Entries for January 16-31, 2026

Market/Commercialization Information

PRE-SOLICITATION NOTICE AND DRAFT RFP FOR ENVIRONMENTAL REMEDIATION SERVICES (ERS) SINGLE AWARD TASK ORDER CONTRACT (SATOC) FOR THE SHAW AIR FORCE BASE OPTIMIZED REMEDIATION CONTRACT (ORC)
United States Army Corps of Engineers (USACE), Engineer Division South Atlantic
Contract Opportunities on SAM.gov W912HN26RA009, 2026

This pre-solicitation notice and Draft RFP are for a $40M Environmental Remediation Services (ERS), Single- Award Task Order contract (SATOC) for the Shaw Air Force Base Optimized Remediation Contract (ORC) for the USACE Savannah District. This acquisition is being offered as a 100% set-aside for small business competition, under NAICS 562910, and will result in a Firm Fixed Price Contract Award. This pre-solicitation notice provides industry with information prior to the issuance of the RFP and an opportunity for industry to comment on the Draft RFP. The objective of the Shaw Remediation Project is to achieve a site closure as defined in the Shaw Hazardous Waste RCRA Permit for unrestricted residential use. The Shaw AFB ORC consists of 18 Installation Restoration Program (IRP) sites, Operations and Maintenance for two large Groundwater Treatment Plants, and zero Military Munitions Response Program (MMRP) sites. POs include 11 RA-O Sites, three IRA-O Sites, and four LTM Sites. Eleven sites have a PO of Alternative Objectives as well as RC or SC. See the Draft RFP for the full SATOC and Seed Project Performance Work Statements. The ordering period is seven years for the base period and one six-month option period pursuant to FAR 52.217-8. The final approved solicitation will be issued in electronic format only and is anticipated to be available on or about 12 March 2026.
https://sam.gov/workspace/contract/opp/7320f6b3a6304419876 3ef1de0e9abf3/view

ENVIRONMENTAL LABORATORY SERVICES
US Army Corps of Engineers (USACE) Engineer Division, Great Lakes and Ohio
Contract Opportunities on SAM.gov PANCLR26P029694, 2026

ENVIRONMENTAL LABORATORY SERVICES US Army Corps of Engineers (USACE) Engineer Division, Great Lakes and Ohio Contract Opportunities on SAM.gov The USACE Chicago District is issuing this sources sought synopsis as a means of conducting market research to identify parties having an interest in and the resources to support the requirement for environmental laboratory services for water and sediment sampling analysis. The intention is to procure these services on a competitive basis. Based on the responses to this sources sought notice/market research, this requirement may be set-aside for small businesses (in full or in part) or procured through full and open competition, and multiple awards may be made. All Small Business Set-Aside categories will be considered. Telephone inquiries will not be accepted or acknowledged, and no feedback or evaluations will be provided to companies regarding their submissions.
https://sam.gov/workspace/contract/opp/bc6c27c2cc114aafb9bd06ac387f8e83/view

FY26 WILLAPA SEDIMENT CHARACTERIZATION SERVICE
US Army Corps of Engineers (USACE) Engineer Northwestern Division
Contract Opportunities on SAM.gov PANNWD26P0000027927, 2026

This solicitation is being released as a Total Small Business Set-Aside under NAICS code 541620. Market research is being conducted to determine contractor capabilities for sediment characterization in Willapa Bay, Washington. The contractor will be expected to provide all personnel, equipment, facilities, transportation, tools, materials, supervision, and other items and non-personal services necessary to perform the tasks for a sediment characterization in Willapa Bay as defined in this Performance Work Statement (PWS). Work will include preparing a sampling and analysis plan (SAP) suitable for submission for approval, sampling and characterizing the sediments in the proposed dredging area as described in the SAP, and preparing a report to document characterization results that can then be used by the Dredged Material Management Program (DMMP) to make a suitability determination. The PWS includes preparation of the SAP; sampling and testing of dredged material; data collection and analysis; and report preparation. The contractor must possess the following experience:

- Performance of sediment characterization in coastal/marine environments.
- Ability to generate sampling and analysis plans in accordance with the Dredged Material Management Program (DMMP) User Manual.
- Ability to collect and process sediment core and grab samples and analyze the sediment samples for chemical and biological laboratory testing in accordance with DMMP guidance.
- Ability to review, interpret, and synthesize chemical and biological sediment data succinctly in a comprehensive data report that includes tables and figures.
- Ability to generate, review, and upload electronic data deliverables in the Washington State Environmental Information Management (EIM) database format for acceptance and publication in the EIM database.

https://sam.gov/workspace/contract/opp/1c622b57294b4b6ea9bc1348c3835529/view

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Cleanup News

SUPPLEMENTAL CONTAMINANT SOURCE AND CREEK SEDIMENT REMEDIATION AT A PREVIOUSLY REMEDIATED SUPERFUND SITE, PENNSYLVANIA, U.S.A.
Reese III, W.J. and N. Rashid. | SETAC North America 46th Annual Meeting, 16-20 November, Portland, OR, abstract only, 2025

The Whitmoyer Laboratories Superfund site is a former pharmaceutical manufacturing facility contaminated with arsenic. Previous remediation included excavation and off-site disposal of soil impacted with high concentrations of arsenic, consolidation (under the cap) of soil with lower arsenic impacts, construction of a 2-ft thick permeable soil cap to prevent direct contact with residual subsurface arsenic-impacted soil, institutional controls, and hydraulic control and treatment of impacted groundwater. Post-remedy sediment monitoring revealed an area below the canal-creek confluence with elevated arsenic levels in the surficial creek sediment. This area was likely either overlooked during the original remedial investigations, due to the spatial scale of sediment data collected, or reflects newly contaminated sediments due to potential uncontrolled source(s) of arsenic loading to the creek. Supplemental sediment investigations were performed to better understand the horizontal and vertical extent of the impacted sediments. Numerous contemporaneous investigations revealed that overburden shallow groundwater with elevated arsenic has the potential to seasonally discharge to the creek from the southern bank at a former soil hot spot area, as overburden groundwater was not fully controlled by the bedrock pumping wells of the groundwater recovery system. To address this new source of arsenic to Tulpehocken Creek, an overburden groundwater interceptor trench system was constructed. Remedial alternatives are being evaluated to remove the area of contaminated sediments from the creek, cap the underlying impacted soils, and reconstruct the creek bed to mitigate the potential for erosion and recontamination of the new cap. The presentation focuses on the methods used to locate and delineate the area of contaminated creek sediment and determine the supplemental remediation required, including the overburden groundwater interceptor trench system, as well as the pending streambed remedial work. *See site documents for more information:*
https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.sesSid=0300643&doc=Y&colid=3087 3&region=03&type=SC

NATURAL ATTENUATION- INNOVATIVE AND OBVIOUS
Knox, J.N. Northwest Remediation Conference, 20 October, Tacoma, WA, 12 slides, 2025

The scientific basis, regulatory framework, and practical implementation of monitored natural attenuation (MNA) are explained as a groundwater remediation strategy, particularly for chlorinated solvent sites. The presentation outlines regulatory expectations, the importance of source control prior to MNA selection, plume stability analysis, and the use of statistical trend evaluation and contingency triggers to ensure protectiveness. The case study focuses on a large, complex chlorinated solvent contamination site covering >300 acres with five or more intermingled plumes across three aquifer zones, divided by regulatory boundaries and monitored with well triplets to characterize vertical plume profiles. Source control and removal actions were carried out for all identified source areas before considering MNA as a remedial strategy. Lines of evidence supporting MNA included spatial degradation trends (significant breakdown of parent compounds like TCE into daughter products such as vinyl chloride and ethene), limited temporal decreases, and favorable geochemical conditions indicating natural biodegradation processes. A conceptual site model was developed to delineate source areas, the extent of contamination, and exposure pathways, which supported the observation of stable to shrinking overall plume behavior with some localized expanding zones, and molar comparisons showing elevated daughter products downgradient. The remedy also incorporated institutional controls and contingency triggers that would initiate additional actions if statistically significant increasing trends were detected at compliance points near discharge to the Lower Duwamish Waterway, reflecting risk-based management tied to ecological receptors. Long-term monitoring and financial assurance were highlighted as essential due to the extended timeframes required for attenuation processes to achieve regulatory goals.
https://nwremediation.com/wp-content/uploads/83_KN01.pdf

REMEDIATION OF PFAS-IMPACTED SOLIDS
Popovic, J. and J. Kornuc. NAVFAC Remediation Innovative Technology Seminar, 74 slides, 2025

The presentation provides a comprehensive overview of approaches for managing PFAS-impacted soil and solids, focusing on both established practices and emerging treatment technologies. The core of the presentation compares treatment technology categories, including thermal desorption, smoldering combustion, soil washing, and stabilization/solidification, summarizing their readiness levels, advantages, limitations, and costs for handling PFAS-laden materials. Case studies are described to demonstrate how the technologies perform in practice. At Naval Auxiliary Landing Field Fentress, ~14 tons of soil with ~30 µg/kg PFAS was treated using stabilization followed by landfill disposal, with straightforward waste profiling and low cost. At Naval Station Newport, >52,000 tons of excavated soil with low PFAS concentrations (≤~5 µg/kg) were managed by segregating loads and disposing across multiple landfills with differing PFAS limits; this effort had substantial total costs and required extensive waste characterization. A small PFAS investigation-derived waste soil case at Cutler Site 10, NSA Fire Station, was disposed of as non-hazardous PFAS material in a landfill after waste profiling, highlighting logistical challenges in remote locations. An ex situ pilot-scale thermal desorption project at Joint Base Elmendorf Richardson treated ~2,000 yd³ of soil to below both EPA residential regional screening levels and Alaska state cleanup criteria. Smoldering combustion tests at the same base showed >99.9% reduction in PFAS in treated soils, with most fluorine retained in stable forms like calcium fluoride and minimal emissions of PFAS or hydrofluoric acid, indicating effective destruction mechanisms beyond simple removal. The presentation concludes with guidelines for selecting and implementing PFAS solids treatment technologies, emphasizing protectiveness, historical data use, bench and pilot studies, regulatory coordination, and contingency planning, noting that PFAS solids management remains an evolving challenge with limited fully mature destruction technologies available.
https://exwc.navfac.navy.mil/Portals/88/Documents/EXWC/Restoration/er_pdfs/rits/2025/RITS%202025_PFAS%20Solids%20Treatment_Final.pdf?ver=013Q_k822K6kZKrm4C876Q%3d%3d

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Demonstrations / Feasibility Studies

FINAL VERIFICATION STUDY/PILOT TEST COMPLETION REPORT INSTALLATION RESTORATION SITE 14 ALAMEDA POINT, ALAMEDA, CA
Naval Facilities Engineering Systems Command Southwest, 154 pp, 2025

A pilot study at IR Site 14 in Alameda evaluated the effectiveness of an in situ colloidal activated carbon (CAC) barrier using PlumeStop® to reduce PFAS mass flux to the Oakland Inner Harbor. The verification effort included bench-scale column testing, passive flux meter (PFM) assessments, continuous soil coring, discrete groundwater sampling, and a clear-water injection test to refine barrier design and injection parameters. Column results showed that 0.5% CAC reduced total PFAS by more than two orders of magnitude, while 2.0% CAC achieved greater than three orders of magnitude reduction, leading to the selection of variable CAC concentrations (2.5%, 5.0%, and 7.5%) based on PFAS mass loading across treatment zones. The barrier was installed using 290 direct-push injection points between 3 and 17 feet bgs, and 12 performance monitoring wells were installed along three transects to evaluate effectiveness. During the first year of post-injection monitoring, PFOS and PFOA concentrations generally decreased by more than 90% within the barrier and by 40-50% or more downgradient, with some wells showing reductions from over 100,000 ng/L to near non-detect levels. PFM data confirmed significant reductions in contaminant mass flux, and groundwater elevation monitoring indicated no mounding or adverse hydraulic impacts. Overall, the pilot study demonstrated that the 7.5% CAC barrier effectively reduced PFAS migration toward the harbor and provided critical data to support long-term remedial design decisions. https://alamedapointenvirp.com/wp-content/uploads/2025/07/site-14-verification-study_pilot-test-rpt.pdf

COMBINING MICROBIOLOGICAL, CHEMICAL, AND ABIOTIC PROCESSES FOR SIMULTANEOUS TREATMENT OF CVOCS AND HEAVY METALS
Lakhwala, F. and A. Seech. | AEHS Foundation 41st Annual International Conference on Soils, Sediments, Water and Energy 20-23 October, Amherst, MA, 33 slides, 2025

Biogeochemical reduction (BGCR) combines natural microbiological, chemical, and abiotic processes such as enhanced reductive dechlorination (ERD) and in situ chemical reduction (ISCR) to enhance cVOC degradation and sequester toxic metals. This presentation describes the synergistic effect of these processes and provides representative site data from a field-scale application for the removal of chlorinated ethenes, cadmium, nickel, and zinc.
https://s3.amazonaws.com/amz.xcdsystem.com/A51108D5-FA2F-2B6D-01D92AC0E42DCF3B_abstract_File26129/PDFofPresentation_42_1019090403.pdf

INNOVATIVE PHYTOMANAGEMENT SYSTEMS BY COMBINING MISCANTHUS AND SWITCHGRASS WITH BIOSTIMULANTS TO ENHANCE MICROBIAL DIVERSITY AND SOIL REMEDIATION
Iqbala, Y., B. Mua, Z. Yia, W. Zegada-Lizarazuc, M. Von Cosseld, P. Peronic, E. Alexopouloue, A. Montic, E.G. Papazoglouf, T. Fua, and S. Xuea.
Industrial Crops and Products 234:121610(2025)

A technology with enhanced phytoremediation capacity that combines miscanthus and switchgrass with biostimulants to promote beneficial soil bacteria and fungi was evaluated through field trials on a metal-polluted soil. Crop growth was compared under two different biostimulants treatments and a control, considering biomass yield, morphological parameters, soil physicochemical and biological properties. Biostimulant treatments compared with control positively influenced crop biometric traits and increased biomass yield up to 31/ha (+54%) and 9 t/ha (+35%) for miscanthus and switchgrass, respectively, in the second establishment year. Biostimulants treatment HAM (humic acid combined with mycorrhizae) performed best by reducing the metal CaCl2-available fraction in both miscanthus and switchgrass plots, with the exceptions of Pb in switchgrass and Cu in miscanthus. The study corroborated that both factors under study, i.e., crop type and biostimulant applications, have influenced the soil microbiome structure. Compared with the control group, biostimulants HAM treatment increased Bacillus abundance by 44% in miscanthus and Candidatus Solibacter by 200% in switchgrass. In the case of fungi, the biostimulants HAM treatment promoted the relative abundance of Fusarium in the rhizospheres of both miscanthus and switchgrass. Findings suggest that selecting the right crop and biostimulants application can modulate the rhizosphere environment, consequently enhancing the effectiveness of phytomanagement technologies.
https://www.sciencedirect.com/science/article/pii/S0926669025011562/pdfft?md5=4348870ee2d1470fdaf90d6bd2b663f3&pid=1-s2.0-S0926669025011562-main.pdf

FIELD DEMONSTRATION OF POLYMER STABILIZED ACTIVATED CARBON FOR IN SITU TREATMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)-IMPACTED GROUNDWATER
Hatton, J., P.-F. Yan, C. Liu, S. Jo, J. Popovic, B.L. Rhiner, J. Wong, M. Mitchek, J. Li, W.A. Arnold, M.F. Simcik, and K.D. Pennell.
Journal of Hazardous Materials 499:140292(2025)

A field demonstration of a polymer-stabilized activated carbon (colloidal carbon product [CCP]) was conducted using a "push-pull" test, consisting of a "push" phase (CCP injection) and a "pull" phase (withdrawal of treated groundwater), to assess the effectiveness of the treatment technology. A lab-scale aquifer cell experiment using site aquifer materials and simulated groundwater demonstrated 90.9 to >99.9% removal of all six tested PFAS by CCP injection. For the field-scale test, a total of 1,900-L CCP was injected into a 2.4-meter interval, and 4,750 L of water were extracted from the treated interval, with extractions conducted at 3- and 10-month post-injection. PFAS concentrations were reduced by up to four orders-of-magnitude, from > 50,000 ng/L total PFAS to below individual detection limits in samples collected 10 months post-injection. An economic analysis indicates that the operating costs of the CCP system would be less than half of a comparable P&T system. Findings demonstrate that CCP injection is a practical, efficient, and cost-effective in situ remediation strategy for addressing PFAS-impacted groundwater plumes.
https://www.sciencedirect.com/science/article/pii/S0304389425032121/pdfft?md5=d7197e9f98aa8d951affdfedb14ecbb68&pid=1-s2.0-S0304389425032121-main.pdf

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Research

MULTI-APPROACH DATA PROCESSING WORKFLOW TO HELP CLOSING THE MASS BALANCE OF PFAS IN THE ENVIRONMENT
Shrestha, O., J. Dahl, T. Matsubara, and R. Marfil-Vega. Environmental Measurement Symposium, August 4-8, St. Louis, MO, 35 slides, 2025

An untargeted LC-MS method employing a sensitive, high-mass-accuracy quadrupole time-of-flight (QToF) instrument was used to participate in the PFAS NTA Interlaboratory Study organized by NIST in 2024. This technique, coupled with a novel data-processing approach, enables comprehensive non-targeted PFAS screening that helps close the mass balance of PFAS in the environment. Three unknown samples (A, B, and C) obtained from NIST were analyzed to identify PFAS. A data-dependent acquisition (DDA) method in both positive and negative ionization modes was implemented using QToF mass spectrometry to expand the chemical space covered with the method. Multi-approach data processing included identifying PFAS compounds using NIST Library Match, the NIST suspect list, FluoroMatch, and LabSolutions. The EPA 1633 PFAS standard mix was used to validate m/z trigger settings for the DDA method. The NIST MS2 library was converted into a software-compatible format to facilitate accurate spectrum matching. Identification through NIST Suspect Match relied on common product ions, neutral losses, and isotope Score, with a mass error threshold of less than 5 ppm. FluoroMatch analysis incorporated its built-in PFAS library and algorithms, utilizing Kendrick Mass Defect plots to identify PFAS and related families. Results were dereplicated, and PFAS were identified and scored according to NIST-defined criteria. Samples A, B, and C had 40, 57, and 105 negative PFAS matches and 9, 44, and 29 positive matches. The presentation demonstrates the workflow and how the multi-data approach benefits PFAS identification.
https://apps.pelac-institute.org/nemc/2025/docs/presentations/pdf/8-4-25-Emerging%20Environmental%20Applications%20for%20High%20Resolution%20Mass%20Spectrometry-2.01-Shrestha.pdf

ASCORBIC ACID STABILITY AND PH TESTING TO SUPPORT RWM-018 PILOT SCALE WELLHEAD TREATMENT SYSTEM FEASIBILITY DETERMINATION
VerMeulen, H., E. Koelker, and S. Fuentes. Savannah River National Laboratory (SRNL) Report SRNL-STI-2025-00578, 24 pp, 2025

Historical in situ chemical oxidation (ISCO) injections of potassium permanganate and sodium persulfate left residual oxidant concentrations in the A/M-Area groundwater system at the Savannah River site. ISCO events targeted DNAPLs through strong oxidant injections within plume zones upgradient of current groundwater recovery wells RWM-008 and RWM-018. These residual oxidants could significantly impede the operation of the mercury removal system needed to meet NPDES permit requirements for the ongoing P&T system that hydraulically controls portions of the A/M-Area plume. Effluent-treated groundwater from this system is discharged to surface water at the receiving outfall of the M-1 Air Stripper. To prevent interference of the M-1 Air Stripper system by residual oxidants, groundwater recovery was ceased at well RWM-018. Oxidant transport modeling in the A/M-Area from ISCO estimated that the potential oxidant load contributed by RWM-018 could be as high as 120 mg/L. It is also possible that oxidants may contribute via pumping at well RWM-008 as residual oxidants within the aquifer migrate toward its zone of influence. SRNL conducted research to investigate potential pre-treatment chemicals to neutralize the residual oxidants before reaching the M-1 Air Stripper to allow for resumed groundwater recovery at RWM-018 and continued pumping at RWM-008. Deployment of ascorbic acid for neutralization of residual oxidants at RWM-018 (and possibly RWM-008) is recommended based on results from previous reductant testing. For a maximum estimated oxidant load at RWM-018, a well-head treatment system would need to dose about 400 gals ascorbic acid per month to ensure complete neutralization. A second system with an additional reagent should also be considered for deployment at RWM-008. https://www.osti.gov/servlets/purl/2997611

EXPLORATION OF PFAS MASS DISCHARGE IN STORMWATER VERSUS GROUNDWATER: TECHNICAL AND REGULATORY CONSIDERATIONS
Newell, C.J., J.D. Gamlin, G.J. Garvey, H.S. Rifai, G.O. Grundy, M. Gupta, M. Wang, N.W. Johnson, H. Javed, and M.Q. Lentz. | Remediation 36(1):e70052(2025)

A study analyzed the environmental criteria that may drive stormwater remediation, modeled the stormwater hydrologic response of hypothetical AFFF sites, compiled PFOS concentration data in stormwater, and compared the potential PFOS mass discharge in stormwater versus groundwater. Typical stormwater mass discharge of PFOS was relatively smaller than groundwater contributions at AFFF sites. However, given the faster impact timescale of stormwater movement and the variability in receiving water types and uses, many AFFF sites may require some form of stormwater management. The paper presents a series of potential regulatory approaches for PFAS-impacted stormwater, including expansion of existing regulatory programs, use of best management practices, individual site mass discharge limits, and watershed-scale PFAS mass balance approaches. *This article is* ***Open Access*** *at* https://onlinelibrary.wiley.com/doi/10.1002/rem.70052.

AIR BUBBLING ASSISTED SOIL WASHING TO TREAT PFAS IN HIGH ORGANIC CONTENT SOILS
Londhe, K., and A.K. Venkatesan. | Environments 12(1):20(2025)

A study explored the use of a novel process where soil washing was combined with air bubbling (or foam fractionation) to aid in PFAS removal from high organic carbon (OC)-content soil (~4-20%). Treatment with air bubbling of high OC soil (~20%) with PFBS and PFOA did not enhance removal, as they featured low surface activity. An improvement in PFOS extraction from 27% to 42% was observed with bubbling, consistent with the higher surface activity of PFOS compared to PFOA and PFBS. PFDA was irreversibly adsorbed to the high OC soil and was not removed efficiently by both bubbling and soil washing. A slight improvement in PFDA removal (6-13%) was observed when a co-surfactant (cetyltrimethylammonium chloride) was added and when the OC content was reduced to ~4% by the addition of nonorganic sand to the contaminated soil before soil washing. This suggests that the interaction of PFDA with OC was the dominant factor determining its extraction from soil. Results indicated that soil washing alone was sufficient to remove short-chain PFAS from soil. Although bubbling had a mild effect on the removal of some long-chain PFAS from the solution, it did not help in the overall removal of PFAS from high OC soil, highlighting the difficulty in the treatment of high OC-content soil and that immobilization of PFAS would be an ideal approach in managing such contaminated sites. *This article is* ***Open Access*** *at* https://www.mdpi.com/2076-3298/12/1/20.

ADVANCED CARBON NANOMATERIAL-BASED ELECTROCHEMICAL PLATFORMS FOR REAL-TIME DETECTION AND REMEDIATION OF EMERGING ENVIRONMENTAL POLLUTANTS
George, C., M.S. Christo, S. Jha, M. Harshitha, J.C. Vidyashree, M. Dinamani, and H.K. Ramaraju. Microchemical Journal 221:116936(2026)

Carbon allotropes were synthesized and functionalized to enhance key electrochemical properties like surface area, electrical conductivity, and the kinetics of electron transport to identify and remove emerging contaminants. The nanostructures were integrated into sensor electrodes using field-effect transistor and chemiresistor-type configurations. The devices established exceptional sensitivity and selectivity, achieving detection limits in the nanomolar spectrum for a range of pollutants, including pesticides and heavy metals. Surface modification with bio-recognition elements such as aptamers and enzymes enabled selective binding and efficient signal transduction. The electrochemically active carbon surfaces facilitated adsorption and electrocatalytic degradation processes, permitting the same platform to perform detection and treatment. To facilitate simultaneous contamination identification and onsite environmental cleanup, electroactive carbon surfaces absorb contaminants and accelerate their destruction. Advanced characterization methods, including Fourier Transform Infrared Spectroscopy and Scanning Electron Microscopy, were used to assess the sensor's shape, chemical bonding properties, and performance. In situ remediation with real-time monitoring offers a portable, cost-effective, and sustainable approach to environmental protection. Results establish the potential of multifunctional carbon nanomaterial-based electrochemical systems to address critical challenges in environmental sensing and contaminant remediation.
https://www.sciencedirect.com/science/article/pii/S0026265X26001360/pdfft?crasa_token=H4InapaoFkIAAAAA:oWn9Aa1CWtAbHvd8h5LJneAB4LCRVmp2cjnXqt4UaRYtgrcDiFgqk2QkuSo3OkjKX6JcnG22Hg&md5=2834c97d1a021d5034a46c6b627f7c6

QUANTITATIVE SUSTAINABILITY ASSESSMENT OF IN SITU THERMALLY ENHANCED BIOREMEDIATION FOR CARBON EFFICIENT GROUNDWATER REMEDIATION
Yang, Z., Q. Wang, C. Wei, Z. Zhang, Z. Tang, Y. Li, G. Luo, F. Coulon, L. Fan, and X. Song.
Sustainable Production and Consumption 63:19-33(2025)

In situ thermally enhanced bioremediation (ISTEB) is a promising approach for remediating contaminated soil and groundwater. However, comprehensive quantitative sustainability assessments of its sustainability are limited, especially for field-scale applications using hot water injection (TEB-HW) or thermal conductive heating (TEB-TCH). A study addressed the gap by developing a quantitative sustainability framework integrating life cycle assessment with best management practices (BMPs), comprising 108 indicators derived from an extensive literature review and policy analysis. Using full-scale operational data from ISTEB implementations, the environmental, economic, and social performance of TEB-HW and TEB-TCH were quantified relative to conventional thermal treatment (TCH). Compared with TCH only, TEB-HW and TEB-TCH reduced carbon emissions by 78% and 31%, and achieved cost savings of 72% and 38%, while also improving community engagement and satisfaction. Normalized multi-criteria sustainability scores indicate overall performance gains of 31% and 13% compared to TCH only. Further optimization of BMPs, such as electric vehicle transport, green injectates, and renewable energy integration, could enhance ISTEB sustainability by up to 45%.

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General News

IN SITU VERIFICATION AND QUANTIFICATION OF NATURALLY OCCURRINGDECHLORINATION RATES IN CLAYS: DEMONSTRATING PROCESSES THAT MITIGATE BACK-DIFFUSION AND PLUME PERSISTENCE FINAL REPORT
Schaefer, C., Z. Nguyen, D, Tran, C. Werth, T. Blount, S. Dai, and G. Kumar. ESTCP Project ER20-5031, 87 pp, 2025

This work aimed to demonstrate and validate an innovative approach for assessing and quantifying naturally occurring abiotic and biotic dechlorination reactions in low-permeability clays. Such an approach would guide RPMs and regulators in assessing naturally occurring abiotic dechlorination at DoD sites. The project employed multiple methods and techniques that have been demonstrated in previous laboratory and field projects to attain insight into a cost-effective and easily implementable in situ methodology that can be used to assess the extent to which naturally occurring abiotic and biotic dechlorination processes are occurring within clays (via a first-order rate constant). This in situ approach was utilized at eight sites. Using 1% (v/v) HCl extractions and X-ray diffraction for mineral composition provided information to estimate TCE abiotic reductive dechlorination in clays. However, the model could not be independently used to verify the lab-derived rate constants. For reductive abiotic dechlorination under anoxic conditions, results suggest that 1% HCl extraction coupled with XRD data can be used as a screening-level tool to verify and estimate reductive dechlorination rate constants.
Final Report: https://serdp-prod-0001-124733793621-us-gov-west-1-s3.us-gov-west-1.amazonaws.com/s3fs-public/2025-12/ER20-5031%20Final%20Report.pdf?VersionId=9R5rcTGNSMLWb8d4kNeKomZqXzRLolwE
Guidance: https://serdp-prod-0001-124733793621-us-gov-west-1-s3.us-gov-west-1.amazonaws.com/s3fs-public/2025-11/ER20-5031%20Guidance%20Document.pdf?VersionId=1s90wIFyECN0ZBEnYt3yLD9Nl1jeRlKv

PFAS DESTRUCTION TECHNOLOGY DEMONSTRATIONS
Pinkard, B. and J. Follin | SERDP & ESTCP Webinar Series, January 2026

This webinar highlighted two PFAS destruction technologies, hydrothermal alkaline treatment (HALT) and supercritical water oxidation (SCWO). Hydrothermal alkaline treatment (HALT) leverages high pH conditions to destroy PFAS in liquid feedstocks. The project demonstrated HALT for the centralized disposal of several PFAS-rich liquid wastes produced during DoD site remediation efforts. PFAS destruction performance was measured and assessed for a range of operating conditions, leveraging many different analytical techniques to track the fate of fluorine and the extent of PFAS destruction. A legacy AFFF blend was processed onsite with HALT. This presentation describes the fundamentals of HALT, shares insights from the demonstration, and discusses best practices for integration within an effective treatment train for facilitating complete PFAS capture and destruction. SCWO is an innovative technology that has been previously demonstrated for the destruction of energetics and other organic wastes. The presentation focuses on recent tests that have been performed using this technology for PFAS destruction at a Clean Earth facility in Charlotte, NC, and at General Atomics' test facility in San Diego, CA. At the Charlotte facility, a mobile system was used to process and destroy three PFAS-laden waste streams and an AFFF concentrate. In San Diego, spent granulated activated carbon and ion-exchange resin beads were tested using a commercial SCWO system. The presentation summarizes the procedures, PFAS test results, and stack gas testing.
Video: https://www.youtube.com/watch?v=tjeXlyzaXqU&embeds_referring_euri=https%3A%2F%2Fserdp-estcp.mil%2F&source_ve_path=OTY3MTQ
Slides:
https://serdp-prod-0001-124733793621-us-gov-west-1-s3.us-gov-west-1.amazonaws.com/s3fs-public/2026-01/SERDP%20ESTCP%20Webinar%20%23224%20%28R%2001272026%29%20-%20Combined%20Slides%20V5%20%20-%20%20Be

CURRENT KNOWLEDGE ABOUT PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN THE ATMOSPHERE: FATE, ANALYTICAL METHODS AND RESEARCH PRIORITIES
Vieira, H.G., M.C. Canela, R.C. Urban, and B.S. Cabrero. | Chemosphere 389:144703(2025)

This article comprehensively overviews the current knowledge on PFAS, including a compilation of information on emission sources- primary sources and secondary sources; proposed classifications of their volatility based on vapor pressure by EPA and the European Chemicals Agency; atmospheric processes that govern gas-particle partitioning, long-range transport, and deposition; an assessment of current and emerging sampling and analytical techniques, including OTM 45/50 methods; and the identification of priority knowledge gaps. Among the main existing gaps, the validation of improved monitoring strategies and inhalation toxicity studies for neutral precursors could significantly contribute to a robust risk assessment and support regulatory efforts within the evolving global agenda for the phase-out of PFAS.

ALTEMIS: NEXT-GENERATION IN SITU REAL-TIME GROUNDWATER MONITORING STRATEGIES
Wainwright, H. | Pacific Northwest National Laboratory RemPlex seminar, 4-6 November, Richland, WA, 21 minutes, 2025

The Advanced Long-Term Monitoring Systems (ALTEMIS) project is developing an innovative paradigm of long-term monitoring based on state-of-the-art technologies, such as in situ groundwater sensors, geophysics, drone/satellite-based remote sensing, reactive transport modeling, and AI, that will improve effectiveness and robustness, while reducing the overall cost. As a part of this project, an in situ real-time groundwater long-term monitoring framework was developed based on various sensors and data analytics methods. Rather than relying on one single metric, this approach provides multiple lines of evidence to ensure the system stability: (1) groundwater table and its gradient that governs the migration speed and direction of the contaminant plume, and (2) in situ measurable geochemical parameters for detecting changes in contaminant mobility. In addition, machine learning algorithms were developed to improve the spatiotemporal interpolation of groundwater tables and contaminant concentrations by exploiting proxy variables such as in situ sensors and geospatial layers, and detect anomalies by computing the difference between near-future forecasting and measurements. To accommodate noisy and drifting sensor data streams, algorithms were also developed for automated outlier removal and drift correction. The framework was demonstrated based on the plot-scale installation at the Savannah River Site F-Area.
See times 1:01-1:20: https://www.pnnl.gov/projects/remplex/2025-summit/technical-sessions/artificial-intelligence
Slides: https://www.pnnl.gov/sites/default/files/media/file/2025%20RemPlex%20-%20Technical%20Session%208%20-%20Haruko%20Wainwright%20-%20ALTEMIS.pdf

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