

Entries for June 16-30, 2025

Market/Commercialization Information

R – SOURCES SOUGHT: EPA REGION 4 START VI (SOL)
U.S. Environmental Protection Agency, Region 4 Contracting Office, Atlanta, GA
Contract Opportunities on SAM.gov 68HEDP24R0007, 2025

This is a full and open competition under NAICS code 541620. EPA Region 4 requires a contractor to provide nationally consistent technical assistance services to EPA On-Scene Coordinators and other federal officials implementing EPA's responsibilities under the national response system for the Superfund Technical Assessment and Response Team (START) class of contracts. These services primarily support Region 4's Areas of Responsibility (AOR). Within the EPA's certain locations established as out-posted sites/zones, EPA's primary mobilization point is its Atlanta Regional Office, and the out-post cities/zones are Louisville, KY; Jackson, TN; Raleigh, NC; and Tallahassee, FL. Other than Atlanta, the contractor is not required to have office locations at any of the outpost cities. Technical requirements include response, preparedness and prevention, assessment and inspection, technical support, data management, and training. Offers are due by 4:30 PM EDT on September 1, 2025. <https://sam.gov/workspace/contract/opm/sol/541620/1a1ah47452fa37e1e55c43727f87b9w>

F – PROJECT LABOR AGREEMENT (PLA) SURVEY FOR REMEDIAL ACTION SATOC AT THE WELSBACH SUPERFUND SITE (SNOTE)
U.S. Army Corps of Engineers, Northwestern Division, Kansas City, MO
Contract Opportunities on SAM.gov W912DQ26RA002, 2025

The U.S. Army Corps of Engineers (USACE), Kansas City District (NWK) is soliciting comments from the construction community addressing the potential use of Project Labor Agreements (PLA) for large-scale construction projects located at the Welsbach/General Gas Mantle (GGM) Superfund site. This SATOC will have a capacity of \$95M. Remedial action activities will consist of environmental investigation, construction, preparation of appropriate documents, monitoring, and site restoration. Construction may include, but is not limited to the following: Large-scale construction remediation to include shoring, dewatering, excavation, and handling of radiologically impacted soils; Preparation of environmental work plans and reports; Groundwater monitoring and field data collection; Collection, management, and treatment of water during excavation activities; Radiation air permit monitoring; Health physics, radiation safety and radiation training; Extensive community relations with property owners; Management and technical staffing of an on-site laboratory; and the use of the Multi-Agency Radiation Survey & Site Investigation Manual. A Project Labor Agreement is defined as a pre-hire collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for a specific construction project and is an agreement described in 29 U.S.C. § 158(f). F. The public is invited to respond to the use of a PLA for this construction project utilizing the PLA Questionnaire attached to this notice. <https://sam.gov/opp/41ef4e433e54540483727f87b9w/view>

F – MD-CHESAPEAKE BAY ESFO-LEAD SHOT SITE (SOL)
U.S. Department of the Interior, Fish and Wildlife Service, Construction A/E Team 2, Falls Church, VA
Contract Opportunities on SAM.gov 140FC225R0015, 2025

This is a total small business set-aside under NAICS code 562910. The U.S. Department of the Interior, Fish and Wildlife Service, requires a contractor to plan and complete soil removal and remediation at the Lead Shot Site within the Prime Hook National Wildlife Refuge in Milton, Delaware. Key activities include obtaining permits and utility clearances, completing a Health and Safety Plan, conducting environmental surveys (wetlands, trees, soil, groundwater, and surface water), decommissioning of an existing sampling/transportation and disposal, soil excavation/disposal, removal of above ground and underground storage tanks, tank pumping and disposal, provisions for installing temporary holding tanks, drilling services and monitoring, well installation, disaster response including aircraft crashes, environmental modeling, biological assessments, biohazardous material cleanup and disposal, transportation and disposal of hazardous and non-hazardous waste, and sampling and analysis. The contractor must provide a 24-hour point of contact who is available seven days a week, 365 days a year for emergency response calls or compliance-related work. The award will be a firm-fixed-price contract with a period of performance of 545 calendar days after receipt of the Notice to Proceed. Offers are due by 5:00 pm edt on August 21, 2025. <https://sam.gov/opp/3ef17a25aaf14e94d5f252f2af1ch1c11n3c1m176f434b6c6.pdf>

F – HAZARDOUS SUBSTANCE EMERGENCY SPILL REMEDIATION (COMBINE)
U.S. Department of the Air Force, Air Force Materiel Command, Air Force Life Cycle Management Center, Wright Patterson AFB, OH
Contract Opportunities on SAM.gov FA860125R0030, 2025

This is a full and open competition under NAICS code 562910. The U.S. Department of the Air Force requires a contractor to provide timely response and remediation for hazardous substance emergency response and compliance-driven tasks that are beyond the capabilities of the 88th Air Base Wing Civil Engineer Environmental Management Branch at Wright-Patterson Air Force Base in Ohio. Emergency response and remediation services performed shall ensure compliance with all federal, state, local, Air Force, and WPAFB laws and regulations. Response situations may include but are not limited to: Hazardous material containment/spill cleanup, PCB containment/spill cleanup, hazardous waste removal actions, shock sensitive chemical sampling/transportation and disposal, soil excavation/disposal, removal of above ground and underground storage tanks, tank pumping and disposal, provisions for installing temporary holding tanks, drilling services and monitoring, well installation, disaster response including aircraft crashes, environmental modeling, biological assessments, biohazardous material cleanup and disposal, transportation and disposal of hazardous and non-hazardous waste, and sampling and analysis. The contractor must provide a 24-hour point of contact who is available seven days a week, 365 days a year for emergency response calls or compliance-related work. The award will be a Blanket Purchase Order. Offers are due by 10:00 AM EDT on September 4, 2025. <https://sam.gov/workspace/contract/opm/fd/541620/1a1ah47452fa37e1e55c43727f87b9w>

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Cleanup News

CANT REMOVE ALL YOUR SOURCE MATERIAL? DOES IT MATTER?
Fischer, G. I DCHWS East 2025 Spring Symposium, 2-4 April, Philadelphia, PA, 15 slides, 2025

This presentation reviews the groundwater plumes from two manufactured gas plants (MGP) pre-and post remediation. Both sites were located in similar settings, with similar underlying lithology and hydrology, degree of MGP-related impact, and offsite groundwater plumes. Both sites were also located in the New Jersey Pinehills, with a "no degradation" groundwater quality standard. Each site contained DNAPL source material in the saturated and unsaturated zones. Site 1 was remediated by excavating the source material and soil with concentrations greater than the residential cleanup standard. Impacted soil was thermally treated to the residential cleanup standard and used to backfill the excavation. Site 2 was remediated through in situ solidification/stabilization (ISS) of source material and impacted soil. Site 1 had source material extending to depths of ~25 ft below ground surface, and excavation was a viable option. Site 2 had source material to depths of ~65 ft below ground surface. The in situ treatment site was adjacent to the municipality's water department, with a 150-ft-tall water tower on the property. Full excavation of source material on this site would have been technically and financially challenging. At a minimum, seven years of post-remediation groundwater monitoring was conducted at both sites. The presentation discusses whether there is a significant difference in the natural attenuation of MCP-related groundwater impacts over time and which treatment method was more effective. <https://mediacdn.guidesbook.com/uploads/213716/gf76au0WZvUfYhV1Ch1c11n3c1m176f434b6c6.pdf>

CASE STUDY OF A SUCCESSFUL BROWNFIELDS REMEDIATION PROJECT AT A FORMER MANUFACTURING FACILITY
Wong, C. I DCHWS East 2025 Spring Symposium, 2-4 April, Philadelphia, PA, 15 slides, 2025

An Industrial Site Recovery Act (ISRA) equivalent Preliminary Assessment/Site Investigation (PAS/I) was completed for Lots 6 (Neely property) and 7 at a former manufacturing facility that assembled trailers to transport construction equipment. Based on the results of the PAS/I, 22 areas of environmental concern (AOCs) were identified across the property, including TCE at the Neely property. The objective was to remediate the AOCs effectively to facilitate the sale of the property and redevelopment as a Brownfields project. Various phases of remedial activities were conducted on the Neely property, including excavation and disposal of drums and contaminated soil. Reductive dechlorination natural remediation by which indigenous bacteria degrade chlorinated solvents under anaerobic conditions, is ongoing and active throughout the dissolved plume. An extensive groundwater monitoring program has been conducted as part of the approved natural attenuation remedy for the past 25 years. Due to natural attenuation and source removal, the extent of the contaminant plume has decreased significantly, in addition to the magnitude of concentrations in the former source area. In a proactive move to attempt to enhance the ongoing natural attenuation process, a 3-D Microemulsion™ (3DME) grid injection program was implemented, resulting in reduced concentrations by an order of magnitude, and overall decreasing concentration trends. Following a Restricted Use Response Action Outcome issued by NJDEP, the site was successfully developed into a warehouse logistics facility. <https://mediacdn.guidesbook.com/uploads/213716/5GKtE3N9s3bHAIb73V81Jf0R8dmlH16K2H5.pdf>

BUGS AND BUBBLES: AN IN-SITU BIOREMEDIATION LEARNING EXPERIENCE
Kapon, D. I DCHWS East 2025 Spring Symposium, 2-4 April, Philadelphia, PA, 15 slides, 2025

A historic tree farm turned residential property adjoining a private country club was impacted by releases from a 1,000-gallon heating oil UST and a 290-gallon gasoline UST. The areas of concern occurred near Moggy Brook, a protected stream with storied significance in relation to glacial geology in the Watchung Mountain region. Dissolved concentrations of primarily MTBE (maximum concentrations of 1,700 ug/L) and benzene (maximum concentrations of 140 ug/L) occurred in an overburden plume of ~5,000 ft², ranging in depth from ~5 ft to ~40 ft bgs. The objective of the project was to achieve unrestricted residential use and return groundwater quality to the condition prior to releases from the USTs and remediate the site as quickly and as efficiently as possible. Sonic™ drilling methods were used to install monitoring and injection wells to target depths. Remedial design investigation samples were analyzed for microbial populations and genes associated with BTEX degradation and evaluated for total oxidant demand. Persistent groundwater concentrations of benzene and MTBE were identified in deep wells set above bedrock at the onset of groundwater sampling, confirming the need for an active groundwater remedy. The remedy consisted of aerobic bioremediation involving groundwater re-circulation, a dissolved oxygen bubbler, and biostimulation + bioaugmentation. Treatment on control injection wells (90 ft run time) resulted in 11 vertical injection/extraction wells and two horizontal injection wells. All residual trapped and dissolved petroleum-related contaminants mass was effectively degraded, and groundwater was fully restored to NJDEP remedial cleanup levels. <https://mediacdn.guidesbook.com/uploads/213716/6r8bS6e4BEM5sZVMfUJn5A04dV544aB6C6.pdf>

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Demonstrations / Feasibility Studies

LARGE-SCALE FIELD EXPERIMENTS ON ENHANCING IN-SITU BURNING WITH FIRE WHIRLS
Cui, W., J. Dowling, M. Hajjoui, M. Huffman, B. Pawar, J. Aureli, Q. Wang, E. Oran, K. Stone, and M. Gollner. I Fuel 403:136093(2025)

A study addressed a critical research gap by conducting one of the largest controlled fire whirl experiments to date, focusing on enhancing in situ burning for remediation of oil spills. Fire whirls were successfully generated within a 5-meter-tall three-wall structure under the influence of various wind conditions using a 1.5-meter diameter crude oil pool with 15 mm and 40 mm slick thicknesses on an open water surface. Measurements of flame geometry, flow velocity, temperature profiles, heat flux, mass consumption, and emissions were compared to pool fires. Fire whirls, with mean flame heights nearly double those of pool fires, increased burning rates by 40% and reduced pool emissions by 40%. The highest fuel consumption efficiency of 86% was achieved in a 15 mm slick thickness fire whirl experiment, while in other fire whirl experiments, especially those with 40 mm slick thickness, premature extinguishment lowered ultimate fuel consumption efficiencies. Enhanced performance compared to traditional pool fires suggests that fire whirls might be more effective for in situ burning; however, this efficiency is currently only achieved under calm ambient conditions. The study discusses the potential interactive effects of ambient conditions, configuration sizing, and blowover phenomenon on fire whirl dynamics, highlighting the need for continued research across scales to optimize configurations and mitigate detrimental emissions, thereby enhancing the efficacy of in situ burning in large-scale oil spill scenarios.

BOREHOLE GEOPHYSICAL, TIME-SERIES LOGGING TO MONITOR PASSIVE ISCO TREATMENT OF RESIDUAL CHLORINATED-ETHENES IN A CONFINING BED, NAS PENSACOLA, FLORIDA
Harte, P.T., M.A. Singletary, and J.E. Landmeyer. I Hydrology 12:155(2025)

A passive ISCO (P-ISCO) experiment using potassium permanganate cylinders emplaced in boreholes was conducted at Naval Air Station Pensacola. Chlorinated ethenes are found primarily at the base of a shallow sandy aquifer in contact with an underlying silt-clay confining bed. Results of the time-series borehole logging conducted between 2017 and 2022 in four monitoring wells were used to track oxidant delivery. The electromagnetic (EM) induction logs from the monitoring wells showed an increase in EM response primarily along the contact, likely from pooling of the oxidant, during P-ISCO treatment in 2021. Concurrent natural gamma-ray (NGR) logging showed a decrease in NGR response at three of the four wells, possibly from the formation of manganese precipitates coating sediments. Coupling time-series logging and well-chemistry data allowed for an improved assessment of passive ISCO treatment effectiveness. This article is **Open Access** <https://www.mdpi.com/2306-5338/12/4/155>

FIELD TEST OF A BIOELECTROCHEMICAL MEMBRANE-LESS REACTOR FOR CHLORINATED ALIPHATIC HYDROCARBON AND NITRATE REMOVAL FROM A CONTAMINATED GROUNDWATER
Sassetto, G., M. Presutti, A. Lai, G. Simonetti, L. Lorini, M.P. Pappi, and M. Zeppilli. ChemPlusChem (Published 20 May 2025 before publication)

A membrane-less reactor was used to explore bioelectrochemical remediation of groundwater contaminated with chlorinated aliphatic hydrocarbons (CAHs) and nitrates. A column-type bioelectrochemical reactor was used to stimulate in situ degradation of contaminants through the supply of electrons by a graphite granules biocathode. After preliminary lab characterization and operation with a synthetic feeding solution, a field test was conducted at a contaminated site, where the reactor demonstrated effective degradation of CAHs and inorganic anions. The cathodic potential promoted reductive dechlorination of chlorinated species. Nitrate reduction, sulphate reduction and methanogenesis occurred simultaneously, influencing the overall coulombic efficiency of the process. Using real groundwater compared to the synthetic medium significantly decreased the coulombic efficiency of reductive dechlorination, decreasing from 2.43% to 0.11%. Concentration profiles along the bioelectrochemical reactor allowed for a deeper description of the reductive dechlorination rate at different flow rates and increased knowledge of reduction and oxidation mechanisms. Scaling up the technology presents several challenges, including the optimization of coulombic efficiency and the management of competing microbial metabolisms. The study provides a valuable contribution towards advancing bioelectrochemical technologies to remediate complex contaminated sites.

A NON-TARGET EVALUATION OF DRINKING WATER CONTAMINANTS IN PILOT SCALE ACTIVATED CARBON AND ANION EXCHANGE RESIN TREATMENTS
Tisler, S., N.S. Mkrjacz, L.M. Reinhardt, C.M. Jensen, L. Clausen, A.H. Thomsen, H.-J. Albrechtsen, and J.H. Christensen. I Water Research 271:12287(2025)

A study evaluated the effectiveness of five types of GAC and one anion exchange resin in a pilot test to treat groundwater for drinking water production, specifically targeting persistent compounds like PFAS. Using liquid chromatography and supercritical fluid chromatography coupled with high-resolution mass spectrometry, hundreds of features (i.e., peak at specific mass and retention time) were detected in the groundwater by non-target analysis. After treating ~3,200 bed volumes (BV), GAC filter materials showed <5% breakthrough for all features, with decreasing efficiency down to 73% breakthrough after 7 months (69,000 treated BV for uGAC). Using resin as a lag filter after GAC did not improve the removal of compounds detected in positive electrospray ionization mode. However, the removal by up to 35% for compounds detected in negative electrospray ionization mode was enhanced, indicating higher selectivity of resin for acidic compounds like PFAS. PFBA and PFPeA broke through completely for all GAC and the resin material except the proprietary blended GAC (15,700 treated BV), with only 19% breakthrough for PFPeA. Perfluoro-4-ethylcyclohexane/sulfonic acid was well adsorbed by GAC coupled to resin and by the proprietary blended GAC. Only GAC removed pesticides. 2,4,5-trichlorobenzenesulfonic acid and 2-amino-4-chloro-5-methylbenzenesulfonic acid (ACMBs) were removed (>52%), although high ACMBs concentrations (360 ng/L) in groundwater are of concern. The drinking water after the resin filter revealed 20 new contaminants, indicating the resin filters contribution to contamination. Accelerated migration experiments of the resin revealed additional contaminants, highlighting the need for continued monitoring and evaluation of resin treatment and of resin treatment systems. https://www.sciencedirect.com/science/article/pii/S0043135424001771?via=ihfr&utm_source=s3&utm_medium=s3&utm_campaign=s31494a92451c79e1a8957&ncid=1-e2-0-S0043135424001771&main-ref

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Research

PERFORMANCE TESTING OF A PFAS METHODS FOR SOIL GAS, SEWER GAS, AND INDOOR AIR
Lutes, C., H. Hayes, K. Bronstein, B. Schumacher, J. Zimmerman and A. Williams. 34th Annual International Conference on Soil, Water, Energy, and Air, 17-20 March, San Diego, CA, 28 slides, 2025

A method for the analysis of a set of fluorotelomer alcohols and perfluorooctanesulfonamides was developed and validated to study the potential for PFAS vapor intrusion. The method includes the active collection of samples in multi-bed sorbent tubes followed by analysis using thermal desorption gas chromatography-tandem mass spectrometry. Method validation steps included the evaluation of desorption efficiency, second source verification, storage stability, and method detection limit determinations. These were successfully completed for the fluorotelomer alcohols and perfluorooctanesulfonamides. Method applications to perfluorocarboxylic acids were also evaluated, revealing some potential for artifact formation during thermal desorption. The method's performance was evaluated by sampling large volumes of indoor air with and without added humidification (up to 288 L). Results revealed potential recovery concerns at high humidity. Testing included simulating the collection of warm, high-concentration soil gas with the equipment in cold outdoor air. Additionally, recovery testing was performed with the collection of a residential sewer gas sample using spiked sorbent tubes. The method was also tested at three field sites where sample collection included sub-slab soil gas, deep soil gas, landfill gas, and sewer gas. These sites had different soil types, moisture levels, and non-target compounds, providing information on field application feasibility and potential interferences from non-target compounds. https://3.amazonaws.com/amz-vcf-system.com/AS110805-EAF7E-7B6D-01D92A0E42DC38_abstract_File25469/PresentationPDF_182_0320122936.pdf

MODELING PFAS SORPTION IN SOILS USING MACHINE LEARNING
Fabregat-Palau, J., A. Ershadi, M. Finkel, A. Rigol, M. Vidal, and P. Grathwohl. Environmental Science & Technology 59(13):7678-7687(2025)

This study introduces PFASorptionML, a novel machine learning tool developed to predict soil-liquid distribution coefficients (K_d) for PFAS in soil. Leveraging a data set of 1,274 K_d entries for PFAS in soils and sediments, including compounds such as trifluoroacetic, cationic, and zwitterionic PFAS, and neutral fluorotelomer alcohols, the model incorporates PFAS-specific properties such as molecular weight, hydrophobicity, and pK_a and soil characteristics like pH, texture, organic carbon content, and cation exchange capacity. Sensitivity analysis revealed that molecular weight, hydrophobicity, and organic carbon content are the most significant factors influencing sorption behavior, while charge density and mineral soil fraction have comparatively minor effects. The model demonstrates high predictive performance, with relative percent difference values exceeding 3.16 across validation data sets, outperforming existing tools in accuracy and scope. PFAS chain length and functional group variability significantly influence K_d with longer chain lengths and higher hydrophobicity positively correlating with K_d. By integrating location-specific soil repository data, the model enables the generation of spatial K_d maps for selected PFAS species. These capabilities are implemented in the online platform PFASorptionML, providing researchers and practitioners with a valuable resource for conducting environmental risk assessments of PFAS contamination in soil.

NEW INSIGHTS INTO THE REDUCTIVE DESTRUCTION OF PER- AND POLYFLUOROALKYL SUBSTANCES IN HYDRATED ELECTRON-BASED SYSTEMS
Wang, X., L. Qiu, Z. Chen, H. Chen, J. Wang, Y. Zhang, Y. Xu, D. Kong, M. Zhang, and C. Gu. Environmental Science & Technology 59(11):5786-5795(2025)

A study investigated the PFAS transformation processes in different hydrated electron-based systems, i.e., UV/ Na_2SO_3 , UV/indole, and UV/3-indoleacetic acid (IAA), using different PFCAs as model compounds. Monitoring the production and decay of hydrated electrons, molecular interactions, and the generated intermediates systematically revealed the structure-property-performance mechanism of different systems. In the UV/ Na_2SO_3 system, the disordered attack of hydrated electrons induced rapid destruction of either long or short-chain PFCA. However, the lower hydrated electron efficiency limited the final defluorination ratio. In the UV/indole system, the interaction between indole and PFCA promoted the directed transfer of hydrated electrons, resulting in a significantly higher destruction efficiency for long-chain PFCA than for short-chain PFCA. However, the self-quenching of hydrated electrons in the UV/IAA system led to the ineffective decomposition of all PFCA. This study provides mechanistic insights into the hydrated electron-induced PFAS decomposition processes, which would expand the designing of strategies for improving PFAS destruction efficiency.

TEEN YEARS OF PFOS AND PFOA HUMAN BIOMONITORING IN ITALY: EXPOSURE LEVELS AND DETERMINANTS OF EXPOSURE

Ingeldio, A.M., A. Abballe, E. Dellatte, F. Ferri, N. Iacovella, V. Marra, S. Valentini, and E. De Felip. *J. Chemosphere* 376:144297(2025)

Concentrations of PFOA and PFOS in human serum were studied in this paper. Serum samples were collected in Italy between 2007 and 2017 along with information on the characteristics and lifestyle of the study participants. Univariate and multivariate statistical analyses were applied to the resulting database to identify major determinants of PFAS exposure over time and in different exposure scenarios. PFOA concentrations ranged over four orders of magnitude, with a median value of 2.4 ng/mL. PFOS concentrations ranged over three orders of magnitude, with a median value of 4.6 ng/mL. Exposure scenario and sex were identified as the major factors in determining PFAS concentrations. In subjects with a background level of PFAS exposure, other relevant determinants identified were age, geographical area, degree of urbanization, level of education, and skill level in occupation. A declining time-trend was observed for PFOA, but not for PFOS. Results can support defining measures to limit future human exposure to these persistent contaminants.

MICROFLUIDIC STUDY ON GREEN REMEDIATION OF NONAQUEOUS PHASE LIQUID (NAPL) CONTAMINATION IN HETEROGENEOUS GROUNDWATER SYSTEMS USING DIHYDROLEVOCUCLOSONONE (CYRENE)

Wang, X., H. Zhao, T. Zheng, Y. Li, X. Wang, Q. Wang, T. Long, C. Tsakiroglou, and J. Luo. *Environmental Science & Technology* 59(13):6850-6862 (2025)

A study explored the use of the bioderived green solvent dihydrolevocuclosonone (Cyrene) as an alternative to traditional remediating agents for NAPL remediation. Microfluidic experiments and accompanying numerical modeling demonstrated that Cyrene enhances the dissolution and mobilization of NAPL contaminants, particularly in low-permeability zones, achieving residual NAPL reductions of up to 80% compared with water and Tween 80 solutions. These findings underscore Cyrene's dual environmental benefits as an eco-friendly solvent for both treating solid waste and for NAPL remediation, paving the way for sustainable and green solutions in environmental management.

FEASIBILITY EVALUATION OF A BLENDED COVER WITH ACTIVATED CARBON FOR IN-SITU STABILIZATION OF DDT IN SEDIMENT

Cho, Y.-M., B.J. Pauken, A.E. Tovkach, O.B. Fringer, S.G. Monismith, and R.G. Luthy. *Journal of Contaminant Hydrology* 267:104445(2024)

A feasibility study for an activated carbon (AC)-blended cover was conducted at the Lauritzen Channel of the United Heckathorn Superfund site, which was contaminated with dichlorodiphenyltrichloroethane, its metabolites (DDx), and dieldrin. Vessel activities causing sediment disturbance were identified as key factors for remedy selection. A blended cover with medium-size gravel (D50 = 15 mm, D90 = 19 mm) with 4% granular AC by weight was designed to withstand varied hydrodynamic conditions and AC stability was tested in a current flume. Flume erosion studies showed minimal AC loss (1-2 % of total AC) under shear forces of 9-31 Pa, equivalent to or exceeding the estimated worst-case erosional conditions in the channel induced by a hypothetical, stationary tugboat propelling at high power thrust. The treatability performance of the engineered blended cover design was evaluated through mesocosm studies using site sediment and various cover options. Post-treatment assessments on days 5 and 145 showed rapid reductions in freely dissolved (C_{free}) DDx and dieldrin in the blended cover layers and surface water. For example, by day 145, C_{free} DDx was reduced by over 98%, meeting US EPA remedial goals for the site. It is concluded that the combination of both stability and performance testing demonstrates that an engineered blended cover-AC design would be a feasible remedial option at the site, and that this testing approach can be applied to evaluate in-situ treatment in other sediment cleanup activities.

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General News

DESTRUCTION OF PFAS IN SOILS: TECHNOLOGY DEMONSTRATIONS AT JOINT BASE ELMENDORF-RICHARDSON, ANCHORAGE, ALASKA

Zsolt, L., Crownover, E., and L. Kinsman. SERDP & ESTCP Webinar Series, June 2025

This SERDP and ESTCP webinar focused on three demonstrations of PFAS treatment technologies for impacted soil at Joint Base Elmendorf-Richardson in Anchorage, Alaska, funded in partnership with the Defense Innovation Unit. Investigators discussed demonstration results from thermal conduction heating, smoldering combustion, and electric induction, followed by thermal plasma oxidation, offering insights into the performance and scalability of each technology.

Slides:

<https://sepub-pubof-0001-174733393621-us-gov-west-1-e3-us-gov-west-1-amazonaws-com/e3fe-public/2025-06/SEDPB%20ESTCP%20Webinar%20%23%20216%20%28E8%2006052025%28%20-%20Slides%20V6.pdf?versionId=H55K-CcpQyNh>

Video: <https://www.youtube.com/watch?v=1B6wGNA6n>

SYSTEMATIC EVIDENCE MAP FOR THE PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) UNIVERSE

Shirke, A., E. Radke, R. Jones, B. Allen, C. Lin, A. Ross, N. Vetter, C. Lemeris, P. Hartman, S. Eftim, A. Varghese, R. Blain, H. Hubbard, A. Williams, K. Thayer, and L. Carlson. *Environmental Health Perspectives* [Published online 22 May 2025 before print]

Systematic evidence map (SEM) methods were used to summarize the available epidemiological and mammalian bioassay evidence for ~14,735 chemicals identified as PFAS by EPA's Center for Computational Toxicology and Exposure. This work is a continuation of previous 2022 (<https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP110343>) and 2024 (<https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP14191>) SEMs that inventoried evidence on a separate set of ~500 PFAS. The Comprehensive PFAS Dashboard includes evidence identified from the past SEMs and completed EPA assessments. Literature searches from peer-reviewed and gray literature sources were conducted to identify, screen, and inventory mammalian bioassay and epidemiological literature using a manual review and machine learning software. A diverse array of potentially relevant supplemental content was also tracked, including mechanistic data, exposure-only studies, and studies informing chemical toxicokinetics and clearance. Exposure, comparator, and outcome (PECO) criteria, experimental design details, and health endpoints were summarized in interactive web-based literature inventory visuals for each study meeting a predefined population. Epidemiology studies and animal bioassay studies with ≥21-day exposure duration or reproductive/developmental study design underwent an evaluation for risk of bias and sensitivity, as well as detailed extraction of health endpoint data. Scientific database searches retrieved 152,205 references. After full-text screening, 347 mammalian bioassays and 44 epidemiological studies met PECO criteria. The mammalian bioassay and epidemiological evidence assessed 99 and 30 individual PFAS, respectively (n = 18 PFAS). The epidemiological evidence assessed 15 health systems, and the mammalian bioassay evidence assessed 16 health systems. Across all data, only 1.4% (214/14,735) of PFAS had any mammalian bioassay or epidemiological data available. The majority of PFAS lack publicly available information about the potential human health effects of exposure to these chemicals. *Accepted manuscript:* <https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP16952>

1,2-DICHLOROETHANE IN INDOOR AIR

Eklund, B., G. Plantz, and C. Regan. *Remediation* 35(3):e70025(2025)

1,2-Dichloroethane is a manmade compound used to produce vinyl chloride. Due to its toxicity, it generally has relatively low screening levels based on acceptable concentrations in indoor air, soil vapor, and groundwater. If a 1,2-dichloroethane release occurs, the compound may be detected in the subsurface and could be a risk driver for vapor intrusion (VI). Based on studies presented in this paper, however, this compound has become more frequently detected in indoor air and is likely attributed to sources in the buildings being sampled. Current knowledge of indoor air background levels of 1,2-dichloroethane and potential sources is summarized in this article. Recent field data demonstrate that the typical indoor air concentrations for this compound are higher than those reported in the past and may be connected to a larger presence of internationally shipped materials in the current indoor environment than in previous decades. This is an important consideration when evaluating buildings for VI, as background indoor air concentrations of 1,2-dichloroethane may confound the VI pathway assessment. <https://online.library.wiley.com/doi/pdf/10.1002/rem.70025>

WORKSHOP 07: ADVANCES IN APPLICATIONS, TECHNIQUES, AND INTERPRETATIONS IN THE FIELD OF ENVIRONMENTAL FORENSICS

Philp, P. | AEHS Foundation 40th Annual International Conference on Soils, Sediments, Water and Energy 21-24 October, Amherst, MA, 19 slides, 2024

This workshop discusses the evolution of environmental forensics techniques and their application to different problems. In addition, the integration of historical product information, site histories, and other potentially useful information is also covered. A good understanding of analytical chemistry and what happens to products after release into the environment is essential, since the fingerprints of the spilled product may be quite different from the original product in the storage tank. An understanding of the origin and manufacturing processes involved in the synthesis of the contaminants can also be extremely useful. Historical changes in product composition over time resulting from manufacturing processes or end-use specifications are other critical areas of environmental forensics. Preliminary characterization of the environmental samples is undertaken by gas chromatography (GC), followed by more detailed analyses using gas chromatography-mass spectrometry (GC-MS) and possibly MS/MS, along with 2D GC. Stable isotope composition of individual contaminants, including C, H, N, Cl, Br, or S isotopes, can also be utilized for single-component contaminants where GC and GC-MS are of little use for correlation or differentiation. https://s3.amazonaws.com/amz-xcdsystem.com/AS1108D5-FA2F-2B6D-01D92AC0E4DCE3R_abstract_File24087/Handout_205_1023075401.pdf

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