

TechDirect, March 1, 2011

Welcome to TechDirect! Since the February 1 message, TechDirect gained 383 new subscribers for a total of 37,380. 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.

> Upcoming Live Internet Seminars

CARE National Webinar - March 2, 2011, 1:00PM-3:00PM EST, (18:00-20:00 GMT).

The national web cast provides an opportunity for potential CARE cooperative agreement applicants to learn more about the CARE program and ask questions about the 2011 CARE RFP. For more information and to register, see <http://clu-in.org/live> .

NARPM Presents...Radiation Safety for Environmental Professionals - March 3, 2011, 1:00PM-3:00PM EST (18:00-20:00 GMT).

Radiation for Environmental Professionals focuses on providing participants with an overview and basic understanding of the fundamental principles of radiation safety. This webinar is intended for environmental professionals who desire a basic knowledge and understanding of radiation safety. Participants who are responsible for reviewing and discussing radiological issues will also benefit from this webinar. Specifically, the webinar will achieve the following objectives: understand basic terminology and fundamental principles of radiation; identify the three primary types of ionizing radiation and their characteristics; identify radiation dose limits and explain basic methods to control exposures; and understand the biological effects of radiation. For more information and to register, see <http://clu-in.org/live> .

NARPM Presents...Environmental Statutes Basics - March 8, 2011,

1:00PM-3:00PM EST (18:00-20:00 GMT). Environmental Statutes Basics provides a basic history and describes the major provisions of some of the EPA statutes, including the Toxic Substances Control Act (TSCA) and the Clean Water Act (CWA). Participants will also receive a brief history of the EPA and how statutes and regulations are developed. For more information and to register, see <http://clu-in.org/live> .

ProUCL Webinar Parts I and II - March 9 and 16. ProUCL is peer-reviewed EPA software that has been developed to address statistical and data analytic needs of environmental projects originating from the various CERCLA and RCRA site investigations. ProUCL can be downloaded from the EPA website at http://www.epa.gov/nerlesd1/tsc/TSC_form.htm .

These webinars will be useful for regulators, environmental scientists and practitioners, site owners/operators, consultants and contractors who use or want to use statistics to do their work. For more information and to register, see <http://clu-in.org/live> .

ITRC Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater - March 10, 2011, 11:00AM-1:15PM EST (16:00-18:15 GMT).

Sites contaminated with metals and radionuclides present unique challenges to the development of effective remedial alternatives that also provide long-term protection to human health and the environment. The high costs of ongoing conventional treatment, total removal, and/or management combined with the scale of potential health and environmental risks make it important to evaluate attenuation-based remedial alternatives. This training and the associated ITRC Technical and Regulatory Guidance document, *A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater* (APMR-1, 2010), is intended for anyone involved with evaluating, investigating, remediating or managing a site that involves metal and radionuclide contaminants in groundwater. This training and document provides: introduction to key attenuation processes for metals and radionuclides; information on incorporating MNA into remedial alternatives for metals/rads; and an overview of the decision framework on MNA for metals and radionuclides in groundwater within the larger evaluation framework of a contaminated site. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

NARPM Presents...A Tale of Three Sites - Supporting Reuse Throughout the Cleanup Process - March 10, 2011, 2:00PM-4:00PM EST (19:00-21:00 GMT).

This webinar will provide concrete examples of how RPMs have supported the reuse of sites throughout the cleanup process, looking at innovative strategies prior to listing on the NPL to past construction completion. The presenters will highlight three sites and share their on-the-ground experience and site outcomes. This session will reinforce the messages of the new reuse directive entitled "Considering Reasonably Anticipated Future Land Use and Reducing Barriers to Reuse at EPA-lead Superfund Remedial Sites" and complement the 2011 NARPM Training Program Session, *Top Five Tools to Jumpstart Reuse at Your Superfund Site*. For more information and to register, see <http://clu-in.org/live>.

US and EU Perspectives on Green and Sustainable Remediation Part 2 - March 15, 2011, 10:00AM-12:00PM EDT (14:00-16:00 GMT).

In an effort to continue the dissemination of information on international green and sustainable remediation, an Internet Seminar entitled "US and EU Perspectives on Green and Sustainable Remediation Part 2" will be presented on March 15, 2011. The first Internet Seminar on international green and sustainable remediation took place on July 12, 2010, and was called "US and EU Perspectives on Green and Sustainable Remediation" (http://www.clu-in.org/conf/tio/arconsoil_071210/). During the seminar, international leaders of sustainable and green remediation efforts discussed their drivers and constraints, as well as the impacts of these opportunities and issues on their efforts. The seminar was subsequently presented as a primer, entitled "Sustainable Remediation: International Developments" (<http://www.clu-in.org/consoil/#sub3>), during a special session in September at ConSoil 2010 (<http://www.consoil.de>) in Salzburg, Austria. The ConSoil special session focused on the state of international implementation of sustainable environmental remediation. The focus of the March 15th Internet Seminar will be to clarify how green remediation and sustainable remediation are similar, yet different, and to provide US and International case studies of green remediation. Panelists will include representatives from the U.S. Environmental Protection Agency (USEPA), Sustainable Remediation Forum - United Kingdom (SURF UK), and Environment Agency Austria (EAA). In addition, presenters from the July 2010 Internet Seminar and September 2010 ConSoil Special Session will also be in attendance representing SURF US and the Netherlands; EURODEMO+; Network for Industrially Contaminated Land in Europe (NICOLE); Common Forum on Contaminated Land in Europe; and Environment Canada. For more information and to register, see <http://clu-in.org/live>.

NARPM Presents...Ecological Revitalization: Turning Contaminated Properties into Community - March 15, 2011, 1:00PM-3:00PM EDT (17:00-19:00 GMT). Join in this seminar to learn about cost-effective remedies that naturally lead to an ecological reuse of your contaminated site. This webinar will help Remedial Project Managers (RPMs) and other site managers and stakeholders better understand, coordinate, and carry out ecological land revitalization at contaminated properties as part of site cleanup. Participants will hear about the technical considerations for designing and implementing cleanups that facilitate ecological reuse of streams, wetlands, and terrestrial ecosystems, including long-term stewardship, and discover how site managers use ecological land reuse as part of real cleanup site. By attending this webinar, you'll know that there are about 100 contaminated sites where ecological reuse was implemented, and you'll know who to contact at each site for more information! For more information and to register, see <http://clu-in.org/live> .

ITRC LNAPL Training Parts 1, 2, and 3 - March 22, 23, and 24, 2011. Light non-aqueous phase liquids (LNAPLs) are organic liquids such as gasoline, diesel, and other petroleum hydrocarbon products that are immiscible with water and less dense than water. LNAPLs are important because they are present in the subsurface at thousands of remediation sites across the country, and are frequently the focus of assessment and remediation efforts. Part 1 of this training course explains how LNAPLs behave in the subsurface and examines what controls their behavior. Part 1 also explains what LNAPL data can tell you about the LNAPL and site conditions. Relevant and practical examples are used to illustrate key concepts. Part 2 addresses LNAPL characterization and site conceptual model development as well as LNAPL recovery evaluation and remedial considerations. Specifically, Part 2 discusses key LNAPL and site data, when and why those data may be important, and how to get those data. Part 2 also discusses how to evaluate LNAPL recoverability. Part 3 uses the LNAPL conceptual site model (LCSM) approach to identify the LNAPL concerns or risks and set proper LNAPL remedial objectives and technology-specific remediation goals and performance metrics. Part 3 also provides an overview of the LNAPL remedial technology selection framework. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/live> .

NARPM Presents...Review of ARARs during a Feasibility Study - March 22, 2011, 2:00PM-4:00PM EDT (18:00-20:00 GMT). Review of ARARs during a Feasibility Study focuses on specific technical and regulatory Applicable or Relevant and Appropriate Requirements (ARAR) related to protection of ecological and historical resources that RPMs address during cleanups under CERCLA. By taking the webinar, participants will be able to discuss the general principals of how to meet the substantial requirements of these ARARs in developing and implementing a CERCLA cleanup. For more information and to register, see <http://clu-in.org/live> .

NARPM Presents...Vapor Intrusion Issues at the Hill Air Force Base - March 24, 2011, 2:00PM-4:00PM EDT (18:00-20:00 GMT). This session will focus on tools and techniques used to address vapor intrusion issues at the Hill Air Force Base site located in northern Utah. For more information and to register, see <http://clu-in.org/live> .

Community Engagement Activities at Superfund Sites - March 31, 2011, (1:00PM-3:00PM EDT), 17:00-19:00 GMT. In this seminar sponsored by the Superfund Research Program (SRP), Anna Goodman Hoover, SRP grantee from the University of Kentucky, will present "Using Community-Based Participatory Communication in Superfund Communities." This overview will focus on a community-driven future vision for the Paducah Gaseous Diffusion Plant (PGDP) which has been impacted by trichloroethylene and technetium-99 contamination in the groundwater. Sharon Lin, US EPA, will present "Risk Reduction Through Behavior Change," focusing on activities around the Palos Verdes Shelf Superfund Site, one of the largest DDT and PCB contaminated sediment sites in the country. She will speak about a community based

social marketing approach used to educate local fishermen and community members about health risks of eating contaminated fish and to promote safer fishing and fish eating practices. This is the first session of the RiskLearning Spring/Summer 2011 series "Community Engagement: New Approaches and Success Stories." The Series Introduction will be given by Dr. Linda Birnbaum, Director, NIEHS. The session will be moderated by Ms. Beth Anderson, Superfund Research Program (NIEHS). For more information on the series visit <http://www.niehs.nih.gov/research/supported/srp/events/risklearning/index.cfm> . To register, see <http://clu-in.org/live> .

> New Documents and Web Resources

Final Report: Independent Design Review, Celanese Fiber Operations Superfund Site, Shelby, North Carolina, EPA Region 4 (EPA 542-R-11-001). The Celanese site is located in Shelby, North Carolina. Operation of the P&T system was discontinued on a trial basis for two years to evaluate monitored natural attenuation as a potential ground water remedy. The system has not been restarted. EPA Region 4 is requesting a third-party review to help determine if the system should be restarted, if a modified system should be restarted, or if another type of ground water remedial approach is warranted. This report provides a brief background on the site, a summary of observations made from the document review, and recommendations regarding future modifications to the existing remediation system (including associated investigation activities). The cost impacts of the recommendations are also discussed (February 2011, 38 pages). View or download at <http://clu-in.org/techpubs.htm> .

Final Report: Technical Assistance for the Somersworth Sanitary Landfill Superfund Site, Somersworth, New Hampshire, EPA Region 1 (EPA 542-R-09-010). The Somersworth Sanitary Landfill Site (Somersworth site) is a former landfill in southern New Hampshire that is on the National Priorities List (NPL). The landfill was closed in 1981 and has had a groundwater monitoring network since the 1980s. Groundwater remedies were installed by 2001, and the site is currently in the long-term monitoring phase of operation and maintenance (O&M). U.S. EPA Region 1 requested a review of the Somersworth site groundwater monitoring plan. Site monitoring data was reviewed and statistical and heuristic evaluations were performed using the Monitoring and Remediation Optimization System software (MAROS) in 2007. Inputs, results and recommendations for the groundwater monitoring network, including the results based on the MAROS analysis, were reviewed (July 2009, 55 pages). View or download at <http://clu-in.org/techpubs.htm> .

Terrestrial Carbon Sequestration: Analysis of Terrestrial Carbon Sequestration at Three Contaminated Sites Remediated and Revitalized with Soil Amendments (EPA 542-R-10-003). This paper presents the results of a study conducted by U.S. EPA's Technology Innovation and Field Services Division (TIFSD) on the terrestrial carbon sequestration co-benefit of using soil amendments for remediation and ecological revitalization at three sites. Prior to this study, little research has been published evaluating and quantifying terrestrial carbon sequestration benefits associated with land remediated with soil amendments. TIFSD conducted this study to increase this knowledge base. We quantified soil carbon sequestration rates at three sites: Leadville, CO, Stafford, VA, and Sharon Steel, PA. This study was part of our methodology development for sampling and analysis of carbon in soils at amended sites (methodology finalized June 2010). The results of this study indicate that carbon is being sequestered at all three sites we studied (February 2011, 56 pages). View or download at <http://clu-in.org/techpubs.htm> .

Monitored Natural Attenuation of Inorganic Contaminants in Ground Water,

Volume 3: Assessment for Radionuclides Including Tritium, Radon, Strontium, Technetium, Uranium, Iodine, Radium, Thorium, Cesium, and Plutonium-Americium (EPA 600-R-10-093). The U.S. EPA Office of Research and Development, in cooperation with the Office of Superfund Remediation and Technology Innovation and Office of Radiation and Indoor Air, recently published the last of a three-volume technical resource for selection of MNA as a site-specific remedy component for inorganic contaminants in ground water. Volume 3, Assessment for Radionuclides, addresses technical aspects of attenuation mechanisms and data collection for tritium, radon, strontium, technetium, uranium, iodine, radium, thorium, cesium, and plutonium-amerium. The document emphasizes characterization of immobilization and/or radioactive decay processes that may control contaminant attenuation or flux reduction, as well as technical approaches to assess performance characteristics of the MNA remedy. A tiered analysis approach is presented to assist in organizing site characterization tasks (September 2010, 147 pages). View or download at <http://www.epa.gov/nrmrl/gwerd/gw/mna.html> .

Hazardous Waste Clean-Up Information (CLU-IN) On-line Characterization and Remediation Databases Fact Sheet. This fact sheet provides an overview of the 10 on-line characterization and remediation databases available on the Hazardous Waste Clean-Up Information (CLU-IN) website sponsored by the U.S. EPA's Office of Superfund Remediation and Technology Innovation (OSRTI), Technology Innovation and Field Services Division (TIFSD). These databases provide information about pilot- and full-scale applications of innovative site characterization and treatment technologies for EPA remedial project managers, other federal and state personnel, consulting engineers, technology developers and vendors, remediation contractors, researchers, community groups, and individual citizens. They facilitate and encourage the hazardous waste remediation community to share knowledge about, and experiences with, innovative technologies (January 2011, 2 pages). View or download at <http://clu-in.org/techpubs.htm> .

Bioavailability of Dioxins and Dioxin-Like Compounds in Soil. The Risk Assessment Guidance for Superfund (RAGS) Part A discusses making adjustments to Superfund site-specific risk assessments when the medium of exposure in an exposure assessment differs from the medium of exposure assumed by the toxicity value (cancer slope factor, reference dose value, etc.) based upon site-specific bioavailability data. An important consideration in assessing risks from exposures to dioxin in soil is whether an adjustment is needed in the application of the oral cancer slope factor (CSF) and/or oral chronic reference dose (RfD) for 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD). This adjustment would account for differences in the bioavailability of TCDD (and toxicologically related polychlorinated dibenzo-p-dioxins [PCDD] and polychlorinated dibenzofuran congeners [PCDF]) in soil and in the test medium used in the critical study(s) on which the CSF and/or RfD were based (e.g., dietary exposure vs. exposure to soil). An adjustment would be considered appropriate if evidence were sufficient to indicate that the relative bioavailability (RBA) of the PCDD/F mixture in soil was less than 100%. This report presents a summary of the published literature and analysis of the available data regarding RBA of PCDD/F in soil (December 2010, 83 pages). View or download at http://epa.gov/superfund/health/contaminants/dioxin/pdfs/Final_dioxin_RBA_Report_12_20_10.pdf .

ProUCL Version 4.1.00 Software Released. ProUCL version 4.1.00 is the latest update of the ProUCL statistical software package for analysis of environmental data sets with and without nondetect (ND) observations. ProUCL version 4.1.00 is a comprehensive statistical software package with statistical methods and graphical tools to address many environmental sampling and statistical issues. The ProUCL software, Fact Sheet, User Guide, and Technical Guide can be downloaded from the EPA website at <http://www.epa.gov/osp/hstl/tsc/software.htm> .

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 24 resources, events, projects and news items were added to EUGRIS in February 1-24, 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:

Contaminated Land Remediation Report. This report was compiled and authored by Contaminated Land: Applications in Real Environments (CL:AIRE). The aims of this research were to summarize the current understanding and utilization of different contaminated land remediation techniques, to identify current and likely future factors influencing their selection and to set out the relative economic, environmental and social costs and benefits (i.e., the sustainability) of each technique. The sustainability impact assessment section of the report develops further the principles of the Sustainable Remediation Forum (SuRF-UK), demonstrating how thorough qualitative sustainability assessments for remediation technology selection can be undertaken and developed. Remediation techniques have evolved significantly over recent years, and the aim is to help industry to identify all the available options and to avoid resorting to a default remediation solution which may have less well determined economic, environmental or social impacts (February 2011, 120 pages). View or download at http://www.claire.co.uk/index.php?option=com_content&view=article&id=431&catid=1&Itemid=93 .

> Conferences and Symposia

2011 Air Force Restoration and Technology Transfer Workshop, San Antonio, TX, March 7-11, 2011. The Workshop, led by the AFCEE Environmental Restoration Division (AFCEE/ER) in partnership with the AFCEE Restoration Branch of the Technical Division, brings together hundreds of professionals from military services, industry, academia, local, state, and federal agencies, to focus on the latest in environmental restoration approaches and solutions. The emphasis of the 2011 Restoration and Technology Transfer Workshop is on restoration policy and program management. The Workshop includes a multiple-track agenda of informative plenary presentations, optional short courses and technical sessions on a variety of topics, plus an exhibit hall and networking opportunities. For more information and to register, see <http://www.baskow.com/client/rtw2011/> .

Practical Models Supporting Remediation of Chlorinated Solvents, Atlanta, GA, March 22-23, 2011. Explore a subset of the publicly-available simulation and data analysis tools that can be used alone or in combination to answer questions such as: Will source remediation meet site goals? What will happen if no action is taken? Should I combine source and plume remediation? What is the remediation timeframe? What is a reasonable remediation objective? The model discussion will focus on the unique features of selected models and how those features can support strategy development. Emphasis will be on REMChlor, a newly released tool that simulates both source and plume remediation. By providing the ability to simulate sites where conditions change in space and time, REMChlor can provide information "equivalent" to the types of output from more sophisticated numerical models. For more information and to register, see <http://srnl.doe.gov/csgss/> .

DoD Environmental Monitoring and Data Quality (EMDQ) Workshop, Arlington, VA, March 28-April 1, 2011. This workshop will include technical training sessions, technical presentations, a plenary session featuring distinguished speakers, a Q&A forum, component meetings, a poster session, an update on the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP), and networking opportunities with members of the environmental community. This workshop is open to

all interested environmental professionals involved with DoD sites or projects including representatives from the DoD services, other federal agencies, state, local, and tribal governments, academia, and the private sector. For more information and to register, see <http://www.navylabs.navy.mil/DoDChemistmeeting.htm> .

Brownfields 2011 Conference, Philadelphia, PA, April 3-5, 2011. The EPA Brownfields Program is co-sponsoring the 14th National Brownfields Conference. The conference will provide a forum for training, research and technical assistance to communities to facilitate the inventory of brownfield sites, assessment and remediation of brownfields sites, community involvement, and the green and sustainable revitalization of brownfields and contaminated sites. For more information and to register, see <http://www.brownfields2011.org/en/home> .

Training for Small Businesses at 2011 Brownfields Conference, Philadelphia, PA, April 4-5, 2011. EPA's Office of Solid Waste and Emergency Response (OSWER) will be offering two days of training sessions (April 4-5) for Small and Disadvantaged Business owners and other interested parties in conjunction with Brownfields 2011 Conference in Philadelphia. All sessions will be held at the Philadelphia Marriott Downtown (1201 Market Street, Philadelphia, PA 19107) in the Franklin 3 meeting room on the Fourth floor. Training Sessions will address Best Management Practices (BMPs) for Targeted Brownfields Assessments, BMPs for Brownfields Remediation, and BMPs for Green Remediation. These 1.5 to 3 hour sessions will be offered on Monday and Tuesday, April 4th and 5th. For more information and to register see the News section on the front page of www.trainex.org.

Small and Disadvantaged Business Listening Session at 2011 Brownfields Conference, Philadelphia, PA, April 6, 2011. OSWER also will be holding a one-day Listening Session on April 6. The Listening Session is part of an initiative to build the technical capacity of small and disadvantaged businesses (SDBs) as they compete for environmental cleanup business. The purpose of this event is for EPA to hear from SDBs about challenges, barriers, and issues of concern that would assist it in providing more meaningful and relevant training and technical support.

In addition to the listening session, the event includes an afternoon match-making session where SDBs have an opportunity to speak one-on-one with the EPA staff organizing the listening session, as well to network with major Superfund Contractors invited to the meeting. The session will be held at the Philadelphia Marriott Downtown (1201 Market Street, Philadelphia, PA 19107) in the Franklin 3 meeting room on the Fourth floor. For more information and to register, see www.trainex.org/listen.

Vapor Intrusion Pathway: A Practical Guideline ITRC 2-day Classroom Training, Princeton, NJ, April 18-19, 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> .

Advanced Triad Training for Practitioners, New Orleans, LA, April 26-28, 2011. This course is based on best management practices (BMP) implemented by the U.S. EPA, partnership organizations, federal and state partners, and consultants. Participants will learn how the Triad Approach can be used to streamline projects in a legal, technically sound, and cost-effective manner. For more information and to register, see <http://trainex.org/offeringslist.cfm?courseid=796&all=yes> .

Registration Now Open!! International Conference on Sustainable Remediation 2011: State of the Practice, Amherst, MA, June 1-3, 2011. Sponsored by the Environmental Institute at the University of Massachusetts Amherst and the U.S. EPA Office of Superfund Remediation and Technology Innovation, the conference will address the interrelated themes of green chemistry, human health, and environmental response. Session presentations by scientists, practitioners, and regulators will feature new research, field applications, and lessons learned. Leading researchers and regulatory experts will provide an overview of the sustainable remediation landscape and address research needs, policy and regulatory challenges moving forward. The conference will feature 2 keynote presentations, 24 technical sessions, poster presentations and a student poster competition, exhibits, and ample opportunities for networking. The 2010 Green Remediation Conference attracted hundreds of attendees (academia, government, non-profit, and private sector) from 16 countries and 31 States. For more information and to register, see <http://www.umass.edu/tei/conferences/SustainableRemediation/> .

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 47 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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