

TechDirect, September 1, 2011

Welcome to TechDirect! Since the August 1 message, TechDirect gained 193 new subscribers for a total of 38,658. 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 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.

> Announcements

Anticipated Position Supporting EPA as a federal employee. We anticipate announcing the following employment opportunity, which may of interest to hazardous waste professionals. We will advertise the position as a public service for the CLU-IN audience: 1 Environmental Engineer Position with EPA's Technology Assessment Branch in Arlington, VA. The duties of this position include the use of environmental engineering knowledge and skill to support Superfund remedial project managers, other remedy decision makers, and EPA staff with usable cost and performance data for remedies, particularly for innovative technologies. The position, which will soon be officially announced on USAJobs.gov , will be open to current and former federal employees, and other "status" candidates that will be further defined in the official announcement. For more information, see <http://www.clu-in.org/jobs/>.

> Upcoming Live Internet Seminars

ITRC Development of Performance Specifications for Solidification/Stabilization - September 8, 2011, 11:00AM-1:15PM EDT (15:00-17:15 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> OR <http://clu-in.org/live> .

Superfund Landfill Methane Potential Assessment - September 14, 2011,

2:00PM-3:15PM EDT (18:00-19:15 GMT). The EPA Office of Superfund Remediation and Technology Innovation conducted a study in 2010 to explore options for productively utilizing methane emissions from landfills that are placed on the Superfund National Priorities List. The study included the development of the Landfill Gas Energy Project Assessment Tool, which can be used to aid managers in conducting their own assessment of the feasibility of installing landfill gas energy projects at landfills. The scope of the Tool will be presented, together with a discussion of the Fresno Sanitary Landfill in California as a comparison case study by applying the EPA LandGEM and LFGCost models. Both LandGEM and LFGCost are routinely used by the EPA Landfill Methane Outreach Program. Total landfill gas and methane generation for the Fresno Sanitary Landfill were estimated using LandGEM version 3.02, released May 12, 2005, which is an automated tool for estimating emission rates from municipal solid waste (MSW) landfills. The model was developed by the EPA Office of Research and Development-National Risk Management Research Laboratory, and the Clean Air Technology Center. The model results can be used to estimate the recoverable methane available for a potential LFG energy project. LandGEM can also be used by landfill owners and operators to determine if a landfill is subject to the control requirements of the federal New Source Performance Standard (NSPS) for new MSW landfills, the emission guidelines for existing MSW landfills, or the National Emission Standards for Hazardous Air Pollutants (NESHAP) for MSW landfills. In evaluating the economic feasibility of an LFG energy project at the Fresno Sanitary Landfill, EPA's LFGcost Tool was utilized. This webinar will review the assumptions made in the Tool and the resulting economic outlook for a potential project at this site. For more information and to register, see <http://clu-in.org/live> .

ITRC Phytotechnologies - September 15, 2011, 11:00AM-1:15PM EDT (15:00-17:15 GMT). This training familiarizes participants with ITRC's Phytotechnology Technical and Regulatory Guidance and Decision Trees, Revised (Phyto-3, 2009). This document provides guidance for regulators who evaluate and make informed decisions on phytotechnology work plans and practitioners who have to evaluate any number of remedial alternatives at a given site. This document updates and replaces Phytoremediation Decision Tree (Phyto-1, 1999) and Phytotechnology Technical and Regulatory Guidance Document (Phyto-2, 2001). It has merged the concepts of both documents into a single document. This guidance includes new, and more importantly, practical information on the process and protocol for selecting and applying various phytotechnologies as remedial alternatives. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/live> .

ITRC In Situ Bioremediation of Chlorinated Ethene - DNAPL Source Zones - September 22, 2011, 11:00AM-1:15PM EDT (15:00-17:15 GMT). Treatment of dissolved-phase chlorinated ethenes in groundwater using in situ bioremediation (ISB) is an established technology; however, its use for DNAPL source zones is an emerging application. This training course supports the ITRC Technical and Regulatory Guidance document In Situ Bioremediation of Chlorinated Ethene: DNAPL Source Zones (BioDNAPL-3, 2008). This document provides the regulatory community, stakeholders, and practitioners with the general steps practitioners and regulators can use to objectively assess, design, monitor, and optimize ISB treatment of DNAPL source zones. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

Use of Geostatistical 3-D Data Visualization/Analysis in Superfund Remedial Action Investigations - September 23, 2011, 1:00PM-3:00PM EDT (17:00-19:00 GMT). Three-dimensional (3-D) visualization and analysis is being used with increasing frequency to improve the effectiveness environmental investigation and cleanup efforts. Many potential users, however, are not readily aware of how visualization and analysis methods can be used to support their projects at various stages in a project lifecycle, how the software programs really work, what to consider when scoping and procuring

services, what to plan for in terms of costs and schedule, or how to confirm and quality check results. This two-hour seminar will: (1) describe the setup and use of 3-D data visualization systems; (2) show how visualization and analysis can help resolve a number of common, but critical, issues at environmental cleanup sites; (3) identify best management practices developed from a broad range of Superfund site 3-D visualization applications; (4) describe quality control procedures when using 3-D visualization for analyzing existing data in EPA investigations; (5) and present guidelines for contracting 3-D visualization and analysis services. The seminar will also demonstrate how 3-D visualization and analysis was used to maximize the value of existing site data at the Time Oil/Well 12A Superfund Site in Tacoma, Washington. Under active remediation since 1988, the site has not reached the goals identified in the Record of Decision (ROD). At this site, 3-D data visualization/analysis was utilized extensively for defining present site conditions and providing a comprehensive conceptual site model (CSM) for evaluation and selection of remedial actions designed to reach a workable exit strategy. An open forum will be held after the presentations, during which participants will be able to submit questions and feedback to the speakers. For more information and to register, see <http://clu-in.org/live> .

ITRC Project Risk Management for Site Remediation - September 27, 2011, 2:00PM-4:15PM EDT (18:00-20:15 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> or <http://clu-in.org/live> .

ITRC Mine Waste Treatment Technology Selection - September 29, 2011, 11:00AM-1:15PM EDT (15:00-17:15 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> .

Nanotechnology: Implications and Applications - October 3, 2011, 1:00PM-3:00PM EDT (17:00-19:00 GMT). Nanotechnology encompasses a diverse

range of materials with a variety of applications, including those relevant to Superfund sites. As with any new technology, concerns have been raised about the potential for human toxicity and environmental impact of nanoparticles. In this two-part seminar, investigators from the National Institute of Environmental Health Sciences Superfund Research program (SRP) will explore the implications of nanoparticles on human health, as well as applications of nanotechnology-based environmental sensing. Remediation of Superfund sites can release nanoscale particles into the environment, which can pose exposure risks. The health effects of these complex mixtures and materials, especially emerging materials produced by the nanotechnology industry, are not sufficiently well understood. Dr. Ian Kennedy, of the University of California-Davis SRP, will discuss the potential for adverse environmental effects and human health effects that can arise from exposure to both intentionally manufactured and unintentionally produced nanomaterials. The primary focus will be on metals and metal oxide nanomaterials. There remains a compelling need for improved ways to detect and quantify toxic and/or hazardous chemical species found at existing or potential Superfund sites. Better analytical techniques could reduce the cost of monitoring, help improve remediation methods, and more accurately assess the health risks associated with hazardous and toxic species. Nanoscale materials provide an opportunity to develop new methods that could be faster, easier, smaller, and/or less expensive. Dr. Donald Lucas, of the Lawrence Berkeley National Laboratory, and a member of the University of California-Berkeley SRP, will discuss how changing the size of materials to the nanoscale changes their properties. These changes can be exploited to produce sensors and detectors that the potential to reduce the cost and improve detection limits. Examples include the use of controlled shape silver and gold nanoparticles to detect arsenic and mercury in air and water. For more information and to register, see <http://clu-in.org/live> .

US and EU Perspectives on Green and Sustainable Remediation, Part 3 - October 26, 2011, 10:00AM-12:00PM EDT (14:00-16:00 GMT). This seminar is a continuation in the series on international green and sustainable remediation efforts (additional information on prior seminars can be found at <http://clu-in.org/consol/>). This two-hour seminar will: (1) provide case studies on how green and sustainable remediation efforts can be implemented; (2) discuss EPA's draft environmental footprint methodology for estimating or quantifying a remediation site's footprint; (3) summarize information presented during the green and sustainable remediation track at the October International Committee on Contaminated Land (ICCL) meeting, including key points from the Common Forum paper on sustainable and risk-informed land management; and (4) provide updates from initiatives around the world. An open forum will be held after the presentations, during which participants will be able to submit questions. For more information and to register, see <http://clu-in.org/live> .

> New Documents and Web Resources

Technical Support Project (TSP) Expertise Directory. The TSP Expertise Directory is a searchable directory that provides a snapshot of the various types of expertise possessed by the current members of the three TSP Forums (Ground Water, Federal Facilities and Engineering). It is based on input provided by forum members. EPA Regional Forum representatives will help EPA staff initiate a technical assistance project or site visit from the appropriate Technical Support Center. View or download at <http://epa.gov/tio/tsp/download/expertise.pdf> .

Interstate Technology & Regulatory Council (ITRC) Website Features National Successes. The ITRC Success Story page highlights new success stories that show how ITRC products significantly contribute to developing solutions to national

environmental challenges. The success stories are organized generally by topic and represent the wide variety of uses served by ITRC products. View and submit success stories at <http://www.itrcweb.org/successstories.asp>.

National Institute of Environmental Health Sciences' (NIEHS) Superfund Research Program (SRP) Reaches Milestone in Research Dissemination.

Celebrating the 200th Research Brief: each of these present timely and relevant SRP-funded research findings in the areas of environmental health sciences and remediation. Past and future issues of the Research Brief can be accessed on the SRP website at: <http://tools.niehs.nih.gov/srp/researchbriefs/>.

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

Megasite Management Toolsuite (2011). The software supports the integrated planning and assessment of megasite revitalisation options in ecologic, economic and sustainability terms through interconnected software modules, which operate on the basis of an integrated GIS database. A description of the Megasite Management Toolsuite and a User's Guide are available at the website: <http://www.safira-mmt.de> in English and German. The software itself is available on request.

> Conferences and Symposia

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 Orleans, LA and New York, New York: Best Management Practices for Site Assessment, Site Remediation, and Green Remediation Footprint Reduction, November 15, 2011 in New York City (<http://trainex.org/1228>); Triad Training for Practitioners, November 16-18, 2011 in New York City (<http://trainex.org/796>); OSC 201, October 17-19, 2011 in New Orleans (<http://www.trainex.org/285>), Removal Process for RPMs, October 18-19, 2011 in New Orleans (<http://www.trainex.org/53>), Waste Treatment, Transportation, and Disposal, October 20-21, 2011 (<http://www.trainex.org/46>). There are no tuition costs for these courses. Other environmental professionals who may find these courses of interest, 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>.

Training Opportunities on Best Management Practices for Site Characterization, Remediation, and Footprint Reduction. The U.S. EPA Technology Innovation and Field Services Division (TIFSD) and the CERCLA Education Center (CEC) is offering training based on best management practices (BMP) implemented by the U.S. EPA, partnership organizations, federal and state partners, and consultants. Participants learn how these BMPs can be used to streamline projects in a legal, technically sound, and cost-effective manner. 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 (<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. The target audience includes EPA, federal, state, tribal, and private industry technical project managers and stakeholders involved in the development and implementation of BMPs at hazardous waste sites. For additional information about these training courses, visit <http://www.trainex.org>.

LNAPLs: Science, Management, and Technology ITRC 2-day Classroom Training, Minneapolis, MN, September 20-21, 2011. 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 more information and to register, see <http://www.itrcweb.org/crt.asp>.

DNAPL Site Characterisation: Tools and Techniques and DNAPL Site Remediation: Technologies and their Applicability, September 22 and 29, 2011. These two free 1.5 hour live webinars will present the attendees with a detailed overview of how to characterise DNAPL sites, including current and emerging tools and techniques, what appropriate remediation techniques are available and discuss their relevance to specific contaminants and geological settings. The presenters will demonstrate accepted good practice and share knowledge that they have developed from applied research and commercial projects across the globe. It is advised that participants attend both events as they are designed to complement each other. For more information and to register, see http://www.claire.co.uk/index.php?option=com_civicrm&task=civicrm/event/info&reset=1&id=176&Itemid=88.

Vapor Intrusion Pathway: A Practical Guideline ITRC 2-day Classroom Training, Denver, CO, October 3-4, 2011. Led by internationally recognized experts, this 2-day ITRC classroom training will enable you to learn the latest strategies to conduct site screening and investigations; determine what tools are appropriate to collect quality data and evaluate the results; apply multiple lines of evidence to ensure quality decision-making; build solutions for VI issues through understanding of mitigation options; and network with environmental professionals dealing with this interdisciplinary and complex pathway. Interactive learning with hands-on exhibits, classroom exercises, and frequent Q&A sessions will reinforce these course objectives and contribute to a practical understanding of this difficult pathway. For more information and to register, see <http://www.itrcweb.org/crt.asp>.

Innovative Approaches to Mining Remediation and Reuse Workshop, Arlington, VA, October 6th, 2011. This workshop is sponsored by the U.S. EPA Office of Superfund Remediation and Technology Innovation and the International Committee on Contaminated Land. The workshop will facilitate the information exchange and networking among professionals from the public and private sectors, domestic and international, on mining site remediation and reuse and specifically address: (1) building sustainability into mining site remediation (land conservation, soil amendments, approaches to prioritize the use of limited resources, sludge management, environmental impact assessment practices and sustainable practices), (2) innovations in mining site cleanup technologies (addressing metal mobility, pit lake remediation, treatment reactors, bioavailability, arid land mining, and chemical extracted processes) and (3) engaging communities in site cleanup and reuse decisions (mine impacted waters, socioeconomic perspectives on mining, communities perspective on mining, community renewal programs, First Nations and mining remediation, and corporate responsibility on mining). For more information, to register, and those interested in participating in the exhibit hall and the poster session, see <http://www.MiningWorkshop.org>.

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/> .

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 23 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. 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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