19:00-21:15 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 .

ITRC Use of Risk Assessment in Management of Contaminated Sites - November 21, 2013, 2:00PM-4:15PM EST (19:00-21:15 GMT). This training course identifies how various risk-based approaches and criteria are applied throughout the processes of screening, characterization, and management of contaminated sites. The training course and associated overview document, Use of Risk Assessment in Management of Contaminated Sites (RISK-2, 2008), are intended for risk assessors and project managers involved with the characterization, remediation, and/or re-use of sites. The training and overview document provide a valuable tool for federal and state regulatory agencies to demonstrate how site data collection, risk assessment, and risk management may be better integrated. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

CEC Training for OSCs...CERCLA Coordination with Natural Resource Trustees - November 21, 2013, 11:00AM-1:00PM EST (16:00-18:00 GMT). The purpose of this webinar is to provide an understanding of the statutory and regulatory basis for notification and coordination activities with Natural Resource Trustees. Participants will acquire a general understanding of what are natural resources, who are Natural Resource Trustees, and what are Trust Resources. Participants will also learn the legal and regulatory basis for EPA's notification and coordination activities with Natural Resource Trustees. For more information and to register, see http://clu-in.org/live .

ITRC Soil Sampling and Decision Making Using Incremental Sampling Methodology Parts 1 and 2 - December 3 and 10, 2013. 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 .

> New Documents and Web Resources

Remediation Optimization: Definition, Scope and Approach (EPA 542-R-13-008). This document provides a general definition, scope and approach for conducting optimization reviews within the Superfund Program and includes the fundamental principles and themes common to optimization. It should be noted that although this document has been developed for optimization support in the Superfund Program, OSRTI acknowledges that the content of the document can apply to optimization in other remedial programs or regulatory frameworks (June 2013, 8 pages). View or download at http://clu-in.org/techpubs.htm .

Demonstration of Incremental Sampling Methodology for Soil Containing Metallic Residues (ERDC TR-13-9). This 2013 report includes objectives of a project to demonstrate improved data quality for metal constituents in surface soils on military training ranges and to develop a methodology that would result in the same or lower cost. The demonstration was conducted at two inactive small-arms ranges at Fort Eustis, VA, and Kimama Training Site (TS), ID, and at one active small-arms range at Fort Wainwright, AK. View or download at: http://acwc.sdp.sirsi.net/client/search/asset/1030080 .

Cost and Performance Report of Incremental Sampling Methodology for Soil Containing Metallic Residues (ERDC TR-13-10). This 2013 report further explores the cost and performance components from the incremental sampling project discussed in report ERDC TR-13-9. View or download at: http://acwc.sdp.sirsi.net/client/search/asset/1030100 .

ProUCL 5.0.00 is now available. In September of 2013, the USEPA Office of Science Policy updated ProUCL, a statistical software package for analysis of environmental data sets with and without nondetect (ND) observations. ProUCL version 5.0 contains statistical methods and graphical tools to address many environmental sampling and statistical issues. View or download at http://www.epa.gov/osp/hstl/tsc/software.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:

- Geophysical Imaging for Investigating the Delivery and Distribution of Amendments in the Heterogeneous Subsurface of the F.E. Warren AFB
- Enhanced Attenuation of Unsaturated Chlorinated Solvent Source Zones Using Direct Hydrogen Delivery: ESTCP Cost & Performance Report
- Polymer-Enhanced Subsurface Delivery and Distribution of Permanganate: ESTCP Cost & Performance Report
- Demonstration of New, Highly Perchlorate-Selective Ion Exchange Resin Coupled with Resin-Optimized, Single-Vessel Engineering Design
- Remediation of Perfluoroalkyl Contaminated Aquifers Using an In-Situ Two-Layer Barrier: Laboratory Batch and Column Study
- Soil Vapor Extraction System Optimization, Transition, and Closure Guidance
- Incremental Sampling Methodology (ISM) for Metallic Residues
- National Perchlorate Cost Update

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 6 resources, events, projects and news items were added to EUGRIS in October. 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 resources were posted on EUGRIS:

CIWEM Calls for International Policy Basics for Contaminated Land. The purpose of this Policy Position Statement (PPS) is to outline CIWEM's views and policy position with respect to the assessment, management, remediation and development of contaminated land. View online at http://www.ciwem.org/policy-and-international/policy-position-statements/contaminated-land.aspx .

Assessment of Aided Phytostabilization of Copper-contaminated Soil by X-ray Absorption Spectroscopy and Chemical Extractions. Field plots were established at a timber treatment site to evaluate remediation of Cu contaminated topsoils with aided phytostabilization. This effort is an output of the European FP7 project. View online at www.greenland-project.eu .

> Conferences and Symposia

Call for Abstracts!! 2014 National Training Conference on the Toxics Release Inventory (TRI) and Environmental Conditions in Communities, Arlington, VA, May 7-9, 2014. This year's conference is cosponsored by US EPA and Dillard University's Deep South Center for Environmental Justice. Abstracts for presentations, exhibit booths, and posters are welcome through December 13, 2013. The full Call for Abstracts and Abstract Submission Form can be accessed through the conference website at http://www2.epa.gov/toxics-release-inventory-tri-program/2014-national-training-conference . For questions or more information, please contact Christine Arcari at arcari.christine@epa.gov.

Groundwater High-Resolution Site Characterization (HRSC), San Francisco, CA, December 12-13, 2013. 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 .

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.