Maryland
Department of
the Environment

Naval Research Laboratory-Chesapeake Bay Detachment

MD-0062

What You Need to Know

Naval Research Laboratory-Chesapeake Bay Detachment (NRL-CBD) is a field station for NRL Washington D.C. that provides facilities and support services for radar, electronic warfare, optical devices, materials, communications, and fire suppression research.

Site Location

NRL-CBD is located at 5813 Bayside Rd., Chesapeake Beach, in Calvert County, Maryland. The 168-acre property is identified on Calvert County Tax map 12, parcel 66. Several buildings are present on-site, with scattered wooded areas and streams which empty into the Chesapeake Bay. The site is located on the west bank of the Bay, with the eastern boundary steeply dropping off to the rip-rap-reinforced shoreline, approximately 80 feet below. The site is secured with fencing and a manned guard post. Maryland Rt. 261 (Bayside Rd.) runs north-south through the site, dividing it into western and eastern portions. The facility also includes a 2-acre tract of land on Tilghman Island in Talbot County. In addition, NRL-CBD controls a water range area extending to the east into the Chesapeake Bay.

Site History

The NRL-CBD site is one of several field sites of the NRL, whose main campus is in Washington, D.C. The NRL-CBD site is used to conduct testing involving radar, electronic warfare, optical devices, materials, communications, and fire research. Land for the site was initially acquired in 1941, with major expansion occurring in 1953-1954 with construction of a large laboratory building, shop facilities, and complete utility systems.

Environmental Investigations

Several sites have been identified which need assessment, with investigation activities occurring beginning in the early 2000s.

A 2017 Evaluation of Per- and Polyfluorinated Alkyl Substances (PFAS) identified a significant PFAS plume in the surficial groundwater on-site related to the fire-training area (Site 10). In 2020, the Navy completed the Base-wide Expanded Site Inspection (ESI) Report. The ESI was performed to further evaluate Sites 3, 4, 5 (disposal sites), 7 (road oil application), 9 (photo processing building) and Area of Concern (AOC) D (lead-paint water tower). Based on the results of the ESI, Site 7 was not recommended for further action; since then, new sites have

been identified. Currently being assessed are Site 10, Sites 3, 4, and 5, AOC D, an old fire station (Site 50), Site 9, and a storage building (Bldg. 76). Off-site activities have been conducted as well. In 2018, forty-two (42) samples of off-site residential drinking water wells were collected and analyzed by the Navy for three PFAS compounds (perfluorooctanoic acid [PFOA], perfluorooctane sulfonic acid [PFOS], and perfluorobutanesulfonic acid [PFBS]). Only PFOA and PFOS were included in the combined EPA PFAS Health Advisory Level (HAL) of 70 parts per trillion (ppt) at the time; 2 of the 42 samples were identified as having PFAS concentrations below that HAL. The 3rd sample had a J-qualified (estimated) detection of PFBS.

In 2022, the Navy completed the Site Inspection (SI) for Site 10. The SI was performed to determine whether PFAS are present at Site 10, and if so, at what concentrations, for PFOS, PFOA, and PFBS. PFOS is the predominant PFAS compound at the Site. In addition to the known surficial groundwater plume, the SI identified PFOS associated with Site 10 in surface water (up to 4960 ppt), soil (up to 7950 parts per billion [ppb]), and sediment (up to 34.9 ppb).

Additionally, three Military Munitions Response Program (MMRP) sites were identified as needing assessment: UXO-1 (the site of the Hypervelocity Low Pressure Gun), UXO-2 (Randle Cliffs Zuni Launch Site and Gun Mounts), and UXO-3 (Small Arms Range). UXO-2 soil was assessed and determined not to need further assessment. Surficial groundwater use restriction was recommended by the Navy at all three UXO sites due to low levels of contaminants, and MDE concurred. In 2019, lead-soil removal was completed at UXO-3, which was operational between the 1960s-early 1990s as a recreational range for Navy personnel and civilians.

Current Status

Removal of lead-contaminated soil is planned at UXO-1 after gun removal. The gun was used between 1967-1995 to study the impact of high velocity projectiles on various target materials; lead-paint has flaked off of the gun, which still remains on-site.

Investigations are ongoing at the above-mentioned sites, including the more recently designated PFAS sites. Notably, interim measures to remove PFAS contamination from the surface water are currently being planned. In the longer term, work continues with the goal of cleaning up the PFAS plume on-site.