Entries for July 16-30, 2025

Market/Commercialization Information

REMOVAL AND DISPOSAL OF PFAS/PFOA COMPROMISED SOIL (SOL)
U.S. Department of the Army, National Guard Bureau, USPFO Activity WIANG 115, Madison, WI
Contract Opportunities on SAM.gov W50S9F25Q0004, 2025

This is a total small business set-aside under NAICS code 562910. The 115th Fighter Wing at Dane County Regional Airport--Truax Field in Madison, Wisconsin, requires a contractor to remove and dispose of PFAS/PFOA-compromised soil in accordance with laws and regulations. There is a single soil pile that is estimated at 13,200 cubic yards of material and an estimated 19,600 tons. The work includes sample collection and analysis to characterize the extent of soil contamination. Sample results will be used to determine the appropriate method of disposal (hazardous vs. non-hazardous) or treatment for these soils. Using sample results, the contractor will load, transport, and dispose of the soil at an EPA-approved disposal facility, to be identified and coordinated by the contractor, in accordance with all federal, state, and local requirements. The award will be a firm-fixed-price contract with a Period of Performance of one 180-day Base Period, followed by six option periods: three for compromised waste disposal and three for non-compromised waste disposal. Each option period will have a 180-day Period of Performance. The exercise of each option is dependent upon available funding. Offers are due by 2:00 PM CDT on September 19, 2025. https://sam.gov/opp/331ddfaa86554d66ab4c474dd05c7d44/view

FORMOSA MINE SUPERFUND SITE, OPERABLE UNIT 1 (OU1) REMEDIAL ACTION PROJECT, RIDDLE, OREGON (PRESOL)
U.S. Army Corps of Engineers, Northwestern Engineer Division, Seattle, WA
Contract Opportunities on SAM.gov W912DW25R0008, 2025

When this solicitation is released on or about September 2, 2025, it will be competed as a full and open competition under NAICS code 562910. USACE's Seattle District is seeking a contractor for the Formosa Mine Remedial Action Capping Project in Riddle, Oregon. The project SOW consists of activities necessary to implement primarily the earthwork-related requirements of the EPA's ROD for the Formosa Mine Superfund Site OU1. OU1 includes all surface and subsurface mine materials deposited outside of the underground mine workings and considered "source materials" for the site. These include materials excavated during construction and operation of the mine, such as waste rock, ore, tailings, construction rock, road surfaces, and contaminated soils. Objectives of the OU1 remedial action are to remove, consolidate, and restrict or minimize the interaction of contaminant source materials with precipitation, surface water runoff, and groundwater. The remedial approach focuses on preventing direct exposure to mine waste with elevated metal concentrations and reducing acid rock drainage generation, reducing impacts on groundwater and surface water. The proposed project award will be a firm-fixed-price contract and is predominantly construction. The magnitude is estimated to be in the range of $25,000,000 and $100,000,000. The contract will require 100% payment and performance bonds. There is no solicitation at this time. https://sam.gov/opp/5b8582e7d8f14db280bda8d1bb4762ae/view

STRATEGIC ENVIRONMENTAL RESEARCH AND DEVELOPMENT PROGRAM (SERDP) - OPEN TOPICS BROAD AGENCY ANNOUNCEMENT (BAA) (PRESOL)
U.S. Army Corps of Engineers, Humphreys Engineer Center Support Activity, Alexandria, VA
Contract Opportunities on SAM.gov W912HQ25S0004, 2025

The DoD SERDP Office is interested in receiving white papers for research focusing on Environmental Restoration, Munitions Response, Resource Conservation and Resilience, and Weapons Systems and Platforms technologies under NAICS code 541715. This announcement declares SERDP's intent to competitively fund research and development for environmental research that addresses the topic areas set forth in the Announcement. The Announcement and complete submittal instructions are found on https://serdp-estcp.mil/workwithus. No request for proposals, solicitation, or other announcement will be made. It is the proposer's sole responsibility to ensure the white paper is received by SERDP. Awards will take the form of contracts. Submission of white papers is not restricted in any way to any particular entity. The Government will not pay for any costs associated with preparing white papers or travel to present oral presentations in support of full proposals. To be eligible for consideration, readers wishing to respond to this announcement must submit a white paper in accordance with all instructions on the SERDP website. This solicitation will remain open for one year from the date of publication, or until replaced by a successor BAA, whichever comes first. No faxed or hard copy submissions will be accepted. https://sam.gov/workspace/contract/opp/6bbc4b18665c4f2fb8bbf9d303b83836/view

ENVIRONMENTAL SECURITY TECHNOLOGY CERTIFICATION PROGRAM (ESTCP) - ENVIRONMENTAL TECHNOLOGY DEMONSTRATIONS (PRESOL)
U.S. Army Corps of Engineers, Humphreys Engineer Center Support Activity, Alexandria, VA
Contract Opportunities on SAM.gov W912HQ25S0005, 2025

The ESTCP Office is interested in receiving white papers for innovative technology demonstrations that address DoD environmental and installation energy requirements as candidates for funding. The Announcement and complete submittal instructions are found at https://serdp-estcp.mil/workwithus. Awardees will be selected through a multi-stage review process. The white paper review step allows interested organizations to submit technology demonstrations for Government consideration without incurring the expense of a full proposal. Based upon evaluation, each of the white paper submitters will be notified as to whether ESTCP requests or does not request the submission of a full proposal. As noted in the instructions, evaluation criteria for white papers are Technical Merit and ESTCP Relevance and each is weighted equally. Due to the anticipated volume of white papers that will be received, the Government will not provide debriefs to those who are not requested to submit a full proposal. Instructions for preparing a full proposal will be provided at the time of notification. A request for submission of a full proposal does not indicate a decision has been made to make an award. Evaluation criteria for full proposals will include Cost/Benefit of Technology, Transition Potential, and Cost of Proposal in addition to the criteria above. ESTCP may make multiple awards up to a collectively shared maximum value of $10,000,000.00 under this BAA. To be eligible for consideration, parties wishing to respond to this announcement must submit a white paper in accordance with the instructions on the website. This solicitation will remain open for ~1 year from the date of publication, or until replaced by a successor BAA. No faxed or hard copy submissions will be accepted. https://sam.gov/workspace/contract/opp/b65a7529a7f0465a9c20c5bd92cd7846/view

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Cleanup News

ENHANCED IN SITU BIOREMEDIATION OF CHLORINATED ETHENES: FROM IN SITU MICROCOSMS TO FULL-SCALE APPLICATION
Polasko, A.L., W. Ponticello, S. Mahendra, and L. LaPat-Polasko.
Bioremediation Journal 1-17(2024)

Concentrations >20 mg/L of cVOCs, including PCE, TCE, and cDCE, have been present in site groundwater for over 40 years. To promote a faster cleanup time, an in situ bioremediation approach was evaluated using In-Situ Microcosms® (ISMs) followed by a full-scale in situ bioremediation approach. The study evaluated slow-release versus quick-release carbon substrates with and without bioaugmentation using the chlorinated ethene-degrading culture, SDC-9™. After a three-month incubation period, the ISMs were retrieved. The ISMs amended with a carbon source with or without bioaugmentation displayed a >93% TCE reduction, which corresponded to an increase in cDCE in all the ISMs. The *Dehalococcoides* population and gene abundances associated with chlorinated ethene biodegradation (tceA, bvcA, vcrA) increased three orders of magnitude in the bioaugmented ISMs over the natural attenuation ISM and carbon source only amended ISMs. The SDC-9 and AquaBupH®, EOS®, and buffer-amended ISM unit showed the highest level of VC and a similar level of ethene to the SDC-9 and EHC® ISMs. However, the AquaBupH and SDC-9 ISM displayed the highest level of acetate, demonstrating active fermentation processes. Results indicated that a combined approach of biostimulation along with bioaugmentation effectively promoted conditions conducive to reductive dechlorination. The full-scale in situ bioremediation system coupled biostimulation with bioaugmentation using SDC-9 to successfully reduce chlorinated ethenes in groundwater. EOS-100® served as a sustained carbon source along with CoBupH, facilitating the production of hydrogen through volatile fatty acid fermentation. This led to the reduction of chlorinated ethenes over the subsequent three years, showcasing minimal rebound in contaminant levels. Two rounds of bioaugmentation increased the *Dehalococcoides* population, accelerating the biodegradation processes and setting up the site for monitored natural attenuation. This study shows that using ISMs to guide full-scale bioremediation design resulted in an effective cVOC biodegradation system that led to quicker and more sustainable cleanup.

WHOLE META GENOME SEQUENCING AND 16S RRNA GENE AMPLICON ANALYSES REVEAL THE COMPLEX MICROBIOME RESPONSIBLE FOR THE SUCCESS OF ENHANCED IN-SITU REDUCTIVE DECHLORINATION (ERD) OF A TETRACHLOROETHENE-CONTAMINATED SUPERFUND SITE
Reiss, R.A., P.A. Guerra, O. Makhnin, and M. Kellom. PLoS ONE 20(2):e0306503(2025)

The North Railroad Avenue Plume (NRAP) Superfund site demonstrates successful chlorinated solvent bioremediation. The presence of tetrachloroethene biodegradation byproducts, organohalide respiring genera, and reductive dehalogenase (rdh) genes detected in groundwater samples indicated that enhanced reductive dechlorination (ERD) was the remedy of choice. This was achieved through biostimulation by mixing emulsified vegetable oil into the contaminated aquifer. This report combines metagenomic techniques with site monitoring metadata to reveal new details of ERD. DNA extracts from groundwater samples collected prior to and at four, 23, and 39 months after remedy implementation were subjected to whole metagenome sequencing (WMS) and 16S rRNA gene amplicon (16S) analyses. Response of the indigenous NRAP microbiome to ERD protocols was consistent with results obtained from microcosms, dechlorinating consortia, and observations at other contaminated sites. WMS detects three times as many phyla and six times as many genera as 16S. Both techniques reveal abundance changes in *Dehalococcoides* and *Dehalobacter* that reflect organohalide form and availability. Methane was not detected before biostimulation but appeared afterwards, corresponding to an increase in methanogenic *Archaea*. Assembly of WMS reads produced scaffolds containing rdh genes from *Dehalococcoides*, *Dehalobacter*, *Dehalogenimonas*, *Desulfocarbo*, and *Desulfobacula*. Anaerobic and aerobic cometabolic organohalide-degrading microbes that increase in abundance include methanogenic *Archaea*, methanotrophs, *Dechloromonas*, and *Xanthobacter*, some of which contain hydrolytic dehalogenase genes. Aerobic cometabolism may be supported by oxygen gradients existing in aquifer microenvironments or by microbes that produce O2 via microbial dismutation. The NRAP model for successful ERD is consistent with the established pathway and identifies new taxa and processes that support this syntrophic process. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0306503

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Demonstrations / Feasibility Studies

QUANTIFYING PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN AIR EMISSIONS: LAB & FIELD EXPERIENCES FROM A HAZARDOUS WASTE INCINERATOR
Hofman, J., G. Jacobs, B. Baeyens, A.R. De Carvalho, W. Aerts, S. Voorspoels, G. Van den Bergh, M. Van Deun, P. Berghmans, A. Van Brecht, and G. Otten.
Environment International 200:109541(2025)

Methodological developments and validation experiments led to a new compendium method (LUC) for the quantification of PFAS in air emissions. Relevant experience with the proposed OTM-45 method was obtained through dedicated lab experiments and 15 repeated stack measurements at a hazardous waste-to-energy plant. The sampling, extraction, and analytical procedures were optimized through different lab and field validation exercises, resulting in the first available regulatory method to detect and quantify PFAS in air emissions (LUC/VI/003). This method has been applied to various stacks and industries to collect evidence on prevailing concentration levels, compositional fingerprints, and impact evaluation from gas abatement technologies. The need for harmonization of both PFAS sampling and analytical procedures is stressed to guarantee comparability of PFAS emission results. This methodological evidence paves the way for more standardized emission monitoring, more stringent environmental standards, and improved public health protection.
https://www.sciencedirect.com/science/article/pii/S0160412025002922/pdfft?md5=66c159cad42cdbfd422cb4ed20fff0d&pid=1-s2.0-S0160412025002922-main.pdf

THERMAL TREATMENT OF HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA) USING A PILOT-SCALE RESEARCH COMBUSTOR
Weber, N.H., G.V. West, W.R. Roberson, J.C. Mackie, J.M. Mattila, P. Burnette, M. Allen, W. Preston, W.P. Linak, and J.D. Krug.
Journal of Hazardous Materials 495:138905(2025)

The thermal decomposition of single-component aqueous solutions of the GenX process chemical hexafluoropropylene oxide dimer acid (HFPO-DA) was investigated in a pilot-scale research combustor. Two solutions containing target HFPO-DA concentrations of ~500 and 4,000 mg/L were atomized at post-flame temperatures of ~920, 860, and 750°C. The stack gases were characterized for combustion products, including fluorocarbon products of incomplete combustion (PICs). Analytical techniques included Other Test Method 50 and real-time analysis using Fourier transform infrared spectroscopy and chemical ionization mass spectrometry. Quantum chemical calculations were performed to identify pathways for the thermal decomposition of HFPO-DA. Identified PICs included 1H-perfluoroalkanes, fluoroether E-1 (heptafluoropropyl 1,2,2,2-tetrafluoroethyl ether), and two ultra-short-chain PFCAs (trifluoroacetic acid [TFA] and perfluoropropionic acid [PFPrA]). Most PIC concentrations increased with decreasing peak temperatures, with ~40-60 % of the fluorine in the HFPO-DA converted into PICs at ~750°C. At higher peak temperatures, lower PIC concentrations were observed, suggesting that temperature is a critical parameter for mineralization. Modeling results proposed that the thermal decomposition of HFPO-DA can pass through 1,1,1,2,2,3,3-heptafluoro-3-[(1,2,2-trifluoroethenyl)oxy]propane (perfluoropropylvinyl ether [PPVE]) or fluoroether E-1 intermediate species, with the PPVE route offering lower energy barriers.

INTEGRATED REMEDIATION THROUGH SOLIDIFICATION AND DEWATERING OF CONTAMINATED SOIL FROM LABORATORY INVESTIGATION TO IN-SITU APPLICATION
Deng, T., Y. Deng, H. Liu, F. Liu, Z. Hong, and X. Geng.
Soils and Foundations 65(4):101602(2025)

A combined vacuum dewatering-solidification/stabilization technique (SSVD) was proposed and explored. The method increases the water-to-binder ratio to ensure even mixing of the binder and heavy metal-contaminated soil, followed immediately by vacuum dewatering. Zinc-contaminated soil was studied, as zinc is a well-known factor that decreases compressive strength and cementation speed. The vacuum dewatering successfully removed water from solidified soil during the initial 12 h of setting and hardening in the field, indicating the feasibility of more water incorporation to raise the mixing workability. The process can enhance the microstructure to prevent the migration of contaminants and extract the heavy metals from the solidified mass through cation exchanges. After 28 days of curing, lab tests showed a 1.9 to 4.1 times increase in strength and a 1.7 to 17.8 times decrease in permeability after dewatering. In the field, the values increase by 1.8 times and decrease by 1.7 times, respectively. The Zn^{2+} observed diffusivity also decreases by 2.0 times after dewatering in the lab. Microstructure analysis reveals that vacuum dewatering significantly reduces the porosity of the solidified matrix, enhancing its integrity. https://www.sciencedirect.com/science/article/pii/S0038080625000368/pdfft?md5=921ade41b1dbd2ec56a5b7d0b7502ef1&pid=1-s2.0-S0038080625000368-main.pdf

IN-SITU REMEDIATION EXPERIMENT AND FIELD APPLICATION OF HORIZONTAL WELLS IN CONTAMINATED SITES
Kong, L., Y. Wang, B. Zhang, C. Feng, A. Gu, and X. Huang.
Journal of Environmental Chemical Engineering 13(5):117737(2025)

Horizontal well jet injection technology to remediate contaminated sites in situ was studied through laboratory experiments and field tests. The jet injection process was simulated through vertical submerged jet scouring of the loading soil in the lab. The field test was conducted at a contaminated site with a plume area of 3,004.8 m. Based on the lab results, the relationship between scour hole dimension, soil parameters, and jet parameters was analyzed. The effect of remediation was evaluated within 28 days after injection. The results showed that soil pressure rapidly decreases at the beginning of the injection, then gradually decreases to a stable value. The dimension of the scouring hole is positively correlated with the injection pressure and average particle size of the soil, and is negatively correlated with clay content. After 21 days of horizontal well injection, contaminant concentrations were lower than the standard requirement.
https://www.sciencedirect.com/science/article/pii/S2213343725024339/pdfft?casa_token=MwjvY3LtZ_AAAAAA:MbtMloGDWpIHXRrnWiGATdggAZg0vJP1yEaEU3CtMX3p1xuDEk0ZGZSqHDEdX01YiEYpdfibCA&md5=d1ecf4e90cfd66ddec9d58a41c6ce

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Research

IMMOBILIZATION OF PER- AND POLYFLUORINATED ALKYL SUBSTANCES (PFAS) FROM FIELD CONTAMINATED GROUNDWATER BY A NOVEL ORGANO-CLAY VS. COLLOIDAL ACTIVATED CARBON UNDER FLOW CONDITIONS
Gunarathne, V., T.M. Melo, M. Schauerte, F. Groth, M. Slany, and J. Rinklebe.
Journal of Hazardous Materials 488:137273(2025)

Fluorolock® and Intraplex®, which represent novel and unique adsorptive materials, were specially developed to remediate PFAS in situ in the saturated zone. The potential of both materials to immobilize PFAS in soil under flow conditions was evaluated via soil column experiments using groundwater contaminated with PFAS in the field. The potential ecotoxicological effects of both materials on aquatic organisms were assessed by exposing the soil column effluent to *Daphnia magna*. Soils amended with Fluorolock and Intraplex significantly reduced PFAS leaching. Intraplex had higher PFAS immobilization efficiency than Fluorolock, likely due to its higher carbon content (84 % higher) and larger specific surface area (93 % higher). Fluorolock and Intraplex resulted in changes in water parameters; however, the effluent from soil amended with Fluorolock exhibited mild toxicity, whereas the amended with Intraplex was not toxic to *D. magna*. The distinct PFAS immobilization and the respective toxicity outcomes, with Fluorolock showing mild toxicity and Intraplex exhibiting no toxicity to D. magna, indicate that Fluorolock and Intraplex could be suitable for the remediation of PFAS-contaminated groundwater.

TREATMENT OF GASOLINE-CONTAMINATED SOIL USING PROCESS OPTIMIZED FENTON OXIDATION TECHNIQUE: AN ENVIRONMENTAL MANAGEMENT AND CONTAMINATION MITIGATION APPROACH
Akpoveta, V.O., J.O. Thomas, E.Q. Umudi, C.O. Ekwe, J. Arigbede, B. Ogbolu, and F. Olumide.
Remediation 35(3):e70022(2025)

This study applied process-optimized Fenton-reactants to treat gasoline-contaminated soil. Optimization protocols and characterization of soil quality indicators followed standard procedures, with the application of molecular spectroscopy to determine total petroleum hydrocarbon (TPH) content as gasoline. Gasoline-contamination severely impacted pH (6.70-5.40), conductivity (262-137 μS/cm), phosphorus (8.30 to 6.20 mg/kg), and TPH concentrations (25.0-1,400 mg/kg). Soil texture and heavy metals were not significantly affected. Treatment efficiency was monitored by evaluating soil quality indicators, heavy metals, and TPH. Conductivity, pH, organic carbon, organic matter, TPH, and metals removal were improved after optimized Fenton-oxidation treatment, which indicates the effectiveness of the technique. The determined optimal concentration of Fenton-reactants from the process optimization was 50% v/v H_2O_2 and 250 mg/L $FeSO_4$, at a determined optimal temperature of 30°C and pH 4. The optimized technique yielded excellent results with a significant decrease (92%) in TPH content after 9 h. Kinetics followed a zero-order mechanism with a rate constant of 120.18 mg/kg/hr and a half-life of 5 h, 49 min. The technique was effective in removing gasoline contaminants and restoring lost soil properties.

MODEL-BASED APPROACH TO DETERMINE CRITICAL DESIGN PARAMETERS FOR TANDEM CIRCULATION WELL REMEDIATION SYSTEMS
Yang, S., Z. Wen, Q. Zhu, S. Yuan, and Y. Li. I Groundwater 63(3):371-386(2025)

A study employed regionalized sensitivity analysis with Latin Hypercube Sampling (LHS) to identify the most sensitive parameters in lab tandem circulation well (TCW) experiments, reducing the number of parameters to estimate. The estimated parameters were used to construct a reactive transport model with periodic boundary conditions to enhance its universality for in situ TCE bioremediation through electrolysis, considering mutual interactions among well clusters. Results revealed the mechanisms that influence the operating parameters and well spacing on remediation performance. Degradation efficiency was limited by DO oversaturation in the wellbore. However, it could be promoted by optimization of operation parameters, using an optimization index, the ratio of current to pumping rate (α). Simulation results implied two suggestions for well spacing: (1) designing a remediation site with a higher aspect ratio will enhance the technology performance; and (2) with a larger area, both current intensity and pumping rate need to be proportionally increased in alignment with the enlarged area to ensure

optimal efficiency.

IS MICROBIALLY PRODUCED DISSOLVED ORGANIC CARBON A MISSING LINK IN NATURAL ATTENUATION?
O'Reilly, K., D. Zemo, and R. Mohler.
Groundwater Monitoring & Remediation 45(2):81-87(2025)

Research characterized dissolved organic carbon (DOC) generated in association with in situ hydrocarbon biodegradation. DOC was thought to consist primarily of degradation intermediates; however, high-resolution mass spectrometry (HRMS) analysis of samples collected from the USGS's Bemidji research site indicates that most of the chemical formulae identified in DOC from impacted wells were also found in unimpacted water samples. HRMS results were further evaluated, focusing on the identification of potential redox pairs and the distribution of the average oxidation state of the carbon in HRMS-identified formulae. It was hypothesized that microbially-produced DOC acts as a pool of carbon compounds with a continuum of oxidation states that serves as a reversible electron buffer with the ability to accept, store, and donate electrons depending on redox conditions. This allows hydrocarbon oxidation that is disconnected in time and space from the reduction of the terminal electron acceptors (TEAs), such as oxygen, Fe $^{3+}$, or sulfate. Given that concentrations of DOC may be high relative to concentrations of dissolved hydrocarbons and TEAs, this suggests that microbially produced DOC may be a missing link in understanding the carbon and electron balance at sites undergoing natural attenuation.

SOIL FLUSHING FOR REMEDIATION OF LANDFILL LEACHATE-CONTAMINATED SOIL: A COMPREHENSIVE EVALUATION OF OPTIMAL FLUSHING AGENTS AND INFLUENCING FACTORS
Yu, H., Z. Liu, M. Song, L. Liu, and Z. Liu. | Waste Management 200:114771(2025)

A study evaluated five surfactants and three chelating agents to identify effective flushing agents for leachate-contaminated soil and determine optimal conditions for their use. The agents were analyzed through batch experiments and 1-D column tests to assess the effects of pH, temperature, solid-liquid ratio, and injection conditions on their efficacy. Results showed that saponin was most effective in extracting heavy metals (total Cr and Cr(VI)), total nitrogen, ammonia nitrogen, and organic compounds. The removal efficiency of contaminants by saponin increased with higher concentrations. Higher pH levels reduced the effectiveness of polysorbate 80 (Tween 80), rhamnolipid (RL), and saponin in removing chromium but improved ammonia nitrogen extraction. The remediation outcomes are also subject to tight control of temperature and solid-liquid ratios, which is reflected in the strengthening efficiency along with rising temperatures and the amount of flushing agents applied. The study further examined the impact of different injection methods on the remediation process. Continuous injection was most effective for soil primarily contaminated with chromium, whereas a step-gradient mode yielded better results for nitrogen compounds. A multi-pulse injection mode was optimal for soil with a high concentration of organic pollutants.

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General News

TRANSITIONING FROM ACTIVE REMEDIES TO MONITORED NATURAL ATTENUATION
Adamson, D., S. Farhat, C. Newell, and J. Wilson. SERDP Project ER20-1429, 199 pp, 2025

The objective of this research was to provide an easier way for site managers to answer several specific technical questions that are important during a transition assessment, such as 1) is the plume at my site stable (making it a good candidate for transitioning)?, 2) what is the likelihood that my site has a "persistent source" that will be resistant to further active treatment?, 3) how can I establish if the performance of an active remedial technology has plateaued? and 4) what type of contaminant removal rates can I expect after transitioning to MNA? A software tool (TA2 Tool) that aids in gathering and analyzing data relevant for a site-specific transition assessment was developed as part of this research. This free web-based tool has modules that perform quantitative assessment of concentration trends and project the remediation timeframe based on the current remedial approach. It includes modules that predict how remediation timeframes are influenced by matrix diffusion to assess if additional remediation is warranted. It also includes modules that evaluate MNA as a transition technology, specifically by looking at plume stability, natural attenuation rates, and projections of plume concentrations at a downgradient point of compliance in the absence of further active treatment. https://serdp-estcp.mil/projects/details/350cbc0b-893a-43a6-8a0c-c9c057baaa0/er20-1429-project-overview

THE HIDDEN COSTS OF PFAS REMEDIATION: ENERGY, WASTE, AND LONG-TERM VIABILITY
Pacific Northwest National Laboratory RemPlex seminar, 93 minutes, 2025

PFAS management presents many complex challenges, from uncertainties about human health risks and contaminant behavior to the effectiveness of remedies and the demands of evolving regulatory frameworks. This seminar explores the environmental footprint of treating PFAS, with discussion about the energy demands, waste generation, and broader environmental impacts of PFAS treatment technologies and insights into how these factors—alongside the regulatory context—should shape remediation decision-making. https://www.pnnl.gov/remplex-seminars

DECIPHERING PFAS IN RAINWATER: SOURCES, DISTRIBUTION, AND ENVIRONMENTAL IMPACT
Zenobio, J.E., B.N. Nzeribe, M. Hilyard, and B. DiGuiseppi. | Remediation 35(4):e70029(2025)

A literature review synthesized the outcomes of studies in 13 states that examined the occurrence, transport, and deposition of PFAS via precipitation. Legacy compounds (PFOA, PFOS) and emerging short-chain PFAS (trifluoroacetic acid [TFA], hexafluoropropylene oxide dimer acid) have been detected in rainwater, with evolving profiles reflecting regulation and shifting manufacturing practices. The persistent presence of TFA emphasizes its atmospheric persistence and worldwide distribution. PFAS concentration patterns are regionally variable, with high concentrations typically detected at urban and industrial sites and detectable ambient levels in remote regions, suggesting PFAS in precipitation may be a combination of both local sources and long-range atmospheric transport. The types of precipitation events could play important roles in PFAS deposition. Stratiform events may collect more extensive regional inputs, whereas convective storms may be more efficient at collecting local emissions and fugitive dust, resulting in higher local PFAS concentrations. Urban surface runoff has the potential to be an adjunct or predominant pathway of PFAS transport to receiving waters. This review articulates the complexity of atmospheric PFAS occurrence and highlights the importance of integrated monitoring, source attribution, and varied regulatory approaches in addressing the environmental issues and public health concerns associated with PFAS deposition via precipitation.

CONTROLLING HYDROCARBON PLUME MIGRATION AND REDUCING REMEDIAL COSTS WITH COLLOIDAL ACTIVATED CARBON (CAC) BARRIERS
Seymour, K. | AEHS Foundation 40th Annual International Conference on Soils, Sediments, Water and Energy 21-24 October, Amherst, MA, 42 slides, 2024

This presentation covers common scenarios where CAC barriers are implemented and reviews related projects while highlighting lessons learned and optimal design and application techniques. The sites represent approaches to prevent surface water impact, stop excursions across property lines, preemptively stop potential plume migration, or intermittent barriers to reduce the overall number of injection points to treat a plume. Some examples highlighted include:

- A PRB implemented at Naval Base Point Loma to prevent the movement of residual diesel contamination from reaching San Diego Bay. The CAC barrier outperformed the project action limit of 640 µg/L for diesel range TPH by achieving non-detect concentrations at two sentry wells for five consecutive quarters and achieving site closure.
- A PRB implemented as an interim remedy to prevent the migration of a large BTEX plume to Flat Head Lake, MT, where benzene concentrations were as high as 122 µg/L adjacent to the lake and expected to increase as the high concentration migrated closer to the barrier. Implementing a CAC barrier has reduced BTEX concentrations to ND for over 3 years while upgradient source treatment remedies are being implemented.
- Multiple PRBs implemented in Tallahassee, FL, to reduce the material and installation costs necessary to meet remedial budgets and timelines.

https://s3.amazonaws.com/amz.xcdsystem.com/A5110805-EA2E-2B6D-01D92AC0E42DCE3B_abstract_File24087/Handout_192_1023011005.pdf

SPECIFIC AMBIENT PM2.5-BOUND PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS): A PROMINENT HUMAN HEALTH RISK ISSUE THAT DESERVES ATTENTION?
Sangkham, S., W. Phairuang, N. Pansakun, and A.T. Ford.
Environmental Science & Technology 59(29):14780-14783(2025)

This viewpoint or perspective highlights the critical issue of PFAS bound to fine particulate matter ($PM_{2.5}$) in the ambient environment. The authors argue that such airborne PFAS should be recognized as a major public health concern, given their persistence in the environment and potential carcinogenicity. https://pubs.acs.org/doi/pdf/10.1021/acs.est.5c07694?ref=article_openPDF

The Technology Innovation News Survey welcomes your comments and suggestions, as well as information about errors for correction. Please contact Michael Adam of the U.S. EPA Office of Superfund Remediation and Technology Innovation at adam.michael@epa.gov or (703) 603-9915 with any comments, suggestions, or corrections.

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