



Welcome to TechDirect! Since the May 1 message, TechDirect gained 69 new subscribers for a total of 40,245. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing 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 Announcement

**Applicants Selected for FY 2022 Brownfields Assessment, RLF, Cleanup (ARC) Grants and RLF Supplemental Funding.** In May, EPA announced that 227 communities were selected to receive 237 grant awards for a total Loan Fund, and Cleanup Grant funding. These Brownfields Grants will be used to assess, clean up and redevelop underutilized properties while protecting public health and the environment. Brownfields Grants not only support communities to address the environmental, public health, and social issues associated with contaminated land. EPA also announced \$107 million in supplemental funding to 39 successful, existing Revolving Loan Fund Grant recipients and redevelop brownfield sites. Supplemental funding for RLF Grants is available to recipients that have depleted their funds and have viable cleanup projects ready for work. RLF supplemental funding helps sustain and increase cleanup of brownfield sites, while also helping them become stronger, healthier, and more economically competitive. For more information, please visit <https://www.epa.gov/brownfields/applicants-selected-fy-2022-brownfields-assessment-rlf>

> Upcoming Live Internet Seminars

**Vapor Intrusion Mitigation (VIM-1) - A Two Part Series, June 2 and 14, 2022.** When certain contaminants or hazardous substances are released into the soil or groundwater, they may volatilize into soil gas. Vapor intrusion (VI) 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 Scree 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 technical 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 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/luve>.

**SERDP ESTCP: Demonstration and Validation of New Non-Invasive Technology to Assess Contaminant Storage in Low Permeability Media and Rock Matrix June 2, 2022.** This webinar will feature DoD-funded research estimating the rate coefficient governing dual-domain mass transfer (DDMT) as well as immobile porosity. Dr. Ramona Iery (NAVFAC Engineering and Expeditionary Warfare Center will cover the basis for monitoring DDMT using University) will talk about the team's new borehole technology, the Mobile/Immobile Porosity Exchange Tool (MI-PET). Finally, Dr. Fred Day-Lewis (Pacific Northwest National Laboratory) will demonstrate how geophysical methods. For more information and to register please visit <https://www.serdp-estcp.org/Tools-and-Training/MI-PET-Series/06-02-2022>.

**Spring 2022 FRTR Meeting - June 6 and 13, 2022.** The FRTR Spring 2022 Meeting will explore advances in applying artificial intelligence technologies to site cleanup. Artificial intelligence technologies are beginning to transform systems provide opportunities to access dangerous or toxic environments, and improve worker safety. Advances in machine learning are making it possible to process and analyze large data sets in new ways to support recent technology advances supporting site characterization and remediation, identify potential benefits, risks and limits of robotics and unmanned aerial systems to support site characterization and remediation, and discuss appropriate remediation decisions. For more information and to register please visit <https://clu-in.org/luve>.

**Connecting the Science to Managing LNAPL Sites a 3 Part Series - June 7 and 21, 2022.** The newly updated LNAPLs (Light Non-Aqueous Phase Liquids) 3-part training course series is based on the ITRC guidance: LNAPL Remedial Technologies (LNAPL-3, 2018) and focuses on connecting the science to managing LNAPL sites and helping you: build upon your understanding of LNAPL behavior in the subsurface (Part 1), develop your LNAPL core select/implement LNAPL technologies (Part 2). After this training series, the expectation is that you will have the skills and understanding to use ITRC science-based resources to improve decision making at your LNAPL sites. For understanding can hopefully be incorporated into your own LNAPL programs. It is expected that participants will attend this 3-part training series in sequence. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/luve>.

**Federal Facilities Online Academy: Resolving Issues before Formal Dispute - June 8, 2022, 1:00PM-3:00PM EDT (17:00-19:00 GMT).** Resolving Issues Before Formal Dispute is a two-hour webinar course that identifies key under a federal facility agreement. This webinar provides project management tips and techniques to address disagreements early in the process. By taking this course, participants will achieve the following objectives: Identify key members from different agencies; Learn how to prepare a team to handle conflict; Explore tips and techniques to improve communication and come to resolution; and, Understand when formal dispute should be considered. For

**ITRC Soil Background and Risk Assessment (SBR) - June 23, 2022, 1:00PM-2:30PM EDT (17:00-18:30 GMT).** While some state and federal agencies and other entities have guidance documents regarding soil background guidance document that summarizes the state of the science on this topic. The Soil Background and Risk Assessment ITRC guidance document released December 2021 is intended to fill the gap by providing a comprehensive background in risk assessments. It focuses on the process of establishing defensible background concentrations of naturally occurring or anthropogenic ambient chemicals that can be used when performing risk assessment at a Background and Risk Assessment Guidance Document (SBR-1) includes risk assessors, risk managers, and site investigators, which may include federal, state, tribal, and various local agency employees; contractors to these a consultants. For training purposes, the ITRC Soil Background and Risk Assessment team produced four videos, two of which will be viewed during the class. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/luve>.

> New Documents and Web Resources

**Updated Solidification/Stabilization Focus Area.** Solidification and stabilization are treatment technologies that achieve remediation goals by mixing contaminated materials with reagents that reduce leaching, and thus mobilize groundwater flow can leach contaminants from soil, sludge, and other wastes in the environment and transport them to groundwater or nearby surface water bodies, increasing potential exposure pathways for human and ecological Focus Area has been updated to reflect the current state of the science, including new screening questions for considering S/S as a remedy. Visit the updated Focus Area at <https://clu-in.org/solidification>.

**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 technology development. Recent issues, complete archives, and subscription information is available at <https://clu-in.org/products/tns/>. The following resources were included in recent issues:

- A Field Method to Quantify Chlorinated Solvent Diffusion, Sorption, Abiotic and Biotic Degradation in Low Permeability Zones
- Developing PIGE into a Rapid Field-Screening Test for PFAS
- Ion Exchange Membranes and Fibers as Passive Samplers for Chemically-Diverse PFAS
- Environmental Sequence Stratigraphy (ESS) as a Remedy Optimization Tool
- Groundwater Pump and Treat System Optimization Report U.S. DOE NNSA Pantex Plant, Texas
- Stable Carbon Isotopes for Tracing In Situ RDX Remediation
- Synergistic Reductive Dechlorination of 1,1,1-Trichloroethane and Trichloroethene and Aerobic Biodegradation of 1,4-Dioxane- Phase II
- Groundwater Chemistry, Hydrogeologic Properties, Bioremediation Potential, and Three-Dimensional Numerical Simulation of the Sand and Gravel Aquifer at Naval Air Station Whiting Field, Near Milton, Florida, 2015-20
- Numerical Modeling of Groundwater Flow in the Crystalline-Rock Aquifer in the Vicinity of the Savage Municipal Water-Supply Well Superfund Site, Milford, New Hampshire
- Natural Attenuation and Biostimulation for In Situ Treatment of 1,2-Dibromoethane (EDB)
- Bridging the Gap from Remedy-In-Place (RIP) to Response Complete (RC)

**A Review of Exit Strategies and Site Closeout Challenges at Navy Clean Up Sites (TR-NAVFAC-EXWC-SH-2211 March 2022).** This Naval Facilities Engineering Systems Command (NAVFAC) technical report identifies six as an array of approaches available to develop exit strategies. Three Navy case studies are provided as examples of sites that have implemented successful exit strategies that resulted in SC. View or download from [https://www.navfac.navy.mil/content/dam/navfac/Support/320Centers/Engineering%20Dep%20Expeditionary%20Wafac%20Center/Environmental/Restoration/exit\\_strategies.pdf](https://www.navfac.navy.mil/content/dam/navfac/Support/320Centers/Engineering%20Dep%20Expeditionary%20Wafac%20Center/Environmental/Restoration/exit_strategies.pdf) or <https://clu-in.org/luve>.

**EUGRIS Corner.** New Documents on EUGRIS, the platform for European contaminated soil and water information. More than four resources, events, projects and news items were added to EUGRIS in May 2022. These can be appropriate month and year for the updates in which you are interested.

> Conferences and Symposia

**2022 Environmental Measurement Symposium - Crystal City, VA, August 1-5, 2022.** The Environmental Measurement Symposium (EMS) is the combined meeting of the National Environmental Measurement Conference (N theme of the 2022 conference is Where Do We Go From Here? The Conference will include: a Technical Program featuring oral and poster presentations, a special half-day general session with a keynote speaker focused on the special keynote presentations on the conference theme, and luncheon presentations; an Exhibit Program showcasing the latest innovations in environmental monitoring; and an Innovative New Technology Showcase. For more

**2022 National Brownfields Training Conference - Oklahoma City, OK, August 16-19, 2022.** The National Brownfields Training Conference is the largest event in the nation focused on environmental revitalization and economic 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 new cowork something for you! For more information, please visit <https://brownfields2022.org/>.

**27th National Tanks Conference & Exposition - Pittsburgh, PA, September 13-15, 2022.** NEIWPCC is co-sponsoring the conference in partnership with U.S. EPA's Office of Underground Storage Tanks (OUST) and the A Officials (ASTSWMO). Anticipated topics of the plenary sessions and posters include innovative cleanup technologies and approaches to address leaking underground storage tanks (LUSTs), such as green remediation and high conceptual site models addressing emerging contaminants; and alternative fuels stored in underground storage tanks. For more information, please visit <https://neiwpc.org/our-programs/underground-storage-tanks/national-tanks-conference/>.

**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 <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](mailto:balent.jean@epa.gov). Remember, you may subscribe, unsubscribe or change your subscription address at <https://clu-in.org/techdirect/> at any time

may do so on CLU-IN at <https://clu-in.org/techdirect>. All



al of \$147.5 million in Brownfields Assessment, Revolving economic growth and job creation, but they also empower citizens who have demonstrated success in their work to clean these communities. These communities have made in [www.epa.gov/grants-and-funds](https://www.epa.gov/grants-and-funds).

/I) occurs when these vapors migrate up into overlying buildings during "Investigation, and Management" (PVI, 2014). ology information sheets, and 4 checklists with the goal of mitigation systems. The Vapor Intrusion Mitigation training is a

rch efforts to demonstrate geophysical approaches for g geoelectrical measurements. Then, Dr. Lee Slater (Rutgers) oods can be used to constrain parameter estimation for DDMT.

rm how people and machines work together. Robotics and ort remediation decisions. Specific objectives are: Review rropriate use of machine learning and artificial intelligence to

L Site Management: LCSM Evolution, Decision Process, and ceptual site model and LNAPL remedial goals (Part 2), and r regulators and other government agency staff, this improved [clu-in.org/blue](https://clu-in.org/blue).

ss formal options to address conflict before going to dispute actors that contribute to conflict when working with team more information and to register please visit <https://clu-in.org/blue/>.

, there is not one comprehensive and widely accepted defensible framework for establishing and using soil contaminated sites. The target audience for the ITRC Soil gencies; as well as potentially liable parties and their [clu-in.org/blue](https://clu-in.org/blue).

y, of the contaminants. Rain, stormwater runoff, and ical receptors. The CLU-IN Solidification/Stabilization (S/S)

te hazardous waste community interested in technology

pecific milestones along the path to site closeout (SC), as well <https://www.navy.mil/Press/2019/01/20190120%20NAVY%20CLEANUP%20SITES%20FINAL%2028MAR22.docx.pdf>

viewed at <http://www.epris.info/whatsnew.asp>. Then select the

NEMC) and the Forum on Environmental Accreditation. The e conference theme and updates from EPA program offices, information, please visit <https://www.envirosymposium.org/index.php>.

mic redevelopment. Held every two years, the National tier or a seasoned professional, Brownfields 2021 offers

ssociation of State and Territorial Solid Waste Management 1 resolution site characterization tools; development of LUST

ted. We invite sponsors to input information on their events at

night or day.



