Cannon AFB PFAS
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Frequently Asked Questions

Actions Taken

Q. What actions has the Department of the Air Force (DAF) taken at Cannon Air Force Base (AFB) about this issue?
A. The DAF completed a Preliminary Assessment (PA) and issued a report in October 2015 identifying locations on Cannon AFB where Aqueous Film Forming Foam (AFFF) may have been released. The Site Inspection (SI) was completed in August 2018 and an expanded SI completed in March 2019. The DAF obtained 25 water off base samples and identified three drinking water locations where Per- and Polyfluoroalkyl Substances (PFAS) exceeded the US Environmental Protection Agency's (EPA's) Lifetime Health Advisories (HAs) for PFAS in drinking water. Two samples were below the EPA's Lifetime HAs, and the remaining samples were "non-detect."

Q. As a result of these steps, what are the actions that the DAF has taken in response?
A. The DAF has provided alternate water sources in place of off base drinking water where PFAS was present at levels above the EPA's Lifetime HAs; replaced the original AFFF mixture with a formulation that meets EPA guidelines; replaced AFFF in fire vehicles; and retrofitted 850 DAF fire vehicles with a system that prevents foam discharge in 2019. Additionally, the DAF implemented stringent AFFF training and use guidance that limits use of AFFF to emergencies and requires immediate clean-up of any dispersal.

Q. What are the next steps that Cannon AFB is taking?
A. The DAF is beginning a Remedial Investigation (RI) at Cannon AFB to determine the nature and extent of PFAS, which will help determine how and when we can execute any other remedial actions. The nature and extent will better define where the PFAS impact is and the concentration levels by investigating soil, groundwater, surface water, and sediment. The RI contract was awarded August 31, 2020.

Q. What is a Remedial Investigation?
A. The RI is a very detailed investigation into PFAS to determine if it is in surrounding soil, groundwater, sediment, and surface water. The investigation also collects data about site conditions, conducts human health and ecological risk assessments to determine whether PFAS present unacceptable risks, and further identifies what is needed for a comprehensive cleanup at current and former installations.

Q. Why does the DAF have to do all these studies instead of taking action?
A. These investigations and studies are necessary to enable the DAF to understand the nature and extent of the threat posed by PFAS released from Cannon AFB and equip the DAF to decide what long term steps must be taken to address that impact. The DAF is responding to PFAS impacts from AFFF releases at Cannon AFB in accordance with the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA), the Defense Environmental Restoration Program statute (DERP), and the National Contingency Plan (NCP). CERCLA, DERP, and the NCP are federal laws and regulations that specify a process that must be followed when responding to releases of hazardous substances, pollutants,

or contaminants to the environment. The investigations and studies the DAF is conducting about PFAS released at Cannon AFB are required under the CERCLA/NCP process.

Q. How long will clean-up take in and around Cannon AFB?
A. The CERCLA process is deliberate and driven by carefully acquired and studied data. The RI is the prerequisite to determine the nature and extent of the PFAS impact which will help decide the timeline for clean-up, and we are working as quickly as possible to perform the RI and maintain the integrity of the analysis. It is important to note that the DAF has taken measures to protect drinking water sources while we conduct the investigation.

Q. What is CERCLA?
A. Congress established the CERCLA, also known as Superfund, in 1980 in response to risks to human health and the environment posed by the release of CERCLA-defined hazardous substances, pollutants, or contaminants to the environment. The process promotes accountability, community involvement, and long-term protectiveness. The goal of CERCLA is to protect human health and the environment by cleaning up sites that present an unacceptable risk. The CERCLA process depends on regulatory standards to fully identify and resolve impacts. Without established standards, federal and state agencies are often unable to use taxpayer dollars to investigate and respond to undefined impacts, and regulatory agencies lack the ability to enforce action.

Q. Why isn't the DAF addressing agricultural wells?
A. Our first step was determining if PFAS was present in the environment, and if so, could it reach drinking water sources. The DAF's focus has been on addressing possible health risks to drinking water sources because drinking water is the most direct route to human consumption and because the EPA has an established Lifetime HA to help guide our actions. We immediately addressed drinking water concerns at and in the vicinity of Cannon AFB, and have been consistently moving forward in the CERCLA process with completion of the PA and SI. Now we're moving on to the RI phase, which sets the groundwork for remedial actions in the future. Those remedial actions will address risk to all receptors, to include humans, livestock, and agriculture.

Q. Isn't the DAF lack of action allowing the "plume" to migrate and cause more "impacts?"
A. The DAF is acting as quickly as possible while following the CERCLA process. The RI will determine the nature and extent or rather exactly where and how far the PFAS impact has travel so we can identify the best course of action to respond to the PFAS impacts. In the interim, we are ensuring alternative safe drinking water is available. An Engineering Evaluation/Cost Analysis (EE/CA) assessment will be completed to evaluate data collected during the RI and consider possible interim responses that can be implemented while the investigation continues.

Q. What is the status of the ongoing litigation at Cannon AFB?
A. Litigation is ongoing.

Next Steps

Q. How will the DAF inform the public of efforts and results?
A. Once the RI is complete, the DAF will share the results with regulators for review and feedback/input, and the final report will be posted to the AFCEC Administrative Record at https://ar.afcec-cloud.af.mil/. In addition, the DAF hosts Quarterly Public Updates to inform and involve the community in the PFAS investigation and provide a forum for the open exchange of information.

Q. Will the DAF implement interim responses during the investigation?
A. The DAF has installed two Point-of-Use Treatment (POUT) systems at locations for drinking water sources that exceed the EPA lifetime HA, and is planning to install one additional system. POUT is a small treatment system that is installed at the drinking water source, usually associated with a building's sink. A contract was awarded for an EE/CA and Pilot Study that will identify and evaluate alternatives for an interim response associated with groundwater that will be implemented before the final remedy. The Pilot Study will provide additional valuable information to the EE/CA.

Q. Will the DAF conduct sampling of human serum and cattle to determine PFAS levels?
A. The primary focus is to sever pathways to protect drinking water used for human consumption. The purpose of the RI is to determine the nature and extent of the PFAS in soil, groundwater, surface water, and sediment that could present a complete pathway for exposure to humans or ecological populations. Addressing anything beyond drinking water requires a whole-of-government approach to set promulgated standards for any other source. For more information on human sampling, visit Agency for Toxic Substances and Disease Registry's (ATSDR) website at https://www.atsdr.cdc.gov/.

Q. How will the DAF protect Clovis drinking water wells and other purveyors if it is determined DAF operations are causing EPA Lifetime HA exceedances?
A. The RI will provide data to determine the nature and extent of PFAS impact from Cannon AFB to any off-site private or public well. If any exceedances are identified above the EPA Lifetime HA in drinking water sources, the DAF will ensure alternate drinking water supplies are available.

Q. What methodologies/technologies will be used to treat PFAS impacted groundwater?
A. The RI and subsequent Feasibility Study, which will evaluate potential remedial options, will take the DAF one step closer to implementing long term actions and will help us select the most effective cleanup option for each installation. The Feasibility Study will evaluate the data provided by the RI and help inform the best methods and technologies for remediation.

Q. Is Cannon AFB still using AFFF containing PFAS for firefighting activities?
A. The DAF has replaced all legacy C8 AFFF at Cannon AFB with a C6 AFFF that meets EPA guidelines. Additionally, the DAF has taken measures to prevent accidental discharge of foam from emergency vehicles, and DAF no longer utilize AFFF in training. Any C6 AFFF used for emergency situations is containerized and disposed in accordance with governing regulations.

Issues

Q. Will the DAF follow State promulgated standards?
A.
For Drinking Water:
When a State properly promulgates a PFAS drinking water standard, the DAF adheres to the standard in any location where we are the supplier of drinking water. Where DAF is not the supplier of drinking water, we follow our authorities available in the CERCLA. Where DAF is the known source, CERCLA allows us to provide bottled water, filter systems, and other removal actions to quickly assure no one is drinking water above the EPA PFAS EPA Lifetime HA level.

For Groundwater and Soil: Under CERCLA, state standards are incorporated into remedies to the extent they are accepted as Applicable, Relevant or Appropriate (ARARs). The Department of Defense

determines whether state PFAS standards are potential ARARs. Once that determination is made, DAF will decide on a site-by-site basis whether the standard is in fact an ARAR for that site since all ARARs are site specific.

Q. What are section 343 and 344 of the NDAA about?
A. Section 343 of the National Defense Authorization Act (NDAA) for Fiscal Year 2020 provides DoD components discretionary authority to use Operation and Maintenance funds to provide alternative water or treat DoD impacted surface or well water used for agricultural purposes to create products destined for human consumption when the water is impacted by PFAS from activities on a military installation at levels that are above either EPA's LHAs for PFAS or a US Food and Drug Administration (FDA) standard for PFAS in raw agricultural commodities and milk.

Section 344 authorized the acquisition of real property within the vicinity of a DAF base that has shown signs of PFAS impact due to activities on base and which would both extend the contiguous geographic footprint of the base and increase the force protection standoff near critical infrastructure and runways.

Q. Will the DAF buy dairy-owned land near the installation?
A. Section 344 of the NDAA for Fiscal Year 2020 gives the DAF authority to purchase land that has shown signs of PFAS impact due to activities on base and which would both extend the contiguous geographic footprint of the base and increase the force protection standoff near critical infrastructure and runways. Any purchase of dairy-owned land near Cannon AFB must meet the criteria specified in Section 344 and must be approved by the Assistant Secretary of Defense for Sustainment, pursuant to guidance the DAF received from the Department of Defense about implementing Section 344.

Q. What is the DAF position on reimbursing agriculture industry for business losses?
A. Neither the NDAA nor CERCLA provide any authority for the DAF to reimburse dairy farms for business losses due to PFAS impact from releases of AFFF at Cannon AFB. Section 343 of the NDAA for Fiscal Year 2020 provides DoD components discretionary authority to use Operation and Maintenance funds to provide alternative water or treat DoD impacted surface or well water used for agricultural purposes to create products destined for human consumption when the water is impacted by PFAS from activities on a military installation at levels that are above either EPA's Lifetime HAs for PFAS or a US FDA standard for PFAS in raw agricultural commodities and milk.

Q. The NDAA gives the DAF authority to go treat right now, why isn't the DAF taking action?
A. Section 343 of the NDAA for Fiscal Year 2020 provides DoD components discretionary authority to use Operation and Maintenance funds to provide alternative water or treat DoD impacted surface or well water used for agricultural purposes to create products destined for human consumption when the water is impacted by PFAS from activities on a military installation at levels that are above either EPA's Lifetime HAs for PFAS or a US Food and Drug Administration standard for PFAS in raw agricultural commodities and milk.

Consistent with the its risk-based cleanup program and DoD implementation guidance for Section 343, the DAF may exercise its Section 343 discretionary authority to provide alternative water or treat agricultural water based on meeting two criteria. The first criterion is a scientifically supportable determination of a need to take action due to an unacceptable risk to human health or the environment based on the site-specific exposure. Such a determination is made either after completion of risk assessments performed during the CERCLA process or by use of US FDA standards for PFAS in raw agricultural commodities and milk. Since the FDA has not established any standards for PFAS, the DAF

must complete risk assessments during the Remedial Investigation before it can even consider treating agricultural water using its Section 343 authority.

Q. Why has the DAF not resampled to determine extent of PFAS impact?
A. The DAF worked as quickly as possible to award the RI to determine the nature and extent of the PFAS impact. The SI and Expanded SI only validated the presence of the impact, now the RI will help the DAF understand the lateral and vertical extent of and identify potential exposure pathways and concentration levels of the impact.

Q. Why won't the DAF host a Restoration Advisory Board (RAB) at Cannon AFB?
A. In September, 2020, the DAF solicited public interest in a RAB. No public responses were received during the public comment period. To ensure optimal opportunity for the public, the DAF reassessed for public interest in RAB in February 17, 2021 with a 45-day public comment period ending April 3, 2021. Since a RAB must cover an installation's entire restoration portfolio, and not just one issue or site, a RAB will not be re-established for Cannon at this time. However, the DAF will continue to hold quarterly PFAS public updates that target public concerns. In addition, the DAF will make information available through a web- based Administrative Record, the Cannon AFB environmental restoration program web site, and through quarterly public meetings.

Q. What is the DAF policy for disposal of investigation-derived wastes (IDW) containing PFAS? How is DAF currently handling those wastes?)
A. DAF currently does not have a formal IDW policy in place. Because PFAS is not considered a hazardous waste, the soil containing PFAS above EPA screening levels is primarily disposed in landfills in compliance with landfill requirements. DAF contractors are recommended to dispose soil IDW in a RCRA Subtitle C landfill. Water impacted with PFAS above LHA is typically run through Granulated Active Carbon or other treatment system.

Q. I recently found out that I have cancer, is it possible that PFAS caused my cancer?
A. For health-related concerns, we recommend you reach out to your medical provider, and local, state or federal health agencies for more information on potential PFAS impacts.

Q. ATSDR has just released toxicological profiles for some of the PFAS. How does DAF plan to use these Minimum Risk Levels (MRLs) in risk assessment and cleanup?
A. DoD follows CERCLA and EPA regulations for all chemicals in our cleanup program. The EPA is currently evaluating how or if the MRLs for the four PFAS in the ATSDR Toxicological Profile should be used for all cleanup sites across the country. The DAF will adjust its policies and actions with DoD guidance Additional information about MRLs can be found at https://www.atsdr.cdc.gov/mrls/index.html.

Q. What is DAF's position regarding elevated blood levels of PFAS around some of the military installations?
A. ATSDR's research to better understand the health effects associated with PFAS exposure is ongoing. Scientists are not currently certain of how PFAS levels in the blood can affect a person's health. The DAF will continue to work closely with federal agencies such as ATSDR and USEPA.

Q. How will the DAF address PFAS exposure from agricultural products?
A. DAF follows the CERCLA process for addressing cleanup of PFAS in the environment. DAF will work closely with our regulatory partners to complete site-specific human health and ecological risk

assessments to evaluate relevant exposure pathways. The DAF is limited in addressing agricultural product exposure until there are established standards for PFAS

Q. How do we know we can trust the DAF?
A. The DAF is committed to transparency and ensuring the community is aware of the ongoing efforts to address the PFAS occurrence in and around Cannon AFB. The DAF will host frequent meetings to address public concerns and ensure that RI results and information are published on the US Air Force Civil Engineer Center (AFCEC) Administrative Record https://ar.afcec-cloud.af.mil/ for public review.

Q. Will the DAF pay for independent studies and confirmation of investigation findings?
A. The DAF is responding to PFAS impacts in accordance with CERCLA and the NCP, which prescribe how the DAF will investigate and respond to releases of hazardous substances, pollutants, and contaminants to the environment. The DAF can complete the CERCLA/NCP process without utilizing independent studies.

Q. Cannon AFB is on a RCRA permit. Why does DAF insist on cleanup under CERCLA when all the cleanup sites at this base are on a RCRA permit?
A. RCRA states that corrective action is only taken to address hazardous wastes and hazardous waste constituents. See RCRA sections 3004(u) and 3005. A contaminant must meet one of those federal definitions - not a state definition that is broader than RCRA - for DOD to be authorized to address that contaminant under RCRA. PFAS do not meet the federal definition of "hazardous waste" or "hazardous waste constituent." However PFAS do meet the CERCLA definition of "pollutant or contaminant." Therefore, the DAF is addressing PFAS under CERCLA, rather than RCRA, even at our bases that have RCRA corrective action permits.

Q. The New Mexico Environment Department (NMED) is also studying PFAS occurrence in NM. Is the DAF partnering with NMED to ensure a robust and active approach to mitigate the PFAS impact?
A. The DAF works closely with NMED on all aspects of the PFAS response at Cannon AFB, including sharing the results of its PFAS investigation, and providing reports and products for NMED's review and comment.

Q. Will the DAF work in collaboration with the Clean Water Act Partnership and local diary communities to ensure transparency and to share real time information?
A. The DAF is responding to PFAS impacts in accordance with CERCLA and the National Contingency Plan, which prescribe how the DAF will investigate and respond to releases of hazardous substances, pollutants, and contaminants to the environment. Publicly releasable documents will be made available for public comment and review on the AFCEC Administrative Record. https://ar.afcec-cloud.af.mil/.

Q. Will the DAF consider, utilize and adopt PFAS investigative data and findings from private and state agencies into the Remedial Investigation?
A. In different places in the CERCLA process, the DAF will solicit input from regulators and the public for consideration. The DAF will review and consider information relevant to the investigation of PFAS at Cannon AFB pursuant to the CERCLA framework.

Q. Is the DAF willing to form partnerships with outside organizations (i.e., CWP –Cannon) and agencies to address PFAS impacts?

A. The DAF is addressing the impact of PFAS releases of AFFF IAW federal environmental restoration law and process. As such, we are communicating with state and federal regulators and we are keeping the public informed about what we're doing. As we go through the response process, there are opportunities for interested parties to provide comments and ask questions. To the extent the process includes regulator involvement and public participation, there is partnering going on. For the DAF's part, if we need expertise or assistance we don't have internally, we'll seek it so we can complete our responsibilities under federal environmental restoration laws.

Q. Given the significance of this issue, why can't the DAF promulgate PFAS standards?
A. The DAF doesn't have legal authority or a Congressional appropriation to promulgate PFAS standards.

Q. The DAF has stated that DoD is funding cleanup technology research and development. What is the nature of these studies and who are the key agencies?
A. The DoD has funded research through the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) for cleanup technologies that include in-situ and ex-situ groundwater treatment, treatment for investigative derived waste, and wastewater treatment. These technologies are at various stages of study. The treatment technologies, investigators, and the current status can be found on the DoD PFAS page (https://serdp-estcp.org/Featured-Initiatives/Per-and-Polyfluoroalkyl-Substances-PFASs/DoD-PFAS-Page/DoD-PFAS-Page).

AFCEC also seeks to advance innovative environmental technology through a Broad Agency Announcement (BAA) initiative. The BAA provide a bridge from R&D successes to use by site remediation practitioners.

Several BAA projects focusing on PFASs are underway currently at DAF installations. Additional PFAS–related BAA projects are scheduled for award in FY21. Current projects include:

- Wright-Patterson AFB, Ohio. Coupling Ion-Exchange Resin with Electrochemical Treatment for Complete Separation and Destruction of PFAS in Groundwater.
- Cape Canaveral Space Force Station, Florida. Field-Scale Comparison of Adsorbents for In Situ Stabilization of PFAS. A full scale application of this technology recently was initiated at Ellsworth AFB, South Dakota.
- Wright-Patterson AFB, Ohio. Enhanced Contact Electrical Discharge Plasma Reactor (PFAS Remediation). A follow-up project seeks to upscale to water treatment rates of 10-100 gal/min.
- Peterson Space Force Base, Colorado. Electrochemical treatment by nanofiltration plus sequential UV oxidative/reductive treatment of reject water.