ENVIRONMENTAL INVESTIGATION AND RESTORATION
Naval Weapons Station Yorktown
Yorktown, Virginia

April 2023

Background

Naval Weapons Station (NWS) Yorktown is a federal facility located in York and James City Counties, and the City of Newport News, Virginia (Figure 1). NWS Yorktown is bound on the northwest by Cheatham Annex; on the northeast by the York River and the Colonial National Historic Parkway; on the southwest by Route 143 and Interstate 64; and on the southeast by Route 238 and the town of Lackey.

NWS Yorktown, originally named the Navy Mine Depot, was established in 1918 to produce Naval mines for the North Sea Mine Barrage during World War I. For 20 years after World War I, the depot continued to receive, reclaim, store, and issue mines, depth charges, and other weapons. During World War II, the facility was expanded to include three trinitrotoluene (TNT) loading plants and new torpedo overhaul facilities. A research and development laboratory for experimentation with high explosives was established in 1944. In 1947, a quality evaluation laboratory was developed to monitor special tasks assigned to the facility, which included the design and development of depth charges and advanced underwater weapons. On August 7, 1958, the depot was renamed NWS Yorktown. Today, the primary mission of NWS Yorktown and its tenant commands is to provide critical fleet ordnance support for the Department of the Navy (Navy); expeditionary logistics training and operations; and warfare training for Sailors, Marines, and other branches of the military.

Some of these historical land uses and practices at NWS Yorktown have resulted in localized areas of soil, groundwater, surface water, and sediment contamination, which are being evaluated under the Department of Defense's Navy Environmental Restoration Program (NERP). NWS Yorktown was added to the National Priorities List in October 1992, based on the United States Environmental Protection Agency's (EPA) Hazard Ranking System.

The purpose of a five-year review is to evaluate the effectiveness of remedies and remedial actions for sites with contaminants remaining above levels that allow for unlimited use and unrestricted exposure (UU/UE), and for which there is a Record of Decision (ROD) or decision document in place. In January 2023, the Navy along with concurrence from EPA Region 3 and the Virginia Department of Environmental Quality (VDEQ), completed the fifth five-year review of existing ROD documents and associated remedial actions onboard the installation. It was prepared pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act §121(c), otherwise known as CERCLA or Superfund, and the National Contingency Plan, 40 CFR Part 300.430(f)(4)(ii). A thorough review of various reports and documents pertaining to post-remedy implementation activities, analytical data and findings, as well as through site visits and inspections, went into preparing this document.

This fact sheet is being distributed to notify the public of current Navy findings.

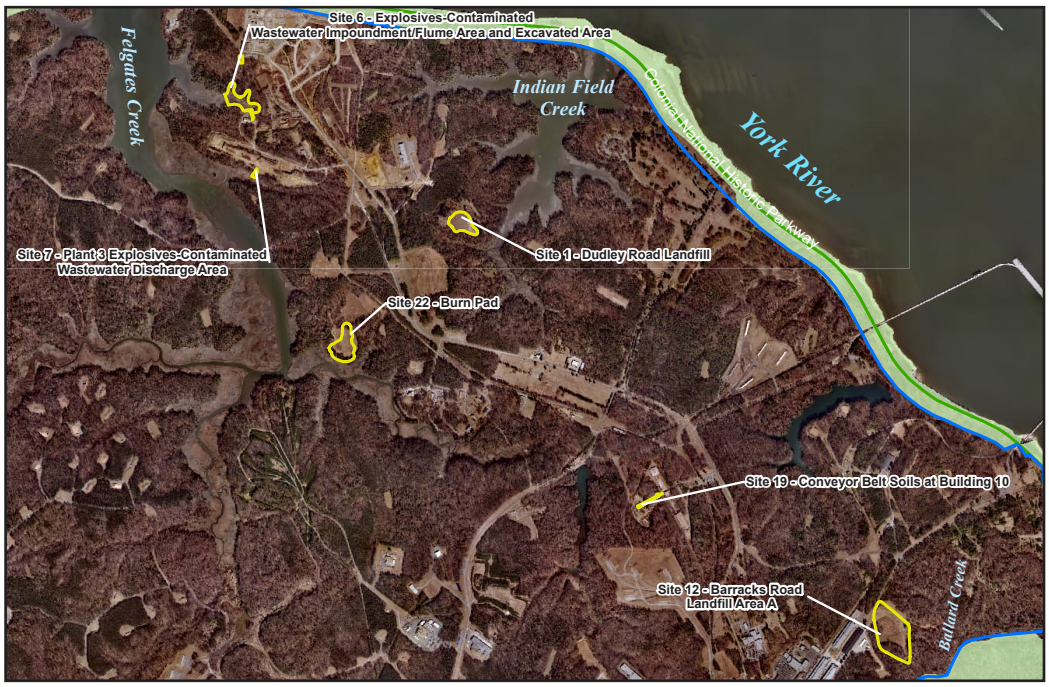

Figure 1. NWS Yorktown Remediation Site Map

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Site Descriptions

Since the initiation of NERP at NWS Yorktown, numerous sites and site screening areas have been identified and evaluated. Six of these sites (Site 1 [Operable Unit (OU) VIII], Site 6 [OU XV, XIII, and XIV], Site 7 [OU XII], Site 12 [OU III], Site 19 [OU VII], and Site 22) have RODs and remedies in place where hazardous substances, pollutants, and/or contaminants remain at or above levels that allow for UU/UE. Therefore, these sites are required to have a review every five years to ensure their respective remedies remain protective of human health and the environment. Figure 1 (see page 1) shows the location of these sites onboard NWS Yorktown. A description of each site are as follows:

Site 1 – Dudley Road Landfill (OU VIII) was operated from 1965 to 1979 as a landfill for the disposal of solid waste materials into two borrow pits. A ROD was signed in 1999 to address soil and waste. The selected remedy consisted of the removal and disposal of surface debris and soil, restoration of the existing soil cover, and implementation of land use controls (LUCs) to prohibit residential development and activities that interfere with the integrity of the soil cover. A preliminary assessment identified the potential for per- and polyfluoroalkyl substances (PFAS) to have been released at the site and a site inspection is ongoing to evaluate the presence/absence of the emerging chemicals of environmental concern. The remedy for Site 1 is determined to have short-term protectiveness due to the ongoing PFAS investigation.

Site 6 – Explosives-Contaminated Wastewater Impoundment (OU XV), Flume Area (OU XIII), and Excavated Area (OU XIV) consists of three areas: the Impoundment Area, the Flume Area, and the Excavated Area. The Impoundment Area was a three-acre, unlined, surface impoundment created by building a cofferdam across the headwaters of Felgates Creek. The Impoundment Area received wastewater from the flumes connected to Buildings 109 and 110. The Flume Area was a network of flumes that carried wastewater, reportedly containing explosives and solvents, from Buildings 109 and 110 into the Impoundment Area from 1942 to 1975. The Excavated Area is a small area north of the Impoundment Area likely used for the storage of unidentified materials. A ROD was signed in 1998 to address soil and/or sediment in the Impoundment and Excavated areas and residue in the Flume Area. The remedy consisted of the excavation of soil and sediment and LUCs to prevent residential development in the Flume Area, a soil cover protective of ecological receptors and LUCs in the Excavated Area, and long-term monitoring (LTM) of surface water, sediment, and groundwater in the Impoundment Area. The boundaries of the Flume Area and Impoundment Area were refined in 2012, and the need to prohibit industrial land use within the Impoundment Area was identified and implemented shortly thereafter. In addition, Buildings 109 and 110, and the network of concrete flumes, were demolished in 2012. Data collected at the Excavated Area indicate no soil cover exists. Based on the site inspections and a review of available data, the remedy at the Impoundment Area (OU XIII) remains for long-term protectiveness. With the removal of residues from the flumes and the flumes themselves, the response at the Flume Area (OU XIII) is complete and will not be evaluated in future five-year reviews. The remedy at the Excavated Area (OU XIV) has not been implemented and is therefore not protective. To ensure protectiveness, the Navy will implement remedial action to mitigate ecological exposures at the Excavated Area (OU XIV).

Site 7 – Plant 3 Explosives-Contaminated Wastewater Discharge Area (OU XII) includes the area surrounding Loading Plant 3, as well as a 300-foot drainage area that received loading plant nitrosamine-contaminated wastewater from 1945 to 1975. Approximately 770 cubic yards of soil and sediment were excavated from the drainage area in 1996. A ROD for soil and sediment in the wastewater drainage area was signed in 1998. No further actions other than LUCs prohibiting residential use were required. Based on site inspections and review of available data, the remedy remains for reaching long-term protectiveness.

Site 12 – Barracks Road Landfill Area A (OU III) consists of three areas: (1) Area A, the former location of an industrial and non-industrial waste incinerator facility, (2) Area B/C, a former disposal area where ash, scrap metal, charred wood, cloth, and glass may have been disposed, and (3) the Wood/Debris Disposal Area, where lumber, wood pallets, and miscellaneous construction debris were disposed. A ROD was signed in 1997. No actions were required for Area B/C and the Wood/Debris Disposal Area. The soil remedy selected for Area A consisted of excavating soil, removing surface debris, and constructing a soil cover. Additionally, LUCs for Area A prohibited the use of groundwater as a potable water supply, and LTM of groundwater, surface water, and sediment were required. Based on site inspections and review of available data, the remedy remains for reaching long-term protectiveness.

Site 19 – Conveyor Belt Soils at Building 10 (OU VII) consisted of soils in a 500-foot-long trench beneath a conveyor belt and the surrounding area that was formerly used from the 1940s to 1970s to transport packaged TNT. A ROD for soil was signed in 1998. The selected remedy included removing the conveyor belt, removing soil, and covering the excavated area with topsoil. Additionally, LUCs were implemented to prohibit residential development and activities that interfered with the integrity of the soil cover. Based on site inspections and a review of available data, the remedy remains for reaching long-term protectiveness.

Site 22 – Burn Pad was reportedly used for burning waste explosives and spent solvents from the early 1940s until 1994. A ROD notating no further action was signed in 2011 for surface water and sediment. A ROD documenting the selected remedy for groundwater was signed in 2012. The remedy included groundwater treatment, LTM and LUCs. A pre-design investigation for groundwater was conducted prior to the implementation of groundwater treatment. The pre-design investigation indicated groundwater contamination was more expansive than initially understood and a supplemental investigation identified the presence of 1,4-dioxane, perchlorate, and PFAS, which are all chemicals of emerging environmental concern in groundwater. In addition, a site inspection is ongoing to further evaluate the presence of PFAS at the site. The remedy for Site 22 groundwater is determined to provide short-term protectiveness due to the uncertainty related to the presence of 1,4-dioxane, perchlorate, and PFAS.

Protectiveness Summary

One site (Site 6 [OU XIII]) was identified that had a remedy that was not protective, while two sites were identified that had remedies that only had short-term protectiveness (Site 1 [OU VIII] and Site 22). The Navy, EPA, and VDEQ have agreed to the steps for addressing the protectiveness at these sites and a time frame for reaching long-term protectiveness.

No issues were identified for the remaining sites during the five-year review process that affected the protectiveness of the remedies in place. It is recommended to continuing LUCs, site inspections, and LTM, as applicable.

For More Information:

The community was notified of the five-year review process through a Restoration Advisory Board (RAB) meeting and public notice. NWS Yorktown discusses environmental issues of interest in the community through the RAB. For more information about the RAB, or if you have questions concerning NWS Yorktown, or the information contained in this fact sheet, please reach out to the following individuals:

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Information Repository:

A physical copy of the fifth five-year review report is publicly available at:

Yorktown Library
8500 George Washington Memorial Highway
Yorktown, VA 23692
(757) 890-3377

Review the Administrative Record at the NWS Yorktown public website: https://www.navfac.navy.mil/Business-Lines/Environmental/Products-and-Services/Environmental-Restoration/Mid-Atlantic/Yorktown-NWS/Community-Outreach/

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