



TechDirect, August 1, 2020

Welcome to TechDirect! Since the July 1 message, TechDirect gained 68 new subscribers for a total of 39,592. 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 2021 Environmental Workforce Development and Job Training (EWDJT)

Grants. This notice announces the availability of funds and solicits proposals from eligible entities, including nonprofit organizations, to deliver Environmental Workforce Development and Job Training (EWDJT) programs that recruit, train, and place local, unemployed and under-employed residents with the skills needed to secure full-time employment in the environmental field. The application submission deadline is September 22, 2020. For more information and application instructions, see <https://www.epa.gov/brownfields/fy-2021-environmental-workforce-development-and-job-training-ewdit-grants-0>.

Notice of Intent to Publish a Funding Opportunity Announcement for Superfund Hazardous Substance Research and Training.

The National Institute of Environmental Health Sciences released a "Notice of Intent to Publish" NOT-ES-20-021 about the intent to publish a Funding Opportunity Announcement (FOA) to solicit applications for the Superfund Hazardous Substance Research and Training Program, referred to as Superfund Research Program (SRP) Centers. SRP Center grants will support problem-based, solution-oriented research Centers that consist of multiple, integrated projects representing both the biomedical and environmental science and engineering disciplines; as well as cores tasked with administrative (which includes research translation), data management and analysis, community engagement, research experience and training coordination, and research support functions. The scope of the SRP Centers is taken directly from the Superfund Amendments and Reauthorization Act of 1986, and includes: (1) advanced techniques for the detection, assessment, and evaluation of the effect on human health of hazardous substances; (2) methods to assess the risks to human health presented by hazardous substances; (3) methods and technologies to detect hazardous substances in the environment; and (4) basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances. The Notice is being provided to allow potential applicants

sufficient time to develop meaningful collaborations and responsive projects/cores. The FOA is expected to be published in August 2020 with an expected application due date in February 2021. View more information at

<https://grants.nih.gov/grants/guide/notice-files/NOT-ES-20-021.html>.

> Upcoming Live Internet Seminars

Federal Facilities Online Academy - August 3 & September 14, 2020. This voluntary training program has been developed for EPA RPMs, project managers from other federal agencies, State government, and Tribal groups who work on federal facility Superfund cleanups. Please consider participating in all 12 courses, 11 Webinars and 1 In-Person Training, to obtain a certificate upon completion of the entire Federal Facility Academy series. For more information and to register for upcoming sessions or view archived sessions, see <https://trainex.org/offeringslist.cfm?courseid=1819>.

ITRC PFAS Virtual Training - August 11-13, 2020. As part of the DOE's Analytical Services Program's Virtual Training Workshop Series, ITRC is teaching a three-day PFAS seminar. The training will involve current updates on PFAS treatment and detection, sampling and analysis, management of PFAS contaminated sites, and regulations, both current and proposed. For more information and to register, see For more information and to register, see https://whova.com/web/analy_202009/?view=preview.

Revegetation of Mine Wastes in Arid Environments: Linking Above- and Below-Ground Performance - August 12, 2020, 1:00PM-2:30PM EDT (17:00-18:30 GMT). Hard rock mining results in extensive land disturbance due to economic mineral extraction and residual mine waste deposition. Revegetation accelerates reclamation of land disturbed by mining; however, the revegetation of mine waste sites in arid regions of the world has unique environmental challenges due to low water availability and sensitive ecologies. Further complicating the issue is the myriad of wastes that exist. Here we focus on mine tailings, which exhibit a wide range of pH and metal content, as well as waste rock. In this presentation, we will discuss what we have learned over the last decade about how below-ground metrics are related to and can predict revegetation success under a variety of conditions and revegetation approaches. We will present data from legacy and modern waste sites examining both direct planting into mine waste and cap and plant scenarios. We are using these data to identify below-ground metrics that correlate with vegetation establishment patterns and are easy to measure; and then using the identified metrics to develop guidance for prediction of tipping points for vegetation success or failure. An additional outcome of this work is creation of the University of Arizona Center for Environmentally Sustainable Mining which has facilitated a partnership with Arizona copper companies called the Collaborative Industry-University Research Initiative on Revegetation of Mine Wastes. This partnership has enabled both a comprehensive assessment of multiple revegetation strategies under diverse conditions and an open atmosphere wherein results are shared among all partners through annual reports and meetings. For more information and to register, see <https://clu-in.org/live>.

ITRC Integrated DNAPL Site Characterization - August 20, 2020, 1:00PM-3:15PM EDT (17:00-19:15 GMT). The Integrated DNAPL Site Characterization Team has synthesized the knowledge about dense non-aqueous phase liquid (DNAPL) site characterization and remediation acquired over the past several decades, and has integrated that information into a new document, Integrated DNAPL Site Characterization and Tools Selection (ISC-1, 2015). This guidance is a resource to inform regulators, responsible parties, other problem holders, consultants, community

stakeholders, and other interested parties of the critical concepts related to characterization approaches and tools for collecting subsurface data at DNAPL sites. After this associated training, participants will be able to use the guidance to develop and support an integrated approach to DNAPL site characterization, including: identify what site conditions must be considered when developing an informative DNAPL conceptual site model (CSM); define an objectives-based DNAPL characterization strategy; understand what tools and resources are available to improve the identification, collection, and evaluation of appropriate site characterization data; and navigate the DNAPL characterization tools table and select appropriate technologies to fill site-specific data gaps. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

ITRC Characterization and Remediation of Fractured Rock - August 25, 2020, 1:00PM-3:15PM EDT (17:00-19:15 GMT). The basis for this training course is the ITRC guidance: Characterization and Remediation of Fractured Rock. The purpose of this guidance is to dispel the belief that fractured rock sites are too complex to characterize and remediate. The physical, chemical and contaminant transport concepts in fractured rock have similarities to unconsolidated porous media, yet there are important differences. By participating in this training class, you should learn to use ITRC's Fractured Rock Document to guide your decision making so you can: develop quality Conceptual Site Models (CSMs) for fractured rock sites, set realistic remedial objectives, select the best remedial options, monitor remedial progress and assess results, and value an interdisciplinary site team approach to bring collective expertise to improve decision making and to have confidence when going beyond containment and monitoring -- to actually remediating fractured rock sites. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

ITRC Optimizing Injection Strategies and In situ Remediation Performance - August 27, 2020, 1:00PM-3:15PM EDT (17:00-19:15 GMT). ITRC developed the guidance: Optimizing Injection Strategies and In Situ Remediation Performance (OIS-ISRP-1) and this associated training course to identify challenges that may impede or limit remedy effectiveness and discuss the potential optimization strategies, and specific actions that can be pursued, to improve the performance of in situ remediation by: refining and evaluating remedial design site characterization data; selecting the correct amendment; choosing delivery methods for site-specific conditions; creating design specifications; conducting performance evaluations, and optimizing underperforming in situ remedies. The target audience for this guidance and training course is: environmental consultants, responsible parties, federal and state regulators, as well as community and tribal stakeholders. This training will support users in efficiently and confidently applying the guidance at their remediation sites. An optimization case study is shared to illustrate the use of the associated guidance document. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

ITRC Long-term Contaminant Management Using Institutional Controls - September 3, 2020, 1:00PM-3:15PM EDT (17:00-19:15 GMT). Institutional controls (ICs) are administrative or legal restrictions that provide protection from exposure to contaminants on a site. When ICs are jeopardized or fail, direct exposure to human health and the environment can occur. While a variety of guidance and research to date has focused on the implementation of ICs, ITRC's Long-term Contaminant Management Using Institutional Controls (IC-1, 2016) guidance and this associated training class focuses on post-implementation IC management, including monitoring, evaluation, stakeholder communications, enforcement, and termination. The ITRC guidance and training will assist those who are responsible for the management and stewardship of ICs. After attending the training, participants will be able to: describe best practices and evolving trends for IC management at individual sites and across state agency programs; use this guidance to improve IC reliability and prevent IC failures, improve existing, or develop new, IC Management programs, identify the pros

and cons about differing IC management approaches; use the tools to establish an LTS plan for specific sites; and use the elements in the tools to understand the information that should populate an IC registry or data management system. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

> New Documents and Web Resources

Superfund Remedy Report, 16th Edition (EPA 542-R-20-001). EPA prepares the Superfund Remedy Report to provide information and analyses on remedies EPA selected to address contamination at Superfund National Priorities List and Superfund Alternative Approach sites. This report is the latest in a series, prepared since 1991, on Superfund remedy selection. The latest edition focuses on the analysis of Superfund remedial actions selected in fiscal years 2015, 2016 and 2017 (July 2020, 85 pages). View or download at <https://clu-in.org/srr/>

ITRC Risk Communication Toolkit. This resource was developed by three current ITRC teams: Per- and Polyfluoroalkyl Substances (PFAS), 1,4-Dioxane, and Harmful Cyanobacterial Blooms (HCBs). The purpose of the Toolkit is to recognize that risk communication is broader than any specific environmental issue and highlight the value of this science-based communication approach. The Risk Communication Toolkit is a resource for aiding state personnel, other lead organizations, and stakeholders in understanding and communicating risk associated with emerging environmental issues and concerns. This Toolkit contains: an overview of risk communication concepts; steps to develop a risk communication plan and stakeholder outreach activities; guidance for drafting press releases and analytical result summary letters, case studies, and a risk communication plan template; and additional tools and case studies added and updated by ITRC teams as they are developed. View and use at <https://rct-1.itrcweb.org>.

Superfund Research Program (SRP) Research Brief 307: Clay Layers May Worsen Arsenic Contamination. Layers of clay are widely thought to protect groundwater aquifers from above-ground contaminants. But according to a new NIEHS Superfund Research Program (SRP) study, these clay layers may play a role in increasing groundwater arsenic contamination. At a site near the village of Baylakandi, Bangladesh, Columbia University SRP Center researchers observed increasing concentrations of arsenic over time in deeper wells, revealing that clay layers rich in organic carbon may enhance arsenic contamination, rather than protect against it. View more information at https://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=307.

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:

- First Monitored Natural Recover Report, Data Collections 2013-2016 Palos Verdes Shelf, Operable Unit 5 of the Montrose Chemical Corporation Superfund Site, Los Angeles County, California
- Pilot Scale Assessment of a Deployable Photocatalytic Treatment System Modified with BiPO₄ Catalyst Particles for PFAS Destruction in Investigation-Derived Wastewaters
- A Combined Photo/Electrochemical Reductive Pathway Towards Enhanced PFAS Degradation

- A Framework for Assessing Bioaccumulation and Exposure Risks of Per- and Polyfluoroalkyl Substances in Threatened and Endangered Species on Aqueous Film Forming Foam (AFFF)-Impacted Sites
- Modeling Pilot-Scale GAC PFAS Adsorption for the Simulation of Full-Scale Performance and Costs
- Engineering Issue: Soil Vapor Extraction (SVE) Technology
- Record of Decision for the Ballard Mine
- Discharge System 2019 Annual Operations and Maintenance Report Berkeley Pit and Discharge Pilot Project
- Bonita Peak Mining District BioCement-A Pilot Study
- In-Pit Batch Treatment of Arsenic: Laboratory Studies and Field Trial

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 5 resources, events, projects and news items were added to EUGRIS in July 2020. 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 resources were posted on EUGRIS:

Supplementary Report 1 of the SuRF-UK Framework: A General Approach to Sustainability Assessment for Use in Achieving Sustainable Remediation (2020).

This collection of documents describe a general approach to sustainability assessment that consolidates a range of guidance issued by SuRF-UK. Part 1 also provides guidance on how to carry out sustainability assessments for remediation design and strategy setting and remediation technology selection. View or download at <https://www.claire.co.uk/projects-and-initiatives/surf-uk> .

Supplementary Report 2 of the SuRF-UK Framework: Selection of Indicators/Criteria for Use in Sustainability Assessment for Achieving Sustainable Remediation (2020).

Part 2 describes in detail the nature and rationale for 15 SuRF-UK headline indicator categories and an approach to indicator selection and use. The report also includes a checklist of possible individual indicators/criteria provided as an appendix. View or download at <https://www.claire.co.uk/projects-and-initiatives/surf-uk> .

> Conferences and Symposia

Virtual National Environmental Monitoring Conference (NEMC), Online, August 3-21, 2020. NEMC is the largest conference in North America focused on environmental measurements. In 2020, NEMC will be held as a virtual conference with the focus on the technical presentations. The theme of this year's conference is The Environment in 2020: Past, Present and Future. The Virtual event will include: a Technical Program featuring 138 oral presentations, a special half-day general session with a keynote speaker focused on the conference theme and updates from EPA program offices, two special keynote presentations on the conference theme, and five luncheon presentations; a Virtual Poster Session with 39 poster presentations; a Virtual Exhibit Program showcasing the latest innovations in environmental monitoring; and an Innovative New Technology Showcase. For more information and to register, see <https://nemc.us/index.php> .

Call for Ideas Extended and Registration Open! 2020 SERDP and ESTCP Symposium. The Symposium will continue as a virtual conference the week of November 30 - December 4, 2020 in response to the COVID-19 pandemic. The SERDP and ESTCP Symposium is the nation's largest conference focusing on the Department of Defense's priority environmental and installation energy issues. The

Symposium brings together environmental and energy researchers and technology developers with the defense end-user and regulatory communities to showcase cutting edge environmental technologies and ideas. The 2020 Symposium will offer 16 technical sessions, a number of short courses, more than 450 technical poster presentations, exhibitors from funding and partnering organizations, and a variety of networking opportunities for the more than 1,000 attendees. The deadline for poster abstract submissions has been extended to Friday, August 14, 2020. For more information and to register, see <https://web.cvent.com/event/a0cfb891-60fa-4233-8cc6-189bbf947195/summary>

Call for Ideas! 2021 National Brownfields Training Conference, Oklahoma City, OK, April 27-30, 2021. Submit your ideas for dynamic educational sessions that encourage conversation and participation from your fellow attendees. The Brownfields 2021 educational program will motivate brownfields stakeholders to engage, learn, and share their experiences and knowledge of community revitalization challenges and solutions. The conference planning committee is looking for session ideas in 12 topic areas. Submissions are due by August 24, 2020. For more information and to submit an idea, see <https://brownfields2021.org/sessions/call-for-ideas/>.

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 (703) 603-9924 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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