

ER-2714: Development of Coupled Physiochemical and Biological Systems for In-Situ Remediation of Mixed Perfluorinated Chemical and Chlorinated Solvent Groundwater Plumes

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Technology Focus

- Develop coupled in situ remediation technologies to treat groundwater plumes containing mixtures of per and polyfluoroalkyl substances (PFAS) and chlorinated ethenes.

Research Objectives

- Develop highly sorptive and reactive nanomaterials for PFAS and chlorinated ethenes; Develop biological systems to degrade chlorinated ethenes and PFAS byproducts; Evaluate the performance of coupled physicochemical and biological technologies in dynamic systems.

Project Progress and Results

- Synthesized highly sorptive nanomaterials; Demonstrated heated activated persulfate degradation of PFOA; Detected inhibition of TCE and PCE degradation in the presence of PFAS mixtures; Demonstrated sequestration of PFOA and PFOS in columns treated with stabilized activated carbon.

Technology Transition

- Continue nanomaterial synthesis and treatability testing; Disseminate findings via publications, conference, and professional organizations.

