



TechDirect, October 1, 2022

Welcome to TechDirect! Since the September 1 message, TechDirect gained 55 new subscribers for a total of 40,345. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing may do so on CLU-IN at <https://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.

> Funding Opportunities

FY 2023 Brownfields Multipurpose, Assessment, Revolving Loan Fund, and Cleanup (MARC) Grants. These brownfields grants may be used to address sites contaminated by hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum) and petroleum. The Brownfields Program is hosting three webinars to assist applicants with understanding the FY 2023 guidelines on September 29, October 4 and 6. Webinar recordings and Q&As for each session will be made available. The deadline to submit an application is November 22, 2022. For more information and application instructions, see <https://www.epa.gov/brownfields/solicitations-brownfield-grants>.

FY 2023 SERDP Supplemental Solicitation. 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) 2023. All proposals are due October 28, 2022. For more information, please visit <https://www.serdp-estcp.org/workingwithus>

> Upcoming Live Internet Seminars

ITRC Incremental Sampling Methodology (ISM-2) Update Training Modules - October 4, 2022, 1:00PM-2:00PM EDT (17:00-18:00 GMT). Are you puzzled about ISM? ITRC trainers fielded lots of questions about ISM during the two sessions on Incremental Sampling Methodology (ISM-2) Update. Join our trainers a year later to walk through some of those common questions and take questions from you! We will

also make sure you are aware of all the tools and resources ITRC provides on ISM. At registration, you can also review the archived training modules. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

NIEHS Climate Change and Health: Sessions 1-3. October 7, November 4, 18, 2022. The NIEHS Superfund Research Program (SRP) is hosting a Risk e-Learning webinar series focused on scientific research and tools that can be used to promote health and resilience to climate change. The series will feature SRP-funded researchers, collaborators, and other subject-matter experts who aim to better understand and address how climate change affects human exposures to hazardous substances and the public health consequences of a changing climate and identify ways to build health resilience. For more information and to register, please visit <https://clu-in.org/live/>.

Federal Facilities Online Academy: Role of Superfund Performance Measures - October 12, 2022, 1:00PM-3:00PM EDT (17:00-19:00 GMT). Role of Superfund Performance Measures is a two-hour webinar course that will identify the role of performance measures, including environmental indicators, how to justify their status, and how to achieve an under-control status at Superfund sites. By taking this course, participants will achieve the following objectives: Discover the origin and role of Government Performance and Results Act (GPRA) Measures; Explore the different types of internal Environmental Protection Agency (EPA) planning targets reported through the Superfund Enterprise Management System (SEMs) database; and, Learn about Environmental Indicators for Human Exposure and Groundwater Migration and how they are determined. The instructional methodology for this course includes lecture, group discussion, and quizzes. The target audience for this course is federal, state, and tribal representatives who work on Federal Facility cleanups. Ideally, students should have a basic understanding of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. This course is part of the Federal Facilities Academy training program. For more information and to register, please visit <https://clu-in.org/live/>.

ITRC Strategies for Preventing and Managing Harmful Cyanobacteria Blooms (Two Part Series) - October 13 and November 8, 2022. Cyanobacteria are microscopic, photosynthetic organisms that occur naturally in all aquatic systems but most often in freshwater systems. Under certain conditions, cyanobacteria can multiply and become very abundant, discoloring the water throughout a water body or accumulating at the surface. These occurrences are known as blooms. Cyanobacteria may produce potent toxins (cyanotoxins) that pose a threat to human health. They can also harm wildlife and domestic animals, aquatic ecosystems, and local economies by disrupting drinking water systems and source waters, recreational uses, commercial and recreational fishing, and property values. It is likely that continued population growth, land use change, increases in nutrient inputs to our waterways, and the warming climate will favor proliferation of these problematic species. Providing a range of practical approaches to minimize these blooms and their likely societal and wildlife effects is critical to our future vitality, health, and economic prosperity. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

ITRC 1,4-Dioxane: Science, Characterization & Analysis, and Remediation - October 18, 2022, 1:00PM-3:15PM EDT (17:00-19:15 GMT). 1,4-Dioxane has seen widespread use as a solvent stabilizer since the 1950s. The widespread use of solvents through the 1980s suggests its presence at thousands of solvent sites in the US; however, it is not always a standard compound in typical analytical suites for hazardous waste sites, so it previously was overlooked. The U.S. EPA has classified 1,4-dioxane as "likely to be carcinogenic to humans." Some states have devised health standards or regulatory guidelines for drinking water and groundwater standards; these are often sub-part per billion values. These low standards present challenges for analysis, characterization, and remediation of 1,4-dioxane. The ITRC team created multiple tools

and documents that provide information to assist all interested stakeholders in understanding this contaminate and for making informed, educated decisions. For more information and to register, please visit <https://itrcweb.org/> or <https://clu-in.org/live/>

How to Evaluate Soil Vapor Extraction (SVE) Remedy Performance: Guidance and a Tool from the US Department of Energy - October 26, 2022, 1:00PM-2:30PM EDT (17:00-18:30 GMT). Volatile organic compound (VOC) contamination in the vadose zone presents a potential threat to underlying groundwater and/or to nearby structures through vapor intrusion. Such contamination is often addressed using soil vapor extraction (SVE), in which a vacuum is applied to the unsaturated zone to remove VOCs from the soil gas through a physical, mass transfer and extraction process. Typical of such processes, SVE can exhibit a diminishing rate of contaminant extraction over time. Current SVE performance assessment guidance provides a structured approach for assessing remediation of volatile contaminant sources in the vadose zone to determine whether the remedy should be terminated, optimized, supplemented, or transitioned to another technology. Quantification of the impacts of the remaining vadose zone source on groundwater and soil gas concentrations is a key element of this performance assessment. This seminar will discuss the U.S. Department of Energy's SVE performance assessment guidance and the associated Soil Vapor Extraction Endstate Tool (SVEET) software, that has recently been updated as part of an Environmental Security Technology Certification Program (ESTCP) project. Application of the guidance and tool will be illustrated using information from the ESTCP demonstration and from an evaluation of a SVE system at the DOE Hanford Site. Collectively, SVE performance assessments provide a defensible technical basis for making decisions about vadose zone remediation to provide a path that protects human health and the environment while making effective use of limited resources. For more information and to register, please visit <https://clu-in.org/live/>

ITRC Vapor Intrusion Mitigation (VIM-1) - A Two Part Series - November 3 and 15, 2022. When certain contaminants or hazardous substances are released into the soil or groundwater, they may volatilize into soil gas. Vapor intrusion (VI) occurs when these vapors migrate up into overlying buildings and contaminate indoor air. ITRC has previously released guidance documents focused on VI, including the "Vapor Intrusion Pathway: A Practical Guidance" (VI-1, 2007) and "Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management" (PVI, 2014). However, ITRC has received multiple requests for additional details and training on mitigation strategies for addressing this exposure pathway. The ITRC Vapor Intrusion Mitigation Team (VIMT) created ten fact sheets, 16 technology information sheets, and 4 checklists with the goal of assisting regulators during review of vapor intrusion mitigation systems, and helping contractors understand the essential elements of planning, design, implementation, and operation, maintenance and monitoring (OM&M) of mitigation systems. The Vapor Intrusion Mitigation training is a series of eight (8) modules, presented over two sessions. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

NIEHS Climate Change and Health: Session II - Untangling Complex Exposures and Health Effects - November 4, 2022, 1:00PM-3:00PM EDT (17:00-19:00 GMT). The NIEHS Superfund Research Program (SRP) is hosting a Risk e-Learning webinar series focused on scientific research and tools that can be used to promote health and resilience to climate change. The series will feature SRP-funded researchers, collaborators, and other subject-matter experts who aim to better understand and address how climate change affects human exposures to hazardous substances and the public health consequences of a changing climate and identify ways to build health resilience. People are continually exposed to a complex mixture of environmental toxicants. The second session will describe how extreme weather events, such as hurricanes and wildfires, and other extreme events affect the distribution of these pollutants, their toxicity, and the potential increased risk of exposure to humans.

Presenters will introduce new models to track the movement of multiple contaminants in the environment and will discuss the health effects of these complex exposures. We will also hear about the NIH Climate Change and Health Initiative and other ongoing efforts at NIH to reduce the health consequences associated with climate change. This is the second session in a three part series. For more information and to register, please visit <https://clu-in.org/live/>.

> New Documents and Web Resources

Research Brief 333: Combining Arsenic Data Across Populations Sheds Light on Exposure Sources. By combining data across three different populations, NIEHS Superfund Research Program (SRP) researchers were able to better characterize sources of arsenic exposure that should be included in risk assessments. The study was a collaboration among the University of California (UC), Berkeley, University of New Mexico (UNM), and Columbia University SRP centers. Arsenic, naturally found in earth's crust, is associated with a range of health problems including diabetes, cardiovascular disease, and cancer. Health risk estimates are primarily based on exposure to arsenic in drinking water. Arsenic is mostly excreted from the body through urine. But the researchers found that comparisons of levels of arsenic that people ingest to levels of arsenic that they excrete were inconsistent. They believed that revealing other exposure sources in water, food, and dust might be important, especially for specific populations. To learn more and download the research brief, please visit https://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=333

Updated ITRC Per- and Polyfluoroalkyl Substances (PFAS) Fact Sheets Available Now. ITRC's PFAS Team has just published new updates to its popular PFAS Fact Sheets! This update includes an all new fact sheet covering Surface Water Quality, along with new content added to each of the existing PFAS Fact sheets, covering the following topics: Naming Conventions; Regulations; History and Use; Fate and Transport and Physical and Chemical Properties; Sampling Precautions and Laboratory Analytical Methods; Site Characterization and Media-Specific Occurrence; Treatment Technologies and Methods; Aqueous Film-Forming Foam; Human and Ecological Health Effects and Risk Assessment; Risk Communication; and Stakeholder Perspectives. To learn more and view the fact sheets, please visit <https://pfas-1.itrcweb.org/>

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 <https://clu-in.org/products/tins/>. The following resources were included in recent issues:

- Memorandum: Investigating Per- and Polyfluoroalkyl Substances Within the Department of Defense Cleanup Program
- Surface-Active Behavior of Select Per- and Polyfluoroalkyl Substances (PFAS) and Their Mixtures

NIEHS SRP Technology Profile for Continuous Monitoring Water Sensor for Arsenic, Mercury, and Other Contaminants. A Superfund Research Program (SRP)-funded small business developed a customizable sensor to continuously monitor water for arsenic, mercury, and cadmium, among other contaminants. A Business Innovation Research Grant from the NIEHS Superfund Research Program supported early work on the device. For more information, see https://www.niehs.nih.gov/research/supported/centers/srp/science_digest/2022/9/technology/index.cfm

> Conferences and Symposia

Design and Construction Issues at Hazardous Waste Sites (DCHWS) - West Fall 2022 Symposium - Denver, CO, October 31-November 2, 2022 . The applications of engineering and science associated with cleaning up hazardous waste sites continue to evolve rapidly. DCHWS aims to facilitate an interactive engagement between professionals from government and the private sector related to relevant and topical issues affecting their field. This will be a 2 -1/2 day event, sponsored by Society of American Military Engineers (SAME) Denver Metro Post (DMP) and US EPA, providing the latest techniques and challenges when working at Hazardous Waste sites. For more information, please visit:
<https://sites.google.com/samephiladelphiaipost.org/dchws/west-symposium/fall-2022-dchws?authuser=0>

FRTR Fall 2022 Federal Remediation Technologies Roundtable (FRTR) Fall 2022 Meeting: Strategies and Resources for Advancing Remediation Technology from R&D to Commercialization - Washington, DC, November 8, 2022. The FRTR Fall 2022 General Meeting will explore changing needs and opportunities for interagency collaboration in advancing innovative remediation technology from basic research, through development and evaluation, to commercialization for full-scale application to meet site cleanup goals. As the remediation technology industry evolves to meet new cleanup priorities and emerging technology needs, the role of Federal agencies and FRTR in technology transfer also needs to evolve. This meeting is open to the public. For details and registration, please visit <https://trainex.org/offeringslist.cfm?courseid=1145&all=yes>

Save the Date! 2023 National Brownfields Training Conference - Detroit, MI, August 8-11, 2023. The National Brownfields Training Conference is the largest event in the nation focused on environmental revitalization and economic redevelopment. Usually held every two years, the National Brownfields Conference attracts over 2,000 stakeholders in brownfields redevelopment and cleanup to share knowledge about sustainable reuse and celebrate the EPA brownfields program's success. Whether you're a newcomer or a seasoned professional, Brownfields 2023 offers something for you! For more information, please visit <https://brownfields2023.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. We invite sponsors to input information on their events at <https://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 Jean Balent at (202) 566-0832 or balent.jean@epa.gov. Remember, you may subscribe, unsubscribe or change your subscription address at <https://clu-in.org/techdirect> at any time night or day.

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