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PROPOSED PLAN FOR SITE 32 WETLANDS AREA DOWNGRADIANT OF BEAVER POND  
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# Final Proposed Plan

## Site 32: Wetlands Area Downgradient of Beaver Pond

Naval Weapons Station Yorktown

April 2011

### 1 Introduction

This **Proposed Plan** describes the preferred alternative for **Environmental Restoration Program (ERP)** Site 32, the Wetlands Area Downgradient of Beaver Pond, at Naval Weapons Station (WPNSTA) Yorktown, Yorktown, Virginia. The preferred alternative for remedial action at Site 32 is No Further Action (NFA) for **sediment** and **surface water**. This alternative was selected for sediment following completion of a **Non-Time Critical Removal Action (NTCRA)** to mitigate potential unacceptable ecological risks from exposure to mercury, cadmium, and silver in sediment. Following completion of a **Remedial Investigation (RI)** and Step 7 of the **Ecological Risk Assessment (ERA)** process that demonstrated surface water poses no unacceptable risk to human health and ecological receptors, NFA is required for surface water. **Groundwater** and **soil** are not addressed in this Proposed Plan; however they will be addressed in a separate document. Because there are no unacceptable risks remaining at Site 32 from exposure to sediment and surface water, evaluation of other remedial action alternatives is unnecessary.

This Proposed Plan is issued jointly by the United States Navy (Navy), the lead agency for environmental restoration activities at WPNSTA Yorktown and the **United States Environmental Protection Agency (USEPA)** Region 3, the lead regulatory agency. The plan has been coordinated with the Commonwealth of **Virginia Department of Environmental Quality (VDEQ)**, the support regulatory agency.

This Proposed Plan will be available for public review and comment at the York County Public Library - Yorktown (8500 George Washington Memorial Hwy, Yorktown, Virginia 23692, (757) 890-3376) during a 45-day **public comment period** that includes a public meeting and fulfills public participation responsibilities as required under Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)** as amended, and Section 300.430(f)(2) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. The Navy and USEPA Region 3, in consultation with VDEQ, will make the final decision on this plan for Site 32 for sediment and surface water after reviewing and considering all information submitted during the 45-day public comment period.

In addition to presenting a preferred alternative for Site 32 sediment and surface water, this Proposed Plan summarizes previous CERCLA investigations that have been conducted at Site 32. Information documenting environmental investigations at Site 32 is available to the public in the **Administrative Record (AR)** file for WPNSTA Yorktown. Details regarding the dates of the public comment period, the date and time of the public meeting, and the location of the AR are included in the text box entitled "Please Mark Your Calendar." In addition, a glossary of key terms is provided at the end of this Proposed Plan; glossary terms are identified in bold print the first time they appear.

### Mark Your Calendar for the Public Comment Period

#### Public Comment Period

February 20, 2011 through April 5, 2011

#### Submit Written Comments

The Navy will accept written comments on this Proposed Plan during the public comment period. To submit comments or obtain further information, please refer to the names and contact information included at the end of Section 7. A blank sheet has been added at the end of the document to be

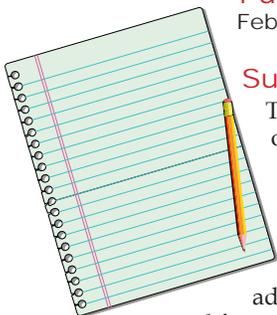
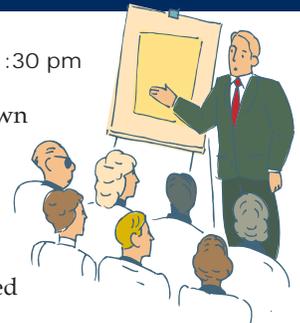
used for writing comments.

#### Attend the Public Meeting

Thursday, March 10, 2011; 1:00 - 1:30 pm

York County Public Library - Yorktown  
8500 George Washington Memorial Highway Yorktown, Virginia 23692

The Navy will hold a public meeting to explain the Proposed Plan. Verbal and written comments will be accepted at this meeting.



#### Location of Administrative Record File

NAVFAC Atlantic  
6506 Hampton Boulevard, Norfolk, VA 23508  
Phone: 757.322.4785

## 2 Site Background

Site 32, the Wetlands Area Downgradient of Beaver Pond (formerly Site Screening Area [SSA] 25) encompasses an area of approximately 5.6-acres in the extreme eastern portion of WPNSTA Yorktown, the centerline of which represents the boundary between the installation and the National Park Service (NPS) Colonial National Historic Park (Figure 1).

Site 32 is located between two impounded portions of Ballard Creek (Figure 1): Impoundment No. 1 is a natural beaver dam that forms the western boundary while Impoundment No. 2 forms the eastern boundary; the construction of Impoundment No. 2 is unclear. Ballard Creek flows around the northern edge of Impoundment No. 1, through the wetland area, around the southern edge of Impoundment No. 2, and eventually discharges to the York River.

### Previous Investigations and Actions

Site 32 was characterized as part of several investigations and actions since 1998. Detailed information from previous investigations conducted at Site 32 is available in the AR for Yorktown. The investigations conducted at Site 32 are summarized below and listed in Table 1.

Sediment at Site 32 was adversely impacted by releases of mercury from the former Sewage Treatment Plant 2 (STP 2), which was located along the northern bank of the wetland area. In 2000, when STP 2 was dismantled and removed, beaded elemental mercury was discovered at

the base of the trickling filter. Twelve drums of mercury-contaminated soils were removed for proper disposal.

### Limited Field Investigation

In August 2003, a limited field investigation was conducted by Baker Environmental, Inc. within the Site 32 wetland area to delineate total mercury concentrations in sediment in the vicinity of the WPNSTA Yorktown Site 12 Long Term Monitoring (LTM) sediment sampling locations. The results of the limited field investigation were included in the Final Project Plans Step 3B and 4 of the **Baseline Ecological Risk Assessment (BERA)** report. This investigation included 39 surface and 12 subsurface sediment samples. The maximum detected concentrations of total mercury in surface and subsurface sediment were 15.3 milligrams per kilogram (mg/kg) and 19.5 mg/kg, respectively. Based upon the results of the limited field investigation, the WPNSTA Yorktown Partnering Team agreed to develop a work plan for the continued investigation of mercury associated with the former STP 2 area.

### Consensus Statement 5-18-04-37

On May 18, 2004, based on the results of the 2003 limited field investigation, the WPNSTA Yorktown Partnering Team agreed to move forward with a BERA to further characterize the nature and extent of mercury in the wetland area and to assess potential ecological impacts within the wetland area from exposure to mercury.

### Consensus Statement 8-17-05-42

On September 26, 2005, the WPNSTA Yorktown Partnering Team agreed that the Work Plan for the Site

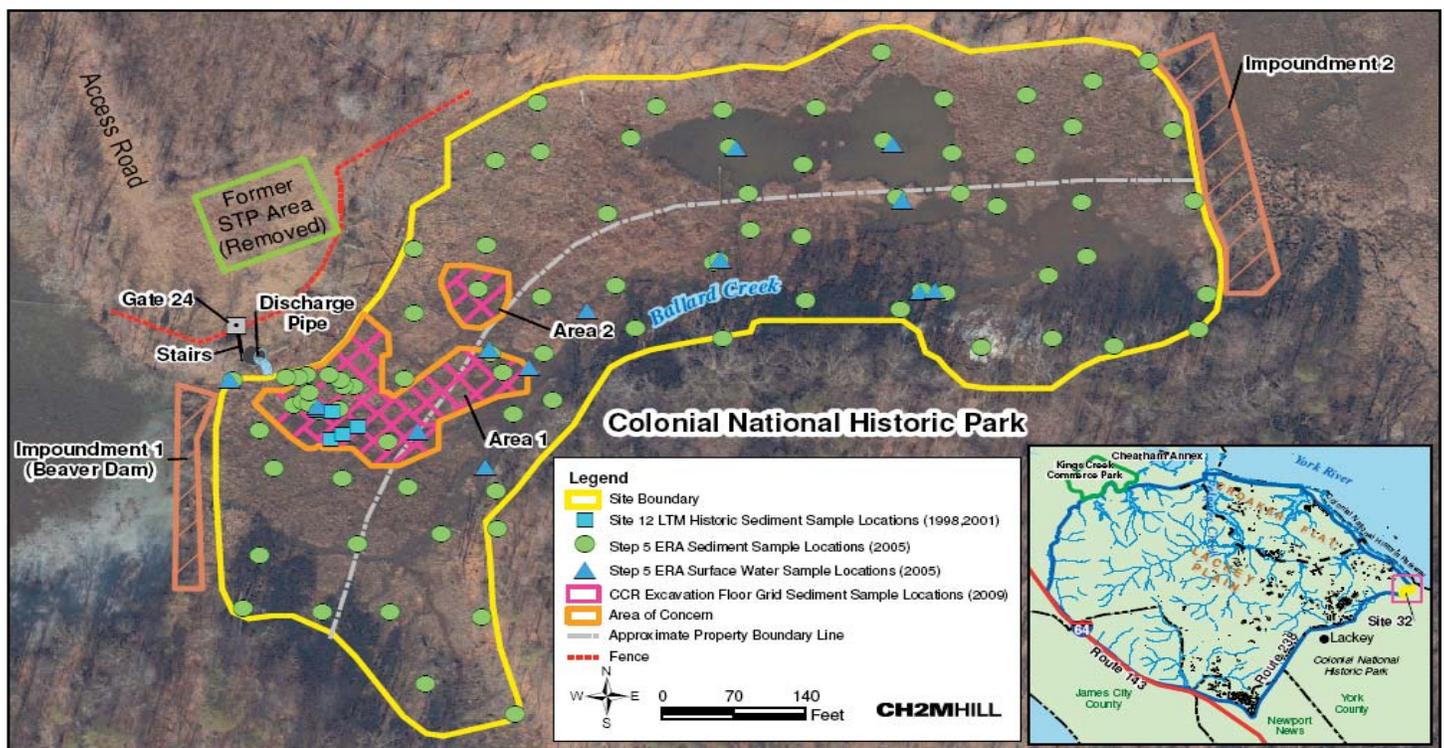


Figure 1 - Site 32 Site Map

Table 1 - Site 32 Previous Investigations

Document Title Milestones	Author/Date	AR Document Number
Consensus Statement 5-18-04-37	May 18, 2004	Not Applicable
Consensus Statement 8-17-05-42	September 26, 2005	01739
Final Project Plans Step 3B and 4 of the Baseline Ecological Risk Assessment	Baker, 2005	01873
Final Site 12 Final Long-term Monitoring (LTM) Report (1998-2003)	Baker, 2005	02078
Final Steps 6 and 7 of the Aquatic Baseline Ecological Risk Assessment	CH2M HILL, 2008	02412
Final Engineering Evaluation/Cost Analysis (EE/CA) Site Screening Area 25	CH2M HILL, 2009	00104
Final Construction Completion Report Removal Action at Site 32	Shaw, 2009	00113

32 investigation could be finalized and that fieldwork could be scheduled with an understanding that the major focus of the work plan was to address the known release of mercury from STP 2.

### Final Project Plans Step 3B and 4 of the BERA

In October 2005, a Step 3B (problem formulation) and 4 (study design/data quality objectives) BERA was completed to:

- Define the key pathways, chemicals, and receptors that could be driving potential risks within Site 32
- Establish the **measurement endpoints**, study design, data quality objectives, and data analysis methods for additional Site 32 investigations necessary to complete the ERA

The BERA concluded that mercury may have been historically transported from the STP 2 trickling filter tank, via a regulated outfall to Site 32.

The BERA Project Plans recommended the following field activities:

- Collection of surface water, sediment, and fish and frog tissue samples for analytical testing
- Collection of sediment samples for **toxicological testing**
- Collection of **background** samples for analytical and toxicological testing

### Final Site 12 Final Long-term Monitoring Report (1998-2003)

Sampling of sediment within the Site 32 wetland area began as part of WPNSTA Yorktown Site 12 LTM, which was conducted in 1998 and from 2000 through 2003. Site 12 is a former disposal area containing drainage channels that discharged into Ballard Creek. The sediment samples collected from 2000 through 2003 were analyzed for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The LTM results for these sediment samples indicated that mercury, cadmium, and silver were elevated relative to background levels.

### Final Steps 6 and 7 of the Aquatic Baseline Ecological Risk Assessment

In November 2008, a Step 6 and 7 Aquatic BERA was completed to assess the potential for mercury, cadmium, and silver to adversely impact aquatic receptors at Site 32, thus following the WPNSTA Yorktown Partnering Team agreement of the Aquatic BERA work plan as discussed in Consensus Statement 8-17-05-42.

The results of the Aquatic BERA indicated two areas where mercury, cadmium, and silver in sediment posed a potential **ecological** risk in the Site 32 wetland area.

### Final Engineering Evaluation/Cost Analysis Site Screening Area 25

In July 2009, an **Engineering Evaluation and Cost Analysis (EE/CA)** was prepared to evaluate remedial action alternatives for sediment posing potential ecological risk at Site 32.

The following remedial action alternatives were evaluated to address these potential risks:

- Alternative 1 – No Action
- Alternative 2 – Wetland Sediment Excavation and Offsite Disposal
- Alternative 3 – Wetland Sediment Cover and Land Use Controls (LUCs)

The recommended remedial action was Alternative 2, Wetland Sediment Excavation and Offsite Disposal. Because this alternative consisted of removing sediment that posed potential unacceptable ecological risk, no future monitoring or maintenance would be required. In addition, preliminary remediation goals (PRGs) for sediment were established to be protective of ecological receptors.

In addition, a streamlined human health risk screening evaluation was included in the EE/CA. The results of this screening indicated that there are no potential human health risks present at Site 32 from exposure to sediment or surface water.

## Final Construction Completion Report

In December 2009, a Construction Completion Report (CCR) was prepared to document the completion of a NTCRA of contaminated sediment (**Contaminants of Concern [COCs]** concentrations above the PRGs) at Site 32.

A total of 2,041 tons of contaminated sediment was disposed of from Site 32. Post excavation confirmation samples were collected from the excavation floor and sidewalls of each grid to document that the PRGs for the Site 32 COCs were met.

Site 32 was restored to pre-construction conditions with clean fill and wetland vegetation to return it to the same hydrologic, topographic, and vegetative states. The PRGs for the Site 32 COCs were met based on the post excavation confirmation samples (Table 2). Based on the removal of contaminated sediment to below PRGs and Site 32 restoration to pre-construction conditions, no LTM is warranted at Site 32.

Table 2 – Site 32 Maximum Detection of COCs

COC	PRG (mg/kg)	Maximum Detection of COC following completion of NTCRA (mg/kg)
Cadmium	3.8	Not Applicable
Mercury	4.2	01739
Silver	102	01873

## 3 Site Characteristics

Site 32 is a wetlands area located in the extreme eastern portion of WPNSTA Yorktown. The **topography** of this wetland area is characterized as a broad, flat area between steep upland slopes with elevations at the top of the slope on the order of 30 to 50 feet above mean

sea level. One main surface water channel, along with numerous small braided surface water channels and small ponds, all no deeper than about 6 inches, are located between two impoundments within this wetlands area.

**Upland canopy** tree species, including American sycamore, loblolly pine, sweet gum, and yellow poplar, are present along the Site 32 perimeter and across each impoundment while **freshwater emergent wetland** vegetation is present within the wetland itself.

Due to Site 32 being a wetland, the groundwater within the unconfined Columbia Aquifer is expected to first occur at relatively shallow depths and discharge locally. There is no current or expected future use for groundwater at Site 32. **Potable** water at WPNSTA Yorktown is supplied by the City of Newport News Waterworks.

## 4 Scope and Role of Response Action

WPNSTA Yorktown was placed on the **National Priorities List (NPL)** in October 1992. A federal facilities agreement, signed in 1994, identified 16 Sites for remedial investigation and 19 SSAs for the **Site Screening Process (SSP)**. Subsequent to the FFA, six additional SSAs were identified for consideration under CERCLA. Site 32 is a site at WPNSTA Yorktown currently in one of the various stages of being investigated, addressed, and/or closed out in accordance with CERCLA and the NCP. A summary of how the Navy, in partnership with the USEPA Region 3 and VDEQ, is addressing all CERCLA sites at WPNSTA Yorktown is provided in the **Site Management Plan**, which is updated annually and available in the AR file.

### WHAT IS HUMAN HEALTH RISK AND HOW IS IT CALCULATED?

A Human Health Risk Assessment (HHRA), which estimates the likelihood of health problems occurring if no cleanup action were taken, consists of the following four-step process:

**Step 1: Analyze Contamination**      **Step 3: Assess Potential Health Dangers**  
**Step 2: Estimate Exposure**          **Step 4: Characterize Site Risk**

In **Step 1**, comparisons of the concentrations of site chemicals to scientific studies on the effects those chemicals have on people help identify which chemicals pose the greatest threat to human health.

In **Step 2**, the Navy considers different ways people might be exposed to chemicals, the concentrations, how often, and how long they may be exposed in order to assess a "reasonable maximum exposure" (RME) scenario that portrays the highest level of human exposure that could reasonably be expected to occur.

In **Step 3**, the Navy uses the information from Step 2, combined with toxicity information, to assess potential health risks. The Navy considers two types of risk: (1) cancer risk and (2) non-cancer hazard. The likelihood of any type of cancer resulting from a contaminated site is generally expressed as a probability: "1 in 10,000 chance" (for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure). For non-cancer health effects, the Navy calculates a "hazard index" (HI), which is the ratio between the "reference dose," (the dosage at which no adverse health effects are expected), and the RME. A "threshold level" (HI less than 1) exists below which non-cancer health effects are no longer predicted.

In **Step 4**, the Navy calculates whether site risks are high enough to cause health problems for people at or near the site. The results of the three previous steps are combined, evaluated, and summarized. The Navy adds up the potential risks from the individual contaminants and exposure pathways and calculates a total site risk.

## 5 Summary of Site Risks

Detailed results of the human health screening and ecological risk assessment conducted at Site 32 are presented in the EE/CA (CH2M HILL, 2009) and the Steps 6 and 7 of the Aquatic BERA (CH2M HILL, 2008), respectively. These documents are available in the AR. In summary, prior to any removal actions at Site 32, no unacceptable human health risks were identified resulting from exposure to sediment and surface water, while potential unacceptable ecological risks were identified for aquatic receptors from exposure to sediment. No ecological risks were identified from exposure to surface water.

Post-removal confirmation samples were collected to verify that subsequent to the NTCRA unacceptable risk attributable to Site 32 sediment had been mitigated. The CCR (Shaw, 2010) documents that the NTCRA activities successfully removed sediment containing contaminants at concentrations posing unacceptable ecological risk; therefore no LTM is warranted. Additional information regarding human health and ecological risks, as well as how they are calculated, is included in text boxes within these sections.

### 5.1 Sediment

Based on the human health risk screening, no unacceptable human health risks associated with sediment were identified.

Potentially unacceptable ecological risks associated with sediment have been mitigated by the NTCRA. Site-specific remediation goals were met, as determined by post-excavation confirmation samples. Therefore, no further action is necessary to address human health and ecological risk from sediment at Site 32.

### 5.2 Surface Water

No unacceptable human health and ecological risks from surface water were identified during any round of risk screening conducted. Therefore, no further action is necessary to address human health and ecological risk from surface water at Site 32.

## WHAT IS ECOLOGICAL RISK AND HOW IS IT CALCULATED?

An ERA evaluates the potential risks to plants, animals, habitats, and communities and is conducted using a step-wise process (as outlined in Navy and USEPA ERA policy and/or guidance), which includes decision points where agreement among stakeholders is reached to assess whether the process should be continued or terminated. The process continues until a final decision has been reached (that is, remedial action if unacceptable risks are identified or no further action if risks are acceptable). The process can also be iterative if data needs are identified at any step; the needed data are collected and the process re-starts at the point appropriate to the type of data collected.

**An ERA has three principal components:**

### Step 1: Problem Formulation

The problem formulation includes:

- Compiling and reviewing existing information on the habitats, plants, and animals that are present on or near the site
- Identifying and evaluating area(s) where site-related chemicals may be found (source areas) and at what concentrations
- Evaluating potential movement (transport) of chemicals in the environment
- Identifying possible exposure media (soil, air, water, sediment)
- Evaluating if/how the plants and animals may be exposed (exposure pathways)
- Evaluating routes of exposure (for example, ingestion)
- Identifying specific receptors (plants and animals) that could be exposed
- Specifying how the risk will be measured (assessment and measurement endpoints) for all complete exposure pathways

### Step 2: Risk Analysis

- Exposure Estimate - An estimate of exposure concentrations. These include direct exposures to lower trophic level receptors (organisms low on the food chain, such as plants and insects), upper trophic level receptors (organisms higher on the food chain, such as birds and mammals), and indirect exposures (exposures via the food chain) for upper trophic level receptors.
- Effects Assessment An assessment of the concentrations of chemicals at which an adverse effect may occur.

### Step 3: Risk Calculation or Characterization

- The first two steps are used to estimate potential risk to plants and/or animals by comparing the exposure estimates with the effects thresholds.
- Also included is an evaluation of the uncertainties (that is, potential degree of error) associated with the predicted risk estimate and their effects on ERA conclusions.

The three principal components of an ERA are implemented as an 8-step, 3-tier process as follows:

**1. Screening-Level ERA (Steps 1-2; Tier 1)**

The SLERA conducts an assessment of ecological risk using the three steps described above and very conservative assumptions (such as, using maximum chemical concentrations).

**2. Baseline ERA (Steps 3-7; Tier 2)**

If potential risks are identified in the SLERA, a BERA is typically conducted. The BERA is a reiteration of the three steps described above but uses more site-specific and realistic exposure assumptions, as well as additional methods not included in the SLERA, such as consideration of background concentrations. The BERA may also include the collection of site-specific data (such as, measuring the concentrations of chemicals in the tissues of organisms, for example, fish) to address key risk issues identified in the SLERA.

**3. Risk Management (Step 8; Tier 3)**

Step 8 develops recommendations of ways to address any unacceptable ecological risks that are identified in the BERA and may also include other activities, such as evaluating remedial alternatives.

in the text box in Section 1 entitled, "Please Mark Your Calendar." The Navy will summarize and respond to all comments submitted during the public comment period in a responsiveness summary that will be included in the final decision document, the Record of Decision (ROD), which will follow this Proposed Plan. This Proposed Plan and the ROD will become part of the AR file for WPNSTA Yorktown.

Public participation is encouraged since the preferred alternative presented in this Proposed Plan may be modified or another alternative selected based on new information and/or public comments received. The public is encouraged to gain a more comprehensive understanding of Site 32 and the Navy's ERP by attending this and other public meetings advertised in the Daily Press and Virginia Gazette newspapers and accessing information included in the AR file. Minutes of all public meetings will be included in the file.

## 6 Preferred Alternative

As a result of the NTRCA completed at Site 32, no unacceptable risk to human health or the environment remains onsite due to exposure to sediment and surface water. Because no unacceptable risk is present, no alternatives, other than the NFA alternative, were evaluated for these media.

Under this alternative, no further response actions for sediment and surface water will be performed at Site 32, and no restrictions on land use or exposure are necessary. The Navy may reconsider NFA for Site 32 or consider evaluation of other alternatives if public comments or additional data indicate that another alternative warrants consideration.

## 7 Community Participation

The Navy and USEPA Region 3, in consultation with VDEQ, will make the final decision on this approach for Site 32 after reviewing and considering all information and comments submitted during the 45-day public comment period. The public comment period for this Proposed Plan will extend from Sunday, February 20, 2011 to Tuesday, April 5, 2011, and a public meeting to discuss the Proposed Plan will be held Thursday, March 10, 2011 from 1:00 pm to 1:30 pm. Details regarding the public comment period and public meeting are included

**During the comment period, interested parties may submit written comments to the following address:**

**Mr. Tom Kowalski P.G.**

NAVFAC MIDLANT, Code EV3  
9742 Maryland Avenue  
Building N-26, Room 3208  
Norfolk, VA 23511-3095  
Phone: (757) 341-0479  
E mail Tom.kowalski@navy.mil

**For further information, please contact:**

**Mr. Rob Thomson, P.E., R.E.M.**

USEPA (Region 3)  
1650 Arch Street  
Philadelphia, PA 19103  
Phone: (215) 814-3357  
Fax: (215) 814-3025  
E mail Thomson.Bob@epamail.epa.gov

**Mr. Wade Smith**

Virginia Dept. of Environmental Quality  
629 East Main Street, 4th Floor  
Richmond, VA 23219  
Phone: (804) 698-4125  
E mail wade.smith@deq.virginia.gov

**Administrative Record (AR):** Site information is compiled in an Administrative Record and placed in the general ERP information repository for public review.

**Assessment Endpoint:** measures that focus the risk assessment on particular components of the ecosystem that could be adversely affected by contaminants

**Background:** The concentration of a naturally occurring or manmade contaminant, such as a metal, found in groundwater, soil, sediment, and surface water in areas not affected by spills, releases, or other site-specific activities. Background concentrations of some inorganics and other contaminants are often at levels that may pose a risk to human health or the environment. These background-related risks should be considered (that is, subtracted) when calculating the risk posed by site conditions.

**Baseline Ecological Risk Assessment (BERA):** A baseline evaluation of the risk posed to the environment if remedial activities are not performed at the site.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):** A Federal law, commonly referred to as the "Superfund" Program, passed in 1980 and amended by the Superfund Amendments and Reauthorization Act of 1986. CERCLA provides for cleanup and emergency response in connection with existing inactive hazardous waste disposal sites that endanger public health and safety or the environment.

**Contaminants of Concern (COCs):** A chemical that based upon comparison to regulatory screening criteria has potential to pose unacceptable risks or hazards to receptors at the site.

**Ecological:** Refers to plants and animals in the environment.

**Ecological Risk Assessment (ERA):** An evaluation of the risk posed to the environment if remedial activities are not performed at the site.

**Engineering Evaluation and Cost Analysis (EE/CA):** A report that summarizes the comparative evaluation of multiple action plans for a site and presents the chosen method of action.

**Environmental Restoration Program (ERP):** The Navy, as the lead agency, acts in partnership with USEPA Region 3 and VDEQ to address environmental investigations at the facility through the ERP. The current ERP is consistent with CERCLA and applicable state environmental laws.

**Freshwater Emergent Wetland:** A nontidal wetland with salinity of less than 0.5 parts per trillion, water depth less than 2 meters, and is not adjacent to a shoreline.

**Groundwater:** Subsurface water that occurs in soil and geologic formations that are fully saturated.

**Human Health Risk Assessment (HHRA):** An evaluation of the risk posed to human health if remedial activities are not implemented.

**Measurement Endpoints:** measures of biological effects (e.g., laboratory toxicity test results) that are related to each respective assessment endpoint

**National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** Provides the organizational structure and procedures needed to prepare for and respond to discharges of oil and releases of hazardous substances, pollutants, and contaminants.

**National Priorities List (NPL):** A list developed by the EPA of uncontrolled hazardous substance release sites in the United States that are considered priorities for long-term remedial evaluation and response.

**Non-Time Critical Removal Action (NTCRA):** A removal action that does not pose an immediate threat to human or ecological health.

**Potable:** Suitable for use as a source of liquid consumption.

**Preliminary Remediation Goals (PRGs):** chemical concentrations established for a site to assess if the cleanup levels have been achieved.

**Proposed Plan:** A document that presents and requests public input regarding a proposed cleanup alternative.

**Public Comment Period:** The time allowed for the members of an affected community to express views and concerns regarding an action proposed to be taken by the Navy and USEPA, such as a rulemaking, permit, or Superfund-remedy selection.

**Receptors:** Humans, animals, or plants that may be exposed to risks from contaminants related to a given site.

**Remedial Investigation (RI):** A study that supports the selection of a remedy where hazardous substances have been disposed of or released. The RI identifies the nature and extent of contamination at the facility.

**Sediment:** Particulate matter that can be transported by fluid flow and that is found submerged underwater.

**Site Management Plan (SMP):** An annual report that provides a management tool for Naval Facilities Engineering Command, VDEQ, USEPA, and consultants for use in planning, scheduling, and setting priorities for environmental remedial response activities to be conducted at a base. The SMP establishes schedules and conceptual approaches for continued CERCLA activities.

**Site Screening Process (SSP):** Process to determine if an area should be considered a Site for further investigation.

**Soil:** A mixture of organic and inorganic solids, air, water, and biota that exists on the earth surface above bedrock, including materials of anthropogenic sources, such as slag and sludge.

**Surface Water:** All water naturally open to the atmosphere (for example, rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries)

**Topography:** the detailed description of the physical features of an area.

**Toxicological Testing:** A test where the effects of exposure to a given chemical is tested on an indicator species. Testing measures variables such as survival, growth, and reproduction.

**United States Environmental Protection Agency (USEPA):** The Federal agency responsible for administration and enforcement of CERCLA (and other environmental statutes and regulations), and with final approval authority for the Selected Remedy.

**Upland Canopy:** Areas characterized by tree cover that is, natural or semi-natural woody vegetation, generally greater than 6 meters tall; tree canopy accounts for 25 to 100 percent of the cover.

**Virginia Department of Environmental Quality (VDEQ):** The Commonwealth agency responsible for administration and enforcement of environmental regulations.

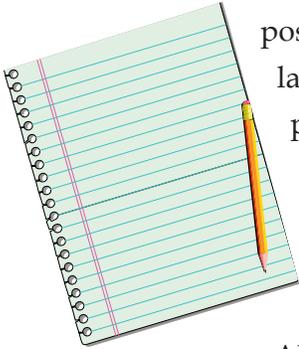


Mark Your Calendar for the Public Comment Period

Public Comment Period

February 20, 2011 through April 5, 2011

Submit Written Comments



Written comments must be postmarked no later than the last day of the public comment period, which is April 5, 2011.

Based on the public comments or on any new information obtained, the Navy may modify the Preferred

Alternative. The insert page

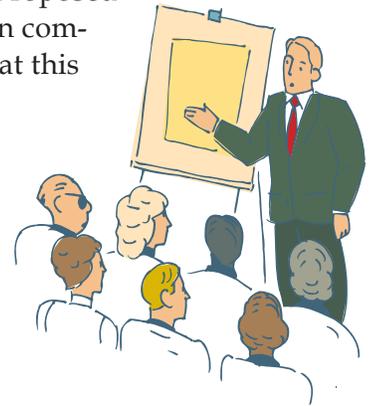
of this Proposed Plan may be used to provide comments, although the use of the form is not required. If the form is used to submit comments, please fold page, seal, add postage where indicated, and mail to addressee as provided.

Attend the Public Meeting

Thursday March 10, 2011 from 1:00 - 1:30 PM

Location: York County Public Library  
8500 George Washington Memorial Highway  
Yorktown, Virginia 23692

The Navy will hold a public meeting to explain the Proposed Plan. Verbal and written comments will be accepted at this meeting.



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Mr. Thomas Kowalski  
NAVFAC Mid-Atlantic, Code OPHREV4  
9742 Maryland Avenue  
Building N-26  
Norfolk, Virginia 23511-3095