Technology Innovation News Survey

Entries for October 16-31, 2023

Market/Commercialization Information

F - RT CANEY SUPERFUND SITE OIL REMEDIATION ACT (SOL)
U.S. Environmental Protection Agency, Region 7, Kansas City, KS

This is a historically contaminated site (HUC/BRISON) set-aside under NACI code 562100. EPA Region 7, requires a contractor to perform a remedial action for lead-contaminated residential properties within Operable Unit-1 (OU1) of the Caney Superfund Site. The project consists of a characterization of sites, lead testing of properties, and mitigation of lead hazards. The project is expected to reduce the risk of lead exposure to children and adults living in the area.

B - BG2P-VP FOR ENVIRONMENTAL-SAMPLING REQUIREMENTS CONTRACT (SOL)
U.S. Army Corps of Engineers, Buffalo District, Buffalo, NY

This is a limited small business set-aside under NACI code 514630. The U.S. Army Corps of Engineers calls for a contractor to perform environmental sampling at the Rausch Road, Buffalo Naval Shipyard site. The project is designed to assess groundwater and surface water conditions for the development of site-specific remedial actions.

F - JOINT BASE CAPO CBOC OPTIMIZED REMEDIATION CONTRACT (ORC) (SOL)
U.S. Army Corps of Engineers, Fort Benning, GA

This is a sources sought notice for marketing research purposes only. The U.S. Army Corps of Engineers, Fort Benning, seeks qualified contractors who are interested in providing follow-on remediation services at the 44-acre Shallow Land Disposal Area (SLDA) located on Fort Benning, GA. The contract is intended to focus on the implementation of site-specific, optimized remediation strategies that effectively address contamination without exceeding budget or schedule constraints.

SLDA REMEDIATION SERVICES (SOL)
U.S. Army Corps of Engineers, Buffalo District, Buffalo, NY

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CleanUp News

NEVERGRADEN, P. AND R. Dupuis: Remediation Technologies Symposium 2023, 11-13 October, New York, USA

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IN-SITU PFAS IMMOBILIZATION AND BEYOND: LEVERAGING BIOCHEMISTRY AND PHOTOREDOX AIDING INTO THE ENVIRONMENT FOR SUCCESSFUL SITE MANAGEMENT
Markle, D. B. and R. Dupuis: Remediation Technologies Symposium 2023, 11-13 October, New York, USA

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TECHNICAL SUPPORT FOR MONITORED NATURAL ATTENUATION OF A URANIUM, THORIUM, AND MERCURY CONTAMINATED WETLAND ALONG THE SAVANNAH RIVER, USA
Kaplan, D. I. The Remedex Virtual Summit, 14-16 November, 2023

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Demonstrations / Feasibility Studies

SUBSURFACE PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) DISTRIBUTION AT TWO CONTAMINATED SITES

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USING GEOSPATIAL ANALYSES TO IDENTIFY CONTAMINANT SOURCE AREA AND TRANSPORT OF A PFAS PLUME
Small, E. B. 2023 Emerging Technologies In The Environment Conference, 18-19 April, Chapel Hill, NC, 17-18 October, 2023

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EVALUATING AND APPLYING SITE-SPECIFIC NAPL DISSOLUTION RATES DURING REMEDIATION

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FIELD DEMONSTRATION OF IN-SITU MICROMOLECULAR FLUSHING FOR ENHANCED REMOVAL OF MULTIPLE CHLORINATED SOLVENTS CONTAMINATED AQUIFER
Ma, X., P. Zhang, and Z. Cheng: 2023 Emerging Technologies In The Environment Conference, 18-19 April, Chapel Hill, NC, 17-18 October, 2023

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Research

RESEARCH BRIEF 347: HIGH-TEMPERATURE BIOCHAR FOR ARSENIC REMEDIATION
National Institute of Environmental Health Sciences, Superfund Research Program, November 2023

Adding biochar produced at high temperatures may be an effective way to immobilize arsenic in sediment, according to NIEHS-funded research. Researchers hypothesized that heating the biochar to different temperatures would affect the chemical characteristics of the biochar, and therefore its ability to immobilize arsenic. To test these hypotheses, the researchers conducted a series of experiments measuring the biochar's immobilization capacities under simulated environmental conditions. The results suggested that biochar produced at high temperatures can be effective for immobilizing arsenic, providing a promising alternative for remediation efforts.
Using 19F NMR to Investigate Cationic Carbon Dot Association with Per- and Polyfluoroalkyl Substances (PFAS)

The study focused on determining if nanoscale polymeric carbon dots are a viable sorbent material for PFAS and developing fluorine nuclear magnetic resonance spectroscopy (19F-NMR) methods to probe interactions between carbon dots and PFAS at the molecular scale. Fluorescent carbon dots (FCDs) were synthesized using silane coupling agents to target anionic PFAS by promoting electrostatic interactions. FCDs were exposed to PFAS to assess their adsorption capacities. PFAS sorption isotherms were measured for PFAS concentrations ranging from 0.1 to 10 mg/L. These results were compared with adsorption capacities for anionic PFAS in the literature.

Transport and Natural Attenuation of Benzene Vapor from a Point Source in the Vadose Zone

A column experiment combined with a model study was conducted to investigate the influence of soil type, vadose zone thickness, and soil moisture content on benzene vapor transport and natural attenuation in the vadose zone. Data showed that vapor migration in soil is influenced by soil properties, including soil type and moisture content. The study concluded that the vadose zone thickness significantly affects benzene vapor migration.

General News

REMOTE SENSING TOOLS FOR ENVIRONMENTAL MONITORING AND CERTIFICATION OF WELL SITES

Remote sensing tools were developed using Earth Observation (EO) image data and cutting-edge machine-learning (ML) and artificial intelligence (AI) technologies to process large volumes of remotely-sensed imagery quickly and efficiently. This will help to detect discharges in their early stages and prevent environmental damage.

DEVELOPMENT OF SCALABLE REACTIVE TRANSFORMATIVE FRAMEWORK FOR PFAS

A project tested, validated, and developed digital tools to monitor terrestrial and wetland environments impacted by oil and gas operations. Remote sensing tools were developed using Earth Observation (EO) image data and cutting-edge machine-learning (ML) and artificial intelligence (AI) technologies to process large volumes of remotely-sensed imagery quickly and efficiently. This will help to detect discharges in their early stages and prevent environmental damage.