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US Army Corps of Engineers



U.S. Army Fort George G. Meade Legacy BRAC Program Tipton Airport Parcel Fire Training Area PFOS/PFOA in Groundwater Sampling Fact Sheet



January 2018

OVERVIEW

The U.S. Army conducted preliminary groundwater sampling at the former Fire Training Area to assess potential impact to underlying groundwater resulting from historical training using fire-fighting foam containing perfluorochemicals (PFCs). This Fact Sheet is prepared by the US Army to summarize the history of the Site, the PFCs groundwater investigation and post-ROD change to the remedial action description to monitor site groundwater.

LOCATION AND HISTORY OF SITE

The former fire training area (FTA) is located on the 346-acre Tipton Airfield Parcel (TAP) property (formerly known as the Tipton Army Airfield) that was transferred to Anne Arundel County in September 1999 for use as a general aviation airport. TAP is located south of intersection of State Route 198 and Highway 32 in Anne Arundel County (Figure 1). The Little Patuxent River (LPR) flows through the western end of the TAP.



The FTA covers approximately 2 acres and is flat and sparsely vegetated with grass. The fire training pit was constructed of a concrete berm about 1 ft high and 20 ft in diameter, which was surrounded by a concrete apron. Records indicate that aqueous fire-fighting foam (AFFF) was used at the site for training purposes prior to 1998. The U.S. Environmental Protection Agency (EPA) has issued a Lifetime Health Advisory (LHA) of 70 nanograms per liter (ng/L) or parts-per-trillion (ppt) for two emerging contaminants contained in AFFF; perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA).

FTA PFCs FIELD SAMPLING ACTIVITIES

The FTA is a closed inactive site; however, annual groundwater sampling is still conducted from two shallow monitoring wells (MWs) at that location as part of the TAP-wide groundwater long-term monitoring (LTM) program. FTA LTM program wells are provided on Figure 2. FTAMW-3 and FTAMW-7 were identified for PFCs sampling since these MWs are purged annually as part of the TAP LTM sampling regimen.

HELICOPTER HANGER AREA FIELD SAMPLING ACTIVITIES

FTAMW-3 and FTAMW-7 analytical results were above the EPA drinking water PFOS/PFOA LHA of 70 ppt. The Army determined that additional GW samples should be collected from the Helicopter Hanger Area (HHA) since shallow groundwater at the FTA follows the local topography and flows 800 ft west toward the Helicopter Hanger Area (HHA).

The HHA site is located on the northwest corner of the TAP and covers approximately 5 acres. The site is bounded by the LPR to the west, State Route 198 to the north, Patuxent Freeway to the east, and the HHA parking area to the south. The HHA is also a closed inactive site; however, annual groundwater sampling is still conducted from two shallow monitoring wells at that location as part of the TAP-wide groundwater LTM program. HHA LTM program well locations are provided on Figure 2.

HHAMW-9 and HHAMW-11 were identified for PFCs sampling since these MW's are purged annually as part of the TAP groundwater LTM sampling regimen.

GROUNDWATER SAMPLING RESULTS

All groundwater samples were collected using USACE Standard Operating Procedure (SOP) 47, and analyzed for PFCs using USEPA Analytical Method 537.

- **PFOS** was detected in FTAMW-3 (89,000 ppt); FTAMW-7 (23,000 ppt), FTAMW-7 duplicate (26,000 ppt); HHAMW-9 (380 ppt), HHAMW-11 (300 ppt) and HHAMW-11 duplicate (350 ppt).
- **PFOA** was detected in FTAMW-3 (4,400 ppt); FTAMW-7 (1,400 ppt); FTAMW-7 duplicate (1,600 ppt); HHAMW-9 (1,500 ppt) and HHAMW-11 (110 ppt) and HHAMW duplicate (110 ppt).

PUBLIC WATER TESTING

Fort Meade water supply production well sampling shows no impact to the Fort Meade public drinking water system. Fort Meade and TAP obtain water from six deep aquifer wells that are screened in the Patuxent Formation 500 – 800 feet below ground surface and below the thick 200 - 250 foot thick Arundel Clay regional confining layer, which consists of stiff, reddish-brown clays. Samples collected from each well and analyzed for PFCs were “Non-Detect” meaning no PFCs constituent were detected in any production well.

Two commercially owned active potable wells are within 0.5 miles of the FTA site (Figure 1). The commercial owners are Bank Shot Grill and Casey's Crab Company. These wells were not sampled because they are hydraulically separated from the contamination since shallow groundwater from the FTA discharges to the LPR and deeper aquifer groundwater flow is to the southeast.

ASSESSMENT OF RISK

PFCs samples collected from the FTA and the HHA show concentration levels above the EPA drinking water LHA of 70 ppt; however, there is no unacceptable health risk associated with potential exposure to PFCs in groundwater at TAP. This is because 1) Land Use Controls (LUCs) stipulated in Army's EPA approved June 1999 Record of Decision (ROD) prohibit the use of groundwater for any purpose other than environmental studies, 2) upgradient active commercial wells are hydraulically separated from FTA shallow groundwater contamination, and 3) FGGM drinking water is supplied by deep aquifer wells. The long-term foreseeable land use is commercial airport; however, LUCs also stipulate that a

residential risk assessment be conducted in the event the property is proposed for residential use.

Analytical results in the HHA monitoring wells indicate that PFOS/PFOA may potentially be discharging to the adjacent LPR. There are no federal regulations under the Safe Drinking Water Act (SDWA) or national recommended ambient water quality criteria under the Clean Water Act (CWA) for PFOS/PFOA, nor are they included as analytes in the U.S. Geological Survey (USGS) National Water Quality Assessment Program, and they are not monitored in water as part of EPA's National Aquatic Resource Surveys.

RECOMMENDATION

The August 2016 Revised Site Management Procedures - Update to DoD Manual 4715.20, "Defense Environmental Restoration Program Management," provides direction to be followed at an open site (i.e., a site that does not allow for unlimited use and unrestricted exposure (UU/UE) or that has not yet been designated no further action): “If [an emerging contaminant] release that may present an unacceptable risk is suspected during the LTM phase, the DoD Component will sample for it as part of the Five-Year Review (5YR) to determine if the remedy remains protective. During the 5YR, the DoD Component shall evaluate the effect of any newly promulgated or modified ARARs that are based on the protection of human health and the environment, and changes in toxicity values or exposure assumptions affecting the protectiveness of the remedy originally selected in the Decision Document.

Although it is unlikely that upgradient neighboring wells are impacted; the Army is conducting follow-up groundwater investigation and risk assessment actions to evaluate the potential impact of the release. Additionally, TAP MWs and surface water sampling for PFOS/PFOA will be conducted during the 2018 annual LTM event.

The Army coordinates these activities with U.S. Environmental Protection Agency (USEPA) Region 3 and the Maryland Department of the Environment (MDE).

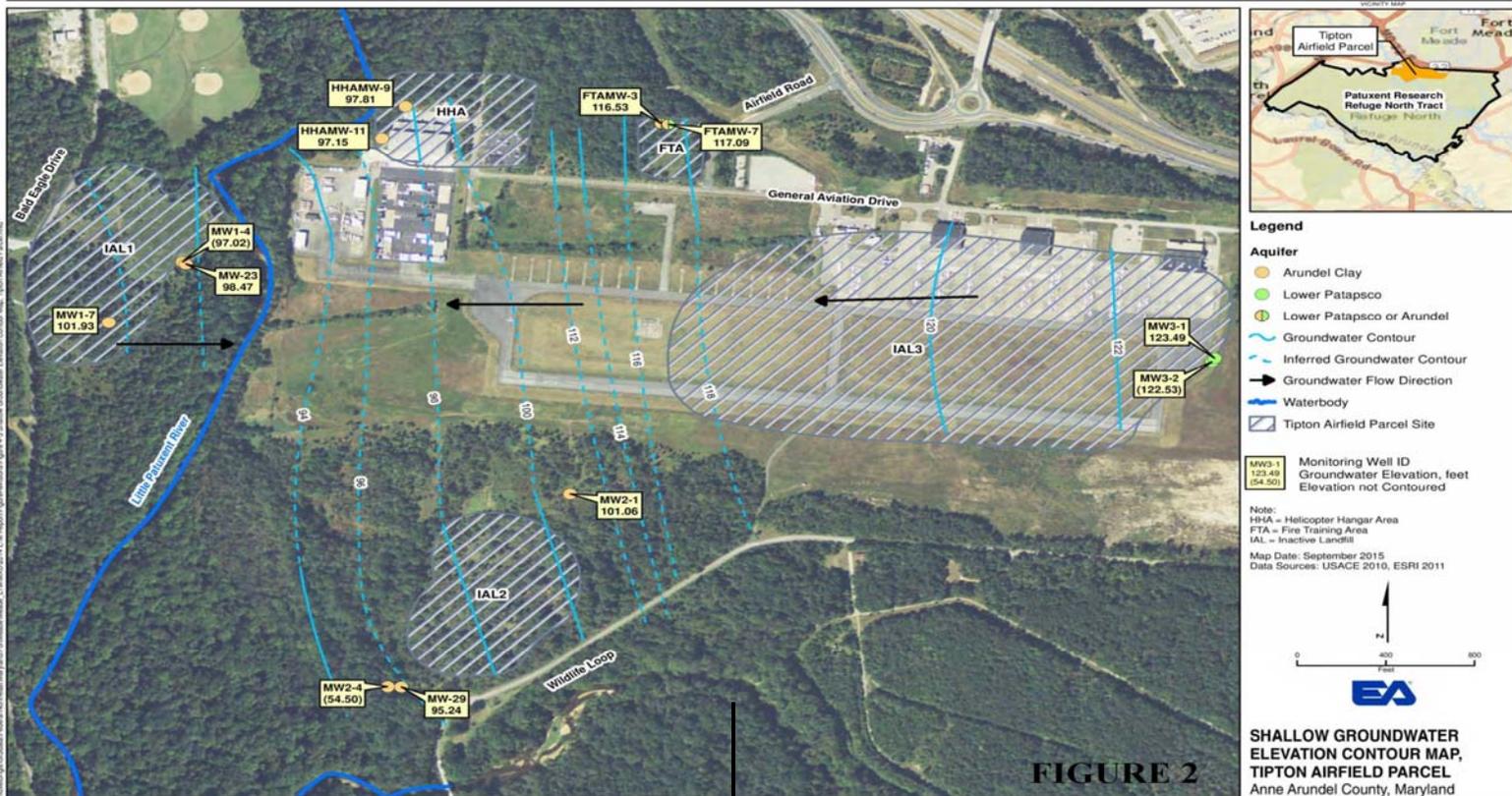


FIGURE 2

ADDITIONAL INFORMATION AVAILABLE

Agency for Toxic Substances and Disease Registry:
www.atsdr.cdc.gov/toxfaq.html.

The Anne Arundel County Department of Health:
 410-222-7398. <http://www.aacpl.net>

This project and other environmental projects is on Fort Meade’s web site at www.ftmeade.army.mil (click on the line for Clean-Up Program and then the link for Fort Meade’s Restoration Advisory Board (RAB). These meetings are held every other month, on the third Thursday at 7 pm.

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NOTE: This Fact Sheet is part of Fort George G. Meade’s Community Information Plan (CIP) and is being issued to notify the public of ongoing environmental investigation efforts.