



DEPARTMENT OF THE NAVY

NAVAL AIR STATION WHIDBEY ISLAND
3730 NORTH CHARLES PORTER AVENUE
OAK HARBOR, WASHINGTON 98278-5000

31 Mar 25

MEMORANDUM

From: Commanding Officer, Naval Air Station Whidbey Island
To: Naval Facilities Engineering Systems Command (NAVFAC) Northwest

Subj: OFF-BASE PRIVATE DRINKING WATER TIME-CRITICAL REMOVAL ACTION
FOR ENDURING SOLUTIONS, NEAR NAVAL AIR STATION WHIDBEY ISLAND,
OAK HARBOR AND COUPEVILLE, WASHINGTON

1. Purpose. The purpose of this Action Memorandum (AM) is to document selected enduring solutions to address specific per- and polyfluoroalkyl substances (PFAS) at or above established September 2024 Department of Defense (DoD) PFAS interim action levels for private drinking water wells (DoD 2024) near Naval Air Station (NAS) Whidbey Island, in Oak Harbor and Coupeville, Washington:

- a. One well providing drinking water to Ault Field Residence K.
- b. One well providing drinking water to Ault Field Residence L.
- c. One well providing drinking water to Ault Field Residences M1 through M8.
- d. One well providing drinking water to Area 6 Residences N1 through N9.
- e. One well providing drinking water to Ault Field Residences O1 through O4.
- f. One well providing drinking water to Coupeville Residence 12.

2. Implementations. The U.S. Navy is implementing a Time-Critical Removal Action (TCRA) in response to PFAS concentrations above the DoD PFAS interim action levels for private drinking water wells near NAS Whidbey Island. The TCRA is intended to select the most protective, enduring, and cost-effective solution to provide a drinking water source.

3. Policy. This AM was prepared per Section 300.415 (n)(2) of Title 40 of the Code of Federal Regulations, as part of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Navy is the lead agency, under Executive Order 12580, for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions at NAS Whidbey Island. NAS Whidbey Island is currently listed on the U.S. Environmental Protection Agency (EPA) National Priorities List.

4. Site Conditions and Background. NAS Whidbey Island is comprised of four separate sites: Ault Field (includes Area 6 Landfill), Outlying Landing Field (OLF) Coupeville, Seaplane Base,

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and the former Lake Hancock Target Range. Seaplane Base and the Lake Hancock Target Range are not discussed further and it is not part of this AM. Naval activities began at NAS Whidbey Island on 21 September 1942. Ault Field currently supports several types of aircraft, 7,600 military personnel, and 1,300 civilian personnel. NAS Whidbey Island's current mission is to maintain and operate naval aircraft and aviation facilities and provide associated support.

a. OLF Coupeville was commissioned by the Navy in 1943. The Navy has used OLF for day and night Field Carrier Landing Practice (FCLP) operations for Ault Field based aircraft since 1967. FCLPs are touch and go operations that simulate aircraft carrier landings and takeoffs. The Navy considers OLF Coupeville an ideal airfield for FCLP training due to its remote location and low ambient lighting, which provides pilots an optimum experience that replicates landing aboard an aircraft carrier.

b. The most common activity associated with a historical release of PFAS to the environment at NAS Whidbey Island is the use of firefighting foam (specifically, aqueous film-forming foam, or AFFF) for testing, training, firefighting, and other life-saving emergency responses, or associated disposal practices. Because of this historical use, PFAS are present in groundwater at NAS Whidbey Island and have been detected in nearby drinking water wells located in the direction that groundwater flows away from NAS Whidbey Island. In 2016, the Deputy Assistant Secretary of the Navy (Environment) issued a memorandum to address past releases of PFAS under the Navy Environmental Restoration Program. In response to the 2016 memorandum, the Navy assessed sites with a known or potential PFAS release and prioritized testing drinking water sites located within one mile downgradient from the release site. The Navy initiated sampling in 2016 near NAS Whidbey Island to ensure the communities near its installations were not exposed to drinking water with PFOA and/or PFOS above 70 parts per trillion (ppt), the DoD's interim action level at the time, because of a known or potential Navy release of PFAS-containing materials. The Navy issued additional guidance to investigate potential PFAS sources and levels of contamination at Naval Installations to identify areas requiring further assessment.

c. In 2018, Preliminary Assessments (PAs) were finalized for Ault Field (including Area 6 Landfill) and OLF Coupeville (CH2M,2018b and c). The Ault Field PA identified 35 PFAS release areas and the OLF Coupeville PA identified 3 PFAS release areas. Between 2016 and 2020, Site Inspections (SIs) for PFAS occurred at Ault Field, Area 6 Landfill, and OLF Coupeville (MMEC 2016; CH2M 2018a; CH2M 2019; CH2M 2020; CH2M 2021a, b; and CH2M 2022). The presence of PFAS was confirmed above the applicable screening levels at the time of the investigations at Ault Field: Airfield (23 release areas), Area 31 (former Runway Fire Training School), Current Fire Training Area, two former wastewater treatment areas, and the Area 6 Landfill. The presence of PFAS was also confirmed at OLF Coupeville. Remedial investigations (RIs) for PFAS are underway at Ault Field Airfield, Area 31, Current Fire Training Area, Area 6 Landfill, and OLF Coupeville.

d. On 26 April 2024, the EPA issued a final National Primary Drinking Water Regulation (NPDWR) establishing nationwide drinking water standards for certain PFAS under the Safe Drinking Water Act (SDWA). This regulation applies to public drinking water systems.

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Operators of public drinking water systems regulated by the NPDWR have five years to meet these standards. In September 2024, the DoD published “Prioritization of Department of Defense Cleanup Actions to Implement the Federal Drinking Water Standards for Per- and Polyfluoroalkyl Substances under the Defense Environmental Restoration Program,” which describes the DoD’s plans to incorporate the EPA’s drinking water regulation into the DoD’s ongoing PFAS cleanups and prioritize actions to address private drinking water wells with the highest levels of PFAS from DoD activities. Table 1 shows the DoD PFAS interim action levels for private drinking water wells.

Table 1. DoD PFAS Interim Action Levels for Private Drinking Water Wells	
PFAS	Level
perfluorooctanoic acid (PFOA)	12 ppt
perfluorooctane sulfonic acid (PFOS)	12 ppt
perfluorononanoic acid (PFNA)	30 ppt
perfluorohexane sulfonic acid (PFHxS)	30 ppt
hexafluoropropylene oxide dimer acid (HFPO-DA, or GenX)	30 ppt
hazard index for mixture of at least two of PFHxS, PFNA, HFPO-DA, and perfluorobutane sulfonic acid (PFBS)	3 (no units)

e. As of February 2025, the Navy has sampled more than 300 off-base drinking water wells with PFAS at or above one or more of the DoD PFAS interim action levels for private drinking water wells in 27 drinking water wells. The Navy has completed or is implementing removal actions for drinking water wells that exceed the DoD’s interim action level at the time, 70 ppt PFOS and/or PFOA, in 21 drinking water wells near Ault Field, OLF Coupeville, and the Area 6 Landfill. In accordance with the 2016 policy, the Navy provided bottled water to residents served by drinking water wells above 70 ppt PFOS and/or PFOA (Navy 2017) prior to implementing an enduring solution. In 2018, the Navy offered to install point of use (POU) filtration systems in lieu of providing bottled water prior to implementing an enduring solution (Navy 2018a). The enduring solutions for these 21 drinking water wells include the following: adding treatment to the Town of Coupeville’s water supply and connecting impacted homes in Coupeville to the Town of Coupeville’s water supply (Navy 2018); connecting five homes and one mobile home park to the City of Oak Harbor’s water supply, connecting one home to a new, deeper drinking water well, and connecting one home to the Navy water supply (Navy 2020); and connecting one home and one business to the City of Oak Harbor water supply and connecting two homes to two new, deeper drinking water wells (Navy 2024).

f. The Navy will initiate enduring solutions, per this TCRA AM, to address the six remaining private drinking water wells (associated with 24 homes) at or above the DoD PFAS interim action levels for private drinking water wells shown in Table 1. The DoD policy also dictates that bottled water may only be provided to homes with wells above 70 ppt for PFOS and/or PFOA prior to implementing an enduring solution. Therefore, the Navy is providing POU filtration systems to these 24 homes as a short-term solution prior to conducting an enduring solution (Navy 2025).

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5. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities/Endangerment Determination.

a. Potential releases of pollutants and contaminants may present an imminent and substantial endangerment to public health, welfare, and the environment. Any historical release of pollutants and contaminants on Navy facilities has the potential to impact groundwater and drinking water adjacent to Navy facilities. The Navy continues to investigate releases and migration of those releases through the RIs at OLF Coupeville, Area 6, Ault Field, Area 31, and Current Fire Training Area (all reports forthcoming).

b. Following the September 2024 DoD policy memorandum, the Navy identified six additional private drinking water wells, which contain certain PFAS at or above the DoD PFAS interim action levels for private drinking water wells but less than 70 ppt for PFOS and/or PFOA, and notified impacted residents.

6. Removal Action and Estimated Costs. The following are alternative actions considered and descriptions of their level of protectiveness and how the action is or is not an effective solution for the impacted residences.

a. Continue to provide a POU filtration system for up to 24 off-base residences for drinking and cooking will address PFAS at or above the DoD PFAS interim action levels for private drinking water wells. Comparatively, this is considered minimally protective or effective as residents may continue to use water for potable or non-potable purposes.

b. Connection to a public water supply and decommissioning of the existing drinking water well is considered the most protective and effective alternative for properties that have access to a public drinking water distribution system. This action eliminates access to the impacted private drinking-water well thus cutting off receptor exposure. This alternative provides unlimited use of drinking water at the off-base residences, with no post-removal site control or periodic operation and maintenance, which makes it a lower cost option to implement over time. In addition, PFAS would not be released back into the environment through disposal of wastewater (via the septic system) or through disposal of spent filtration material. System installation would be carried out in accordance with public water system requirements.

c. Drilling a new private or community well. This alternative is considered the most effective option for residences near Area 6 Landfill and Ault Field if they are not with the existing service area of public water distribution systems. Despite PFAS concentration and distribution within aquifers not being fully defined, a review of PFAS in the area indicates deeper wells do not appear to be impacted by PFAS compounds (based on Navy's private well sampling). This alternative is not a viable alternative for homes near OLF Coupeville due to local hydrogeology and migration of PFAS into the drinking water aquifer.

d. Point-of-Entry (POE) water treatment alternatives are considered protective and effective solutions because PFAS compounds are removed from the groundwater supply from the private drinking water well through treatment. POE treatment systems have long-term ongoing associated maintenance, monitoring and disposal costs, with requirements that must be addressed

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in a timely manner to maintain protectiveness and effectiveness. This alternative is not considered the most efficient solution for properties where a connection to a public water supply or a new well are viable alternatives due to the aforementioned requirements.

The Navy has identified the most protective and efficient long-term solution, construction details, estimated costs, and rationale for selection for each property or action.

a. Ault Field Residence K. Installation of, and connection to, a new, deep aquifer drinking water well. The new drinking water well will be installed up to 200 feet below ground surface. Approximately 100 linear feet of distribution piping and associated water supply pumping improvements will be installed to connect one residence to the new well. The estimated project costs include the project work plan, safety plan, planning costs, management costs, aquifer testing, and well sampling for up to one year for an estimated total cost of \$270,000. The other alternatives for this removal action were eliminated because there is not a serviceable public water supply line nearby and a POE water treatment system is not the most efficient solution.

b. Ault Field Residence L. Connect to a public drinking water distribution system. Roughly 550 linear feet of distribution piping and associated water supply pumping improvements will be installed to support the connection. The estimated project costs include the project work plan, safety plan, planning costs, management costs, and excavation and connection costs for an estimated total cost of \$270,000. With variability and uncertainty, total project costs could be as high as \$350,000, which is consistent with typical estimate variability noted for conceptual and feasibility study project predesign planning under AACE (formerly the Association for the Advancement of Cost Engineering) International Class 4 estimating guidelines. All work will be conducted in accordance with public drinking water system regulations. The other alternatives were eliminated because Residence L is adjacent to a public drinking water distribution system, the most protective solution.

c. Ault Field Residences M1 through M8. Installation of, and connection to, a new, deep aquifer drinking water well. The new drinking water well will be installed up to 200 feet below ground surface. Roughly 2,800 linear feet of distribution piping and associated water supply pumping improvements will be installed to connect all seven residences to the new well. This also includes decommissioning the existing well. The estimated project costs include the project work plan, safety plan, planning costs, management costs, aquifer testing, and operation and maintenance for up to one year for an estimated total cost of \$500,000. With variability and uncertainty, total project costs could be as high as \$660,000. The other alternatives were eliminated because Residences M1 through M8 are not within a public drinking water service area and a POE water treatment system is not the most efficient solution.

d. Area 6 Residences N1 through N9. Connection to the public drinking water distribution system. Roughly 2,400 linear feet of distribution piping and associated water supply pumping improvements will be installed to support the connection. The estimated project costs include the project work plan, safety plan, planning costs, management costs, and excavation and connection costs for an estimated total cost of \$400,000. With variability and uncertainty, total project costs could be as high as \$500,000. All work will be conducted in accordance with

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public drinking water system regulations. The other alternatives were eliminated because Residences N1 through N9 are adjacent to a public drinking water distribution system, the most protective solution.

e. Ault Field Residences O1 through O4. Connection to the public drinking water distribution system. Roughly 950 linear feet of distribution piping and associated water supply pumping improvements will be installed to support the connection. The estimated project costs include the project work plan, safety plan, planning costs, management costs, and excavation and connection costs for an estimated total cost of \$115,000. With variability and uncertainty, total project costs could be as high as \$290,000, which is consistent with typical estimate variability noted for conceptual and feasibility study project predesign planning under AACE International Class 4 estimating guidelines. All work will be conducted in accordance with public drinking water system regulations. The other alternatives were eliminated because Residences O1 through O4 area adjacent to a public drinking water distribution system, the most protective solution.

f. OLF Coupeville Residence 12. Installation of a POE water treatment system to be installed at the entry point from the existing drinking water well to the residence. The estimated project costs include the project work plan, safety plan, planning costs, management costs, installation, and operation and maintenance for up to one year for an estimated total cost of \$160,000. With variability and uncertainty, total project costs could be as high as \$190,000. Other alternatives for this TCRA were eliminated because there is not a public drinking water distribution system nearby and a new drinking water well is not viable based on the location.

The Navy estimates the implementation of all removal action components (including the design and construction) may take up to one year after the AM is signed.

7. Expected Change in the Situation Should Action be Delayed or Not Taken. If recommended removal actions are delayed or not implemented, the Navy will continue to provide POU filtration systems, where applicable. Failure to provide clean drinking water to residents with impacted drinking water would result in continued exposure to PFAS at or above the DoD PFAS interim action levels for private drinking water wells.

8. Future Regulatory Standards for PFAS. This removal action is being performed on off-base drinking water based on exceedances of the PFAS at or above the DoD PFAS interim action levels for private drinking water wells. If additional regulations for PFAS are established, the DoD will provide direction on future re-evaluations and removal actions.

9. Recommendations. This memorandum documents approval of the TCRA to remedy off-base drinking water exposure to PFAS compounds for the six well locations affecting 24 residences near NAS Whidbey Island. Conditions at the site meet the NCP Section 300.415(b) and (n)(2)

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criteria for a removal action and approval for the proposed removal action is recommended.
NAVFAC Northwest is undertaking this TCRA.

A handwritten signature in black ink, appearing to read 'N. J. Gammache', with a stylized, cursive script.

N. J. GAMMACHE

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