



U.S. Army Corps
of Engineers
Norfolk District

RESTORATION

News

Former Nansemond Ordnance Depot Project Update • Volume 13 • July 2004

First Record of Decision Signed for FNOD Project: Offshore Area

The U.S. Army Corps of Engineers (the Corps) recently announced its first Record of Decision (ROD) for environmental restoration efforts at the Former Nansemond Ordnance Depot (FNOD). This decision states that no further action is required for portions of the James and Nansemond rivers offshore of the Former Nansemond Ordnance Depot.

The Offshore Area includes three miles of river from the James River near the I-664 Monitor-Merrimac Bridge to the Nansemond River near the GE facility from the Mean Low Water line (approximately 200 feet from shore) to one nautical mile from shore.

The formal decision document was signed May 24 by the Corps and the U.S. Environmental Protection Agency (EPA), with written concurrence from the Virginia Department of Environmental Quality (VDEQ). The Corps received no comments on their proposed plan during a public comment period that ran in Dec. 2003. A public meeting was held on Dec. 4, 2003 to discuss the studies and the findings.

The ROD document includes a description of the anticipated future land uses and the exposure scenarios evaluated. It is available for public review at the TCC Portsmouth Campus Library and on the Corps' project web site at: www.nao.usace.army.mil/projects/nansemond/documents.html.

Free and clear

This decision was based on environmental characterization activities and surveys, conducted by SAIC, of river sediments and croaker (fish) and crab tissue samples collected there. They tested river sediments for explosives (such as TNT), metals (such as lead and arsenic), pesticides (such as dieldrin), and Volatile Organic Compounds (such as TCE – a contaminant associated with solvents). Results of this study indicate that contaminants from the Former Nansemond Ordnance Depot are not present in the offshore river sediments at concentrations that pose a risk to humans, marine life, or animals on shore.



SAIC (a Corps contractor) used a pontoon boat to conduct shallow water surveys off of the James River beachfront

The low-down on RODs

The Record of Decision (ROD) document is a formal decision document that records the cleanup decision made at sites listed on EPA's National Priorities List. It is the final step in the thorough cleanup process which was established by the Comprehensive Environmental Compensation Liability Act (CERCLA). Records of Decision require written concurrence and approval from EPA. The Corps also sought and obtained input and written concurrence from the VDEQ.

Mark Your Calendar...



August 5
Restoration Advisory Board Meeting
Time: 6:30 PM -8:30 PM



October 7
Restoration Advisory Board Meeting



December 2
Restoration Advisory Board Meeting

All are Welcome!

Location:

Bon Secours Health Center at Harbour View, 5818 Harbour View Boulevard (Suffolk). Check Army Corps web site for meeting times.

2004 Environmental Studies Update

The Corps is continuing environmental studies around the Former Nansmond Ordnance Depot. Here's what's happening . . .

TNT Area – The Corps is now finalizing work plans for the human health and ecological risk assessments for the 1-acre site referred to as the TNT area. These assessments will determine the level of human health and ecological exposure posed by the elevated levels of lead and TNT in the soil. Both assessments will be completed by December. Once completed, the project team will be able to determine an appropriate cleanup strategy for the site. As an interim measure, the Corps installed a cover over the soil in January to prevent people from coming into contact with it. The Corps is coordinating site maintenance activities with TCC and has installed caution signs around the site.



Pesticide Drum Area – The Corps completed soil sampling at the site referred to as the Pesticide Drum area in February. The purpose of the sampling was to determine the extent of dieldrin and dioxin in the soil. The results of this sampling effort indicate that the contaminants are not widespread and only exist in the top six inches of soil in a few locations. Two soil samples contained dioxin and seven samples contained dieldrin at levels above EPA's residential standards. The site was discovered in 1998 when two unsealed and unmarked 55-gallon drums were found in a wooded area between I-664, College Drive, and Armistead Road on



Wooded area after the removal of drums

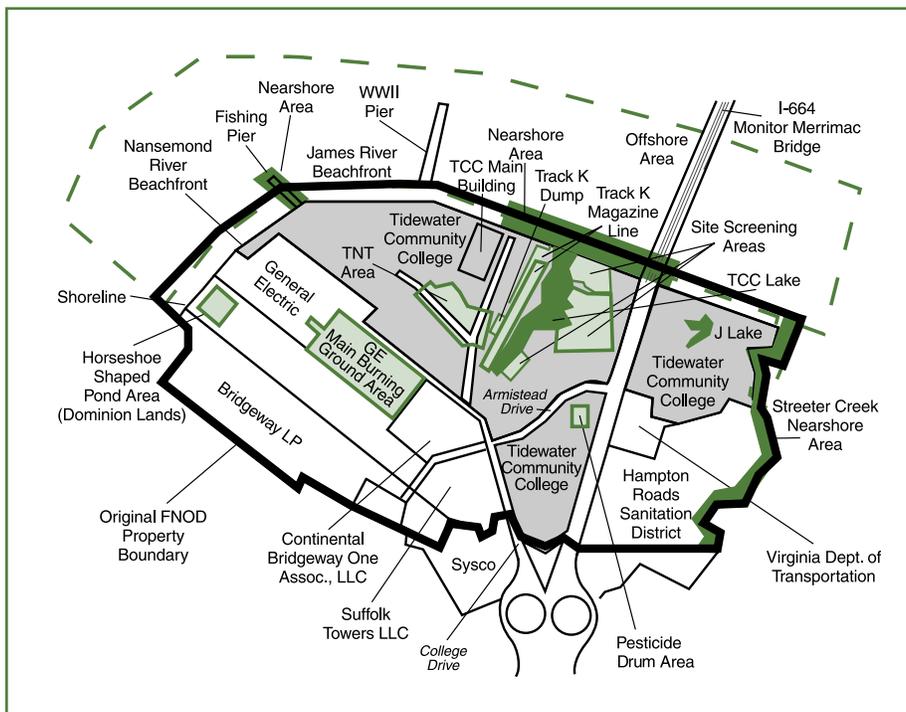
2004 Environmental Study Sites

- TNT Area
- Pesticide Drum Area
- Horseshoe Pond
- James River Beachfront
- Track K/former Tire Pile area
- Nansmond River Beachfront & Wastewater Treatment Plant
- TCC Lake
- Tracks G, H & I (east of TCC Lake and west of I-664)
- Marine Corps Power Generation plant

TCC property. The Corps removed the drums in November 2000 and collected confirmation soil samples following the removal. The results of the initial confirmation sampling effort led to the second round of soil sampling that was conducted in February. The next step is a study referred to as an Engineering Evaluation/Cost Analysis to determine the best course of action for the site. The Corps anticipates that the removal action for this site will include removal of the affected soil in late fall or early winter.

Horseshoe Pond – The Corps has recently completed field work for the ecological risk assessment at the Horseshoe Pond. Results of this assessment are expected in November. During prior sampling efforts, the Corps found high concentrations of metal contaminants in the berm areas around the pond. The Corps is trying to determine if these contaminants have migrated into the adjacent shoreline area (also referred to as the nearshore area) and whether the contaminants are negatively impacting the local ecosystem. Once the Corps

Continued on page 3



2004 Environmental Studies Update

Continued from page 2

can determine the level of risk posed by the site, they will conduct a feasibility study to evaluate cleanup alternatives. This 1.2 acre site is on property owned by Dominion Lands and is located southwest of the GE plant adjacent to the Nansemond River. It is one of six EPA designated FNOD "Source Areas" listed on the National Priorities List.

James River Beachfront – The Corps initiated a study referred to as a remedial investigation at the James River beachfront this month. Weston, a Corps contractor, will evaluate existing site data, collect additional samples as needed, and conduct human health and ecological risk assessments. The 500-foot section of shoreline was used by the former depot as a general disposal site. In the summer of 2001, the Army Corps removed large amounts of debris from the beach and installed a stone revetment to stabilize the shore from erosion. The Corps found heavy metals in several soil samples under the revetment during confirmation sampling that was conducted after the 2001 removal effort.

Track K/Former Tire Pile Area – The Corps project team is currently conducting human health and ecological risk assessments at the Track K area to determine the level of risk posed by several soil locations that contain slightly elevated levels of dieldrin and dioxin. The Track K area is located on TCC property west of South Road in an unused, wooded area. The Corps collected soil samples there in February to delineate the extent of the dieldrin and dioxin. Only two samples collected at depths of zero to six inches were above EPA's residential cleanup levels. None of the soil samples collected at depths of 12 to 24 inches were above EPA's residential cleanup levels. The Corps intends to leave this site suitable for unrestricted use and believes that the risk assessment will indicate that a removal action is not needed. The Corps estimates

that it will take 8 to 12 months to complete the remedial investigation at the site.

Site Screening Efforts

Nansemond River Beach – The Corps has submitted work plans to EPA and the state (VDEQ) to conduct a site investigation of the Nansemond River beach later this summer. The investigation will include a shoreline geophysical survey, soil sampling, and groundwater sampling on the bluff. The project team will use site screening criteria established jointly with the regulators to determine if additional efforts are needed.

TCC Lake – SAIC, a Corps contractor, recently conducted sediment and geophysical surveys of the entire 14-acre lake. The results of this site screening effort indicate that more work is needed at the lake. The issues that need to be examined further are heavy metals in the lake sediments, surface water, and fish tissue. Pesticides are also present in the lake sediments. The Corps is now proceeding with a Remedial Investigation of the lake to fully characterize the nature and extent of the contaminants there. The lake is located on TCC property west of Interstate 664 and adjacent to the James River. It was originally a swampy creek that drained into the James River until it was dammed somewhere between the 1950s to 1960s. EPA identified the lake as a possible waste disposal area in their Hazard Ranking package of the FNOD site in 1999. The Virginia Department of Environmental Quality collected fish tissue and sediment samples from the lake in August 2000. The Virginia Department of Health (VDH) conducted a fish consumption analysis from these samples. VDH concluded that the general public faces no health risks from consuming fish caught from the lake once per week. The Army Corps will reevaluate the human health risk associated with fish consumption on a daily rate.

Parent Advisory/ Public Safety Warning

Summer is here . . .and the Army Corps field crews are observing more kids bicycling and playing in the woods on GE property and in remote areas of Tidewater Community College Portsmouth campus. Please be aware that there are physical hazards in these areas that could cause serious injury such as excavation pits, wells, and old buildings that could collapse. The Army Corps has clearly marked its study areas with caution signs to keep people out of harms way. However, in many cases, the signs are being ignored. We need your help. Public safety is the Army Corps' top priority. Please warn your children and teenagers not to play in these areas and to observe the warning signs that are in place.

Thank You!



Example of an old building – The Marine Corps Power Generation Plant

EPA's Designated Source Areas

- TNT Disposal Area
- James River Beachfront
- Impregnite Kit Area
- The Horseshoe Pond
- The Steamout Pond and Main Burning Ground
- Track K/Former Tile Pile Area

2004 Munitions Response Update

The Corps has completed munitions response efforts at approximately 56 of the 69 acres that require clearance at FNOD. This year the Corps has removed 28 discarded military munitions (see glossary Page 5) and 3,643 pounds of munitions debris. The types of munitions that have been found this year include: 3-inch projectiles, 40mm projectiles, 20mm projectiles, boosters, booster adapters, and grenade fuzes.

Booster adapter



75mm round found on Nansemond River beachfront. Recovered items at FNOD are not in pristine condition and are hard to recognize due to corrosion and soil adhering to them.

TCC Athletic Fields/Manning Building/Truck Driving School – The Corps completed another geophysical survey at TCC in June. This follow-up survey involved the reacquisition of 187 magnetic signatures or anomalies identified during the initial munitions response effort that was completed in 2000. The field team also expanded the survey area 30 feet around each anomaly. A total of four discarded military munitions items were found and removed near the Manning Building and the Truck Driving School at depths ranging from 18 to 24 inches below the surface. The items included one 40mm projectile, one 20mm projectile, and two grenade fuzes.

GE Property along Welner Road – The Corps began their munitions investigation on the GE property north of Welner Road in June. The field crew has cleared 15 of the 19 100-by-100 foot grids and removed three 20mm projectiles, one 40mm projectile, and three projectile fuzes. A 3-inch HE round was also found along Welner Road.

Horseshoe Pond – In August, the Corps will investigate two metallic anomalies in the pond. The Corps is trying to determine if the anomalies are scrap metal or munitions related. This is a priority due to new development plans near the site.

Nansemond River Beachfront – The Corps ordnance specialists have found a number of discarded military munitions on the Nansemond River Beachfront this year. The items are being exposed due to the deteriorated condition of the breakwater wall. In December 2003, the Corps found a live piece of ordnance (a 6-inch shrapnel round) and another inert round in May 2004. The Corps will begin a munitions investigation here in September. The Nansemond River Beachfront area is fenced off to restrict public access to the area.



Nansemond River beachfront

GE Main Burning Ground – The Corps continues munitions work in the Main Burning Ground area located on GE property. A total of nine discarded military munitions have been found and removed from the site this year, along with 88 pounds of munitions debris, and

2004 Munitions Response Sites

- TCC Athletic Fields and Renovation Plant area
- GE property along Welner Road
- Horseshoe Pond
- Nansemond River Beachfront
- GE Main Burning Ground Area

125,450 pounds of non-munitions related scrap. Twenty gas mask filters were also found in December. These filters were tested by the Army's chemical and biological weapons experts on February 25, 2004 for chemical warfare materials and subsequently for other hazardous substances. The results of both sampling efforts indicated that no chemical warfare materials or hazardous substances were present in the filters. The Corps then disposed of the filters in an approved landfill.

Due to the amount of debris that still needs to be sifted at the site, the Corps is evaluating a mechanical sifter to see if it can speed up the effort. The field team hopes to have the sifter fully operational by early September. The Corps will coordinate its efforts closely with the affected landowners to minimize impact on area businesses, etc.



Mechanical sifter

A 200-foot safety distance will be required around the back end of the sifter and a 1,800-foot safety perimeter will be required in front of the sifter while it is operating.

Out with the old, in with the new ...terminology

Just when you thought you knew the lingo for ordnance at this site, think again. In the past two years, the Department of Defense (DoD) has developed and begun to implement the Military Munitions Response Program. This program requires DoD to maintain an inventory of defense sites that require a munitions-related environmental or safety response. It also requires DoD to report the progress being made at these sites to Congress annually. As a result, the Army has adopted new terminology to be used when discussing military munitions response efforts. These terms will ensure more accurate and consistent descriptions of DoD's efforts both internally and externally.

What are Military Munitions?

Military munitions include all types of conventional and chemical ammunition products and their components, produced by or for the military for national defense and security.

Discarded Military Munitions – Military munitions that have been buried, abandoned, or disposed of improperly.

Munitions and Explosives of Concern (MEC) – This is the broad term used to describe military munitions that may pose explosive safety risks including: a) unexploded ordnance, b) Discarded Military Munitions, c) Explosive Munitions constituents (e.g TNT, RDX) – soil containing high enough concentrations to pose explosive hazard.

Munitions Constituents – Chemical contaminants or breakdown elements originating from unexploded ordnance, discarded military munitions, or other military munitions.

Munitions Debris – Non-explosive debris from practice or training rounds (ie. empty 75 mm shrapnel debris)

Unexploded Ordnance (UXO) – Military munitions that have been primed, fuzed, armed, or otherwise prepared for action. They have usually been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material. These items remain unexploded either by malfunction, design, or other cause. Approximately 3-10% of the munitions fired are UXO.

Chemical Contaminants

Dieldrin – Dieldrin is an insecticide. Pure dieldrin is a white powder with a mild chemical odor. The less pure commercial powders have a tan color. This substance does not occur naturally in the environment. From the 1950s until 1970, dieldrin and aldrin were widely used pesticides for crops like corn and cotton. Because of concerns about damage to the environment and potentially to human health, EPA banned all uses of dieldrin and aldrin in 1974, except to control termites. In 1987, EPA banned all uses.

Dioxin – “Dioxins” refers to a group of chemical compounds that share certain chemical structures and biological characteristics. Several hundred of these compounds exist and are members of three closely related families: the chlorinated dibenzo-p-dioxins (CDDs), chlorinated dibenzofurans (CDFs) and certain polychlorinated biphenyls (PCBs). Dioxins are formed as a result of combustion processes such as commercial or municipal waste incineration and from burning fuels (like wood, coal or oil). Dioxins can also be formed when household trash is burned and as a result of natural processes such as forest fires. Chlorine bleaching of pulp and paper, certain types of chemical manufacturing and processing, and other industrial processes all can create small quantities of dioxins.

Semivolatile Organic Compounds (SVOCs) – Organic compounds that volatilize slowly at standard temperature (20 degrees C and 1 atm pressure). SVOCs include contaminants such as PCBs, pesticides, phenols, and PAHs.

Volatile Organic Compounds (VOCs) – Organic compounds that evaporate readily into the air. VOCs include substances such as benzene, toluene, methylene chloride, and methyl chloroform.

U.S. Army Corps of Engineers FNOD Project Web Site:
<http://www.nao.usace.army.mil/projects/nansemond/welcome.html>

Environmental Protection Agency:
<http://www.epa.gov/reg3hwmd/super/VA/nansemond/index.htm>

Virginia Department of Environmental Quality (VDEQ):
<http://www.deq.virginia.gov>

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Adriane James, the RAB Government Co-Chair, acknowledges Fred Copeland of GE, for his service to the board at his last meeting in June

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