

FY 2023 First and Second Quarter Report on Department of Defense's Per- and Polyfluoroalkyl Substances Task Force Activities



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Office of the Assistant Secretary of Defense
for Energy, Installations, and Environment

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I. INTRODUCTION

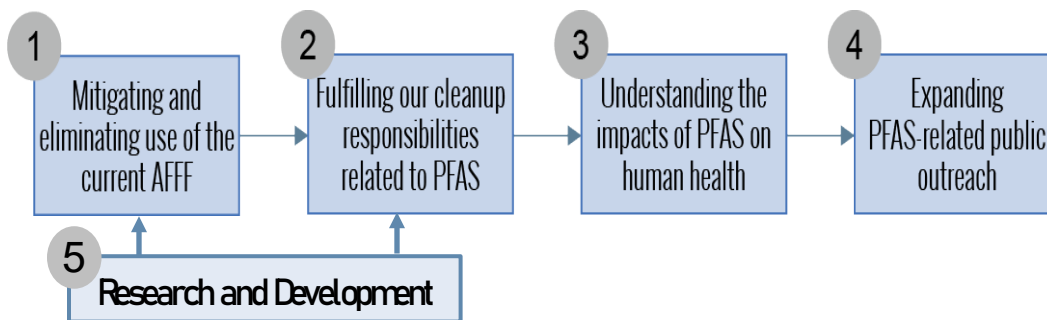
Section 2714 of title 10, United States Code codifies the Department of Defense’s (DoD’s) Per- and Polyfluoroalkyl Substances (PFAS) Task Force and directs the Chairman of the PFAS Task Force to report quarterly to Congress on the activities of the Task Force. In September 2022 and March 2023, the Department submitted reports that provided updates on the DoD PFAS Task Force’s activities during Fiscal Year (FY) 2022. This report covers the DoD PFAS Task Force’s activities during the first and second quarters of FY 2023.

PFAS are a large class of chemicals found in many consumer products, as well as in a type of firefighting foam called “aqueous film forming foam” (AFFF). While DoD is only one of many users of AFFF, there is significant attention on DoD’s usage and the potential impacts to human health and the environment. In July 2019, the Secretary of Defense stood up a Task Force to ensure a consistent and coordinated approach to DoD-wide efforts to address PFAS. Section 341 of the National Defense Authorization Act for FY 2022 (Public Law 117-81) codified the DoD’s PFAS Task Force in section 2714 of title 10, United States Code, and 2714(f) and identified focus areas.

To support the Department’s commitment to the health and safety of its service members, their families, the DoD civilian workforce, and the communities in which DoD serves, the Task Force’s focus areas include:

- Mitigating and eliminating the use of the current AFFF;
- Understanding the impacts of PFAS on human health;
- Fulfilling DoD’s cleanup responsibility related to PFAS;
- Expanding PFAS-related public outreach; and
- Supporting PFAS research efforts and ensuring findings are publicly available.

Figure: DoD PFAS Task Force Focus Areas



II. DOD PFAS TASK FORCE ACTIVITIES

The PFAS Task Force strategically prioritized actions and is aggressively working to complete them by evaluating and establishing policy positions and reporting requirements, encouraging and accelerating research and development, and ensuring the DoD Components are addressing and communicating about PFAS in a consistent, open, and transparent manner. The Department is committed to continuing to address its PFAS releases under the federal cleanup

law (i.e., the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, also known as “Superfund”) and to aggressively pursuing a PFAS-free firefighting solution.

As the PFAS Task Force continues its work to address PFAS across the Department, some highlights of activities accomplished during the first and second quarters of FY 2023 include:

- Completing 41 preliminary assessments/site inspections at installations being assessed for PFAS use or potential release;
- Developing a new Military Specification for a fluorine-free replacement to AFFF;
- Developing comprehensive plans for the transition to PFAS-free alternatives to AFFF and evaluating available technologies, in addition to alternative foams, to replace AFFF systems in facilities;
- Initiating a robust communication and outreach effort focused on improving outreach to communities and increasing transparency in cleanup, to include gathering input from community members, developing a best practices guide, and improving risk communication training;
- Planning senior leader PFAS public outreach engagements, as well as site visits to impacted communities to gather input for more effective future outreach;
- Updating DoD’s PFAS website with installation-specific drinking water and groundwater results, and refining the website to improve navigation and be more user-friendly;
- Conducting research on more than 100 projects, including alternatives to AFFF; and
- Developing or demonstrating 50 PFAS treatment technologies.

The Appendix contains detailed information about the PFAS Task Force’s activities during the first and second quarters of FY 2023.

III. CONCLUSION

DoD’s PFAS Task Force is working to address PFAS issues in a cohesive, consistent manner while coordinating and communicating with external stakeholders. The Task Force has made significant progress toward understanding and limiting the Department’s use of AFFF and researching fluorine-free alternatives to AFFF; monitoring and communicating information about the health effects of human exposure to PFAS; establishing policies and collecting data to track PFAS cleanup progress and costs; and supporting research and development efforts. The Task Force will continue to identify and provide DoD with the tools needed to address the effects of its PFAS releases, and to ensure that the Department continues to protect the health of its service members, their families, the DoD civilian workforce, and the communities in which DoD serves.

Appendix: Per- and Polyfluoroalkyl Substances Task Force Activities During the First and Second Quarters of Fiscal Year 2023

This Appendix describes DoD's PFAS Task Force's activities during the first and second quarters of FY 2023.

Appendix: PFAS Task Force Activities During the First and Second Quarters of FY 2023

Monitoring health aspects of PFAS exposure

For the past several years, DoD has been monitoring the impacts of PFAS on human health, especially the studies conducted by the Agency for Toxic Substances and Disease Registry (ATSDR) within the Department of Health and Human Services (HHS). The Department looks to HHS's National Institute for Occupational Safety and Health for research on occupational exposure and health indicators related to PFAS. We are supporting and monitoring research and development efforts to better understand the potential health effects of PFAS exposure, and communicating this health risk information to our employees. DoD continues to fund the Centers for Disease Control and Prevention/ATSDR for PFAS-related health studies and has provided \$20 million in FY 2023.

The Department continues to offer blood testing for PFAS to all DoD firefighters (Active duty, Reserves, National Guard, and DoD civilians) during their annual occupational exams as required by Section 707 of the FY 2000 National Defense Authorization Act (NDAA).

- ***Congressional Reports/Briefings/Testimony Submitted.***
 - ***First Responder Exposure to PFAS.*** The Department delivered the *First Responder Exposure to PFAS* Report to Congress on February 14, 2023, in response to House Report 117-88, page 65, accompanying H.R. 4432, the DoD Appropriations Bill, 2022. The report includes statistical analyses of DoD firefighter blood testing results for PFAS from FY 2021.

AFFF alternative research and development

Over the past few years, the Department has undertaken an aggressive initiative to develop and demonstrate PFAS-free alternatives for AFFF. A number of commercially available and developmental PFAS-free alternative formulations have been demonstrated to achieve acceptable fire extinguishment performance. DoD has completed evaluations of the shelf life, materials compatibility, and general toxicity of these formulations and the Navy used these results to develop a new MILSPEC – published January 2023. The MILSPEC includes a strict limitation on PFAS content, requires laboratory testing of fluorine-free foams for specific PFAS content as part of product qualification, with a “non-detect” required to pass the test, and manufacturers are required to provide written certification that their MILSPEC-compliant product contains “no intentionally added PFAS.”

The Military Departments are also evaluating available technologies, in addition to alternative foams, to replace current AFFF systems in facilities as part of the development of comprehensive plans detailing the transition to AFFF alternatives in both facilities and vehicles.

During the second quarter of FY 2023, the Department continued development of PFAS-free alternatives to legacy AFFF. In addition, the Department continued to fund alternative ingredients and formulations that are anticipated to improve performance under other conditions of interest to DoD such as operations at low and high temperatures, dilution with salt in addition to fresh water, and the use of alternative non-fluorinated surfactants. Finally, the Department

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continued to fund fundamental work on bubble stability and bubble interactions with fuel and water.

Mitigating the effects of DoD releases of PFAS

- **Cleanup Progress Status.** DoD has identified 707 active military installations, Base Realignment and Closure (BRAC) locations, National Guard facilities, and Formerly Used Defense Sites (FUDS) properties where it is conducting or has completed an assessment of PFAS use or potential release. During the first and second quarters of FY 2023, DoD completed the preliminary assessment/site inspection (PA/SI) phase at 41 installations; the Department determined that 3 of these installations require no further action, while 38 are proceeding to the next step in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, the remedial investigation (RI) phase. Through the end of the second quarter of FY 2023, DoD has completed the PA/SI phase at a total of 425 installations (60 percent); the Department determined that no further action is required at 103 of these installations, while 322 are proceeding to the next step in the CERCLA process. DoD initiated the RI phase at 28 installations during the first and second quarters of FY 2023. The RI phase is underway at a total of 275 installations as of the end of the second quarter of FY 2023.

The Department is monitoring and providing alternative water in the communities surrounding the 53 installations where DoD has identified levels of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) above 70 parts per trillion (ppt).

In May 2022, the U.S. Environmental Protection Agency (EPA) issued new regional screening levels for certain PFAS and DoD is incorporating these new screening values into its cleanup process. This involves DoD changing the screening level that we use to determine whether a site moves from a PA/SI to an RI, from 40 ppt for PFOS and PFOA individually, to 4 ppt for PFOS and 6 ppt for PFOA (in groundwater used for drinking water). The Department is currently assessing the effects of these changes on our cleanup activities.

In June 2022, EPA also announced updated interim lifetime drinking water Health Advisories (HAs) for PFOS at 0.02 ppt and PFOA at 0.004 ppt. These levels for PFOA and PFOS are a significant reduction from the May 2016 HAs of 70 ppt. As EPA stated, these levels are non-regulatory, non-enforceable, and currently below the levels of both detection (determining whether or not a substance is present) and quantitation (the ability to reliably determine how much of a substance is present) of 4 ppt.

EPA proposed a regulatory drinking water standard for PFOS and PFOA in March 2023. The Department looks forward to the clarity that a nationwide regulatory standard for PFOS and PFOA in drinking water will provide.

In anticipation of EPA issuing a final drinking water regulation and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, the Department is evaluating actions to prepare to incorporate a final

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standard, such as reviewing our current data and conducting additional sampling where necessary.

The Department remains committed to fulfilling our cleanup responsibilities, following the federal cleanup law (i.e., CERCLA), and clearly communicating and engaging with communities.

- ***Addressing On-base Drinking Water.*** DoD is ensuring a consistent approach to continued testing and monitoring of on-base drinking water across DoD to ensure no one on-base is exposed to PFOS or PFOA in drinking water above 70 ppt. In furtherance of its March 2020 policy, DoD has continued periodic testing of DoD-operated drinking water systems for certain PFAS, including PFOS and PFOA, and resamples these systems periodically based on the results. Additionally, DoD is continuing to monitor drinking water it purchases for use on its installations to prevent and address exposure to certain PFAS per its July 2020 policy.

As mentioned previously, in anticipation of EPA issuing a final drinking water regulation, the Department is evaluating its efforts to address PFAS in drinking water and what actions we can take to prepare to incorporate a final standard, including our on-base drinking water systems. In addition, DoD will update its policies related to monitoring for PFAS in on-base drinking water to incorporate EPA's new drinking water standard.

- ***Data Calls Issued:***
 - ***Status of Notifications to Agricultural Operations for FY 2023 Data Call, February 28, 2023.*** This memorandum requests each DoD Component provide the status of notifications to agricultural operations from April 1, 2022, through March 31, 2023, to support developing the *Status of Notifications to Agricultural Operations for FY 2023* Report to Congress. Section 335(d) of the FY 2021 NDAA requests the Secretary of Defense provide a report on the approximate locations of the notified agricultural operations; associated Military Installation or National Guard facility; covered PFAS and levels detected in groundwater; and status of notifications to the agricultural operations.
 - ***Installation-Specific Plans for Replacing AFFF in Land-Based Facilities and Mobile Assets, March 22, 2023.*** This memorandum requires the Military Departments provide updated implementation plans, schedules, and overall department costs for replacing AFFF in all land-based facilities, non-tactical, and tactical mobile assets to the Assistant Secretary of Defense for Energy, Installations, and Environment. Additionally, this memorandum requests the Military Departments brief the PFAS Task Force on updates to their planning efforts at regular intervals to support DoD's plan to phase-out of AFFF and transition to non-AFFF alternatives.

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Assessing the perceptions of Congress and the public of DoD's efforts to mitigate PFAS effects from DoD activities

- ***PFAS Public Outreach.*** The Department is committed to expanding our outreach efforts as we continue to address PFAS. DoD is developing an overarching PFAS communication strategy to include communication products that will explain DoD's cleanup activities in a comprehensible and transparent manner. These efforts will ensure a cohesive and collaborative approach to communication and messaging across DoD and drive consistent messaging across all communication platforms. In the Fall of 2022, the Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilience (ODASD(E&ER)) began working in coordination with the Military Departments on a multi-year Environmental Cleanup Communication and Outreach Initiative to enhance communication and outreach with stakeholders including Congress, the public, and communities across the country. In coordination with the Military Departments, ODASD(E&ER) is advancing to in-person community discussions regarding challenges or best practices with DoD's environmental cleanup communication and outreach methods. DoD completed a visit to Biddle Air National Guard Base, Pennsylvania (Former Naval Air Station Joint Reserve Base Willow Grove) on March 15-16, 2023, and is preparing for installation visits to:
 - Davis-Monthan Air Force Base and Morris Air National Guard Base, Arizona (April 18-19, 2023);
 - Fort Monroe, Virginia (May 3-4, 2023);
 - Camp Grayling/Former Wurtsmith Air Force Base, Michigan (May 16-18, 2023);
 - Pease Air Force Base, New Hampshire (July 19-22, 2023); and
 - Fort Devens, Massachusetts (August 29-September 1, 2023).

In-person engagements include DoD attendance at Restoration Advisory Boards and other public forums and one-on-one interviews with community members during which participants are asked a series of communication related questions. Responses to these questions help to highlight best practices and opportunities for improvement with public engagement, provide input about the successes or shortcomings of DoD's public outreach and communication efforts at the local level, and will inform a cohesive and collaborative approach to communication with local communities now and in the future.

This initiative is designed to enhance, earn, or restore public trust, improve transparency about DoD's PFAS cleanup efforts, engage communities affected by DoD's cleanup activities, and illustrate the work being done in the environmental cleanup portfolio. ODASD(E&ER) is working across the Services with PFAS and environmental cleanup portfolio managers, public affairs professionals, and technical staff to identify communication needs, best practices, and tools that will support and improve communication efforts with Congress and communities in which DoD is committed to cleanup activities.

- ***Deputy Assistant Secretary PFAS Public Outreach.*** On March 8, 2023, Mr. Richard Kidd, the DASD(E&ER), participated in a panel discussion on PFOS and PFOA titled,

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“How DoD and Communities Are Managing Forever Chemicals,” as part of the 2023 Association of Defense Communities National Summit. This venue allowed for open and transparent dialogue between the Department and stakeholders affected by the presence of PFAS. During the event, Mr. Kidd discussed notable progress made by the PFAS Task Force in the past three years, DoD’s continued efforts to research and find a suitable replacement for AFFF, DoD’s progress in addressing PFAS releases, and the Environmental Cleanup Communication and Outreach Initiative currently underway.

- ***PFAS Website.*** During the first and second quarters of 2023, the Department has continued to expand and improve its newly launched PFAS website (www.defense.gov/PFAS). The website includes PFAS-related information, policies, information about cleanup technology research, and a searchable database of PFAS sampling data and PFAS cleanup status by installation as part of an interactive map. The Department continuously updated the website to provide PFAS data and present the results in a useful format. The goal of the website is to provide a platform that promotes transparency and clearly communicates information to the public.
- ***Public Disclosure of Results of DoD Testing of Off-Base Drinking Water in a Covered Area for PFAS.*** DoD conducts sampling of drinking water off base to ensure the Department identifies potential impacts of PFAS resulting from DoD activities. Off-base drinking water includes non-DoD drinking water systems and private wells located outside the installation boundary. In accordance with Section 345 of the NDAA for FY 2022, DoD is providing the final testing results for off-base drinking water located in “covered areas.” Covered areas are locations in the United States that are adjacent to and down gradient from a military installation, FUDS, or National Guard facility. DoD’s final testing results are posted at: <https://www.acq.osd.mil/eie/eer/ecc/pfas/map/pfasmap.html>. As of the end of second quarter of FY 2023, DoD has posted 337 final drinking water reports. These reports included over 7,000 sampling results.
- ***Congressional Reports/Briefings/Testimony Submitted.***
 - ***PFAS at BRAC Locations.*** DoD delivered the report to Congress on *PFAS at BRAC Locations* on March 1, 2023, in response to requirements in House Report 117-391, page 23, accompanying H.R 8238, the Military Construction, Veterans Affairs, and related Agencies Appropriations Bill, 2023. The report contains information on the status of PFAS at BRAC locations, including (1) a list of all closed military installations; (2) an indication of whether PFAS have been detected in drinking water and groundwater; (3) an indication of the level of PFAS that have been detected; (4) information on the likely sources of PFAS; (5) an explanation of current mitigation efforts and proposed remediation plans; (6) the status of remediation; (7) a timeline for cleanup; and (8) an estimate of total cost to investigate and clean up PFAS at BRAC locations.
 - ***Report on Active, National Guard, and FUDS PFAS Cleanup Costs.*** DoD delivered the *Report on Active, National Guard, and FUDS PFAS Cleanup Costs* to

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Congress on March 10, 2023, as required by House Report 117-88, page 65, accompanying H.R. 4432, the DoD Appropriations Bill, 2022. The report includes actual obligations through the end of FY 2019; actual obligations in FY 2020; planned and actual obligations in FY 2021; planned obligations for FY 2022; and estimated obligations after FY 2022. The obligations are provided separately for investigations and cleanup and by DoD Component and installation. This report is the second semi-annual report for this reporting requirement.

- ***Report on DoD's PFAS Task Force Activities.*** Section 341 of the NDAA for FY 2022 (Public Law 117-81) codifies DoD's PFAS Task Force in title 10, United States Code, Section 2714, and requires the Chairman of the PFAS Task Force to report 90 days after the date of the enactment and quarterly thereafter. In response to this requirement, DoD delivered the *Report on DoD's PFAS Task Force Activities* to Congress on March 14, 2023. The report reviews the PFAS Task Force accomplishments during the last two quarters of FY 2022.
- ***DoD Incineration Moratorium Report to Congress.*** Section 343 of the NDAA for FY 2022 (Public Law 117-8) directs the Secretary of Defense to report one year after the date of enactment, and annually thereafter for three years, on all incineration of covered materials containing PFAS by DoD during the year covered by the report. In response, DoD delivered the *DoD Incineration Moratorium Report to Congress* on March 22, 2023, to the Administrator of the EPA and the Committees on Armed Services of the Senate and House of Representatives. This initial report covers the period from December 27, 2021, to December 26, 2022.
- On February 28, 2023, the Honorable Brendan Owens, the Assistant Secretary of Defense for Energy, Installations, and Environment; the Honorable Meredith Berger, Assistant Secretary of Navy, Energy, Installations, and Environment; the Honorable Rachel Jacobson, Assistant Secretary of the Army, Installations, Energy and Environment; and Mr. Edwin Oshiba, Acting Assistant Secretary of the Air Force, Energy, Installations and Environment testified before the House Committee on Armed Services Subcommittee on Readiness. The hearing titled, "Energy, Installations, and Environment Program Update," provided updates on the energy, installations, and environment programs, including PFAS.
- DoD regularly answered congressional inquiries as well as discussed DoD's PFAS efforts with House Armed Services Committee and Senate Armed Services Committee staffers.

Supporting PFAS research efforts and ensuring our PFAS research findings are publicly available

The Department's activities are supported by a robust research and development program to advance technologies to expedite the cleanup process. DoD has invested over \$160 million through FY 2022 with another \$60 million planned through FY 2025 with Strategic Environmental Research and Development Program (SERDP) and Environmental Security

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Technology Certification Program (ESTCP) funding. DoD supports over 200 technology development and demonstration projects, including development of analytical methods for PFAS in media other than drinking water; rapid, in-field analysis methods for mapping of impacted areas; determination of pathways for PFAS migration in soil; and a variety of destruction methods for PFAS.

During the first quarter of FY 2023, SERDP released its annual solicitation with topics focused on the outcome of a five-day meeting to gather SERDP- and ESTCP-funded investigators to exchange technical updates and foster collaborations. More than 150 experts attended, representing DoD, EPA, Department of Energy, other Federal organizations, academia, and industry. Requests for proposals were released in October 2022 and focused on the following research topics:

- Development of Improved Concentration Technologies for Treatment of Matrices Impacted by PFAS: The objective of this topic was to develop an improved understanding of various PFAS concentration technologies in both in situ and ex situ applications.
- Development of Improved Sampling and Analytical Methodologies for the Determination of PFAS in the Environment: The objective of this topic was to develop improved sampling and analytical methodologies to measure PFAS in the environment.
- Improved Understanding of Destructive Treatment Processes for PFAS in the Subsurface: The objective of this topic was to develop an improved understanding on how different waste stream characteristics and physical and biogeochemical conditions affect the efficiency and effectiveness of PFAS destruction in non-thermal destructive treatment processes.
- Improved Understanding of the Fate and Transport of PFAS in the Subsurface: The objective of this topic was to seek innovative research to further explore the fate and transport of PFAS in the subsurface, in both the vadose zone as well as the saturated zone.
- Improved Understanding of Thermal Destruction Processes for Materials Laden with PFAS: The objective of this topic was to develop an improved understanding of the transformation mechanisms, pathways, and kinetics of thermal destruction processes aimed at treatment of materials laden with PFAS.
- Self-Assembly Behavior of PFAS Found in Soil and Groundwater at AFFF-Impacted Sites: The objective of this topic was to develop an improved understanding of the self-assembly behavior of PFAS in the subsurface at AFFF-impacted sites.

Research and demonstrations continued among research projects addressing ecotoxicity of PFAS, SERDP and ESTCP projects addressing treatment technologies, and SERDP and ESTCP projects addressing sampling, analysis, and monitoring during the first and second quarters of FY 2023.

The ESTCP released its FY 2024 solicitation in January 2023, with pre-proposals submitted in March 2023. Approximately 100 pre-proposals were received and are under evaluation by the ESTCP Technical Committee. Recommended proposals will submit a full

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proposal in August 2023 and present to the ESTCP staff and Technical Committee in September 2023 for final consideration.

SERDP and ESTCP have funded more than 170 projects since 2011 addressing the management of PFAS in the environment, as well as the development of PFAS-free alternatives to AFFF. DoD publishes summaries of its ongoing PFAS projects and final reports on its SERDP and ESTCP website at: <https://www.serdp-estcp.org/focusareas/e18ec5da-d0de-47da-99f9-a07328558149>. Additionally, SERDP and ESTCP also post summaries of its workshops and planning meetings as well as tools and trainings on the website.