

Department of Defense Perfluorooctane Sulfonate and Perfluorooctanoic Acid on Military Installations

Report to Congress



April 2020

Office of the Under Secretary of Defense
for Acquisition and Sustainment

The estimated cost of this report or study for the Department of Defense is approximately \$14,000 in Fiscal Years 2019 - 2020. This includes \$9,850 in expenses and \$4,050 in DoD labor.

Generated on 2020Apr22 RefID: 2-80DE234

I. Congressional Reporting Requirement

Senate Report 116-48, page 146, accompanying S. 1790, the Department of Defense (DoD) Authorization Act for Fiscal Year 2020, requests the Secretary of Defense, in coordination with the Commandant of the Coast Guard, to submit to the congressional defense committees a report on all military and Coast Guard installations or facilities whose drinking water supply may exceed the perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) levels recommended in the United States Environmental Protection Agency's (EPA) lifetime health advisories (HA).¹

II. Background

This report pertains to a national problem involving a wide array of industries and commercial applications, as well as many Federal and state agencies. Therefore, it needs a nation-wide solution. Per- and polyfluoroalkyl substances (PFAS) refers to an entire class of chemicals of which PFOS and PFOA are the most studied and were historically widely-used throughout the United States. These substances are ubiquitous in many industrial and consumer products because they increase a product's resistance to heat, stains, water, and grease.

In the 1970s, DoD began using aqueous film forming foam (AFFF), which contained PFAS, for aircraft fuel firefighting purposes. DoD is one of many users of AFFF, and other major users include commercial airports, the oil and gas industry, and local fire departments. Accordingly, AFFF use or presence is not uniquely attributable to DoD activities. AFFF is a mission-critical tool required for quickly extinguishing petroleum-based fires. Fluorocarbon-based AFFF containing more than a trace amount of PFOS is no longer manufactured or available for purchase in the United States. Legacy stocks of PFOS-based AFFF remain, and currently manufactured and sold AFFF contains PFAS other than PFOS.

To prevent releases to the environment, DoD uses AFFF only to respond to emergency events and no longer uses it for land-based testing and training. The Department treats each of these emergency uses of AFFF as a spill response, to limit environmental releases.

Since 2011, DoD has funded over 100 research projects, with an investment of approximately \$100 million to date, addressing characterization, toxicity, and treatment of PFAS, as well as development of new, fluorine-free firefighting agents.

¹ For additional information on EPA's health advisories for PFOA and PFAS, please see <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>. "Health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. EPA's health advisory level for PFOA and PFOS offers a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in drinking water." *Id.*

III. PFOS and PFOA Policy Oversight

The Deputy Assistant Secretary of Defense for Environment (DASD(Env)) provides guidance and oversight with respect to the DoD Components' environmental compliance programs. DoD Instruction (DoDI) 4715.06, "Environmental Compliance in the United States," dated August 31, 2018, requires DoD to achieve, maintain, and monitor compliance with applicable environmental requirements, including the Safe Drinking Water Act (SDWA) and its drinking water quality requirements. Therefore, the DoD Components comply with the same federal and state drinking water standards and requirements that apply to a public water system (PWS).²

On May 25, 2016, EPA issued SDWA lifetime Health Advisories (HA) recommending that individual or combined levels of PFOS and PFOA in drinking water be at or below 70 parts per trillion (ppt). DoD's priority is to quickly address drinking water that exceeds the HA from DoD activities. Accordingly, though not required by law or regulation, DoD has followed the EPA HA recommendations, to include providing consumers bottled water, alternative drinking water, or targeted drinking water treatment. Additional actions include retesting, customer notifications, communication with state drinking water officials, investigating the source, and an evaluation of options to lower PFOS/PFOA levels over the short and long terms.

IV. DoD Operated Drinking Water Systems with PFOS/PFOA above the HA

The Department is committed to protecting the health of our Service members, their families, and the DoD civilian workforce. In furtherance of its commitment, DoD took proactive actions to address drinking water impacted by releases of PFOS/PFOA from DoD activities. Between June 2016 and August 2017, the DoD Components tested all 524 DoD-owned and -operated drinking water systems worldwide to identify drinking water that exceeded the EPA HA level for PFOS and PFOA. These tests determined that samples from 24 DoD-operated drinking water systems had PFOS/PFOA above the EPA HA level. This information was provided in a March 2018 briefing to Congress.³

Where DoD-drinking water was above the EPA HA level, DoD has taken immediate and long-term actions to ensure that no one is drinking water from that source. DoD follows the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) process to fully investigate releases, prioritize responses, and determine appropriate cleanup actions based on risk. For immediate short-term responses, the DoD Components may provide bottled water, install point of use filters or temporary treatment equipment, and blend wells. Longer term solutions may include closing wells, installing new wells, adding permanent PFAS-specific treatment equipment, and connection to a municipal drinking water system.

² The term "DoD Components" for this report refers to the Army, Navy, Marine Corps (USMC), Air Force, and Defense Logistics Agency (DLA).

³ <https://www.denix.osd.mil/derp/home/documents/pfos-pfoa-briefing-to-the-hasc/>

Department of the Army

The Army reported PFOS/PFOA above the EPA HA in fourteen DoD-operated drinking water systems at ten installations:

- Belmont Armory
- Camp Carroll
- Camp Red Cloud
- Camp Stanley
- Camp Walker
- El Campo
- Fort Hunter Liggett
- Joint Base Lewis McChord
- Sierra Army Depot
- Soto Cano Air Base

As a follow up to the initial actions, seven installations have completed long-term drinking water solutions, including Belmont Armory, Camp Carroll, Camp Walker, El Campo, Fort Hunter Liggett, Sierra Army Depot, and Soto Cano Air Base. These long-term drinking water solutions included closing wells, installing new wells, and adding permanent PFAS-specific treatment equipment. Joint Base Lewis McChord is in the process of installing long-term drinking solutions for the five separate systems. The two remaining installations, Camp Red Cloud and Camp Stanley, are scheduled for closure and will no longer be providing drinking water.

The Department of the Air Force

The Air Force reported six DoD-operated military drinking water systems with PFOS/PFOA sampling results above the EPA HA:

- Eielson Air Force Base (AFB)
- Horsham Air National Guard Base (ANGB)
- Kunsan Air Base (AB)
- Mountain Home AFB
- New Boston Air Force Station (AFS)
- Wright-Patterson AFB

Both Mountain Home AFB and Horsham ANGB are currently undergoing initial actions. The other four installations, Eielson AFB, New Boston AFS, Wright-Patterson AFB, and Kunsan AB are undergoing long-term solutions to address PFOS/PFOA.

The Department of the Navy

The Navy had six DoD-operated on-base drinking water systems with PFOS/PFOA levels above the EPA HA:

- Naval Air Station (NAS) Oceana Naval Auxiliary Landing Field (NALF) Fentress
- Naval Support Facility (NSF) Diego Garcia I
- NSF Diego Garcia Cantonment
- NSF Diego Garcia Sub Site
- Naval Radio Transmitter Facility (NRTF) Dixon
- MCB Camp Pendleton (South)

Seven of the 35 samples from these six water systems were above the EPA HA for PFOS/PFOA. NSF Diego Garcia I Site and NSF Diego Garcia Sub Site required no further action, as the water systems were already offline and no longer a source of drinking water. NRTF Dixon is providing bottled water and working with regulators to identify the source, as the release has not been linked to the DoD. NAS Oceana NALF Fentress and NSF Diego Garcia Cantonment/Air Ops are currently undergoing long-term drinking water solutions.

At MCB Camp Pendleton, one sample result exceeded the PFOS/PFOA combined HA level. Actions taken included public notification and removing the suspected water sources from service. The affected reservoir was drained and replaced with water from another source. The installation also took three, such as closing wells offline, and resampling confirmed water system levels below the HA. MCB Camp Pendleton continues to monitor the water quality.

Defense Logistics Agency (DLA)

DLA operates one on-base, DoD-operated drinking water system. This system was reported as not having any detectable levels of PFOS and PFOA. All other DLA water systems are owned and operated by local municipalities that adhere to federal, state, and local regulations for PWSs.

United States Coast Guard (USCG)

The USCG is in the process of assessing its risks and vulnerabilities with respect to PFOS and PFOA in drinking water supplies. The USCG is working with the Department of Homeland Security on a strategic, enterprise-wide solution for testing/sampling, providing drinking water alternatives, and operational risk assessments posed by PFOS and PFOA.

V. Notification and Communication

For drinking water systems on installations that test above the EPA HA, DoD has followed the EPA's HA recommended actions to provide prompt notification and ensure that no one consumes drinking water with PFOS/PFOA above the HA. DoD has worked in concert with regulatory agencies and base personnel to provide open and transparent information sharing.

DoD is in regular communication with states, cities, counties, and our federal partners. We have provided updates and participate in forums with multiple partners to share information and approaches to PFOS and PFOA in drinking water, including the Association of State Drinking Water Administrators (ASDWA), National Association of Counties, National League of Cities, Environmental Council of the States (ECOS), National Governors Association, and the Association of State and Territorial Health Officials (ASTHO).

VI. Conclusion

DoD is committed to the health and safety of its military, their families, and civilian personnel, and to proactively taking action to reduce the risks of PFOS and PFOA from DoD activities. As of October 30, 2019, the DoD Components have identified 26 DoD drinking water systems with PFOS/PFOA levels greater than 70 ppt, the EPA's HA. The Department took immediate actions to address these 26 drinking water systems. After cutting off exposure to drinking water above the EPA HA level, DoD is implementing long-term drinking water solutions, such as permanently closing wells, installing new drinking water wells, adding permanent PFAS-specific treatment equipment, and connecting homes to a municipal drinking water system.

DoD has invested in research to develop fluorine-free substitutes for AFFF that meet the military's stringent performance criteria and technologies to quantify and clean up PFOS and PFOA. These combined efforts reinforce DoD's commitment to meeting critical mission requirements while protecting human health.