



TechDirect, November 1, 2011

Welcome to TechDirect! Since the October 1 message, TechDirect gained 258 new subscribers for a total of 39,041. 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 ground water.

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.

> Special Announcements

FY 2012 EPA Brownfields Assessment, Revolving Loan Fund and Cleanup Grant Guidelines - Request for Proposals. These grants may be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum). Opportunities for funding are as follows: Brownfields Assessment Grants (each funded up to \$200,000 over three years; coalitions are funded up to \$1,000,000 over three years), Brownfields Revolving Loan Fund (RLF) Grants (each funded up to \$1,000,000 over five years) and Brownfields Cleanup Grants (each funded up to \$200,000 over three years). The proposal deadline is November 28, 2011. Proposal guidelines are available at <http://www.epa.gov/brownfields/applicat.htm>.

FY 2013 SERDP Solicitations Released. The Department of Defense's Strategic Environmental Research and Development Program (SERDP) is seeking environmental research and development proposals for funding beginning in Fiscal Year (FY) 2013 in response to the Core and SERDP Exploratory Development (SEED) solicitations. Projects will be selected through a competitive process. Details for both Federal and non-Federal submissions are available on the web site under Funding Opportunities at www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations.

> Upcoming Live Internet Seminars

ITRC Use and Measurement of Mass Flux and Mass Discharge - November 3, 2011, 11:00AM-1:15PM EDT (15:00-17:15 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>.

The New Science of Sophisticated Materials: Nanomaterials and Beyond - November 8, 2011, 2:30PM-4:30PM EST (19:30-21:30 GMT). Dr. Maynard is a leading authority on the responsible development and use of emerging technologies. His research interests span identifying, assessing and managing emergent risks, to exploring innovative solutions, to established and emerging human health and environmental risks, to equipping people with the tools they need to make informed decisions in the face of risk and uncertainty. In addition, Dr. Maynard serves on numerous review and advisory panels around the world, and has testified on a number of occasions before U.S. Congressional committees. For more information and to register, see <http://clu-in.org/live>.

NARPM Presents...ORD Scientific and Engineering Technical Support for RPMs (and Others) - November 9, 2011, 1:00PM-3:00PM EST (18:00-20:00 GMT). ORD Scientific and Engineering Technical Support for RPMs (and Others) is a session that focuses on the technical support available from EPA's Office of Research and Development (ORD) to RPMs and other EPA cleanup program staff. Examples of technical support may range from providing a detailed review with recommendations for a single technical document to performance of complex multi-site investigation and remediation activities. The session includes: an overview of the ORD Superfund and Technology Liaison (STL) program to provide RPMs with information on how to access free scientific and engineering technical support from an ORD staff member stationed right alongside them in the regional offices, an overview of the three ORD Technical Support Centers (TSCs) to provide RPMs with information on center capabilities and how to request technical support, and case study examples that are included in the above discussions to show how RPMs have used ORD technical support to make informed decisions during management of their sites. The target audience for this course is all EPA RPMs and other EPA cleanup program staff. For more information and to register, see <http://clu-in.org/live>.

ITRC Project Risk Management for Site Remediation - November 10, 2011, 11:00AM-1:15PM EST (16:00-18:15 GMT). Remediation Risk Management (RRM) is a course of action through which all risks related to the remediation processes (site investigations, remedy selection, execution, and completion) are holistically addressed in order to maximize the certainty in the cleanup process to protect human health and the environment. Remediation decisions to achieve such a goal should be made based on threshold criteria on human health and ecological risks, while considering all the other potential project risks. Through this training course and associated ITRC Technical and Regulatory Guidance Document: Project Risk Management for Site Remediation (RRM-1, 2011), the ITRC RRM team presents tools and processes that can help the site remediation practitioner anticipate, plan for, and mitigate many of the most common obstacles to a successful site remediation project. Examples of project risks include remediation technology feasibility risks; remedy selection risks; remedy construction, operation and monitoring risks; remedy performance and operations risks; environmental impacts of systems during their operation; worker safety risk, human health and ecological impacts due to remedy operation; as well as costs and schedules risks including funding and contracting issues. For more information and to register,

see <http://www.itrcweb.org> OF <http://clu-in.org/live> .

SRI: Reusing Superfund Sites for Recreational Purposes - November 10, 2011, 2:00PM-4:00PM EST (19:00-21:00 GMT). Through the efforts of communities and local governments, Superfund sites across the country are supporting a wide range of recreational reuses. EPA currently tracks over 100 instances of recreational reuse. These land uses range from hiking trails and open space parks to sports complexes, playgrounds and sports fields to Academy of Model Aeronautics flying fields. EPA's Superfund Redevelopment Initiative (SRI) is helping communities reclaim and reuse contaminated lands for a wide range of purposes. SRI provides various tools, partnerships and activities to assist local communities pursue new opportunities to grow and prosper. This webinar will take an in-depth look at several sites from around the country that are providing recreational amenities to communities and share the tools and resources that SRI provides to help communities interested in reusing their Superfund site get started. For more information and to register, see <http://clu-in.org/live> .

ITRC Development of Performance Specifications for Solidification/Stabilization - November 15, 2011, 2:00PM-4:15PM EST (19:00-21:15 GMT). The ITRC technical and regulatory guidance document Development of Performance Specifications for Solidification/Stabilization (S/S-1, 2011) and associated Internet-based training provide an approach to assist practitioners and regulators with measuring and determining acceptable S/S performance. This approach developed by the ITRC Solidification/Stabilization Team provides information for developing, testing, and evaluating appropriate site-specific performance specifications and the considerations for designing appropriate long-term stewardship programs. In addition, the approach provides useful tools for establishing an appropriate degree of treatment and regulatory confidence in the performance data to support decision-making. This training and guidance is intended to be beneficial to anyone involved with CERCLA, RCRA, brownfields, UST or any other regulatory program where S/S has been selected or implemented as a remedial technology. For more information and to register, see <http://www.itrcweb.org> OF <http://clu-in.org/live> .

NARPM Presents...In Situ Sediment Remediation Using Benthic Waterjet Amendment Placement - November 16, 2011 1:00PM-3:00PM EST (18:00-20:00 GMT). Dr. Burken will present his work using traditionally high pressure waterjet in a new and innovative manner to inject remediation amendments such as powdered activated carbon at varying depths in contaminated sediments. This method also decreases contaminant bioavailability and minimizes resuspension and the impact on benthic communities. Waterjet placement can be applied for a suite of amendments targeting nearly all common sediment contaminants, specifically polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH), and redox sensitive metals. In addition, the waterjet can be used for sediments with overlaying caps. For more information and to register, see <http://clu-in.org/live> .

ITRC Use of Risk Assessment in Management of Contaminated Sites - November 17, 2011, 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> OF <http://clu-in.org/live> .

ITRC Mine Waste Treatment Technology Selection - November 29, 2011,

2:00PM-4:15PM EDT (19:00-21:15 GMT). ITRC's Mining Waste Team developed the ITRC Web-based Mine Waste Technology Selection site (<http://www.itrcweb.org/miningwaste-guidance/>) 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 Mine 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>.

> New Documents and Web Resources

Zero Valent Iron Injection Tool. Zero valent iron (ZVI) is a strong reducing agent. It has been used successfully in numerous in situ applications to address chlorinated organic, metal, and explosive compounds (including perchlorate) in contaminated groundwater. ZVI is suited both for injection directly into source zones and for placement along a permeable reactive barrier as a groundwater containment remedy. This training tool focuses on ZVI injection for treating chlorinated solvents. ZVI can be injected in a variety of sizes, media, and methods. Alternative injection sizes include micron or nanoscale ZVI (nZVI). Alternative media include ZVI contained in an emulsified oil (EZVI) or with other iron-carbon combinations (e.g., EHC®; ABC®) to stimulate anaerobic biodegradation. Alternative injection technologies include pressurized nitrogen gas or water as carrying fluids to help the iron powders disperse into the subsurface. ZVI technology has grown and progressed in terms of its use, regulatory acceptance, application methods, and reactive media options. This Web tool is designed to assist Navy remedial project managers in the development and implementation of effective ZVI injection applications. The site uses graphic illustrations to demonstrate the use and behavior of ZVI in the subsurface. Users can: learn about the scientific concepts related to the use of ZVI and the types of ZVI media available for injection, understand the different injection methods used to deliver ZVI to the subsurface, understand which factors influence the applicability of the ZVI technologies, and benefit from the lessons learned during ZVI use at other sites. View and use at <http://www.ert2.org/ZVIT.aspx#tool=zvit&page=Introduction1>.

DCE/VC Stall Tool. The ability of microorganisms to transform chlorinated solvents to innocuous end products enabled the development of in situ bioremediation as a remedial strategy; however, complete dechlorination of perchloroethene (PCE) and trichloroethene (TCE) to innocuous end products (e.g., ethene and ethane) is not always observed. When the reductive dechlorination process is incomplete, levels of dichloroethene (DCE) and/or vinyl chloride (VC) can build up over time in groundwater. This process is referred to as DCE/VC stall, and it can limit the ability of a bioremediation approach to meet cleanup goals and obtain site closure. The purpose of this training tool is to provide remedial project managers with the information necessary to recognize DCE and/or VC stall. A video graphic can be played that explains reductive dechlorination of PCE and TCE to DCE, VC, and ethene. This tool also explores the biological and/or environmental causes of DCE/VC stall, along with potential solutions.

Reductive dechlorination of PCE and TCE to DCE appears at most sites where the redox potential in the aquifer is sufficiently reducing (e.g., iron to sulfate reduction), but at some sites, conditions for complete reductive dechlorination of PCE or TCE to ethene are not present, and degradation stalls at DCE and/or VC. Three basic requirements must be met to form a complete reductive dechlorination pathway: sufficient electron donor (a fermentable carbon source), appropriate redox potential (strongly reducing conditions) in the aquifer, and microbial communities capable of complete dechlorination of PCE to ethene. View and use at <http://www.ert2.org/DCE/tool.aspx> .

Evaluation of Nine Chemical-Based Technologies for Removal of Radiological Contamination from Concrete Surfaces (August 2011). The EPA's National Homeland Security Research Center (NHSRC) evaluated the performance of nine chemical-based decontamination technologies for their ability to remove Cesium-137 from the surface of unpainted concrete in this technical brief. View or download at http://oaspub.epa.gov/eims/eimscomm.getfile?p_download_id=503072 .

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 October 2011. 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:

CleanUp 2011: 4th International Contaminated Site Remediation Conference, Program and Proceedings (2011). The fourth program of the biennial International Contaminated Site Remediation Conference was held at the Hilton Adelaide Hotel in South Australia, 11-15 September 2011. A wide range of topics is covered, encompassing vapor intrusion, permeable reactive barriers, bioremediation, chemical oxidation, emerging contaminants, environmental nanotechnologies, sustainable remediation, innovations in site characterization, and numerous case studies. View or download at <http://www.cleanupconference.com/2011%20CleanUp%20Conference%20Proceedings.pdf> .

NICOLE News (October 2011). NICOLE is a leading forum on contaminated land management in Europe, promoting co-operation between industry, academia and service providers on the development and application of sustainable technologies. The October 2011 NICOLE Newsletter with information on new workshops and technology awards is now available. View or download at http://www.nicole.org/documents/stream.aspx?o=2&fn=NICOLE_Docs_293.pdf

> Conferences and Symposia

Building Innovation Through Partnerships: Apps for the Environment Forum, Arlington, Virginia, November 8, 2011. This forum will commemorate EPA's Apps for the Environment Challenge and present a vision for the future of environmental apps and mobile technology. Attendees will learn about efforts to promote environmental applications from government, business, and tech-industry leaders and discover cutting-edge environmental apps. Attendees will also have an opportunity to share and collaborate on environmental data needs and innovative solutions and develop partnerships through breakout sessions, networking and exhibits. For more information and to register, see <http://www.epa.gov/appsfortheenvironment/forum.html> .

Training Opportunities for Small and Disadvantaged Businesses (SDBs). The U.S. EPA Technology Innovation and Field Services Division (TIFSD) is offering training that is designed to build the technical capacity of SDBs in the site characterization and

remediation field. The training is part of an exciting new initiative designed to build the technical capacity of SDBs as they compete for environmental cleanup jobs in a greener workforce. The following courses are scheduled to be offered in New York, New York: Best Management Practices for Site Assessment, Site Remediation, and Green Remediation Footprint Reduction, November 15, 2011 (<http://trainex.org/1228>) and Triad Training for Practitioners, November 16-18, 2011 (<http://trainex.org/796>). There are no tuition costs for these courses. Other environmental professionals who may find these courses of interest include EPA, federal, state, and tribal technical project managers and stakeholders involved in the cleanup and reuse of hazardous waste sites. For additional information on this initiative, visit <http://clu-in.org/smallbusiness>.

Registration Now Open!! Partners in Environmental Technology Technical Symposium & Workshop, Washington, DC, November 29-December 1, 2011. The Partners in Environmental Technology Technical Symposium & Workshop is a nationally recognized conference focusing on the Department of Defense's (DoD) priority environmental issues. Attendees span the military services; academic and research institutions; private sector technology and environmental firms; and federal, state, and local regulatory and policy making organizations. This year's event will offer an opening Plenary Session where the SERDP and ESTCP Projects of the Year will be announced, 15 technical sessions and four short courses, more than 450 technical poster presentations, and exhibitors from funding and partnering organizations. For more information and to register, see <http://symposium2011.serdp-estcp.org/>.

The Resource Conservation and Recovery Act (RCRA): Cradle to Grave, December 2, 2011. What does it really mean to management waste from "cradle to grave"? Join Pete Raack to learn how this important, cross-cutting regulatory program manages the toxic refuse of a great consumer society. For more information and to register for this webinar, see <http://clu-in.org/neti111202>.

Introduction to Phytotechnologies and Water Balance (Evapotranspiration) Covers, San Francisco, CA, December 14 and 15, 2011. U.S. EPA Region 9 has teamed up with the Office of Research and Development to present two days of training on Phytotechnologies and Water Balance Covers, with each taking a day. This 2 day workshop, offered at the Region 9 offices in San Francisco, is intended to teach regulators, owners and operators, consultants, and engineers the basic principles for growing plant systems for environmental remediation, enhancement, and waste containment. Topics will include alternative cover design, soil selection, construction, monitoring, including discussions of regulatory issues. Regional case studies will be emphasized. The days' offerings are mutually exclusive, so you can attend one or both days depending on your interests and needs. For more information and to register, see <http://www.phytosociety.org/events>.

Call for Abstracts!! Seventh Annual Conference on Design and Construction Issues at Hazardous Waste Sites, Philadelphia, PA, April 10-12, 2012. Hosted by the U.S. EPA and the U.S. Army Corps of Engineers, the conference will facilitate information exchange among professionals from the private and public sectors regarding design and construction issues at hazardous waste sites including effective methods, lessons learned, and the application of technologies. Abstracts discussing current practices and approaches, management techniques, and field experiences in design and construction issues are welcomed. Abstracts are due by November 18, 2011. For abstract guidelines, see <https://superfund.usace.army.mil/2012DCHWS>.

Call for Abstracts!! National Training Conference on TRI and Environmental Conditions in Communities, Washington, DC, April 11-13, 2012. This year's conference is cosponsored by U.S. EPA, the Environmental Council of the States, and the National Pollution Prevention Roundtable. Abstracts for presentations, booths, and posters are welcome through November 19, 2011. The conference will focus on

pollution prevention and using Toxics Release Inventory data to promote sustainability along with sessions on conditions and trends in ecological and human health. The full Call for Abstracts can be found at <http://tinyurl.com/6bh274x> . For questions or more information, please contact Caitlin Briere at briere.caitlin@epa.gov .

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. Currently there are 22 conferences and courses featured. 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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