



US Army Corps
of Engineers

Norfolk District

UXO Removal Actions

Site History

The former Nansemond Ordnance Depot (FNOD) occupied 975 acres overlooking the Nansemond and James Rivers in Suffolk, Virginia, over a 43-year period (1917 to 1960). It played a major role in the storage, shipment, inspection, reconditioning, and disposal of munitions during World War I and World War II.

The original depot (circa 1917) included 28 standard ammunition magazines, 25 high explosive magazines, 13 smokeless powder magazines, 8 primer and fuze magazines, a large warehouse, 16 barracks buildings, 2 officers quarters, hospital, garage, fire house, machine shop, electric storage battery charging station, and other support buildings. Other construction included jetties, guard towers, pier, water tower, and renovation and salvage plant as well as railroads and roads within the site.

Magazines – a military storage area for arms and ammunition

In 1960, the Department of Defense (DoD) declared the FNOD property excess. Various land transactions have taken place within the 975 acres since the initial release of the property in 1960.

Today the site is occupied by Tidewater Community College (TCC), Portsmouth Campus; Dominion Land Management (Bridgeway Commerce Park); General Electric; Continental Properties; the Hampton Roads Sanitation District; and the Virginia Department of Transportation, including a portion of Interstate 664.

Ordnance Work Completed

1987 - 1996

In the spring of 1987, bulk explosives, small arms munitions, and other ordnance items, both spent and unexploded, were discovered in a 2- to 3-acre area at the entrance of TCC. This area is known as the TNT disposal area.

In December 1988, the Corps removed 4,400 pounds of boosters, 260 pounds of bulk explosives, 1,360 pounds of small arms and miscellaneous components, and 30,275 pound of contaminated soil from this site.

In 1992, the Corps conducted an additional removal action in the TNT disposal area of approximately 15 tons of soil laden with bullet casings and slugs, and approximately 80 tons of contaminated soil.

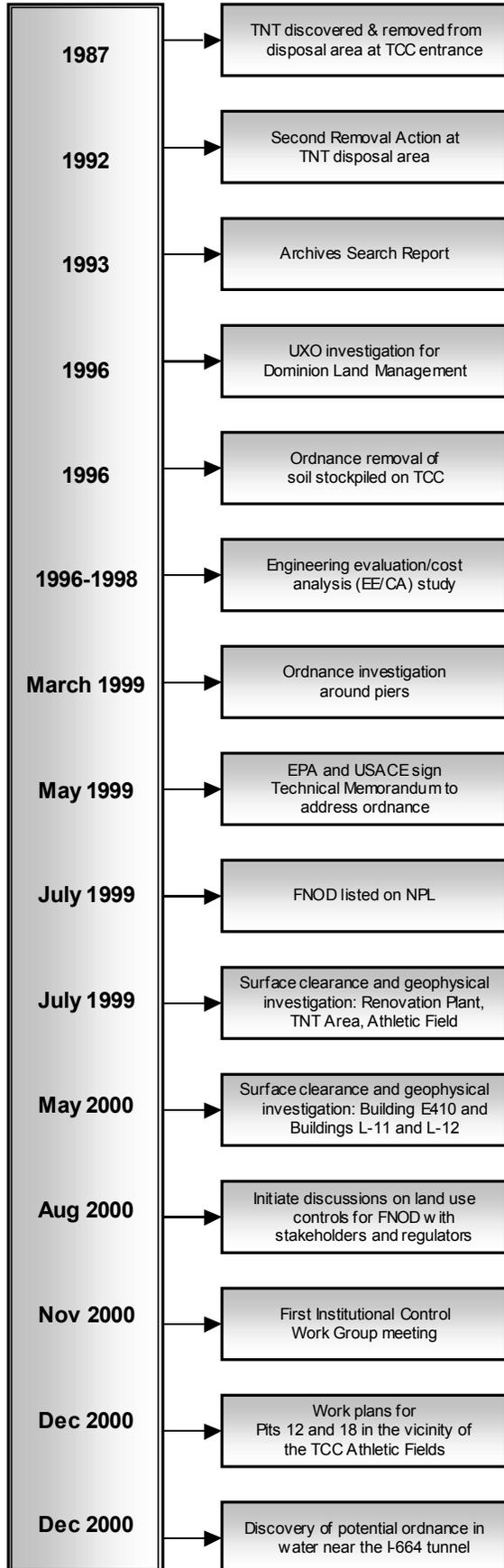
In 1993, an Archive Search Report was completed to identify the types, quantities, and probable locations of ordnance and explosive (OE) waste at the site. Another removal action was completed in 1996 that involved the sifting of 500 cubic yards of soil that was stockpiled on TCC property. Approximately 31,450 pounds of ordnance-related items and 351 pounds of scrap metal were found in the soil. The ordnance-related items consisted of fuze adapters, booster cups, 20 mm TP, 37 mm AP, and 60 mm mortars.



Grenade fuze and detonator

In 1996, Foster Wheeler Environmental Corporation conducted geophysical surveys on Dominion Lands property to investigate the presence of OE. In late 1997, Foster Wheeler completed the site-wide geophysical field work for the draft Engineering Evaluation/Cost

Ordnance Work Completed



Ordnance Work Completed

1987 - 1996 (continued from page 1)

Analysis (EE/CA) report. Approximately 40 grids (30 x 30 meters in size) across the site were studied. These grids were selected based on the archive search report, aerial photo reviews and input by property owners, regulatory agencies, and other interested parties.

Approximately 1,966 anomalies were identified; 926 of these were excavated. Five ordnance-related items were found, including an empty 40 mm projectile, a partially empty 37 mm projectile, a 75 mm projectile, and two 20 mm projectiles. Three additional items were found outside the grids: two M-18 smoke grenades and one 4.5 barrage rocket. Additional test pits were dug in areas that had numerous anomalies including the James River beachfront area, Area O, the Impregnite Kit area, and the brick vault area.

The only ordnance-related materials found were in Area O, where the pits confirmed the presence of ordnance burn and burial trenches to the depth of about 6 feet. Geophysical studies were also conducted at the TCC lake, the Horseshoe Pond, select areas of the James River beachfront, the Main Burning Ground Area, Tracts A, B, H, I, J, K, and Area J Pond.

EE/CA

1996 - 1998

The Engineering Evaluation/Cost Analysis (EE/CA) took place between 1996 and 1998.

Ordnance Work Completed

1999 - 2001

In March 1999, the Corps enlisted the help of Yorktown Naval weapons/ordnance experts and divers to search for potential ordnance around the World War I and II era piers. The investigation lasted 3 days and no explosives were detected.

In May 1999, EPA and the Corps signed a Technical Memorandum to address additional ordnance concerns at the site. The objective of the agreement was to remove ordnance and explosives in designated areas of the former Depot including the beachfront, Area O (burial/burn trenches), Dominion Lands, and GE Lands (Kickout area). In addition, the Corps initiated surface clearances and geophysical investigations at five areas of concern including the following:

Ordnance Work Completed

- **TNT Removal Area** – The investigation area was enlarged beyond the original removal site to ensure no further disposal took place. The geophysical investigation was completed in July 1999. Twenty-six anomalies were detected.
- **Athletic Field (South and North)** – A geophysical survey was done due to the area's terrain. The geophysical investigation was completed in July 1999. Twenty-eight anomalies were detected.
- **Renovation Plant Area** – This area was previously used to renovate shells. The geophysical investigation was completed in July 1999. Fifty-eight anomalies were detected.
- **Building L-11 and L-12** – These magazine buildings were destroyed in the 1920s by fire. The geophysical investigation was completed in May 2000. Five hundred and forty anomalies were detected; 400 are to be classified as trash from the roadway.
- **Building E410** – This magazine building was destroyed by fire in 1937. The geophysical investigation was completed in May 2000. Five hundred and fifty to 600 anomalies were detected.



Mortar fuzes found at the site

- Dominion Lands (Phase I)
- Dominion Lands (Phase II)
- L-11, L-12, E-410
- 33 Pits and Trenches
- GE Lands (Kickout area - 30 acres) – 9 of 144 grids.

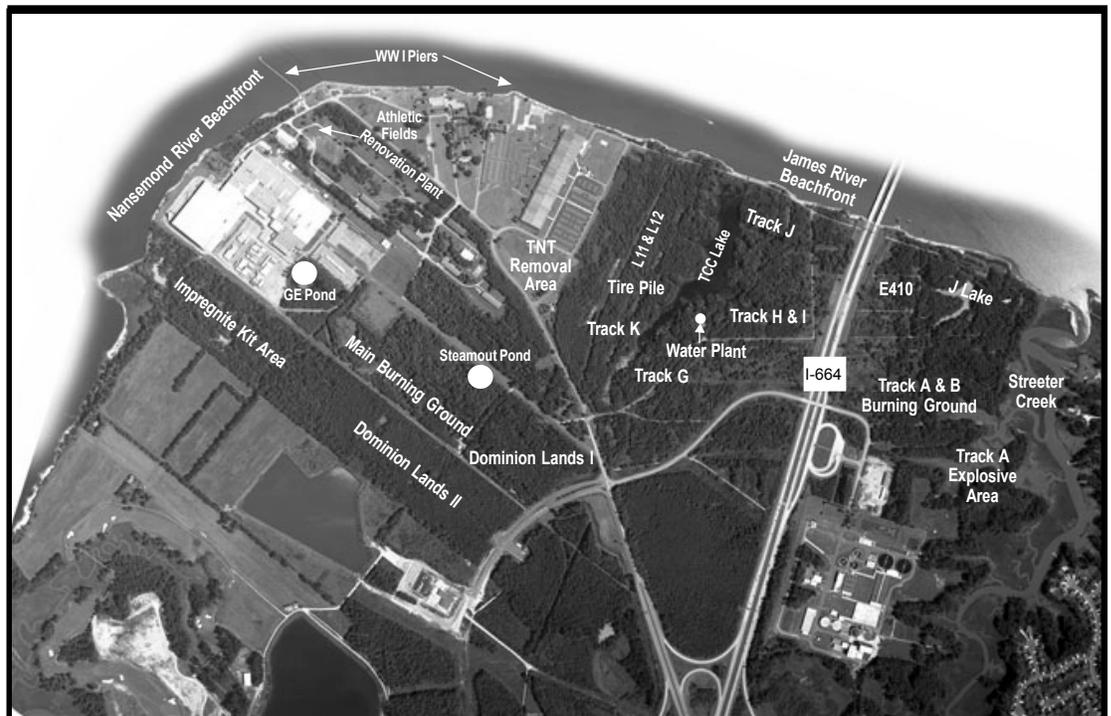
More than 23,577 anomalies were investigated between January 2000 and January 2001. Three hundred unexploded ordnance (UXO) items have been recovered, 79 ordnance items (on GE land only), 2,079 pounds of ordnance-related scrap, and 243,300 pounds of non-ordnance related scrap. The specific types of ordnance that were found include the following:

- 75 mm MK 1 shrapnel rounds
- Mark I high explosive (HE)
- World War II smokes
- Mortar fuzes
- Cartridge cases
- Projectiles
- Burster tubes
- Grenade detonators and fuzes

In August 2000, the Corps initiated discussions with landowners and regulators about land use controls to address any residual risk of ordnance. In November, the Corps held its first FNOD Institutional Control Work Group meeting.

In December 2000, the Corps began preparing work plans for removal actions on Pits 12 and 18 located in the vicinity of the TCC Athletic Fields. In addition, VDOT contractors found potential ordnance items underwater about 12,800 feet from the James River beachfront and 500 feet from the I-664 tunnel. EPA believes these items are related to the former Depot.

From January 2000 through January 2001, surface sweeps for ordnance have been completed on the following:



Site map showing areas of concern and surface sweep locations

Glossary

75 mm MK 1 Shrapnel Rounds – A round of ammunition that is loaded with steel balls and equipped with a timed fuse designed to light an expelling charge prior to impact. The expelling charge then causes the case to rupture or separate, scattering shrapnel (the steel balls) over a wide area.

Anomalies – An anomaly is a reading from a magnetometer that can result from scrap metal or ordnance.

Burn Trenches – Trenches dug for the express purpose of being loaded with retrograde explosives or ordnance, which was burned, and then buried as a means of disposal.

Burster Tubes – A tube that holds an explosive charge. It is found inside some types of projectiles and is used to rupture the projectile case and disburse its contents.

Cartridge Cases – An explosive item designed to produce gaseous products of combustion under pressure, expelling a projectile.

Grenade (Detonators and Fuzes) – Grenades are projectiles of a size and shape convenient for throwing by hand or projecting from a rifle.

Kickout Area – Specific areas consisting of about 30 acres on the FNOD, where ordnance items were expelled to this area when subjected to mass detonation for disposal.

HE (High Explosive) – An explosive which when used in its normal manner detonates, rather than burns.

Mortar Fuzes – A device with explosive components designed to initiate a mortar by actions such as impact, mechanical time, or a combination of these.

Non-OE Related Scrap – Miscellaneous materials not related to OE (metals, soda cans, etc.)

OE (Ordnance and Explosives) – Ammunition, ammunition components, chemical or biological warfare material or explosives that have been abandoned, expelled from demolition pits or burning pads, lost, discarded, buried, or fired.

OE-Related Scrap – OE items that do not contain explosive filler or propellant.

UXO (Unexploded Ordnance) – Military munitions that have been primed, fuzed, armed or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to the public, operations, or material and remain unexploded either by malfunction, design, or any other cause. UXO contains explosive filler or propellant.

Projectiles – Munitions that are launched.

Smokes – Projectiles or grenades that produce smoke rather than explode.

UXO Warnings

- If you come across any items that look like UXO, do not move closer, and **DO NOT TOUCH IT!**
- If you see UXO, do not attempt to move or disturb it or anything near it.
- Note the UXO location on a tree or at eye level if possible and avoid any area where the UXO is located.
- Report UXO immediately to the nearest police department. The police department will coordinate with the property owner and the Army Corps for proper disposal.

POINTS OF CONTACT:

Suffolk Police Dept., Chief Wilson 757-923-2350

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What's Next?

The Army Corps will complete ordnance clearance activities on GE property and on Pits 12 and 18 at the soccer field on TCC. The Corps is also coordinating with VDOT, Navy Ordnance experts, and the regulatory agencies to determine the best course of action for addressing the potential ordnance items that were discovered underwater approximately 500 feet from the I-664 bridge and about 12,800 feet from the James River beachfront. The Institutional Control Work Group is working to establish land use controls to address any residual risk of ordnance that may exist at the site.

Contact Information

For more information about the Former Nansemond Ordnance Depot project, please contact the following people:

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Information Repository

Information about the Former Nansemond Ordnance Depot project is available for public review at the Information Repository:

Tidewater Community College Library
Information Desk
7000 College Drive
Portsmouth, VA

Library Hours:
8 a.m. to 9 p.m. Monday through Thursday
8 a.m. to 4:30 p.m. on Friday
8:30 a.m. to 12:30 p.m. on Saturday