

The U.S. Air Force Enterprise-Wide Response to PFASs: Presentation of All Meta-Data to Date

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In 2015, the Air Force Civil Engineer Center (AFCEC) began an enterprise-wide effort to inventory the total number of sites contaminated with per- and poly-fluoroalkyl substances (PFASs) as a result of historic aqueous film-forming foam (AFFF) use at all 104 active, Air National Guard, and Base Realignment and Closure (BRAC) installations worldwide.

These investigations began with Preliminary Assessments (PAs) and subsequent Site Inspections (SIs) following the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. To date, essentially all PAs are complete, and the SI field work is well underway, if not complete, at most installations. The fundamental objectives of these investigations are to 1) confirm environmental PFAS contamination resulting from all uncontrolled AFFF use and 2) preliminarily gauge the likelihood of human exposure via the drinking water pathway for subsequent sampling and mitigation efforts. Thus, sampling locations are necessarily biased toward areas where AFFF likely infiltrated (i.e., source zones) as well as down-gradient locations where groundwater can be sampled before migrating off-installation. In general, several boreholes have been (or soon will be) installed at each suspected source zone. Multiple soil samples are typically collected with depth and a groundwater sample is collected at the water table. Although the dataset varies among sites in terms of the PFASs measured, the number of soil samples with depth, and ancillary data such as soil physical/chemical properties, these meta-data arguably represent one of the largest sources of PFAS occurrence data anywhere.

This presentation will provide an overview of these meta-data and present results from statistical analyses in the context of fate and transport. Specifically, relevant factors that significantly affect soil-to-groundwater transport will be presented including select precursor PFASs, which have been understudied to date.