Aerostar SES LLC
1006 Floyd Culler Court
Oak Ridge, TN 37830

Per- and Polyfluoroalkyl Substances

Per- and Polyfluoroalkyl substances (PFAS)—including perfluorinated compounds (PFCs)—are a class of synthetic compounds that are resistant to heat, water, and oil. They are used in hundreds of products including nonstick cookware, food packaging, waterproof clothing, fabric stain protectors, lubricants, paints, and firefighting foams such as aqueous film-forming foam (AFFF). PFCs are persistent, resist degradation in the environment, and are bioaccumulative. The US Environmental Protection Agency (EPA) has developed health advisories for drinking water containing two PFCs, perfluorooctanesulfonic acid (PFOS) and/or perfluorooctanoic acid (PFOA).

Military AFFF Use—From the early 1970s until 2002, the Department of Defense (DoD) purchased and used AFFF containing PFOS and/or PFOA (8 carbon chain formulations) for firefighting and firefighting training activities. Some eight carbon chain formulations were used after 2002 until previously purchased stockpiles of the product were depleted. Since 2002, all AFFF purchased by the DoD have been produced by the *telomerization* process (six carbon chain formulations), which contains no PFOS but can potentially break down in the environment to produce PFOA and other perfluorocarboxylic acids. AFFF use at military installations may have included aircraft hangars, plane crash and fire emergency response sites, firefighting equipment testing areas, fire trucks and/or emergency vehicles wash racks/areas, waste water treatment plants, waste lagoons, and other AFFF storage areas.

As an industry leader and prime contractor in PFC and emerging contaminant science, Aerostar provides a full complement of services related to the investigation of multiple PFC compounds.

Did You Know...

Aerostar has:

Supported:
The U.S. Air Force and U.S. Army PFC Programs since 2013

Evaluated:
Laboratories through audits and proficiency testing for PFC analysis

Participated:
In restoration advisory board and other public meetings related to PFC programs

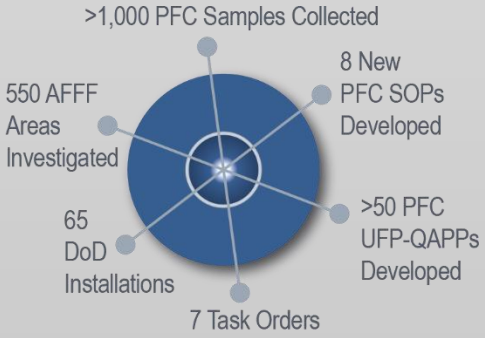
Worked:
With industry and academic leaders for technology exchange and research support

Established:
In-house Emerging Contaminant Group dedicated to investigating/mitigating PFCs

Grown:
To include 194 professional & administrative personnel in 13 offices across the U.S.

We have established an in-house core team of professional engineers, geologists, and scientists who are dedicated to supporting Aerostar's emerging contaminant program.

Our regulatory experts are keenly aware of the dynamic regulatory environment that surround emerging contaminants. They routinely monitor and evaluate changing state and federal regulations and advisories to ensure our clients are aware of any updates that may affect planning and site response actions.



Aerostar PFC Program Stats at a Glance

Emerging Contaminant Services

- ✓ Preliminary Assessments (PAs)
- ✓ Site Inspections (SIs)
- ✓ Risk Assessment
- ✓ Potable Well Surveys
- ✓ Community Relations Support
- ✓ Site Investigations
- ✓ Remedial Investigation (RI)
- ✓ Pathways Analysis
- ✓ Mitigation Measures

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Representative Project Experience

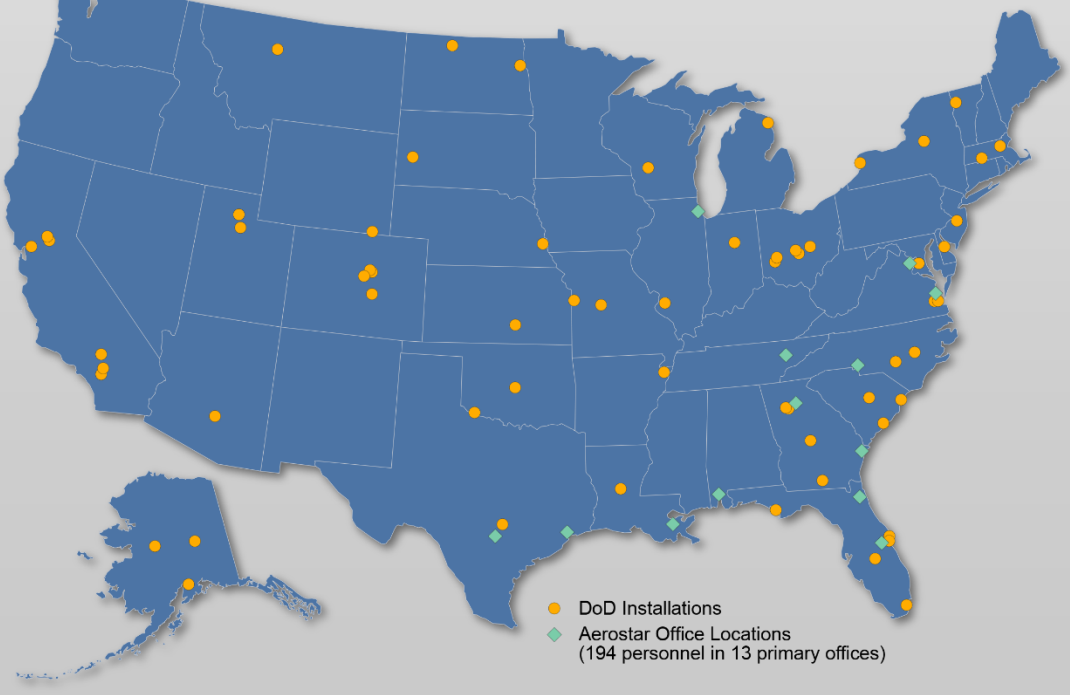
SITE INVESTIGATIONS OF FIRE FIGHTING FOAM USAGE ON VARIOUS AIR FORCE BASES. We recently completed a project supporting the Air Force Technical Support Division at 10 installations and 40 AFFF areas. The focus of the study was to evaluate aircraft maintenance hangars, areas where spray tests were performed, oil/water separators, fire stations, crash sites, foamed runways, AFFF storage areas, and drainage ditches and basins. Throughout the study, approximately 400 surface soil, subsurface soil, groundwater, surface water and sediment samples were collected and analyzed for sixteen PFC constituents. Project activities were documented in installation-specific UFP-QAPP addendums, site investigation reports, and validated data uploaded to the Air Force ERPIMS database.

PFC RELEASE DETERMINATION, DELINEATION AND REMEDIATION AT BRAC INSTALLATIONS. Aerostar is currently conducting PFC SIs at 18 Air Force BRAC installations and 183 AFFF areas. Project tasks include laboratory audits and proficiency testing, evaluating human health and ecological receptors, conducting potable well surveys, supporting Restoration Advisory Board and other public meetings, and implementing mitigation measures. Project activities are documented in installation-specific UFP-QAPPs, SI reports, and validated data uploaded to the ERPIMS database.

SITE INSPECTION OF AQUEOUS FILM FORMING FOAM AREAS, MULTIPLE SITES, UNITED STATES AIR FORCE INSTALLATIONS. This project is currently being performed for the USACE Omaha District, and includes conducting a PFC PA at one Air Force Installation and PFC SIs at 148 AFFF areas on 19 Air Force Installations previously identified as part of PA research activities to determine if a release of PFCs may have occurred in groundwater, soil, surface water, and sediments per EPA guidance for performing SIs under CERCLA.

SITE INVESTIGATIONS OF FIRE FIGHTING FOAM USAGE AT VARIOUS AIR FORCE BASES IN THE EASTERN U.S. This $6.96M project is currently being performed for the USACE Savannah District, and includes conducting PFC PAs at two Air Force installations and PFC SIs of 188 AFFF areas on 20 Air Force installations previously identified as part of PA research activities to determine if a confirmed release of PFCs occurred in groundwater, soil, surface water and sediments per EPA guidance for performing SIs under CERCLA.

Aerostar Perfluoroalkyl Substances (PFAS) PA and/or SI Sampling Experience at DoD Installations



Hangar AFFF Fire Suppression Systems Evaluation and PFC Site Investigation, Ft. Bragg, NC

Project included evaluating hangar AFFF fire suppression systems at Pope Army Airfield and Simmons Army Airfield as well as AFFF release areas not related to the airfields at Fort Bragg. Samples were collected at 5 potential AFFF release areas to confirm if a release of PFCs occurred in groundwater, soil, surface water and sediment in concentrations greater than USEPA provisional health advisory values or other applicable state or federal standards.

FOR MORE INFORATION CONTACT:
Aerostar SES LLC
1006 Floyd Culler Court
Oak Ridge, TN 37830

BRIAN ODOM, P.G.
SENIOR PROJECT MANAGER
478-397-4906
bodom@aerostar.net

PAULA BOND, P.G.
SENIOR PROGRAM MANAGER
865-813-2759
pbond@aerostar.net