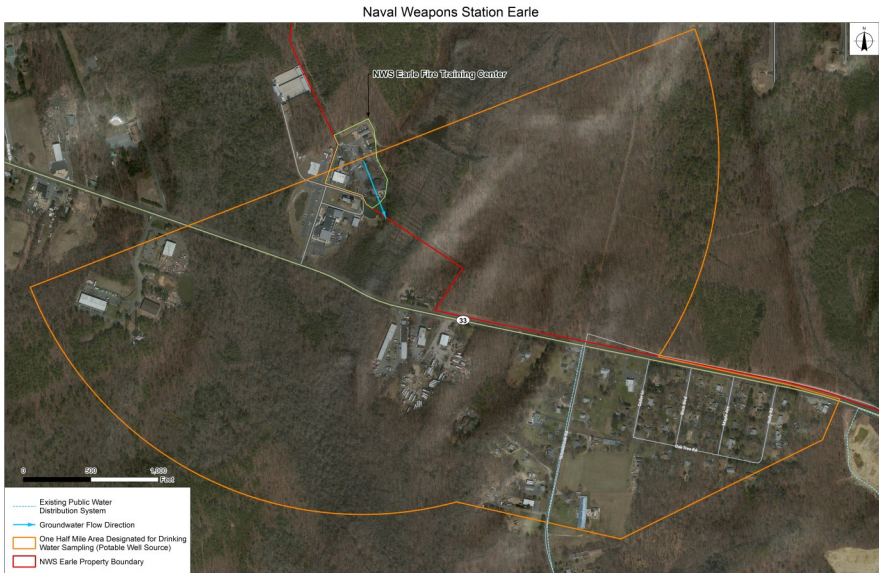
Overview of Testing Results for Perfluorinated Compounds (PFCs) and Follow-Up Actions for NWS Earle Fire Training Center

The *Navy is requesting permission to sample drinking water from homes within a designated sampling area near Naval Weapons Station (NWS) Earle's Fire Training Center located on Route 33 in Howell Township.* The request is being made as a result of recent sampling of drinking water and groundwater conducted at the NWS Earle Fire Training Center which identified perfluorinated compounds (PFCs) in groundwater above health based levels.



*** PFCs were not detected in drinking water at the NWS Earle Fire Training Center.**

The Navy recognizes the potential for PFCs to move off the NWS Earle property in the groundwater, which could impact the quality of drinking water for nearby residents. ***The Navy has been working with the U.S. EPA and the New Jersey Department of Environmental Protection (NJDEP) to discuss and agree upon an off-base sampling approach, including identifying the designated sampling area, as shown in the figure.***

If drinking water in any of the off-base homes in our sampling area is found to contain PFCs above the U.S. EPA or New Jersey health based levels, the Navy will provide alternate drinking water supplies while a long-term solution is implemented.

There is no legal requirement to conduct drinking water testing. It is a voluntary measure because the water quality both on-base and for our off-base neighbors is a priority for the Navy.

WHAT ARE PFCs?

PFCs are man-made chemicals that have been used since the 1950s in many household and industrial products because of their stain- and water-repellant properties. PFCs are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released to the environment, they break down very slowly. Currently, PFCs are classified as unregulated or "emerging" contaminants that have no Safe Drinking Water Act regulatory standards or routine water quality testing requirements. PFCs are being studied by the U.S. EPA to determine if regulation is needed. The U.S. EPA's Office of Water has issued provisional health advisory levels for two PFCs, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). ***Provisional health advisory levels are not regulatory standards. They are health-based concentrations above which the U.S. EPA recommends action should be taken to reduce exposure.*** The U.S. EPA provisional health advisory level for short-term exposure is 0.2 parts per billion (ppb) for PFOS and 0.4 ppb for PFOA. The NJDEP issued an Interim Ground Water Quality Standard for PFNA of 0.01 ppb in November 2015.

HEALTH INFORMATION

Exposure to PFOA and PFOS appears to be widespread globally. Studies have found both compounds in the blood samples of the general human population and wildlife nationwide. Exposure to PFOS, PFOA, and PFNA through ingestion is the primary health concern for people. Studies on exposed human populations indicate PFOS and/or PFOA may cause elevated cholesterol levels and possibly low infant birth weight. When animals are given large doses, they exhibit developmental, reproductive, and liver effects. Some human and animal studies suggest a link with certain cancers.

Health effects from exposure to low levels of PFCs are not well known and studies are continuing. At this time, it is not possible to link exposures to PFCs in water to a person's individual health issues. Blood tests are available, 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 U.S. EPA and State regulatory agencies.

Based on what is known and still unknown about PFCs, it is recommended people not drink water that contains these compounds above health based levels.

PFCs and Navy Policy

Until a decision on regulating PFCs is made, the Navy has proactively developed a policy to ensure drinking water has not been impacted by PFC contamination at installations where there has been a nearby known or suspected release of PFCs to the environment. The most common historical Navy use of PFCs has been during activities involving fire-fighting foam.

The drinking water and groundwater at the NWS Earle Fire Training Center was tested in response to Navy policy because PFC-containing foam was used in years past for fire-fighting training. Results received in January 2016 from samples of the NWS Earle Fire Training Center on-base groundwater monitoring wells (see table below) show that the water contains PFOS above the U.S. EPA provisional health advisory levels and PFNA above the New Jersey interim ground water quality standard. **PFCs were not detected in drinking water at NWS Earle above regulatory thresholds.**

The Navy has started an investigation under our Environmental Restoration Program to determine if PFCs have moved off the NWS Earle Fire Training Center property in the groundwater. Our first priority in this investigation is determining if PFCs are present in the drinking water of nearby residents, and then taking appropriate action as needed.

GROUNDWATER RESULTS

PARAMETER	MAXIMUM RESULTS DETECTED IN EARLE GROUNDWATER	HBL	EXCEEDS HBL?
Perfluorooctane Sulfonate (PFOS)	2.8 ppb	0.2 ppb	Yes
Perfluorooctanoic Acid (PFOA)	0.094 ppb	0.4 ppb	No
Perfluorononanoic Acid (PFNA)	0.015 ppb	0.01 ppb	Yes

ppb = part per billion
HBL = Health Based Level
For PFOS and PFOA, health based level is U.S. EPA Provisional Health Advisory Level based on a short-term exposure.
For PFNA, health based level is NJDEP Interim Ground Water Quality Standard.

OFF-BASE DRINKING WATER SAMPLING

The Navy began notifying residents in the designated sampling area on February 12, 2016, to request to sample their drinking water. Off-base drinking water sampling will be conducted at no cost to residents in the sampling area between February 19-26, 2016 (with the exception of Sunday, February 21). The sampling process will take approximately 30 minutes and will involve a team of two technicians coming into the home to collect a sample from one indoor tap location. The technicians will also use hand-held equipment to collect additional information on the water (e.g. pH and temperature). Prior to collecting the sample, the technicians will go over a homeowner questionnaire.

The questionnaire is designed to gather information about the drinking water well and any filtration systems being used to help with selecting the appropriate tap to sample, and to assist with evaluating the sampling results and developing follow-up investigation plans as needed.

ACTIONS BASED ON RESULTS

Results are expected in late March 2016. The Navy will do its best to keep the results confidential to the extent permitted by law. We will provide notification to each resident of their personal drinking water results and follow-up actions if needed for their home. The Navy will host an additional Open House Public Meeting in early April to share a summary of results and our next steps of the investigation. The following is a summary of planned actions based on drinking water sampling results:

ACTION CRITERIA	PFOA RESULTS	PFOS RESULTS	PFNA RESULTS	ACTION
At or greater than U.S. EPA Provisional Health Advisory or NJDEP Interim Ground Water Quality Standard for PFNA	Greater than 0.4 ppb	Greater than 0.2 ppb	Greater than 0.01 ppb	Provide alternate drinking water at no cost until long-term solution can be implemented
Greater than 25% of U.S. EPA Provisional Health Advisory or above detection limit for PFNA	0.1 ppb to 0.4 ppb	0.05 ppb to 0.2 ppb	Above detection limit (0.003 ppb)	Follow up sampling with further evaluation of potential action
Less than 25% of U.S. EPA Provisional Health Advisory and below the detection limit for PFNA	Below 0.1 ppb	Below 0.05 ppb	Not detected	No further action at this time

The Navy will work with the U.S. EPA and NJDEP to determine if the results indicate the drinking water sampling area needs to be expanded to include additional homes near NWS Earle's Fire Training Center. The Navy will also use the results to determine the next steps for groundwater investigation and long term groundwater solutions.

For more information:
www.cnic.navy.mil/earleinfo

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