
PER- AND POLYFLUORO ALKYL SUBSTANCES

PFAS

Joint Base Andrews

April 2022

BACKGROUND

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are compounds from a class of synthetic fluorinated chemicals used in industrial and consumer products, including defense-related applications. This class of compounds is also referred to as per- and polyfluorinated alkyl substances (PFAS).

In 1970, the U.S. Air Force (USAF) began using aqueous film forming foam (AFFF), firefighting agents containing PFOS and PFOA, to extinguish petroleum fires. AFFF may have entered the environment during routine fire training, equipment maintenance, storage, and use. The U.S. Environmental Protection Agency (EPA) continues to monitor and restrict the use of PFOS-based AFFF; and manufacturers have reformulated AFFF to eliminate PFOS. The USAF has excess inventory of PFOS-based AFFF for use in emergencies. For all other instances, the USAF has removed PFOS-based AFFF from its inventory and replaced it with formulations free of detectable concentrations of PFOS and PFOA, which are less persistent and bioaccumulative in the environment.

The U.S. EPA Lifetime Health Advisory (LHA) level is 70 parts per trillion cumulative for PFOS/PFOA in drinking water. The 2018 Site Inspection of Fire Fighting Foam Usage at Joint Base Andrews tested for and confirmed on-base concentrations of PFAS in soil, groundwater and/or surface water. Levels above the LHA were detected in the groundwater and surface water. Drinking water on base as well as throughout most of the surrounding community is provided via public utility.

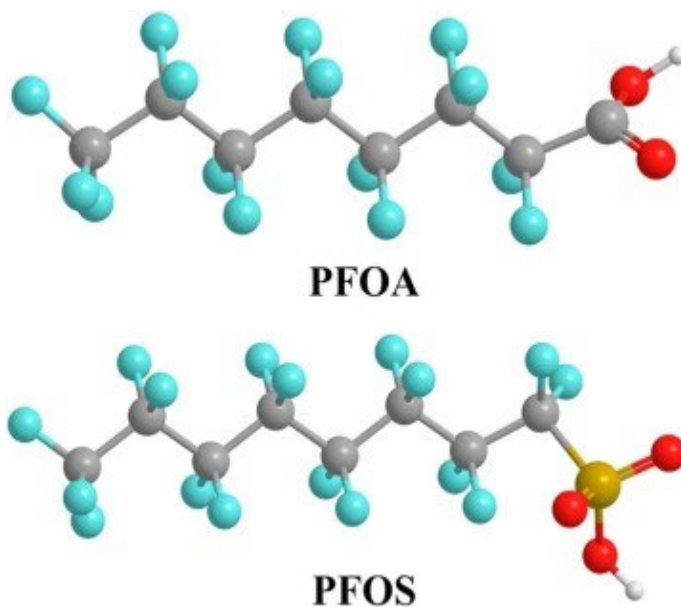


Figure: Chemical Structure for PFOS/PFOA

CHALLENGES

PFOS and PFOA concentrations above the LHA have been found throughout the base, including in Piscataway Creek. In October 2021, the Maryland Department of the Environment placed fishing advisories on this creek based on PFOS/PFOA levels in fish downstream from the base.

PERFORMANCE-BASED APPROACH

A Phase I PFAS remedial investigation for both Joint Base Andrews and the Brandywine DRMO sites will be funded in FY22. The objective of this study is to determine the nature and extent of PFAS levels in the environment at these sites and will involve extensive sampling and analysis of all site media, such as groundwater, surface water, soils, and sediments.