TechDirect, April 1, 2015

Welcome to TechDirect! Since the March 1 message, TechDirect gained 309 new subscribers for a total of 34,859. 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.

> Grant Award

EPA Selects 20 Communities for Brownfield Grants to Revitalize Communities, Strengthen Local Economies. EPA has selected 20 communities in 16 states to receive approximately $4 million in Brownfields Area-Wide Planning (AWP) grants for cleanup and reuse of Brownfields sites to revitalize communities and strengthen local economies. These grants recognize that successful, sustained community revitalization, particularly in economically distressed communities, occurs when neighborhood stakeholders, local governments and the private sector are provided tools to develop a shared plan for redevelopment and community-wide improvement. EPA is awarding up to $200,000 per recipient to work with communities on Brownfields planning activities and reuse in conjunction with community assets such as housing, recreation and open space, employment, education and health facilities, social services, transportation options, infrastructure and commerce needs. For more information, see http://www.epa.gov/brownfields/areawide_grants.htm.

> Upcoming Live Internet Seminars

Adaptation of Superfund Cleanup to Climate Change - April 1, 2015, 2:00PM-4:00PM EDT (18:00-20:00 GMT). This webinar will provide an overview of climate change vulnerability analyses and adaptation at contaminated sites. In some circumstances climate change may result in vulnerabilities in the protectiveness of contaminated site remedies. The course focuses on how such a vulnerability may be better understood and on the means of achieving increased remedy resilience through adaptation measures. The course builds upon a general understanding of the Superfund process, but is relevant to most cleanup programs. By taking the course, participants will gain a better understanding of the following topics: overview of Superfund-specific climate change action plan; framing site-specific analyses to understand remedy vulnerabilities throughout the life of a remedy, and of adaptation measures that may increase remedy resilience; tapping existing and relevant information resources when evaluating the potential impacts of climate at Superfund sites; and regional case studies of Superfund sites that have been impacted by a major weather event. For more information and to register, see http://clu-in.org/live.

US Small Business Funding Opportunities (SBIR/STTR) for Environmental Technologies at NIEHS SRP, EPA, and NSF - April 2, 2015, 1:00PM-3:00PM EDT (17:00-19:00 GMT). This webinar is designed to help small businesses and academic researchers better understand the different agencies that fund environmental technologies, and the fundamental goals of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. The SBIR and STTR programs are one of the largest sources of funding for eligible U.S. small businesses [http://www.sbir.gov/faq/eligibility] to develop innovative high technical risk technologies that have potential for substantial commercial or societal benefits. The webinar is hosted jointly by the SBIR/STTR programs within the National Institute of Environmental Health Sciences Superfund Research Program (NIEHS SRP), the U.S. Environmental Protection Agency (EPA), and the National Science Foundation (NSF). Hear agency experts - Heather Henry from NIEHS SRP; April Richards from EPA; and Prakash Balan from NSF - highlight the unique characteristics of each of their environmental funding options, details of their SBIR/STTR programs, and tips on how to develop a successful SBIR/STTR application. A majority of the time will be dedicated to a Q&A session at the end of the webinar, which will be moderated by Kirsten Mease from NIEHS. The NIEHS SRP SBIR/STTR programs fund the development of technologies for the detection and remediation of hazardous chemicals at contaminated Superfund sites. The EPA SBIR program funds small businesses focused on technologies for the treatment of drinking water and wastewater; air quality sensors, filters, and pollution reduction; and innovative green manufacturing and green materials. The NSF SBIR/STTR environmental programs fund any innovative technologies which have a significant, beneficial impact on the environment and enhance sustainability. Technologies include, but are not limited to, innovations in energy and bioenergy; biotechnology; separations; green chemistry-based products and byproducts; water conservation and reuse; agriculture; and chemical, food, and pharmaceutical processing. For more information and to register, see http://clu-in.org/live.

NARPM Presents...The Superfund Job Training Initiative (SuperJTI) - April 9, 2015, 1:00PM-3:00PM EDT (17:00-19:00 GMT). The Superfund Job Training Initiative (SuperJTI) is a job readiness program that provides training and employment opportunities for people living in communities affected by Superfund sites. Many of these areas are Environmental Justice communities - historically under-represented minority and low-income neighborhoods and areas burdened with significant environmental challenges. EPA's goal, through SuperJTI, is to help these communities develop job opportunities that remain long after a Superfund site has been cleaned up. By participating in the webinar, participants will: understand how the SuperJTI program works; hear how the SuperJTI program has been implemented; discuss how SuperJTI programs benefited multiple stakeholders including the local community, contractors, EPA and especially participants; brainstorm sites that may be eligible for SuperJTI projects; and receive information about how to contact SuperJTI staff and begin a SuperJTI program at their site/community. For more information and to register, see http://clu-in.org/live.

ITRC Remedy Selection for Contaminated Sediments - April 14, 2015, 1:00PM-3:15PM EDT (17:00-19:15 GMT). ITRC developed the technical and regulatory guidance, Remedy Selection for Contaminated Sediments (CS-2, 2014), to assist decision-makers in identifying which contaminated sediment management technology is most favorable based on an evaluation of site specific physical, sediment, contaminant, and land and waterway use characteristics. The document provides a remedial selection framework to help identify favorable technologies, and identifies additional factors (feasibility, cost, stakeholder concerns, and others) that need to be considered as part of the remedy selection process. This ITRC training course supports participants with applying the technical and regulatory guidance as a tool to overcome the remedial challenges posed by contaminated sediment sites. Participants learn how to: identify site-specific characteristics and data needed for site decision

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

ITRC Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management - April 16, 2015, 1:00PM-3:15PM EDT (17:00-19:15 GMT). Chemical contaminants in soil and groundwater can volatilize into soil gas and migrate through unsaturated soils of the vadose zone. Vapor intrusion (VI) occurs when these vapors migrate upward into overlying buildings through cracks and gaps in the building floors, foundations, and utility conduits, and contaminate indoor air. If present at sufficiently high concentrations, these vapors may present a threat to the health and safety of building occupants. Petroleum vapor intrusion (PVI) is a subset of VI and is the process by which volatile petroleum hydrocarbons (PHCs) released as vapors from light nonaqueous phase liquids (LNAPL), petroleum-contaminated soils, or petroleum-contaminated groundwater migrate through the vadose zone and into overlying buildings. The ITRC Technical and Regulatory Guidance Web-Based Document, Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management (PVI-1, 2014) and this associated Internet-based training provides regulators and practitioners with consensus information based on empirical data and recent research to support PVI decision making under different regulatory frameworks. The PVI assessment strategy described in this guidance document enables confident decision making that protects human health for various types of petroleum sites and multiple PHC compounds. This guidance provides a comprehensive methodology for screening, investigating, and managing potential PVI sites and is intended to promote the efficient use of resources and increase confidence in decision making when evaluating the potential for vapor intrusion at petroleum-contaminated sites. By using the ITRC guidance document, the vapor intrusion pathway can be eliminated from further investigation at many sites where soil or groundwater is contaminated with petroleum hydrocarbons or where LNAPL is present. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

SRI Webinar Series: How to Bring about Ecological Revitalization on Contaminated Lands - April 21, 2015, 2:00PM-4:00PM EDT (18:00-20:00 GMT). Ecological revitalization refers to the process of returning land from a contaminated state to one that supports a functioning and sustainable habitat. While the end use of a contaminated property is typically a local decision made with the site owner, EPA actively supports and encourages ecological revitalization, when appropriate, on sites under its cleanup programs. This webinar will share several benefits of ecological revitalization illustrated by case study presentations of various projects across the country. Ecological revitalization topics will include habitat restoration, soil amendment usage, urban gardens and pollinator habitat development. For more information and to register, see http://clu-in.org/live.

Military Munitions Support Services - Planning for a Munitions Project - Apr 23, 2015, 1:00PM-4:30PM EDT (17:00-20:30 GMT). This will be a Military Munitions Support Services seminar with subject matter experts discussing the planning strategies and tools used to investigate or remediate munitions properties. For more information and to register, see http://clu-in.org/live.

SERDP and ESTCP Webinar Series. The overarching goal of the webinar series is to promote the transfer of innovative, cost-effective, and sustainable solutions developed by SERDP and ESTCP. The series targets the end users, including practitioners, the regulatory community, and researchers with the objective of providing cutting-edge and practical information from sponsored research and technology demonstrations in an easily accessible format and at no cost. To view the complete schedule of upcoming webinars, please visit https://www.serdp-estcp.org/Tools-and-Training/Webinar-Series.

> New Documents and Web Resources

Technology News and Trends (EPA 542-N-14-004). This issue highlights approaches for improving and streamlining site cleanup through the broad strategy described in the U.S. EPA's fiscal year 2014 Superfund Remedial Program Review Action Plan. The plan describes short- as well as long-term measures the Agency is undertaking to maintain effective remedial cleanups under Superfund program budget constraints. An important component of the plan is the use of adaptive management--an iterative approach to site investigation and remedy implementation that facilitates response to new information and conditions throughout the site's lifecycle. The plan also focuses on the assessment, study, design and construction phases of the remedial process and outlines modified priorities for related resource management to be combined with additional increases in efficiencies. The projects featured in this issue illustrate ways to more effectively compile information as part of design optimization, implement and monitor remedies and strategically schedule key activities (Winter 2015). View at http://clu-in.org/tnandt/0215.

Decision Making at Contaminated Sites: Issues and Options in Human Health Risk Assessment. Regulatory agencies responsible for site cleanups develop regulations, guidance and policies that define the use of risk assessment in the decision-making process for these sites. These agencies often define default approaches, scenarios and parameters as a starting point for developing risk assessments and risk-based screening values. Project managers and decision makers, however, must rely on professional judgment when the default assumptions must be modified to account for site-specific conditions. While abundant resources are available for risk assessment, there are fewer resources to guide difficult technical decisions when the default assumptions do not apply. This guidance document is a resource for project managers and decision makers to help evaluate alternatives to risk assessment default approaches, scenarios and parameters. Community members and other stakeholders also may find this document helpful in understanding and using risk assessment information. It is different from existing ITRC Risk Assessment guidance and other state and federal resources because it identifies commonly encountered issues and discusses potential options for site-specific alternatives in risk assessment. The document addresses risk assessment issues related to planning, data evaluation, toxicity, exposure assessment, and risk characterization. It also addresses risk management and risk communication as they relate to risk assessment. In addition, the document includes links to resources and tools that provide even more detailed information on the specific issues and potential options (January 2014, 203 pages). View or download at http://www.itrcweb.org/risk-3/. For more information on 2015 dates for the corresponding Internet-based training course, see http://www.itrcweb.org/Training/ListEvents?TopicID=24&SubTopicID=33.

Research Brief 243: Detecting Environmental Chemicals with Novel Immunoassay Technology. A new low-cost portable device uses a smart phone to detect the presence and concentrations of BDE-47 (2,2',4,4'-tetrabromodiphenyl ether), a type of flame retardant and widespread environmental contaminant. The device uses a lab-on-a-chip (LOC) platform to perform microscale enzyme-linked immunosorbent assays (ELISA), a popular lab technique that uses antibodies designed to measure a specific substance in a sample. The LOC platform performed comparably to the standard ELISA laboratory protocol but in much less time and with much smaller sample sizes. The system, developed by researchers led by Tingrui Pan, Ph.D., at the University of California (UC) Davis Superfund Research Program, is cost-effective, easy-to-use, and widely accessible. It can be used to detect levels of BDE-47 in human

samples, such as blood, as well as in liquid samples from the environment. It can also be applied to other chemicals, facilitating mobile detection of health and environmental contaminants in rural or less developed regions. For more information, see http://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=243.

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:

- Pyrolusite Process(R) to Remove Acid Mine Drainage Contaminants from Kimble Creek in Ohio: A Pilot Study
- Enhanced Amendment Delivery to Low Permeability Zones for Chlorinated Solvent Source Area Bioremediation: ESTCP Cost and Performance Report
- Optimized Enhanced Bioremediation Through 4D Geophysical Monitoring and Autonomous Data Collection, Processing and Analysis: ESTCP Cost and Performance Report
- Combining Remedies for More Effective Site Cleanup
- Operating Windows of Two Important Low Input Technologies for Greening Urban Brownfields
- Attenuation Pathways for Munitions Constituents in Soils and Groundwater
- A Review of Green and Sustainable Remediation (GSR) Practices at NAVFAC Environmental Restoration Sites
- Next Generation Risk Assessment: Incorporation of Recent Advances in Molecular, Computational, and Systems Biology

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 8 resources, events, projects and news items were added to EUGRIS in March 2015. 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:

Examination of contaminated land sector activity in England (DEFRA, 2014). This report produced by the UK's Department Environment Food and Rural Affairs (DEFRA) gives an overview of the contaminated land activity in England since Part 2A was introduced in 2000 until 31st December 2013. It documents progress made on identifying and remediating contaminated land sites using information collected from 197 of 326 local authorities (60%) in England and from the Environment Agency for Special Sites. View or download from http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=136

> Conferences and Symposia

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training, Denver, CO, April 7-8, 2015; Seattle (area), WA, September 15-16, 2015; Austin, TX, November 18-19, 2015. 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 local, state, and federal government;

students; community stakeholders; and tribal representatives, ITRC has a limited number of scholarships (waiver of registration fee only) available. For more information and to register, see http://www.itrcweb.org/training.

Groundwater High-Resolution Site Characterization (HRSC), New York, NY, April 15-16, 2015. 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.

EPA to present at the 8th Symposium on Design and Construction Issues at Hazardous Waste Sites, Philadelphia, PA, April 15-17, 2015. EPA staff will present and moderate sessions covering a range of topics including RD/RA Multiple Technologies/Performance Based, Developing Renewable Energy at a Remediated Superfund Site Successfully and Quickly, and Sediment Remediation. For more information and to register, see https://www.regonline.com/builder/site/default.aspx?EventID=1609144.

Registration Now Open! ITRC 2015 Spring Meeting, Pittsburgh, PA, April 20-24, 2015. The 2015 Spring Meeting offers environmental professionals from across the country an opportunity to network and collaborate on innovative approaches to solving environmental challenges. The meeting offers work sessions for all 2015 ITRC Teams, information about ITRC's direction from the ITRC Board of Advisors and Director, and opportunities to expand your network in the environmental community. For more information and to register through April 3, see http://www.itrcweb.org/Meetings/Upcoming.

Call for Proposals! 2015 Tribal Lands and Environment Forum, Minneapolis-St. Paul, MN, August 17-20, 2015. In addition to topics on solid/hazardous waste management, brownfields, UST/LUSTs, Superfund, emergency response, and cross-over land/water issues associated with these fields the 2015 Tribal Lands and Environment Forum is requesting proposals on the areas of ground/surface water quality and management, habitat restoration (including wetlands, streams, and fisheries for example), and drinking water/wastewater systems. For more information and to submit a proposal, see http://www4.nau.edu/itep/conferences/confr_tlf.asp.

Registration Now Open! 2015 National Brownfields Training Conference, Chicago, IL, September 2-4, 2015. Brownfields 2015 promises something for all levels of stakeholders and practitioners. The conference program includes speakers, discussions, mobile workshops, films, and other learning formats that are calibrated to provide you with case study examples, program updates, and useful strategies for meeting your brownfield challenges head on. For more information and to register, see http://www.brownfieldsconference.org/en/registerinfo.

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. To unsubscribe, send a blank email to $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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