Navy's Evaluation of Potential Per- and Polyfluoroalkyl Substances (PFAS) on Vieques

VIEQUES ENVIRONMENTAL RESTORATION PROGRAM **FACT SHEET**

What are PFAS and where are they found?

Per- and polyfluoroalkyl substances (PFAS) are a group of chemicals that have been manufactured and used in a variety of household and commercial products since the 1950s because of their stain- and water-repellent properties. PFAS have also been used in a variety of military applications, including as a component of aqueous film-forming foam (AFFF). The Navy routinely used AFFF for testing, training, firefighting, and other life-saving emergency responses beginning in the 1970s (Figure 1).

U.S. Air Force photo by SSGT Cohen A. Young, 2004

Figure 1 – Firefighting training at an airfield.

PFAS are now present virtually everywhere in the world because of the large amounts that have been manufactured and used. Once these compounds are released, they break down very slowly. PFAS may be present in the soil and/or groundwater at the former Naval Ammunition Support Detachment (NASD) and former Vieques Naval Training Range (VNTR) as a result of historical activities using AFFF (Figures 2 and 3).

Why are PFAS a concern?

There is evidence that exposure to PFAS can lead to adverse health outcomes in humans (Rappazzo et. al, 2017). However, additional research is needed to more clearly understand the potential health effects that may be caused by exposure to PFAS compounds.

The U.S. Environmental Protection Agency (EPA) is currently studying PFAS to determine if regulation is needed. Health-based levels are currently under development, and EPA has issued a drinking water lifetime health advisory for two commonly used and studied PFAS, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) (EPA, 2016a and 2016b).

How is the Navy evaluating PFAS?

The Navy is taking a proactive approach to assess potential PFAS presence at Vieques in cooperation with EPA, the Puerto Rico Department of Natural and Environmental Resources, and the U.S. Fish and Wildlife Service. To date, the Navy has evaluated historical records for the Former NASD, Camp Garcia, and the Former VNTR where AFFF may have been used and PFAS may be present, and also interviewed former Navy and Marine Corps firefighters stationed after 1960.

Thirteen potential release areas (six within the former NASD and seven within the former VNTR) where AFFF may have been released during historical activities associated with military training are currently being evaluated (Figure 2). The Navy is preparing a sample collection plan for each of these areas to collect soil, sediment, and/or groundwater samples. Field activities are anticipated to begin in 2022.

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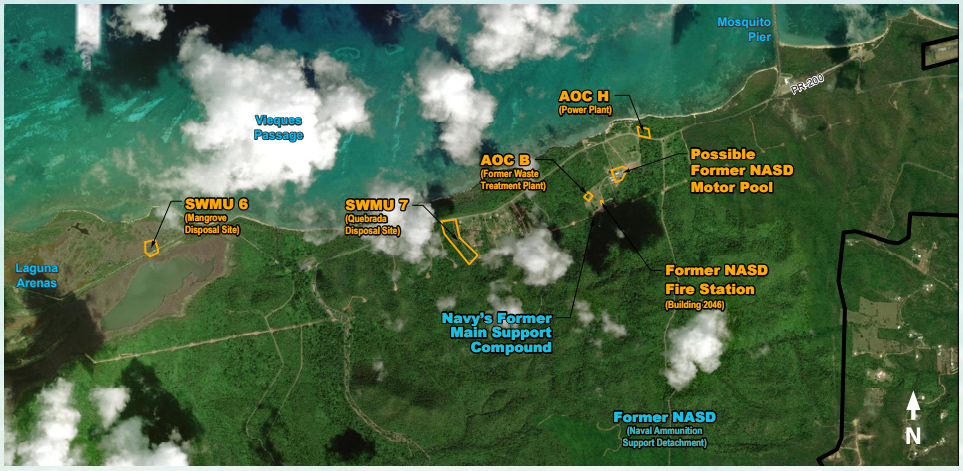

Figure 2 – Former NASD

PFAS Investigation Areas at the Former NASD

LEGEND

Potential PFAS Release Area

N 0 0.5 1 miles

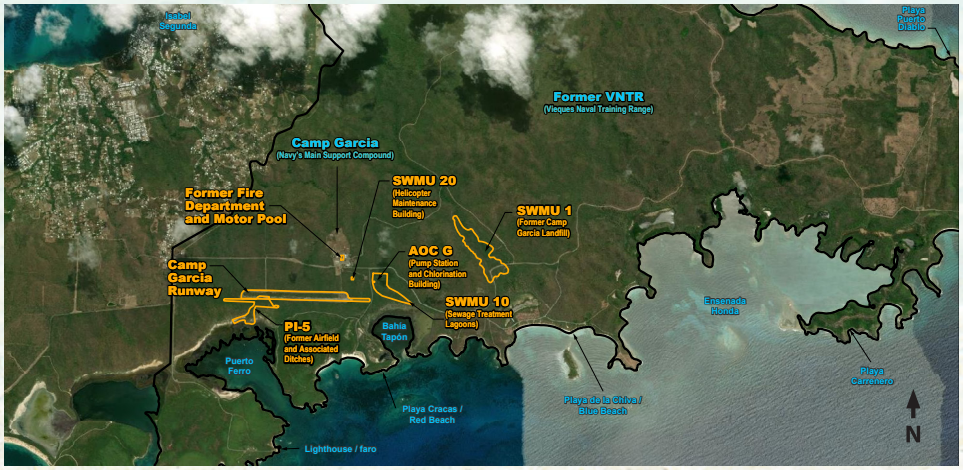

Figure 3 – Former VTNR

PFAS Investigation Areas at the Former VNTR

LEGEND

Potential PFAS Release Area

N 0 1 miles

What about the drinking water on Vieques?

Residents in Vieques are provided drinking water by pipeline from the Rio Blanco Water Treatment Plant, Naguabo, Puerto Rico to Vieques. This water source was analyzed for six PFAS in May 2012 in accordance with the Unregulated Contaminant Monitoring Rule (UCMR3); none were detected. Groundwater is not used as a source of drinking water on the island of Vieques. Groundwater on Vieques is generally considered not suitable for use as a drinking water source due to its general poor quality as a result of natural saltwater intrusion and saltwater intrusion induced by historical pumping of water supply wells when the island's aquifers were used as a potable water source.

REFERENCES

1. EPA. 2016a. Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). EPA 822-R-16-005. Office of Water. May.
2. EPA. 2016b. Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS). EPA 822-R-16-004. Office of Water. May.
3. Rappazzo, K.M.; Coffman, E.; Hines, E.P. 2017. "Exposure to Perfluorinated Alkyl Substances and Health Outcomes in Children: A Systematic Review of the Epidemiologic Literature." Int. J. Environ. Res. Public Health. 2017, 14, 691.

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