

AVANTech is a full-service specialty wastewater treatment company with extensive experience in government and commercial projects involving ion selective contaminant removal. The experience comes from working over 20 years with the US Department of Energy and Department of Defense, as well as worldwide commercial nuclear power plants. These applications require removing trace levels of hazardous and radioactive contaminants from wastewater, and then properly treating and disposing of secondary solid waste.

It is from this experience that AVANTech's expertise in the removal of per- and polyfluoroalkyl substances (PFAS) was developed. The low concentrations of PFAS in wastewater and the hazardous nature of concentrated adsorbents are similar to these in past applications.

AVANTech PFAS Support Capabilities

Engineering

- ✓ PE licensed chemical, mechanical, and electrical engineers
- ✓ Process, mechanical, electrical, and software engineering all done in-house
- ✓ On-site pilot study and lab testing
- ✓ Technology development and patents for unique applications

Fabrication

- ✓ ASME steel pressure vessel and UL electrical fabrication shop
- ✓ Full factory acceptance testing configuration allows testing of full system and software before deploying to client's site

System Examples

- ✓ Mobile and skid systems
- ✓ Tank, surface, and groundwater treatment
- ✓ Secondary solid waste packaging
- ✓ Emergency response
- ✓ On-demand or leased systems with or without AVANTech operators



Selective Ion Exchange Pilot Testing



AVANTech Emergency Response Mobile Trailer



Technetium and Uranium-Selective Ion Exchange Treatment System

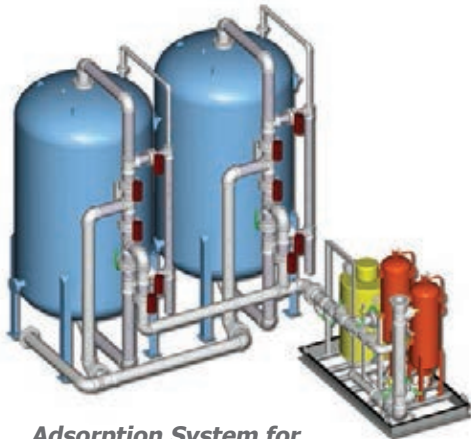


Modular Selective Ion Exchange Treatment System for DOE. Ion Exchange Modules are self-contained for safe handling and designed for direct disposal after exhaustion.

Per- and Polyfluoroalkyl (PFAS) Treatment and Removal

PFAS Specific Capabilities

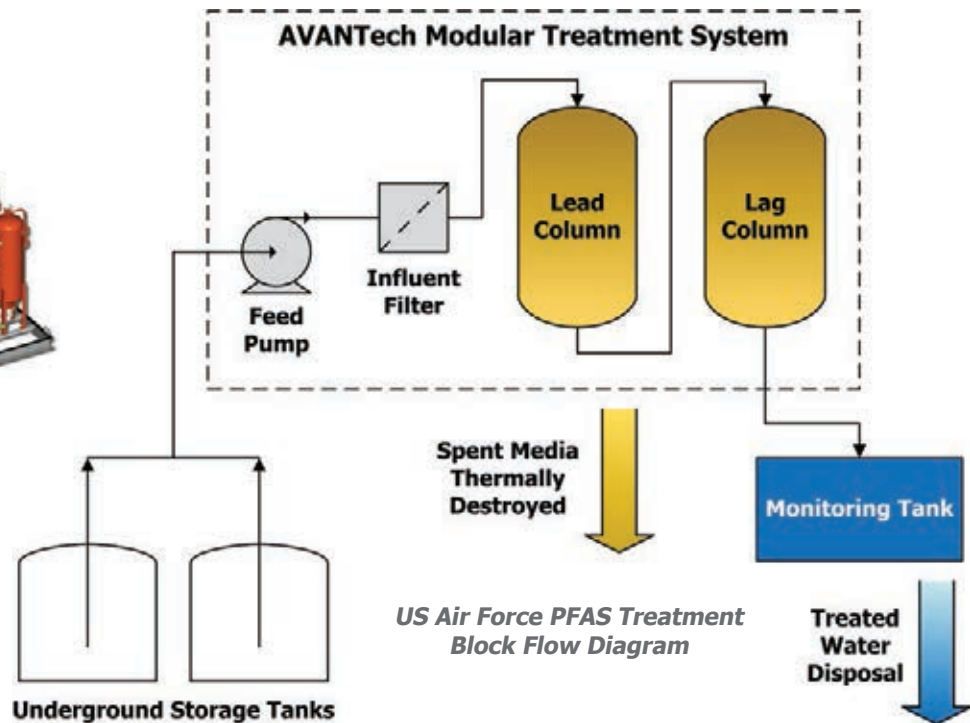
- ✓ AVANTech has a wide variety of filtration, adsorption, and ion exchange technology
- ✓ AVANTech ion exchange media:
 - Proven experience with lab and field data
 - Over 99.9% removal
- ✓ Options for landfill-compliant stabilization
- ✓ Turnkey urgent response applications or custom design/build options



Adsorption System for Anion Removal

A PFAS Project Example

AVANTech designed, built, and operated a small modular PFAS treatment system for a US Air Force Base. The skid included AVANTech ion exchange media and a complete turnkey operation of treatment and assured disposal. Ion exchange vessels were designed to be single-use and disposed of after exhaustion. Results showed 28 PFAS species were removed from ~50,000 ng/L (ppt) to significantly under the EPA recommendation of 70 ng/L.



*AVANTech
Headquarters in
Columbia, SC;
Additional Fabrication
and Office Facilities
Located in Knoxville,
TN, and Richland, WA*