



Marine Corps Outlying Landing Field Atlantic, North Carolina

Drinking Water Investigation

Initial Results and Path Forward

February 2018

In November–December 2017, the Navy completed requested sampling of drinking water from wells within designated areas near Marine Corps Outlying Landing Field Atlantic, also known as Atlantic Field. Based on these sampling results, the Navy is continuing the request to test drinking water from wells within designated areas near the airfield that have not already been tested. Additionally, the Navy is developing plans to initiate an environmental investigation to identify and evaluate potential source areas of the per- and polyfluoroalkyl substances (PFAS) detected in drinking water. The Navy has developed a protective policy to address past releases of PFAS. These substances may be present in the soil and/or groundwater at military sites as a result of historical firefighting activities using aqueous film forming foam (AFFF), including crash response, equipment testing, and training. Although no releases of AFFF have been reported at Atlantic Field, the Navy is conducting this investigation in an abundance of caution due to the historical flight operations with emergency response equipment being present at Atlantic Field that may have used AFFF. If PFAS are in the groundwater at the field, there is the potential for these substances to also be present in private drinking water wells in the designated areas because of their proximity and location relative to the Atlantic Field runway where AFFF may have been used in the past (Figure 1).

In the review of available records, the Navy has identified property parcels suspected to have drinking water wells within the designated sampling area (Figure 2). We are seeking the public's assistance to verify the presence of these drinking water wells. There is no legal requirement to conduct drinking water testing. It is a voluntary measure because water quality for our off-base neighbors is a priority for the Navy. The Navy is performing this drinking water sampling in coordination with partners such as the U.S. Environmental Protection Agency (EPA) Region 4, Agency for Toxic Substances and Disease Registry Region 4, North Carolina Department of Health and Human Services, North Carolina Department of Environmental Quality, and Carteret County Health Department.

BACKGROUND

PFAS are “emerging” contaminants, which have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements. The EPA is currently studying

Figure 1



PFAS to determine if regulation is needed. In May 2016, the EPA released lifetime health advisory (LHA) levels for two PFAS, specifically perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). **Health advisory levels are not regulatory standards. They are health-based concentrations which should offer a margin of protection for all Americans throughout their lives from adverse health effects resulting from exposure to PFOS and PFOA in drinking water.**

The EPA health advisory level for lifetime exposure is 70 parts per trillion (ppt) for PFOS and 70 ppt for PFOA. When both PFOS and PFOA are found in drinking water, the combined concentrations should not exceed 70 ppt.

In September 2016, the on-base drinking water supply at Atlantic Field was sampled and analyzed for several PFAS.

If your preliminary results show that your drinking water contains PFOS and/or PFOA above the EPA health advisory, then the Navy will provide bottled water or an alternate water supply until a long-term solution is implemented.

Figure 2



Even though no PFAS were detected in the on-base drinking water, we realize that this sample result does not mean that groundwater has not been impacted because of the groundwater aquifer characteristics and depth of the Navy supply well relative to the depth of private drinking water wells. Out of concern for our neighbors and a desire to be proactive, the Navy voluntarily initiated the off-base drinking water investigation to determine if past operations at Atlantic Field may have impacted drinking water in private wells near Atlantic Field.

ATLANTIC FIELD DRINKING WATER INVESTIGATION

In November 2017, the Navy initiated off-base drinking water sampling near Atlantic Field. The table below summarizes the results of the initial sampling.

Initial Drinking Water Results near Atlantic Field for PFAS			
Samples collected	Not detected	Detected	Detections of PFAS above the EPA LHA
223	197	26	2*

* The 2 detections above the EPA LHA are included in the number of detections.

Out of the 223 samples collected by the Navy in November and December 2017, two samples exceeded the health advisory of 70 ppt set by the EPA. The results indicate that exposure to PFOS and PFOA is not occurring at many of the private drinking water wells that have been sampled to date. Since some properties in the initial sampling area did not sign up to have their drinking water tested, **the Navy is requesting permission to sample private drinking water wells in this area that have not already been tested.** At this time, the Navy is not planning to expand the sampling area or to resample properties that had detections below the lifetime health advisory. This may change in the future depending on the results of additional sampling.

The preliminary results from the additional off-base drinking water sampling are expected within approximately 30 days after collecting the samples. The Navy will keep the results confidential to the extent permitted by law. We will notify the property owners of their personal drinking water results and follow-up actions if needed. The Navy will provide an alternate water source, likely bottled water, for drinking and cooking for those properties whose drinking water is found to contain PFOS and/or PFOA above the EPA health advisory. The Navy will continue to provide the alternate water source until a permanent solution can be implemented.

HEALTH INFORMATION

Exposure to PFOS and PFOA appears to be global. Studies have found both compounds in the blood samples of the general population. Studies on exposed populations indicate that PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight. In studies conducted using laboratory animals, effects on developmental, neurological, immune, thyroid, and liver function were observed.

Health effects from exposure to low levels of PFAS are not well known and studies are continuing. Blood tests are available to measure these chemicals, but they are not routinely done because the results can be inconclusive and test results do not predict health effects. Long-term exposure effects are still being investigated by the EPA.

Based on what is known and still unknown about PFOS and PFOA, it is recommended people not drink or cook with water that contains these compounds above the EPA's health-based levels.

For updates about this investigation, visit:

<https://go.usa.gov/xR6SX>

If you have specific questions, contact:

NavyAtlanticWater@usmc.mil

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ATLANTIC FIELD PATH FORWARD

The Navy is planning to initiate an investigation on the Atlantic Field property to determine if the PFAS detected during the Drinking Water Investigation is the result of past operations at Atlantic Field. This investigation will inform the Navy if and/or where PFOS and/or PFOA are present in the groundwater at Atlantic Field as well as about important aquifer characteristics. The investigation is planned for 2018 and the Navy will share the results with the public and our local agency partners.