Maryland Department of the Environment

MD EMERGING CONTAMINANTS AT NIKE SITES INITIATIVE

What You Need to Know

Emerging Contaminants at Nike Sites Initiative (ECI) is a project designed to document historic use of Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA), two perfluorinated chemicals (PFCs) at Formerly Used Defense Sites (FUDS) and former Nike Sites in particular. The ECI shall also assess the potential for further pre-remedial investigations of select facilities.

The ECI's objectives include:
Identifing Nike Sites in MD where PFCs might have been used;
Defining populations that may be at risk from potential PFC contamination;
Estimating users and uses of groundwater in close proximity to the sites; and
Laying the groundwork for future investigations that would target identified risks

PFOS and PFOA are "emerging contaminants" which is defined as "a chemical or material that is characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards." These compounds were used in the manufacture and/or treatment of many products because of their unique characteristics. The product of particular interest in this initiative is Aqueous Film Forming Foam (AFFF) which is a PFOS based substance that is used to extinguish liquid fueled fires.

Nike Sites are potential locations of AFFF contamination based on historical and current uses of the properties. It is already known, that subsequent to the Army's use of the properties, some local fire and rescue departments have used the sites for general fire fighting and rescue training, which could have involved the use of AFFF. However, MDE raised the question of whether AFFF could have been used historically for fire-fighting exercises involving fires fueled by liquid fuels stored onsite for use in Ajax Missiles and other rocket engines.

Eighteen Nike Sites, each consisting of two separate properties, were located in a ring configuration around the cities they were designed to defend. In the Baltimore-Washington Metro area, Nike Sites were located in a ring that encompassed both cities. Sites that were designed to defend Baltimore were designated with a "BA" number and sites that were designed to defend Washington were designated with a "W" number.

Environmental Investigation and Action

Sixteen of the eighteen Nike Sites in Maryland have been subject to various environmental investigations and remedial actions. The other two Nike Sites are located on active military reservations and the state has no record of investigations at those sites. The materials and practices used at these sites in the late 1950s and early 1960s often had contaminated soils and groundwater. One common practice at these sites was to dispose of used oil, solvents and other

hazardous liquids by dumping them into a pit containing gravel which allowed the substances to soak into the soil and eventually the groundwater.

Current Status

As part of this investigation, an internet search was conducted to find any contacts who might have information as to the use of PFOS-based compounds such as AFFF at Nike missile sites. Several inquiries were sent out to various contacts, with very few responses. One inquiry was answered by Christopher L. Evans, Chief of Environmental Programs, U.S. Army Corps of Engineers (ACE) Headquarters in November of 2016. His response stated that, "Based on review of historic documents and project-specific preliminary assessments prepared for some of the missile sites in question, there are no fire training areas nor evidence of use or acquisition of Aqueous Film Forming Foam (AFFF) for Nike or Atlas missile sites. Therefore, there is no evidence for concern for past release of Perfluorooctanoic Acid (PFOA)/ Perfluorooctane Sulfonate (PFOS) at these sites."

According to available information, perfluorinated chemicals such as PFOS and PFOA were not used in AFFF by the military until approximately 1964. By this time, liquid fuels used in Ajax and Atlas missiles were being phased out and replaced with the solid fuel-propelled missiles. This timeline corroborates the ACE's conclusion that the use of AFFF containing PFOS or PFOA on Nike bases is unlikely. Consequently, the only sites likely to have AFFF, PFOS/PFOA use or disposal are Nike sites where other parties (such as county fire-fighting agencies) used the property after decommissioning of these sites, such as Phoenix Launch, and not as a result of the Nike program itself.