Final

Record of Decision
for
Site 4 - Operable Unit 2 (Area 4B), Operable Unit 3 (Area 4C), Operable Unit 4 (Area 4D)

Naval Air Station Patuxent River
St. Mary's County, Maryland

Naval Facilities Engineering Command
Washington

September 2009

Contents

Acronyms and Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COPCs	constituents of potential concern
CTE	central tendency exposure
ERA	ecological risk assessment
FFA	Federal Facility Agreement
HHRA	human health risk assessment
HI	Hazard Index
IR Program	Installation Restoration Program
MDE	Maryland Department of the Environment
MEC	munitions and explosives of concern
MPPEH	material potentially presenting an explosive hazard
NAS	Naval Air Station
Navy	U.S. Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NTCRA	non-time-critical removal action
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PRAP	Proposed Remedial Action Plan
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
RME	reasonable maximum exposure
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1 Declaration

1.1 Site Name and Location

This Record of Decision (ROD) was prepared for soil associated with Installation Restoration Program (IR Program) Site 4 Operable Unit 2 (OU-2) (Area 4B), Operable Unit 3 (OU-3) (Area 4C), and Operable Unit 4 (OU-4) (Area 4D) at Naval Air Station (NAS) Patuxent River in St. Mary's County, Maryland. Figure 1 presents the locations of the site and OUs. NAS Patuxent River was placed on the National Priorities List (NPL) on June 30, 1994 (USEPA ID: MD7170024536).

1.2 Statement of Basis and Purpose

This ROD presents the final "no action" determination for IR Program Site 4 OU-2 (Area 4B), and the "no further action" determination for Site 4 OU-3 (Area 4C) and OU-4 (Area 4D), at NAS Patuxent River in St. Mary's County, Maryland (Figure 1). This determination has been made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information contained in the Administrative Record file for the site.

The U.S. Department of the Navy (Navy) is the lead agency and provides funding for site cleanups at NAS Patuxent River. The Navy and the U.S. Environmental Protection Agency (USEPA) Region III issue this ROD jointly. The Maryland Department of the Environment (MDE) concurs with the decision (Attachment A).

On December 9, 2000, the Navy and the USEPA Region III signed a Federal Facility Agreement (FFA), which outlines the scope of efforts for remedial activities at NAS Patuxent River. Site 4 is one of the IR Program sites identified in the FFA for NAS Patuxent River. A list and description of all IR Program sites is presented in the updated NAS Patuxent River **Site Management Plan**[1]. During the past 13 years, a total of 15 RODs have been issued for IR Program sites at NAS Patuxent River in accordance with the priorities established in the Site Management Plan. This ROD documents the final decision for Site 4 – OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) and does not include or affect any other sites or OUs at the NAS.

[1]**Bold text** identifies detailed site information available in the Administrative Record and listed as References that specifically support this ROD.

1.3 Selected Remedy

The Navy and the USEPA, in consultation with the MDE, propose "no action" for soil associated with OU-2 (Area 4B), the former fire-fighting training area, and "no further action" for soil associated with OU-3 (Area 4C), former disposal trenches, and OU-4 (Area 4D), surface disposal area (Figure 1). The selected remedy is based on evaluation of the information presented in the remedial investigation (RI) reports for these parcels of Site 4, including the human health risk assessment (HHRA) and ecological risk assessment (ERA), as well as results of the removal action conducted for OU-3 (Area 4C) and OU-4 (Area 4D). There are no factors indicating unacceptable risks to human health or ecological receptors that would warrant response actions under current and unrestricted future use scenarios.

This ROD documents the final decision for Site 4 OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D), and does not include or affect any other sites or operable units at NAS Patuxent River. A ROD signed in October 2008 documents the decision of "no remedial action" for groundwater associated with both Sites 4 and 5, referred to as OU-6. The final decisions for soil, sediment, and surface water associated with OU-1 (Area 4A) and OU-5 (Site 5) (both shown on Figure 1), will be documented in future RODs.

1.4 Statutory Determinations

The removal action conducted at OU-3 (Area 4C) and OU-4 (Area 4D) addressed the potential threat to human health and the environment from these operable units, thereby meeting the requirements of CERCLA Section 121 and the NCP and eliminating the need for further remedial action. The determination of 'no action' for OU-2 (Area 4B) and "no further action" for OU-3 (Area 4C) and OU-4 (Area 4D) is protective of human health and the environment. The selected remedy will not result in hazardous substances, pollutants or contaminants remaining at the site at concentrations exceeding levels that allow for unlimited use and unrestricted exposure. Consequently, five-year reviews will not be required.

If contamination posing an unacceptable risk to human health or the environment is discovered after execution of this ROD, the Navy will undertake all necessary actions to ensure continued protection of human health and the environment.

1.5 Authorizing Signatures

The Navy and USEPA selected this remedy with the concurrence of the MDE. Concur and recommend for immediate implementation:

Andrew T. Macyko — 28 SEPTEMBER 2009

Captain Andrew Macyko, United States Navy — Date
Commanding Officer
Naval Air Station Patuxent River

9/29/2009

Henry J. Sokolowski, P.E. — Date
Associate Division Director
Office of Federal Facility Remediation & Site Assessment

2 Decision Summary

2.1 Site Name, Location, and Description

NAS Patuxent River (USEPA ID: MD7170024536) is located at the confluence of the Patuxent River and the Chesapeake Bay in St. Mary's County, Maryland (Figure 1). NAS Patuxent River began operating in 1942, and since then it has been one of the primary centers for testing Navy aircraft and equipment. NAS Patuxent River contains buildings, runways, and associated infrastructure to support the military mission of the NAS, as well as office space for Navy and civilian personnel and housing for personnel posted to the NAS.

Site 4 consists of four separate OUs for soil, corresponding to distinct geographical areas of Site 4 where activities were conducted at various times during the site history. It is located near the southern boundary of the NAS, north of Gate 3 and southeast of Holton Pond (Pond 3) (Figure 1). Site 4 was a waste and debris disposal area for NAS Patuxent River between 1943 and 1960 (Fred C. Hart and Associates, 1984). Throughout the site, waste and debris were placed either on the ground surface or in long, narrow trenches. As noted in the **Initial Assessment Study**, waste included miscellaneous station waste, construction debris, and sewage sludge; petroleum, oil, and lubricant products; paints, thinners, and solvents; and lesser amounts of pesticides and photographic laboratory wastes. Waste was reportedly placed in unlined trenches approximately 10 feet wide, 10 feet deep, and 300 feet long, then covered daily with soil. Evidence was identified during the RI indicating that at least some wastes placed in the disposal trenches were also burned. This ROD addresses soil at three of the four OUs for Site 4. OU-2 (Area 4B) is the location of a former fire-fighting training area, OU-3 (Area 4C) encompasses the former disposal trenches, and OU-4 (Area 4D) is a former surface disposal area.

The site is covered with mature pines to the north and east (OU-1 [Area 4A] and OU-4 [Area 4D]), and an open meadow over most of the former disposal area (OU-3 [Area 4C]). In the past, a horse stable and a small house stood adjacent to the former fire-fighting training area (OU-2 [Area 4B]). Those structures were demolished in 2006. A parcel encompassing approximately 6 acres of Site 4 was provided to the Maryland Army National Guard in November 2005 (Figure 1). This land is located immediately south of and adjacent to the current Site 4, and is occupied by a training facility for the Maryland Army National Guard.

2.2 Site History and Enforcement Activities

Site 4 was identified as a potential IR Program site during the Initial Assessment Study conducted in 1984, and the **Confirmation Study** in 1985. In 1989, a **Resource Conservation and Recovery Act (RCRA) Facility Assessment** estimated that 64,000 tons of refuse were disposed at Site 4. In response, an **Interim Remedial Investigation** was conducted in 1991 to collect groundwater samples.

In 1996, a land parcel originally part of Sites 4 and 5 was transferred to the St. Mary's County Metropolitan Commission, at which time soil and groundwater sampling was conducted to determine whether the parcel contained chemicals and metals related to historical disposal activities at Sites 4 and 5. Semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) were not detected in soil samples; however, volatile organic compounds (VOCs) (toluene in one sample at a concentration exceeding the laboratory reporting limit) and metals (in all samples) were detected. However, it was not necessary to take any action to address the detected constituents.

A summary of investigation efforts is presented in Table 1. Figures 2 through 4 present the sampling locations associated with these efforts.

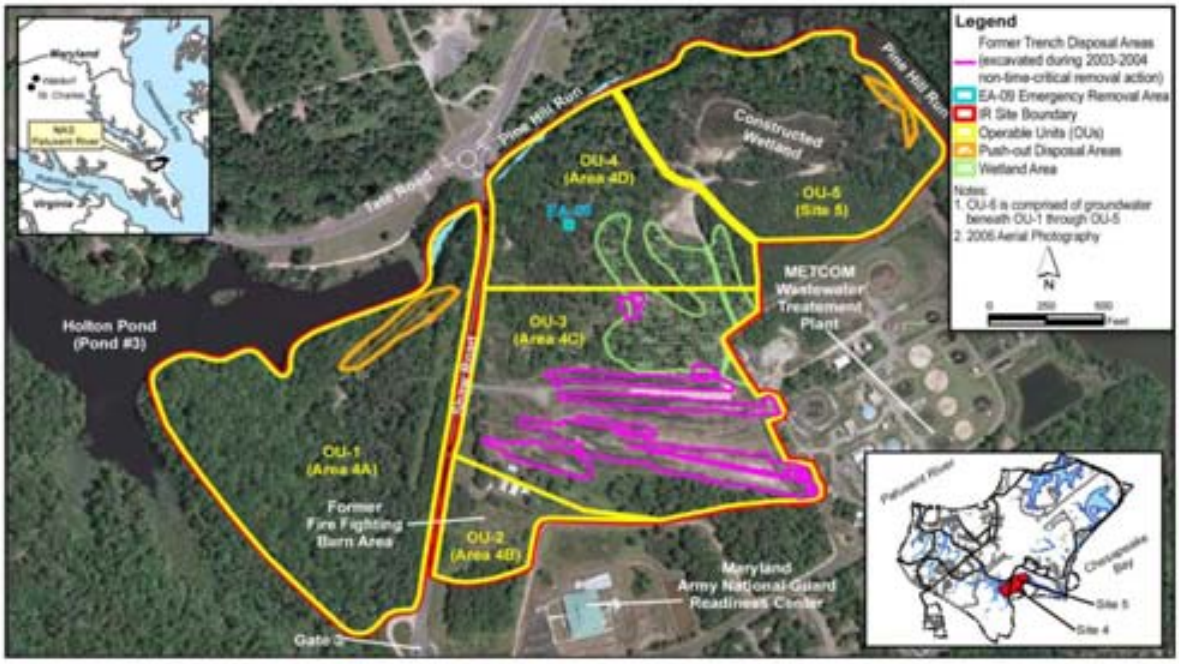


TABLE 1
Previous Investigation Summary

Initial RI Field Activities 1996-1997	During the **initial phase of RI field activities in 1996-1997**, buried debris at Site 4 was observed discontinuously near the surface in the area of the trenches (OU-3 [Area 4C]) (Figure 1). Trenches extended to depths of approximately 7 to 10 feet below the ground surface. Debris included ash, metal pipes, wires, straps, containers, glass objects and shards, porcelain, and the remains of at least two heavily corroded 55-gallon drums. Miscellaneous surface debris was also located in areas west of Shaw Road (Figure 1).
RI Field Activities 2001-2004	RI field activities were conducted in 2001-2004 throughout Site 4 to delineate the locations and types of wastes and debris both in disposal trenches and on the ground surface. The RI field work included tasks to delineate the boundaries of the disposal trenches (OU-3 [Area 4C]), and to collect and analyze samples of soil, groundwater, surface water, and sediment to identify chemicals and metals associated with historical disposal activities. Based on the findings of the RI field activities, a non-time-critical removal action (NTCRA) was initiated to expedite the removal of potential sources of contamination (i.e., the visible surface debris and subsurface waste materials in the known trench areas) to prevent exposure and to support the goal of unrestricted future land use at Site 4. The action is described in an **Engineering Evaluation/Cost Analysis** report, and was conducted concurrent with field investigation tasks at Site 4. The analytical results for samples of environmental media were evaluated as part of the RI report to assess potential risks to human health and the environment.
Non-Time-Critical Removal Action (NTCRA) 2003-2004	The NTCRA conducted in 2003 and 2004 for OU-3 (Area 4C) and OU-4 (Area 4D) removed visible surface debris and buried waste from historical disposal trenches identified during the exploratory trench and test pit investigation conducted as part of the RI activities. The removal activities were documented in a **removal action closeout report.** Post-removal confirmation samples were collected beneath surface debris piles and from the sidewalls and bottoms of the excavated trenches and the sample data were evaluated as documented in the RI report to assess potential risks to human health and the environment. The removal action activities conducted for these operable units are summarized below.

TABLE 1
Previous Investigation Summary

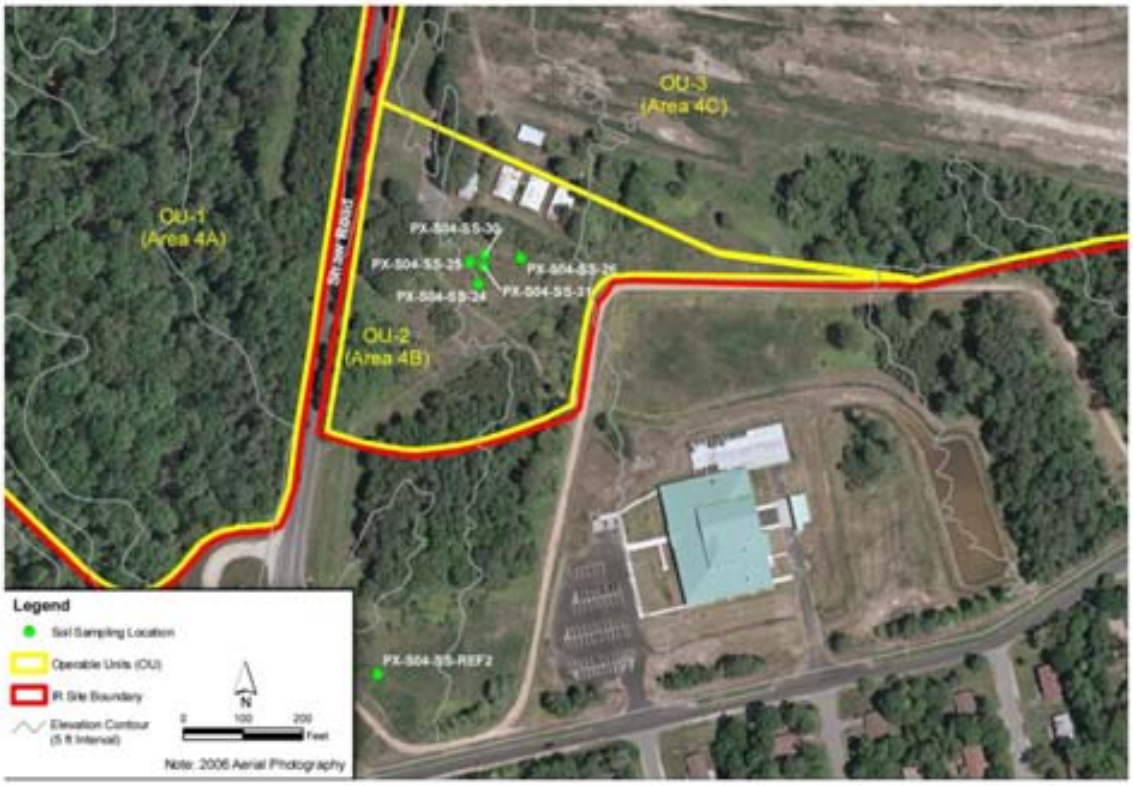
Non-Time-Critical Removal Action (NTCRA) (cont.) 2003-2004	**Removal Action Summary for OU-3 (Area 4C)** A 16-acre area within OU-3 (Area 4C) was cleared of vegetation to facilitate the removal of subsurface wastes from historical disposal trenches. A total of 41,799 cubic yards (approximately 80,000 tons) of soil and materials were removed from seven waste trenches at OU-3 (Area 4C) and disposed offsite as non-hazardous waste at solid waste landfills in Maryland and Virginia. The waste included approximately 460 tons of lead-contaminated materials found at four locations. The lead-contaminated waste was excavated, sampled for waste characterization, stabilized onsite with a phosphate amendment, and disposed offsite as non-hazardous waste after waste characterization was completed. Investigations conducted before the start of the NTCRA did not identify the presence or evidence of munitions and explosives of concern (MEC) at the site. However, based on remedial action findings for another waste disposal area of the NAS, hazard avoidance measures were used to identify potential MEC during intrusive activities. Various whole, inert-filled MEC and other inert material categorized as material potentially presenting an explosive hazard (MPPEH) were discovered during the removal activities for the known disposal trenches in OU-3 (Area 4C). A total of 606 items were identified as MPPEH during the removal action. Each item was inspected, certified, and verified to be free of explosives by trained ordnance technicians in accordance with Department of Defense regulations. A total of 5.6 tons of MEC scrap was transported to a scrap metal processing facility and smelted. **Removal Action Summary for OU-4 (Area 4D)** As part of the NTCRA conducted in 2003 and 2004, surface debris was removed from OU-4 (Area 4D). During the NTCRA, at the location designated as EA-09 (Figure 1), field screening measurements obtained during a trench investigation indicated the presence of volatile compounds at concentrations that exceeded levels for safe working conditions. A 55-gallon drum with unidentified contents and approximately 25 tons of associated soil were excavated and disposed offsite at an appropriate waste disposal facility. Chemical analyses of the excavated soil indicated the soil was contaminated with some type of petroleum compound, but no compound-specific analytes were identified by the analyses. Based on the waste characterization results, the drum contents and soil removed during the excavation activities were classified as non-hazardous for disposal.
Post-Removal Geophysical Survey Activities 2005-2006	As a result of finding MEC in the former disposal trenches for OU-3 (Area 4C) and as a precaution while conducting additional RI activities, further investigation was required for remaining areas of Site 4 to determine whether MEC or MPPEH were disposed in other areas. In 2005, surface geophysical surveys were performed for all of OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) to identify potential anomalies in these areas that could be indicative of buried MEC. The **geophysical survey** was performed using instruments (an analog magnetometer and an electromagnetic magnetometer) to detect and mark metallic subsurface anomalies of significant size (i.e., areas of subsurface anomalies larger than 3 feet in diameter) that could represent a disposal pit or trench containing potential MEC or MPPEH. All identified anomalies were investigated using intrusive methods during the additional RI activities conducted in 2006. Soil samples were collected beneath items identified as containers (e.g., drums or metal containers), or if staining or elevated levels of organic vapors were detected. The analytical results were evaluated in the RI report to assess potential risks to human health and the environment. Results of the geophysical survey and subsequent investigation activities to identify the geophysical anomalies for these operable units are summarized below. **OU-2 (Area 4B)** Two subsurface anomalies were identified for OU-2 (Area 4B) and investigated using intrusive methods during additional activities conducted in 2006. No MEC items, containers, or drums were found, and no indications of soil contamination were observed.

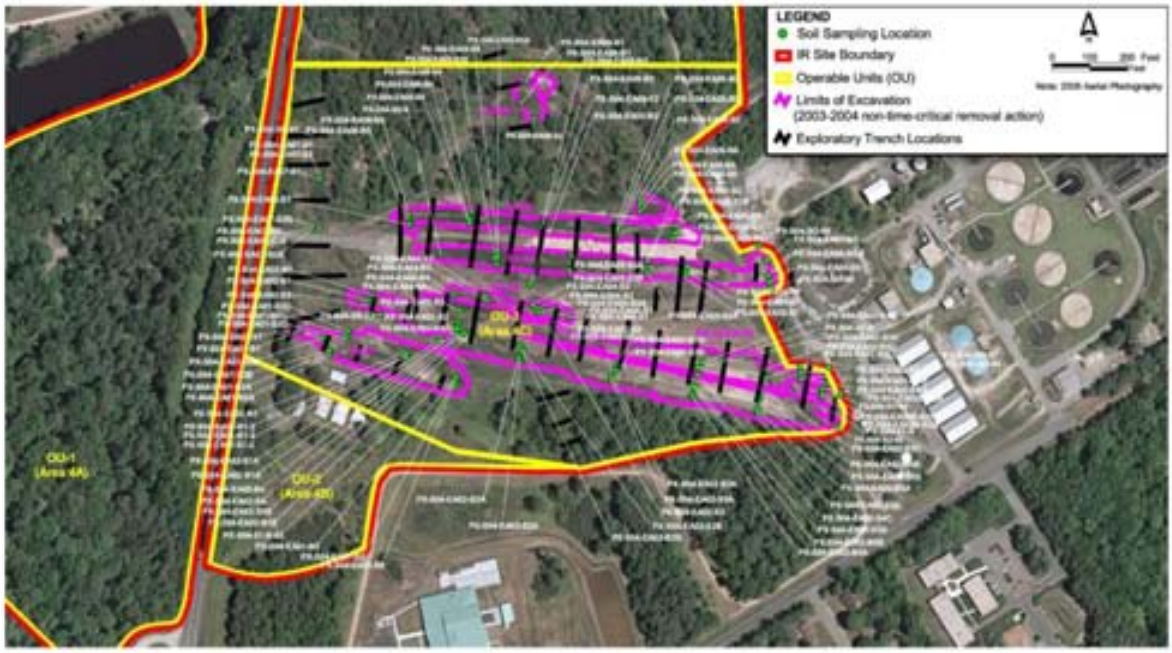
TABLE 1
Previous Investigation Summary

Post-Removal Geophysical Survey Activities (cont.) 2005-2006

OU-3 (Area 4C) Seven surface anomalies, 11 subsurface anomalies, and 2 suspected pit/trench locations (i.e., areas of subsurface anomalies larger than 3 feet in diameter) were identified in 2005 for OU-3 (Area 4C). All identified anomalies were investigated using intrusive methods during the RI activities conducted in 2006. The surface anomalies, which consisted primarily of reinforced concrete and miscellaneous metal debris, were not identified as MEC. MEC were not found at any of the subsurface anomaly locations or suspected pit/trench locations identified for OU-3 (Area 4C). No containers were found and no indications of soil contamination were observed; consequently, no soil samples were collected from OU-3 (Area 4C) during this phase of investigation.

OU-4 (Area 4D) A total of 39 anomalies identified at OU-4 (Area 4D) were investigated to determine whether the anomalies were associated with MEC, MPPEH, or other wastes. The 24 surface anomalies were identified as inert metal debris (steel pipe, culvert pipe, angle iron, steel cable), bricks, vehicle parts, and metal containers (empty 55-gallon drums and 5-gallon metal containers). The 10 subsurface anomalies and 5 suspected pit/trench locations were identified as inert metal debris (steel cable, sheet metal, and pipe), brick and ceramic debris, and one empty drum. Neither MEC nor MPPEH were found at any of the anomaly locations or suspected pit/trench locations during the post-removal investigation activities conducted for OU-4 (Area 4D). Soil samples were collected beneath all items that were identified as containers (e.g., drums or metal containers) and at locations where staining or elevated organic vapor readings were observed.




LEGEND
Soil Sampling Location
IR Site Boundary
Operable Units (OU)
Limits of Excavation
(2003-2004 non-time-critical removal action)
Exploratory Trench Locations
OU-1
(Area 4A)
OU-2
(Area 4B)
OU-3
(Area 4C)


Legend
Soil Sampling Location
Operable Units (OU)
IR Site Boundary
EA-09 Emergency Removal Area
Elevation Contour (5 ft Interval)
Note: 2006 Aerial Photography
PX-S04-SS-22
PX-S04-SS-23
PX-S04-SO-234
PX-S04-SO-244
PX-S04-SO-232
PX-S04-SS-07
PX-S04-SO-236
PX-S04-SO-235
PX-S04-SO-233
OU-5
(Site 9)
PX-S04-SO-245
OU-4
(Area 4D)
PX-S04-SO-270
PX-S04-SO-271
PX-S04-SO-246
PX-S04-SO-272
PX-S04-SO-247
PX-S04-SS-05
PX-S04-SS-09
OU-1
(Area 4A)
Shaw Road
OU-3
(Area 4C)

2.3 Community Participation

The Navy and the USEPA provide information regarding the cleanup of NAS Patuxent River to the public through the community relations program, which includes a Restoration Advisory Board (RAB), public meetings, the Administrative Record file for Site 4, an information repository, and announcements published in local newspapers.

In accordance with Section 117(a) of CERCLA, the Navy provided a public comment period between July 31 and August 31, 2009, for the OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) Proposed Remedial Action Plan (PRAP). A public meeting to present the PRAP was held on August 25, 2009, at the Frank Knox Employee Development Building, Building 2189, Room 100 at NAS Patuxent River.

The final PRAP and previous investigation reports for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) are available to the public in the Administrative Record. The Administrative Record is accessible to the public via:

Naval Air Station Patuxent River Library
22269 Cedar Point Road, Building 407
Patuxent River, MD 20629
Phone: (301) 342-1927

St. Mary's County Public Library, Lexington Park Branch
21677 FDR Boulevard
Lexington Park, MD 20653
Phone: (301) 863-8188

2.4 Scope and Role of Response Action

NAS Patuxent River was listed on the NPL on June 30, 1994. As a result, 46 sites were identified at the NAS for inclusion in the IR Program. Site 4 is one of the IR Program sites identified in the FFA for NAS Patuxent River. A list and description of all IR Program sites is presented in the 2008 update of the NAS Patuxent River Site Management Plan. During the past 13 years, a total of 15 RODs have previously been issued for IR Program sites at NAS Patuxent River in accordance with the priorities established in the Site Management Plan. The designation, media, and remedial action for each site are listed below.

- Sites 1/12 Groundwater and Soil (OU-1): soil cover, shoreline stabilization, land use restrictions, long-term monitoring and maintenance, vegetation cover, wetland mitigation, and erosion control structures (February 2000 ROD)
- Sites 1/12 Surface Water and Sediment (OU-2): removal of lead-contaminated soil and sediment (September 2005 ROD)
- Sites 4/5 Groundwater (OU-6): No Remedial Action (October 2008 ROD)
- Sites 6/6A Soil (OU-1): asphalt and concrete cap, soil/gravel cover, and land use restrictions (September 1999 ROD)
- Sites 6/6A Surface Water, Sediment, and Groundwater (OU-2): removal of PCB-contaminated soil and sediment (September 2008 ROD)
- Site 11 Soil (OU-1): RCRA Subtitle D landfill cap, landfill gas collection and flare system, groundwater and landfill gas monitoring, and land use restrictions (July 1996 ROD)
- Site 11 Surface Water, Sediment, and Groundwater (OU-2): land use restrictions, long-term monitoring and maintenance (September 2008 ROD)

- Site 17 Soil (OU-1): excavation and off-site treatment and disposal of soil and land use restrictions (December 1998 ROD and June 2001 ROD Amendment)
- Site 17 Groundwater, Surface Water, and Sediment (OU-2): sediment removal from Holton Pond (September 2006 ROD)
- Site 24 Soil, Groundwater, Sediment, and Surface Water: No Further Remedial Action (October 2007 ROD)
- Site 27 Groundwater and Soil: No Remedial Action (September 2003 ROD)
- Site 29 Groundwater and Soil: No Remedial Action (October 2007 ROD)
- Site 39 Groundwater: in-situ bioremediation, monitoring, and institutional controls (October 2007 ROD)
- Site 41 Groundwater and Soil: No Further Remedial Action (September 2005 ROD)
- Site 46 Groundwater and Soil: No Remedial Action (September 2004 ROD)

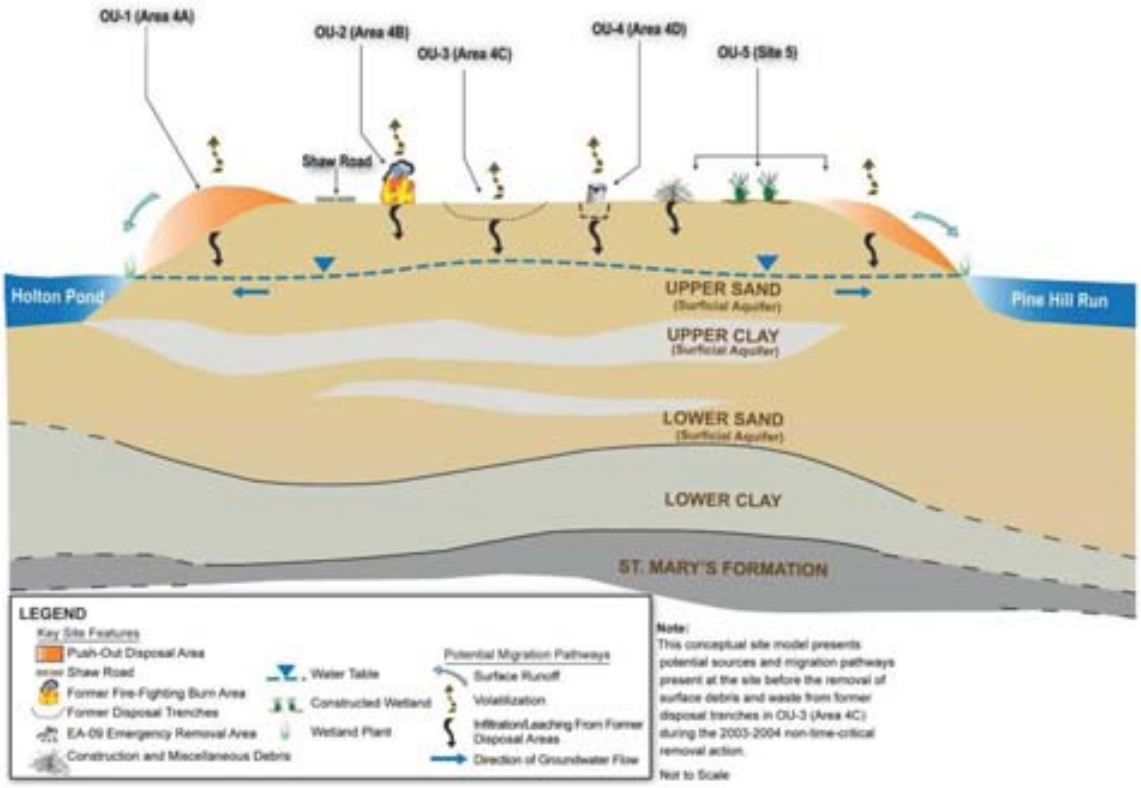
2.5 Site Characteristics

Surface elevations at Site 4 range from 28 to 38 feet above mean sea level. The land surface slopes gently to the north across most of the site, but slopes steeply to Pine Hill and Holton Pond in the north and northwest areas of Site 4. The site is covered with mature pines in the north and west (OU-4 [Area 4D]), and an open meadow over most of former fire-fighting area OU-2 (Area 4B) and disposal area OU-3 (Area 4C) on Figure 1.

The predominant surface water features at Site 4 are Holton Pond and Pine Hill Run. Surface runoff from Site 4 is to the northwest towards Holton Pond and to the north towards Pine Hill Run (Figure 1). Holton Pond discharges into Pine Hill Run, which is a non-tidal freshwater stream for the uppermost ½ mile. Pine Hill Run then widens out and becomes a tidal, brackish water body where it discharges to the Chesapeake Bay. Because the Chesapeake Bay is a large regional groundwater discharge area, Pine Hill Run is likely a gaining stream.

The shallow subsurface stratigraphy consists predominantly of sand and silt, and the shallow groundwater aquifer is encountered from approximately 2 to 20 feet below ground surface. This shallow aquifer is underlain by a semi-confining clay layer. Shallow groundwater beneath the site flows generally northward and discharges to Pine Hill Run and Holton Pond.

A conceptual site model (Figure 5) illustrates key features of OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D), as well as potential migration pathways for constituents that may have been released from possible source areas. Chemicals and metals in soil at OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) were characterized during the RI sampling conducted between 2003 and 2006. RI activities for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) also included the 2001 Pine Hill Run Watershed baseline ERA. A summary of the key RI findings is presented below for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D).



2.5.1 OU-2 (Area 4B) Characterization

- Surface and subsurface soil samples were analyzed for Target Compound List (TCL) organic and Target Analyte List (TAL) inorganic constituents. With the exception of one VOC and one phthalate, constituents detected in surface soil were primarily polycyclic aromatic hydrocarbons (PAHs) and metals. Constituents detected in subsurface soil were limited to metals (see RI OU-2 (Area 4B) Summary Statistics for Detected Constituents in Surface and Subsurface Soil, Tables 4-2 and 4-4, in Attachment B).
- Constituents from burned aircraft and/or fire-extinguishing materials may be the source of PAHs and metals identified in soil for the former fire-fighting training area.
- The area formerly used for fire-fighting training is no longer active.

2.5.2 OU-3 (Area 4C) Characterization

- Surface and subsurface samples were analyzed for TCL organics and TAL inorganic analytes. Constituents detected in surface soil were VOCs, SVOCs, pesticides, and metals. Constituents detected in subsurface soil were VOCs, SVOCs, pesticides, PCBs, and metals (see RI OU-3 (Area 4C) Summary Statistics for Detected Constituents in Surface and Subsurface Soil, Tables 5-2 and 5-4, in Attachment B).
- The potential sources of detected constituents (i.e., wastes in the former trench disposal areas) were removed from the site during the NTCRA conducted in 2003-2004. Additional site investigation

following the NTCRA and associated confirmation sampling and analyses of soil did not identify additional source areas.

- Comprehensive surface geophysical surveys did not identify any additional anomalies potentially related to MEC, MPPEH, or other containers/drums at OU-3 (Area 4C).

2.5.3 OU-4 (Area 4D) Characterization

- Surface and subsurface soil samples were analyzed for TCL organic and TAL inorganic constituents. Constituents detected in surface and subsurface soil were VOCs, SVOCs, pesticides, PCBs, and metals (see RI OU-4 (Area 4D) Summary Statistics for Detected Constituents in Surface and Subsurface Soil, Tables 6-2 and 6-4, in Attachment B).

- The potential sources of contamination (i.e., surface debris, the buried drum and contaminated soil at EA-09, and containers found during the geophysical investigations) were removed from the site during either the 2003-2004 NTCRA or activities conducted in 2006.

2.6 Current and Potential Future Land and Resource Uses

Portions of OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) are currently used for seasonal recreational activities such as hunting. The site is currently not developed. Potential future site use will likely continue the current site use, or could change to an industrial/commercial exposure scenario if Site 4 is developed in the future to support the NAS mission.

2.7 Summary of Site Risks

A risk assessment was conducted as part of the RI and in accordance with current USEPA guidance to evaluate potential risks to human and ecological receptors exposed to environmental media at Site 4. A detailed discussion of the risk evaluation process and findings are presented in the RI report volumes for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D).

2.7.1 Human Health Risk Assessment

A **baseline HHRA** was conducted for each operable unit to evaluate potential human health risks associated with exposure to surface soil and combined surface and subsurface soil. In accordance with USEPA human health risk assessment guidance, estimated risks were initially calculated using a reasonable maximum exposure (RME) scenario, which addresses the maximum human exposure reasonably expected to occur in a population. USEPA guidance also allows evaluation based on a central tendency exposure (CTE), which essentially addresses average exposures rather than RME. A CTE scenario is likely more representative of the actual risk to a majority of potential receptors.

The risk assessments characterized current and potential future human health risks based on potential receptor populations and exposure scenarios assuming that no remedial action would be implemented. Only the trespasser (adult and adolescent) and recreational user (adult and child) exposure routes are complete pathways under current land use conditions. For future land use, potential receptors were assumed to be residents (adult and child), construction workers, industrial workers, trespassers, and recreational users. Future residential use was assumed for the human health assessment to evaluate unrestricted use of the site; however, future residential use of this site is unlikely.

2.7.1.1 OU-2 (Area 4B)

The HHRA identified five metals (aluminum, arsenic, iron, manganese, and vanadium) as constituents of potential concern (COPCs) for surface and subsurface soil. Details related to the location of the detected constituents are presented in Tables 4-1 through 4-4 and Figures 4-4 through 4-8 of the RI report for OU-2 (Area 4B). Although future residential exposure to combined surface and subsurface soil results in hazard estimates exceeding acceptable levels for the child resident (Hazard Index [HI] = 1.9) under the reasonable maximum exposure (RME) scenario, none of the HIs for target organs exceed the acceptable level of 1.0. In addition, the CTE evaluation indicates the risk (HI = 0.23) does not exceed the noncarcinogenic risk threshold of 1.0 (Table 2). The future residential land use scenario was assumed in the HHRA to evaluate unrestricted land use for OU-2 (Area 4B), but it is very unlikely that future use will be residential. Based on this information, potential exposure to soil at OU-2 (Area 4B) does not pose unacceptable risks to human health.

TABLE 2
OU-2 (Area 4B) Human Health Risk Assessment Summary

Current Trespasser/Visitor (Adult)	2.8×10^{-7}	0.03	(a)	(a)	**2.8×10^{-7}**	**0.03**
Future Trespasser/Visitor (Adult)	(a)	(a)	2.4×10^{-7}	0.03	**2.4×10^{-7}**	**0.03**
Current Trespasser/Visitor (Adolescent)	1.7×10^{-7}	0.08	(a)	(a)	**1.7×10^{-7}**	**0.08**
Future Trespasser/Visitor (Adolescent)	(a)	(a)	1.5×10^{-7}	0.07	**1.5×10^{-7}**	**0.07**
Current Recreational User (Adult)	1.4×10^{-7}	0.02	(a)	(a)	**1.4×10^{-7}**	**0.02**
Future Recreational User (Adult)	(a)	(a)	1.2×10^{-7}	0.02	**1.2×10^{-7}**	**0.02**
Current Recreational User (Child)	3.2×10^{-7}	0.14	(a)	(a)	**3.2×10^{-7}**	**0.14**
Future Recreational User (Child)	(a)	(a)	2.7×10^{-7}	0.14	**2.7×10^{-7}**	**0.14**
Future Resident (Adult)	(a)	(a)	(b)	0.22	**(b)**	**0.22**
Future Resident (Child)	(a)	(a)	(b)	1.90 CTE HI = 0.23	**(b)**	**1.90 (c)** **CTE HI = 0.23**
Future Resident (Child/Adult)	(a)	(a)	5.2×10^{-6}	(d)	**5.2×10^{-6}**	**(d)**
Future Construction Worker	(a)	(a)	1.1×10^{-7}	0.21	**1.1×10^{-7}**	**0.21**
Future Industrial Worker	(a)	(a)	1.3×10^{-6}	0.19	**1.3×10^{-6}**	**0.19**

Risk = carcinogenic risk. The range of acceptable carcinogenic risk is 1×10^{-6} to 1×10^{-4} (one in one million to one in ten thousand)

HI = hazard index. A hazard index of less than 1.0 indicates acceptable noncarcinogenic risk.

Unless otherwise indicated, the risk and HI are based on RME.

40 CFR 300.430(e)(2)(i)(A)(2) identifies the acceptable carcinogenic risk range.

40 CFR 300.430(e)(2)(i)(A)(1) identifies the acceptable noncarcinogenic risk level.

(a) Under current land use conditions, receptors would be exposed to surface soil only. Under future land use conditions, it was assumed that soil-moving activities associated with construction for future site development would result in subsurface soil being mixed with the current surface soil and placed on the ground surface.

(b) Carcinogenic risks were not calculated individually for an adult or child resident, but were calculated for a lifetime child/adult resident in accordance with USEPA guidance.

(c) Based on RME, the HI (1.9) exceeds 1.0; however, none of the target organs has an HI exceeding 1.0. The CTE noncarcinogenic hazard (0.23) does not exceed the acceptable HI of 1.0. Therefore, these risk levels are within an acceptable range.

(d) HI was not calculated for a future lifetime child/adult resident, but was calculated individually for an adult or child resident in accordance with USEPA guidance.

2.7.1.2 OU-3 (Area 4C)

The baseline HHRA was completed using analytical data for current conditions at the site (i.e., using data for post-excavation soil samples collected during the NTCRA for OU-3 [Area 4C] which represent site conditions upon completion of the NTRCA). Details related to the location of the detected constituents are presented in Tables 5-1 through 5-4 and Figures 5-4 through 5-11g of the RI report for OU-3 (Area 4C). The HHRA identified three PAHs (benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene) and three metals (arsenic, iron, and vanadium) as COPCs for surface soil. The HHRA also identified five PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene), one PCB (Aroclor-1254), one pesticide (dieldrin), and 10 metals (aluminum, antimony, arsenic, chromium, copper, iron, manganese, mercury, silver, and vanadium) as COPCs for combined surface and subsurface soil.

Future residential land use for a child is the only exposure scenario that may pose unacceptable risks to human health based on the RME evaluation. The RME noncarcinogenic hazard associated with exposure to combined surface and subsurface soil (HI = 1.09) exceeds the acceptable HI of 1.0. This hazard is primarily associated with the ingestion of metals in soil. However, none of the target organs have HIs exceeding 1.0. Furthermore, the CTE noncarcinogenic hazard (0.25) associated with exposure to combined surface and subsurface soil is acceptable (Table 3). The future residential land use scenario was assumed in the HHRA to evaluate unrestricted land use for OU-3 (Area 4C) in the unlikely event that future use will be residential. Based on this information, potential exposure to soil at OU-3 (Area 4C) does not pose unacceptable risks to human health.

2.7.1.3 OU-4 (Area 4D)

A baseline HHRA was conducted using analytical data for current conditions at the site (i.e., using data collected after the EA-09 removal activities at OU-4 [Area 4D]). Details related to the location of the detected constituents are presented in Tables 6-1 through 6-4 and Figures 6-4 through 6-11 of the RI report for OU-4 (Area 4D). The HHRA identified four metals (arsenic, cobalt, iron, and thallium) as COPCs for surface soil. For combined surface and subsurface soil, the HHRA identified three pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) and seven metals (aluminum, arsenic, cobalt, iron, manganese, thallium, and vanadium) as COPCs.

The future residential land use scenario was assumed in the HHRA to evaluate unrestricted land use for OU-4 (Area 4D) in the unlikely event that future use will be residential. Based on risk assessment findings, potential exposure to soil at OU-4 (Area 4D) does not pose unacceptable risks to human health (Table 4).

2.7.1.4 HHRA Summary

Based on the findings of the HHRA for both current land use and likely or hypothetical future land use, potential exposure to surface and combined surface and subsurface soil at OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) does not pose unacceptable risks to human health.

2.7.2 Ecological Risk Assessment

Site 4, which consists primarily of terrestrial habitats that include old field and fragmented forest habitats, was included in the **Pine Hill Run Watershed screening-level ERA**. The screening-level ERA was performed to determine whether constituents associated with past activities at Site 4 result in ecological risk to receptors in habitats throughout the Pine Hill Run Watershed. The assessment did not identify risks for upper trophic level receptors (semi-aquatic and terrestrial) at Site 4. In 2003, as part of the RI, a baseline ERA was completed to include Holton Pond northwest of the western portion of Site 4 and Pine Hill Run at Site 5. The baseline ERA was conducted to further evaluate the areas with potential risks to lower trophic level receptors. Based on the ERA findings presented in the RI report, there is an acceptable level of risk for lower trophic level receptors (e.g., terrestrial plants and soil invertebrates) at Site 4.

TABLE 3
OU-3 (Area 4C) Human Health Risk Assessment Summary

Current Trespasser/Visitor (Adult)	4.7×10^{-7}	0.013	(a)	(a)	**4.7×10^{-7}**	**0.013**
Future Trespasser/Visitor (Adult)	(a)	(a)	6.4×10^{-7}	0.019	**6.4×10^{-7}**	**0.019**
Current Trespasser/Visitor (Adolescent)	3.4×10^{-7}	0.029	(a)	(a)	**3.4×10^{-7}**	**0.029**
Future Trespasser/Visitor (Adolescent)	(a)	(a)	4.9×10^{-7}	0.043	**4.9×10^{-7}**	**0.043**
Current Recreational User (Adult)	2.4×10^{-7}	0.007	(a)	(a)	**2.4×10^{-7}**	**0.007**
Future Recreational User (Adult)	(a)	(a)	3.2×10^{-7}	0.010	**3.2×10^{-7}**	**0.010**
Current Recreational User (Child)	5.2×10^{-7}	0.056	(a)	(a)	**5.2×10^{-7}**	**0.056**
Future Recreational User (Child)	(a)	(a)	6.9×10^{-7}	0.081	**6.9×10^{-7}**	**0.081**
Future Resident (Adult)	(a)	(a)	(b)	0.130	**(b)**	**0.130**
Future Resident (Child)	(a)	(a)	(b)	1.09 CTE HI = 0.25	**(b)**	**1.09 (c)** **CTE HI = 0.25**
Future Resident (Child/Adult)	(a)	(a)	1.4×10^{-5}	(d)	**1.4×10^{-5}**	**(d)**
Future Construction Worker	(a)	(a)	2.7×10^{-7}	0.139	**2.7×10^{-7}**	**0.139**
Future Industrial Worker	(a)	(a)	3.8×10^{-6}	0.113	**3.8×10^{-6}**	**0.113**

Risk = carcinogenic risk. The range of acceptable carcinogenic risk is 1×10^{-6} to 1×10^{-4} (one in one million to one in ten thousand)

HI = hazard index. A hazard index of less than 1.0 indicates acceptable noncarcinogenic risk.

Unless otherwise indicated, the risk and HI are based on RME.

40 CFR 300.430(e)(2)(i)(A)(2) identifies the acceptable carcinogenic risk range.

40 CFR 300.430(e)(2)(i)(A)(1) identifies the acceptable noncarcinogenic risk level.

(a) Under current land use conditions, receptors would be exposed to surface soil only. Under future land use conditions, it was assumed that soil-moving activities associated with construction for future site development would result in subsurface soil being mixed with the current surface soil and placed on the ground surface.

(b) Carcinogenic risks were not calculated individually for an adult or child resident, but were calculated for a lifetime child/adult resident in accordance with USEPA guidance.

(c) Based on RME, the HI (1.09) exceeds 1.0; however, none of the target organs has an HI exceeding 1.0. The CTE noncarcinogenic hazard (0.25) does not exceed the acceptable HI of 1.0. Therefore, these risk levels are within an acceptable range.

(d) HI was not calculated for a future lifetime child/adult resident, but was calculated individually for an adult or child resident in accordance with USEPA guidance.

TABLE 4
OU-4 (Area 4D) Human Health Risk Assessment Summary

Current Trespasser/Visitor (Adult)	3.7×10^{-7}	0.0095	(a)	(a)	**3.7×10^{-7}**	**0.0095**
Future Trespasser/Visitor (Adult)	(a)	(a)	6.4×10^{-7}	0.017	**6.0×10^{-7}**	**0.017**
Current Trespasser/Visitor (Adolescent)	2.3×10^{-7}	0.014	(a)	(a)	**2.3×10^{-7}**	**0.014**
Future Trespasser/Visitor (Adolescent)	(a)	(a)	3.4×10^{-7}	0.030	**3.4×10^{-7}**	**0.030**
Current Recreational User (Adult)	1.8×10^{-7}	0.0047	(a)	(a)	**1.8×10^{-7}**	**0.0047**
Future Recreational User (Adult)	(a)	(a)	3.0×10^{-7}	0.0083	**3.0×10^{-7}**	**0.0083**
Current Recreational User (Child)	4.2×10^{-7}	0.043	(a)	(a)	**4.2×10^{-7}**	**0.043**
Future Recreational User (Child)	(a)	(a)	6.8×10^{-7}	0.073	**6.8×10^{-7}**	**0.073**
Future Resident (Adult)	(a)	(a)	(b)	0.011	**(b)**	**0.011**
Future Resident (Child)	(a)	(a)	(b)	0.99	**(b)**	**0.99**
Future Resident (Child/Adult)	(a)	(a)	1.3×10^{-5}	(c)	**1.3×10^{-5}**	**(c)**
Future Construction Worker	(a)	(a)	2.8×10^{-7}	0.16	**2.8×10^{-7}**	**0.16**
Future Industrial Worker	(a)	(a)	3.1×10^{-6}	0.088	**3.1×10^{-6}**	**0.088**

Risk = carcinogenic risk. The range of acceptable carcinogenic risk is 1×10^{-6} to 1×10^{-4} (one in one million to one in ten thousand)

HI = hazard index. A hazard index of less than 1.0 indicates acceptable noncarcinogenic risk.

Unless otherwise indicated, the risk and HI are based on RME.

40 CFR 300.430(e)(2)(i)(A)(2) identifies the acceptable carcinogenic risk range.

40 CFR 300.430(e)(2)(i)(A)(1) identifies the acceptable noncarcinogenic risk level.

(a) Under current land use conditions, receptors would be exposed to surface soil only. Under future land use conditions, it was assumed that soil-moving activities associated with construction for future site development would result in subsurface soil being mixed with the current surface soil and placed on the ground surface.

(b) Carcinogenic risks were not calculated individually for an adult or child resident, but were calculated for a lifetime child/adult resident in accordance with USEPA guidance.

(c) HI was not calculated for a future lifetime child/adult resident, but was calculated individually for an adult or child resident in accordance with USEPA guidance.

2.8 No Action and No Further Action Determinations

2.8.1 OU-2 (Area 4B)

Based on findings presented in the RI report for OU-2 (Area 4B), including the HHRA and ERA findings summarized above, the Navy and the USEPA, in consultation with the MDE, have selected "no action" for OU-2 (Area 4B). There are no factors indicating unacceptable risks to human health or ecological receptors that would warrant a response action under current and potential future use scenarios, including residential use.

2.8.2 OU-3 (Area 4C) and OU-4 (Area 4D)

The removal action conducted at OU-3 (Area 4C) and OU-4 (Area 4D) addressed the potential threat to human health and the environment from these operable units, thereby meeting the requirements of CERCLA Section 121 and the NCP and eliminating the need for further remedial action. As a result of the NTCRA and the findings presented in the RI report for OU-3 (Area 4C) and OU-4 (Area 4D), including the HHRA and ERA findings summarized above, the Navy and the USEPA, in consultation with the MDE, have selected "no further action" for soil associated with OU-3 (Area 4C) and OU-4 (Area 4D). There are no factors indicating unacceptable risks to human health or ecological receptors that would warrant a response action under current and potential future use scenarios, including residential use. Furthermore, because there are no wastes left in place for OU-3 (Area 4C) and OU-4 (Area 4D), five-year reviews will not be required.

2.9 Documentation of Significant Changes

The PRAP for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D) was released for 30-day public comment on July 31, 2009, and identified "no action" for OU-2 (Area 4B) and "no further action" for OU-3 (Area 4C) and OU-4 (Area 4D) as the preferred alternative. No new information or comments were received during the public comment period that would require a change to the remedy as originally proposed in the PRAP.

3 Responsiveness Summary

The Responsiveness Summary presents stakeholder concerns about the site and selected remedy, and explains how those concerns were addressed and factored into the remedy selection process.

3.1 Stakeholder Comments and Lead Agency Responses

In accordance with Sections 113 and 117 of CERCLA 42 U.S.C. §§9613 and 9617, the Navy provided a public comment period from July 31 through August 31, 2009, for the proposed remedial approach described in the PRAP for OU-2 (Area 4B), OU-3 (Area 4C), and OU-4 (Area 4D). A public meeting to present the PRAP occurred at the Frank Knox Employee Development Building on August 25, 2009. Public notice (Attachment C) of the meeting and availability of documents were published in *The Enterprise* for St. Mary's County on July 29, 2009, *The Recorder* for Calvert County on July 29, 2009, and *The Tester*, which is the NAS Patuxent River newspaper, on July 30, 2009. The participants in the public meeting included representatives of the Navy, USEPA, and MDE. No community members attended the meeting. No questions were received during the public meeting, and no additional written comments, concerns, or questions were received from community members during the public comment period.

3.2 Technical and Legal Issues

No technical or legal issues have been identified for Site 4 OU-2 (Area 4B), OU-3 (Area 4C), or OU-4 (Area 4D) with respect to this ROD.

Section 4
References

1	**Site Management Plan**	Section 1.2	CH2M HILL, 2008. Final Site Management Plan, Naval Air Station Patuxent River, St. Mary's County, Maryland. September 2008.
2	**Initial Assessment Study**	Section 2.1	Fred C. Hart and Associates, Inc. 1984. Initial Assessment Study, Naval Air Station, Patuxent River, Maryland.
3	**Confirmation Study**	Section 2.2	CH2M HILL. 1985. Draft NACIP Confirmation Study II, Naval Air Station, Patuxent River, Maryland.
4	**Resource Conservation and Recovery Act (RCRA) Facility Assessment**	Section 2.2	A.T. Kearney, Inc. 1989. RCRA Facility Assessment, Revised Phase II Report, Naval Air Station Patuxent River, Maryland.
5	**Interim Remedial Investigation**	Section 2.2	CH2M HILL, 1994. Interim Remedial Investigation report, Patuxent River Naval Air Station.
6	**initial phase of RI field activities in 1996-1997**	Section 2.2	CH2M HILL, 1998. Remedial Investigation Sampling Activities. Naval Air Station Patuxent River, St. Mary's County, Maryland.
7	**Engineering Evaluation/Cost Analysis report**	Section 2.2	CH2M HILL, 2003. Final Engineering Evaluation and Cost Analysis at Sites 4 and 5, Naval Air Station Patuxent River, St. Mary's County, Maryland.
8	**removal action closeout report**	Section 2.2	Shaw Environmental. 2005. Draft Closeout Report Interim Removal Action Sites 4 and 5- Hermanville Disposal Site, Naval Air Station, Patuxent River, Maryland.
9	**Removal Action Summary for OU-3 (Area 4C)**	Section 2.2	CH2M HILL, 2008. Final Remedial Investigation at Sites 4 and 5, Volume 5 of 10- Operable Unit 3 (Area 4C) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 5.2.3
10	**Removal Action Summary for OU-4 (Area 4D)**	Section 2.2	CH2M HILL, 2009. Final Remedial Investigation at Sites 4 and 5, Volume 6 of 10- Operable Unit 4 (Area 4D) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 6.2.3

11	**geophysical survey**	Section 2.2	CH2M HILL, 2005. Results of the Geophysical Surveys to Identify Potential Pits and Trenches that May Contain Buried Munitions and Explosives of Concern (MEC) at Sites 4 and 5, Patuxent River Naval Air Station, Patuxent River, Maryland.
12	**OU-2 (Area 4B) Characterization**	Section 2.5.1	CH2M HILL, 2008. Final Remedial Investigation at Sites 4 and 5, Volume 4 of 10- Operable Unit 2 (Area 4B) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 4.6
13	**OU-3 (Area 4C) Characterization**	Section 2.5.2	CH2M HILL, 2008. Final Remedial Investigation at Sites 4 and 5, Volume 5 of 10- Operable Unit 3 (Area 4C) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 5.6
14	**OU-4 (Area 4D) Characterization**	Section 2.5.3	CH2M HILL, 2009. Final Remedial Investigation at Sites 4 and 5, Volume 6 of 10- Operable Unit 4 (Area 4D) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 6.6
15	**A baseline HHRA**	Section 2.7.1	CH2M HILL, 2008. Final Remedial Investigation at Sites 4 and 5, Volume 4 of 10- Operable Unit 2 (Area 4B) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 4.5. CH2M HILL, 2008. Final Remedial Investigation at Sites 4 and 5, Volume 5 of 10- Operable Unit 3 (Area 4C) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 5.5 CH2M HILL, 2009. Final Remedial Investigation at Sites 4 and 5, Volume 6 of 10- Operable Unit 4 (Area 4D) Soil. Naval Air Station Patuxent River, St. Mary's County, Maryland. Section 6.5
16	**Pine Hill Run Watershed screening level ERA**	Section 2.7.2	CH2M HILL, 2003. Final Basewide Ecological Risk Assessment, Pine Hill Run Watershed, Naval Air Station Patuxent River, St. Mary's County, Maryland.

Detailed site information referenced in this ROD in bold text is contained in the Administrative Record.

For access to information contained in the Administrative Record for NAS Patuxent River please contact:

Public Affairs Office, NAS
22268 Cedar Point Road
PAO Building 409, Room 204
Patuxent River, MD 20670-1154
Phone: (301) 757-6748

Attachment A – State Letter of Concurrence

MDE
MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

September 25, 2009

Mr. David Steckler
Naval Facilities Engineering Command
1314 Harwood Street, SE
Washington Navy Yard, Building 212
Washington, DC 20375

RE: Final Record of Decision Concurrence Letter for Site 4 (Operable Units 2, 3 and 4), Naval Air Station Patuxent River, St. Mary's County, Maryland (September 25, 2009).

Dear Mr. Steckler:

The Federal Facilities Division (FFD) of the Maryland Department of the Environment's Hazardous Waste Program has reviewed the above referenced Record of Decision (ROD), which documents the joint concurrence of the U.S. Environmental Protection Agency (EPA) and the U.S. Navy for "no action" at Operable Unit (OU)-2 (Area 4B) and "no further action" at OU-3 (Area 4C) and OU-4 (Area 4D). The FFD concurs with this determination, based on the findings presented in the Remedial Investigation report for this site. Prior remedial actions at this site include non-time critical removal actions at OU-3 (Area 4C) and OU-4 (Area 4D).

A public meeting was held on August 25, 2009 to present the proposed remedial action plan contained in this ROD, and to answer any questions concerning implementation of this ROD at Site 7. No community members attended this public meeting. A transcript of the proceedings of this meeting is included in the responsiveness summary within this ROD. The 30-day public comment period (July 31 through August 31, 2009) provided additional opportunity for public comment on the proposed ROD. No written or verbal comments were received by the Navy, EPA or FFD during the 30-day public comment period.

If you have any questions concerning this document review, please contact me at (410) 537-3398.

Sincerely,

Rick Grills
Project Manager
Federal Facilities Division

RG:rg
cc: Mr. S. Andrew Sochanski
Mr. Horacio Tablada
Mr. Harold L. Dye, Jr.

Attachment B – Summary of Detected Constituents

Table 4-2
OU-2 (Area 4B) Summary Statistics for Detected Constituents in Surface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Volatile Organic Compounds (UG/KG)								
4-Methyl-2-pentanone	1 - 3	1	1	PX-S04-SS-24-1201	3.83	1.10	2.47	0.958
Semivolatile Organic Compounds (UG/KG)								
Acenaphthylene	1 - 6	3.9	3.9	PX-S04-SS-31-0601	98.5	2.86	106	2.69
Anthracene	1 - 6	4	4	PX-S04-SS-31-0601	98.5	2.87	106	2.68
Benzo(a)anthracene	3 - 6	3	16	PX-S04-SS-31-0601	102	3.56	103	1.96
Benzo(a)pyrene	3 - 6	4.1	21	PX-S04-SS-31-0601	103	3.71	101	1.80
Benzo(b)fluoranthene	3 - 6	4.8	44	PX-S04-SS-31-0601	108	3.98	96.1	1.58
Benzo(g,h,i)perylene	3 - 6	4.2	16	PX-S04-SS-31-0601	102	3.63	102	1.85
Benzo(k)fluoranthene	3 - 6	4	31	PX-S04-SS-31-0601	105	3.82	99.1	1.72
Butylbenzylphthalate	1 - 3	13	13	PX-S04-SS-24-1201	134	4.37	105	1.56
Chrysene	3 - 6	4.2	31	PX-S04-SS-31-0601	105	3.85	98.8	1.68
Dibenz(a,h)anthracene	1 - 6	5.3	5.3	PX-S04-SS-31-0601	98.7	2.91	106	2.66
Fluoranthene	4 - 6	6.3	25	PX-S04-SS-24-1201	74.8	3.45	93.4	1.50
Indeno(1,2,3-cd)pyrene	4 - 6	3.6	16	PX-S04-SS-31-0601	70.9	3.11	96.3	1.75
Phenanthrene	2 - 6	2.3	3.1	PX-S04-SS-31-0601	98.6	2.97	106	2.55
Pyrene	4 - 6	5.5	20	PX-S04-SS-24-1201	73.4	3.35	94.4	1.56
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	1 - 6	0.52	0.52	PX-S04-SS-REF2-0601	1.70	0.438	0.580	0.537
4,4'-DDE	4 - 6	2.1	49	PX-S04-SS-REF2-0601	9.99	1.30	19.1	1.28
4,4'-DDT	1 - 6	28	28	PX-S04-SS-REF2-0601	5.93	0.827	10.8	1.31
Dieldrin	3 - 6	0.13	0.98	PX-S04-SS-31-0601	1.22	-0.180	0.847	1.13
Heptachlor epoxide	1 - 6	0.11	0.11	PX-S04-SS-31-0601	0.868	-0.352	0.372	0.909
Methoxychlor	2 - 6	0.48	0.52	PX-S04-SS-31-0601	6.92	1.31	4.97	1.55
beta-BHC	2 - 6	0.27	0.36	PX-S04-SS-REF2-0601	0.788	-0.372	0.368	0.622
gamma-BHC (Lindane)	2 - 6	0.18	0.36	PX-S04-SS-31-0601	0.765	-0.448	0.388	0.746
gamma-Chlordane	3 - 3	0.063	0.1	PX-S04-SS-REF2-0601	0.084	-2.50	0.019	0.240
Total Metals (MG/KG)								
Aluminum	6 - 6	3110	16100	PX-S04-SS-25-1201	9,277	8.94	5,475	0.728
Arsenic	3 - 6	2.1	3.3	PX-S04-SS-REF2-0601	2.26	0.786	0.617	0.254
Barium	6 - 6	19.1	62.6	PX-S04-SS-25-1201	40.7	3.61	17.9	0.492
Beryllium	6 - 6	0.18	0.61	PX-S04-SS-25-1201	0.405	-0.998	0.180	0.4919999
Cadmium	1 - 6	0.15	0.15	PX-S04-SS-30-0601	0.057	-3.14	0.049	0.766
Calcium	6 - 6	529	1160	PX-S04-SS-30-0601	753.5	6.58	258	0.328

Table 4-2
OU-2 (Area 4B) Summary Statistics for Detected Constituents in Surface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Chromium	6 - 6	5.1	18.6	PX-S04-SS-25-1201	11.4	2.30	6.03	0.586
Cobalt	4 - 6	3.6	5.5	PX-S04-SS-25-1201	3.13	0.795	2.08	1.05
Copper	6 - 6	4.4	14.3	PX-S04-SS-25-1201	9.38	2.14	4.10	0.516
Iron	6 - 6	3820	19100	PX-S04-SS-25-1201	11,513	9.14	7,029	0.751
Lead	6 - 6	5.4	9.7	PX-S04-SS-REF2-0601	8.22	2.09	1.58	0.216
Magnesium	6 - 6	270	1500	PX-S04-SS-25-1201	888	6.61	489	0.703
Manganese	6 - 6	51	178	PX-S04-SS-25-1201	114	4.63	54.5	0.530
Mercury	1 - 6	0.058	0.058	PX-S04-SS-26-1201	0.027	-3.84	0.018	0.734
Nickel	4 - 6	5.4	10.5	PX-S04-SS-25-1201	5.73	1.42	3.90	1.000
Potassium	6 - 6	241	690	PX-S04-SS-25-1201	470	6.06	212	0.486
Silver	1 - 6	0.64	0.64	PX-S04-SS-REF2-0601	0.150	-2.87	0.242	1.57
Sodium	3 - 6	27.7	52.3	PX-S04-SS-31-0601	32.5	3.40	14.2	0.454
Vanadium	6 - 6	6.2	30.4	PX-S04-SS-25-1201	18.0	2.70	10.8	0.720
Zinc	6 - 6	16.6	30.3	PX-S04-SS-25-1201	23.4	3.14	4.53	0.200
Wet Chemistry (MG/KG)								
% Solids	3 - 3	81.3	90.4	PX-S04-SS-31-0601	85.8	4.45	4.55	0.053
Total organic carbon (TOC)	3 - 3	11000	37000	PX-S04-SS-31-0601	27,000	10.1	14,000	0.670
pH	3 - 3	5.4	6.4	PX-S04-SS-REF2-0601	5.87	1.77	0.503	0.085

Notes:
UG/KG - microgram per kilogram
MG/KG - milligram per kilogram

Table 4-4
OU-2 (Area 4B) Summary Statistics for Detected Constituents in Subsurface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Total Metals (MG/KG)								
Aluminum	3 - 3	567	1,340	PX-S04-SB-26-1201	857	6.68	421	0.458
Chromium	1 - 3	5.20	5.20	PX-S04-SB-24-1201	2.18	0.264	2.62	1.23
Iron	3 - 3	597	1,390	PX-S04-SB-26-1201	864	6.68	456	0.485
Manganese	3 - 3	4.20	6.80	PX-S04-SB-25-1201	5.73	1.73	1.36	0.256
Nickel	2 - 3	0.520	0.650	PX-S04-SB-26-1201	0.471	-0.832	0.208	0.515

Notes:
MG/KG - milligram per kilogram

Table 5-2
OU-3 (Area 4C) Summary Statistics for Detected Constituents in Surface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Volatile Organic Compounds (UG/KG)								
Acetone	1 - 7	5	5	PX-S04-SS-68-0002	7.57	1.97	2.91	0.341
Methyl acetate	1 - 7	4	4	PX-S04-SS-61-0002	5.07	1.62	0.535	0.113
Methylene chloride	4 - 7	0.7	2	PX-S04-SS-64-0002	2.31	0.436	2.23	0.963
Semivolatile Organic Compounds (UG/KG)								
Acenaphthene	1 - 8	20	20	PX-S04-SS-33-0601	167	4.96	59.6	0.792
Acenaphthylene	1 - 8	14	14	PX-S04-SS-33-0601	166	4.91	61.7	0.918
Anthracene	1 - 8	50	50	PX-S04-SS-33-0601	171	5.07	49.1	0.469
Benzo(a)anthracene	1 - 8	190	190	PX-S04-SS-33-0601	188	5.24	5.94	0.031
Benzo(a)pyrene	1 - 8	220	220	PX-S04-SS-33-0601	192	5.26	12.8	0.064
Benzo(b)fluoranthene	1 - 8	240	240	PX-S04-SS-33-0601	194	5.27	19.4	0.092
Benzo(g,h,i)perylene	1 - 8	140	140	PX-S04-SS-33-0601	182	5.20	17.9	0.108
Benzo(k)fluoranthene	1 - 8	230	230	PX-S04-SS-33-0601	193	5.26	16.0	0.078
Chrysene	1 - 8	220	220	PX-S04-SS-33-0601	192	5.26	12.8	0.064
Dibenz(a,h)anthracene	1 - 8	51	51	PX-S04-SS-33-0601	171	5.07	48.7	0.462
Fluoranthene	4 - 8	88	370	PX-S04-SS-33-0601	176	5.07	90.7	0.480
Fluorene	1 - 8	11	11	PX-S04-SS-33-0601	166	4.88	62.8	1.00
Indeno(1,2,3-cd)pyrene	1 - 8	130	130	PX-S04-SS-33-0601	181	5.19	21.3	0.134
Phenanthrene	2 - 8	85	160	PX-S04-SS-33-0601	170	5.11	35.7	0.275
Pyrene	4 - 8	77	300	PX-S04-SS-33-0601	169	5.05	70.5	0.452
bis(2-Ethylhexyl)phthalate	1 - 7	160	160	PX-S04-SS-66-0002	157	4.82	64.2	0.996
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	6 - 8	0.12	39	PX-S04-SS-67-0002	7.89	1.00	13.0	1.71
4,4'-DDE	7 - 8	12	370	PX-S04-SS-65-0002	88.6	3.37	136	1.68
4,4'-DDT	7 - 8	3.6	240	PX-S04-SS-65-0002	45.8	2.66	81.0	1.62
Aroclor-1260	1 - 7	86	86	PX-S04-SS-68-0002	28.4	3.15	25.4	0.575
Dieldrin	4 - 8	0.74	15	PX-S04-SS-68-0002	3.72	0.907	4.64	0.861
Endosulfan I	1 - 8	0.43	0.43	PX-S04-SS-66-0002	0.885	-0.151	0.186	0.282
Endosulfan II	1 - 8	2.1	2.1	PX-S04-SS-68-0002	1.89	0.637	0.112	0.058
Endrin	2 - 8	0.86	2.7	PX-S04-SS-65-0002	1.82	0.560	0.494	0.318
Heptachlor	2 - 8	0.77	0.9	PX-S04-SS-33-0601	0.934	-0.071	0.073	0.084
Heptachlor epoxide	1 - 8	0.1	0.1	PX-S04-SS-33-0601	0.856	-0.320	0.306	0.801
Methoxychlor	1 - 8	1.9	1.9	PX-S04-SS-33-0601	8.68	2.06	2.75	0.575
alpha-Chlordane	6 - 8	0.49	7.1	PX-S04-SS-68-0002	2.70	0.476	2.79	1.09
beta-BHC	2 - 8	0.32	1.1	PX-S04-SS-65-0002	0.896	-0.163	0.239	0.398

Table 5-2
OU-3 (Area 4C) Summary Statistics for Detected Constituents in Surface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
gamma-Chlordane	3 - 8	0.12	2.5	PX-S04-SS-66-0002	1.18	-0.089	0.735	0.907
Total Metals (MG/KG)								
Aluminum	8 - 8	2960	7430	PX-S04-SS-67-0002	5115	8.50	1441	0.298
Antimony	4 - 8	0.66	0.75	PX-S04-SS-66-0002	0.536	-0.682	0.185	0.377
Arsenic	8 - 8	0.84	2.6	PX-S04-SS-33-0601	1.84	0.554	0.609	0.381
Barium	5 - 8	14.9	48	PX-S04-SS-67-0002	26.2	3.08	16.1	0.673
Beryllium	4 - 8	0.22	0.39	PX-S04-SS-67-0002	0.196	-1.87	0.135	0.757
Cadmium	2 - 8	0.088	0.2	PX-S04-SS-33-0601	0.325	-1.54	0.245	1.11
Calcium	8 - 8	227	4550	PX-S04-SS-61-0002	989	6.36	1454	0.957
Chromium	8 - 8	4.1	10.8	PX-S04-SS-68-0002	6.99	1.90	2.14	0.313
Cobalt	7 - 8	0.47	2.9	PX-S04-SS-69-0002	1.50	0.231	0.905	0.640
Copper	7 - 8	3.2	13	PX-S04-SS-68-0002	7.11	1.76	3.72	0.803
Cyanide	1 - 7	0.3	0.3	PX-S04-SS-66-0002	0.102	-2.55	0.092	0.729
Iron	8 - 8	3110	8210	PX-S04-SS-68-0002	6071	8.67	1706	0.316
Lead	8 - 8	5	35.2	PX-S04-SS-33-0601	16.3	2.57	10.9	0.734
Magnesium	8 - 8	203	712	PX-S04-SS-67-0002	434	5.99	181	0.438
Manganese	8 - 8	17.3	147	PX-S04-SS-69-0002	70.6	4.03	45.4	0.761
Mercury	2 - 8	0.11	0.52	PX-S04-SS-68-0002	0.115	-2.71	0.166	1.04
Nickel	8 - 8	1.4	5.1	PX-S04-SS-67-0002	3.20	1.06	1.44	0.500
Potassium	8 - 8	126	579	PX-S04-SS-33-0601	264	5.46	145	0.483
Silver	5 - 8	0.21	11.2	PX-S04-SS-68-0002	2.09	-0.424	3.72	1.84
Sodium	3 - 8	25.1	57.4	PX-S04-SS-65-0002	301	5.11	265	1.32
Vanadium	8 - 8	6	14.6	PX-S04-SS-68-0002	10.6	2.32	3.07	0.312
Zinc	7 - 8	8.6	211	PX-S04-SS-69-0002	46.7	3.14	68.0	1.30
Wet Chemistry (MG/KG)								
% Solids	1 - 1	93	93	PX-S04-SS-33-0601	93.0	4.53	0	0
Total organic carbon (TOC)	8 - 8	1957	24000	PX-S04-SS-33-0601	9750	8.93	7525	0.784
pH	7 - 7	4.98	7.38	PX-S04-SS-66-0002	5.85	1.76	0.798	0.131

UG/KG - microgram per kilogram

MG/KG - milligram per kilogram

Table 5-4
OU-3 (Area 4C) Summary Statistics for Detected Constituents in Subsurface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Volatile Organic Compounds (UG/KG)								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	6 - 118	0.6	3	PX-S04-EA02-B3A-10	6.76	1.78	3.15	0.631
1,1,2-Trichloroethane	1 - 118	2	2	PX-S04-EA02-S3B-01	7.17	1.92	2.77	0.299
1,1-Dichloroethene	1 - 118	0.6	0.6	PX-S04-SB-61-0406	7.20	1.91	2.81	0.358
1,3-Dichlorobenzene	5 - 118	0.4	1	PX-S04-EA02-B3A-10	6.98	1.84	2.99	0.541
1,4-Dichlorobenzene	4 - 118	0.4	2	PX-S04-EA02-B3A-10	7.03	1.87	2.92	0.464
2-Butanone	1 - 118	29	29	PX-S04-EA06-B4-08	7.42	1.94	3.40	0.308
4-Methyl-2-pentanone	1 - 118	2	2	PX-S04-SB-61-0406	7.21	1.93	2.79	0.301
Acetone	14 - 118	4	330	PX-S04-EA06-B4-08	10.5	1.99	29.9	0.542
Bromomethane	1 - 118	37	37	PX-S04-EA02B-S2B-03	7.50	1.95	3.88	0.319
Carbon disulfide	2 - 118	0.7	1	PX-S04-SB-61-0406	7.15	1.90	2.87	0.392
Carbon tetrachloride	1 - 118	0.5	0.5	PX-S04-SB-61-0406	7.19	1.91	2.82	0.369
Chloromethane	1 - 118	10	10	PX-S04-EA02B-S2B-03	7.28	1.94	2.76	0.281
Cyclohexane	3 - 118	0.6	0.9	PX-S04-EA02-B3A-10	7.05	1.87	2.89	0.457
Dichlorodifluoromethane (Freon-12)	1 - 118	3	3	PX-S04-SB-61-0406	7.22	1.93	2.77	0.289
Methylcyclohexane	4 - 118	0.5	1	PX-S04-EA02-B3A-10	7.02	1.86	2.93	0.473
Methylene chloride	11 - 118	0.8	4	PX-S04-EA02-B5A-07	6.10	1.55	3.63	0.868
Styrene	2 - 118	0.5	0.5	PX-S04-EA02-S4A-10	7.14	1.89	2.87	0.439
Tetrachloroethene	8 - 118	0.5	11	PX-S04-EA05-B5-10	7.05	1.87	2.96	0.477
Toluene	2 - 118	3	6	PX-S04-EA02B-S2B-03	6.18	1.47	3.79	1.09
Trichloroethene	1 - 118	1	1	PX-S04-SB-61-0406	7.20	1.92	2.81	0.331
Vinyl chloride	2 - 118	0.6	2	PX-S04-EA02-S3B-01	7.12	1.90	2.84	0.373
Xylene, total	2 - 118	1	2	PX-S04-SB-61-0406	7.17	1.91	2.84	0.350
cis-1,2-Dichloroethene	1 - 118	3	3	PX-S04-EA02B-N2B-03	7.22	1.93	2.77	0.289
Semivolatile Organic Compounds (UG/KG)								
4-Chloro-3-methylphenol	1 - 118	33	33	PX-S04-EA05-S3B-05	181	5.19	16.9	0.166
4-Chloroaniline	1 - 118	800	800	PX-S04-EA05-B7-10	188	5.22	57.6	0.146
Acenaphthene	1 - 118	470	470	PX-S04-EA05-B5-2-08	185	5.21	28.2	0.102
Anthracene	1 - 118	430	430	PX-S04-EA05-B5-2-08	185	5.21	24.8	0.095
Benzo(a)anthracene	3 - 118	98	2300	PX-S04-EA05-B5-2-08	200	5.22	195	0.248
Benzo(a)pyrene	3 - 118	73	2500	PX-S04-EA05-B5-2-08	202	5.22	214	0.262
Benzo(b)fluoranthene	3 - 118	78	2700	PX-S04-EA05-B5-2-08	204	5.22	232	0.267
Benzo(g,h,i)perylene	3 - 118	84	910	PX-S04-EA05-B5-2-08	187	5.21	68.8	0.181
Benzo(k)fluoranthene	3 - 118	96	1500	PX-S04-EA05-B5-2-08	193	5.22	122	0.211
Butylbenzylphthalate	2 - 118	26	570	PX-S04-EA01-S1-02	185	5.20	39.8	0.215
Carbazole	1 - 118	430	430	PX-S04-EA05-B5-2-08	185	5.21	24.8	0.095

Table 5-4
OU-3 (Area 4C) Summary Statistics for Detected Constituents in Subsurface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Chrysene	3 - 118	110	2500	PX-S04-EA05-B5-2-08	203	5.23	214	0.259
Di-n-octylphthalate	11 - 118	14	230	PX-S04-EA04-S2-10	174	5.11	35.1	0.382
Dibenz(a,h)anthracene	1 - 118	550	550	PX-S04-EA05-B5-2-08	186	5.22	35.2	0.114
Dibenzofuran	1 - 118	130	130	PX-S04-EA05-B5-2-08	182	5.20	10.9	0.061
Fluoranthene	8 - 118	9	6600	PX-S04-EA05-B5-2-08	235	5.18	593	0.535
Fluorene	1 - 118	300	300	PX-S04-EA05-B5-2-08	184	5.21	14.5	0.070
Indeno(1,2,3-cd)pyrene	3 - 118	82	1800	PX-S04-EA05-B5-2-08	195	5.22	150	0.230
Phenanthrene	6 - 118	130	4000	PX-S04-EA05-B5-2-08	214	5.22	352	0.294
Pyrene	5 - 118	78	5300	PX-S04-EA05-B5-2-08	226	5.23	472	0.338
bis(2-Ethylhexyl)phthalate	16 - 118	12	10000	PX-S04-EA05-N5-04	246	4.86	911	0.988
Pesticides/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	29 - 118	0.85	120	PX-S04-EA05-B7-10	3.49	0.735	11.2	0.622
4,4'-DDE	63 - 118	0.56	150	PX-S04-EA06-S6-01	6.92	1.02	18.2	1.04
4,4'-DDT	60 - 118	0.82	320	PX-S04-EA02-B3C-10	8.18	1.04	31.6	1.00
Aroclor-1254	9 - 118	22	700	PX-S04-EA01-N5-04	29.1	3.02	69.5	0.507
Aroclor-1260	8 - 118	12	240	PX-S04-EA01-N5-04	20.6	2.94	20.7	0.270
Dieldrin	8 - 118	1.2	140	PX-S04-EA05-B7-10	3.17	0.675	12.8	0.470
Endosulfan I	2 - 118	0.32	0.49	PX-S04-EA02-B1A-10	0.932	-0.077	0.085	0.126
Endosulfan sulfate	2 - 118	2.9	6.7	PX-S04-EA04-S1-05	1.88	0.617	0.468	0.137
Endrin	7 - 118	0.81	4.7	PX-S04-EA02-B5B-05	1.83	0.590	0.331	0.161
Endrin aldehyde	2 - 118	3	4.2	PX-S04-EA04-S1-05	1.86	0.612	0.262	0.103
Endrin ketone	2 - 118	1.7	8.1	PX-S04-EA05-B5-2-08	1.88	0.613	0.586	0.147
Methoxychlor	2 - 118	5.7	13	PX-S04-EA05-B5-2-08	9.41	2.24	0.679	0.075
alpha-BHC	1 - 118	2.3	2.3	PX-S04-EA02B-N2B-03	0.953	-0.054	0.134	0.097
alpha-Chlordane	12 - 118	0.42	97	PX-S04-EA05-B7-10	1.81	-0.020	8.85	0.515
beta-BHC	6 - 118	0.8	1.8	PX-S04-EA05-S5-06	0.932	-0.090	0.167	0.212
gamma-BHC (Lindane)	1 - 118	0.94	0.94	PX-S04-EA02-B5B-05	0.941	-0.063	0.048	0.050
gamma-Chlordane	1 - 61	1.7	1.7	PX-S04-SB-66-0406	0.949	-0.057	0.108	0.090
technical-Chlordane	5 - 57	1.8	100	PX-S04-EA05-B7-10	2.90	0.114	13.1	0.710
Total Metals (MG/KG)								
Aluminum	117 - 118	291	20500	PX-S04-EA01-S2A-02	5054	8.05	4417	1.11
Antimony	2 - 118	0.64	5.4	PX-S04-EA05-B7-10	2.42	-0.250	3.07	1.56
Arsenic	75 - 118	0.43	5.4	PX-S04-EA02-B2A-10	1.83	0.258	1.39	0.913
Barium	89 - 118	1.3	412	PX-S04-EA05-B7-10	22.8	2.48	40.4	1.16
Beryllium	26 - 118	0.056	0.67	PX-S04-EA01-S2A-02	0.167	-2.48	0.205	1.23
Cadmium	14 - 118	0.14	6.2	PX-S04-EA05-B7-10	0.380	-1.78	0.637	1.40

Table 5-4
OU-3 (Area 4C) Summary Statistics for Detected Constituents in Subsurface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte Name	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Calcium	57 - 118	49.4	4050	PX-S04-EA02-B3C-10	350	5.15	514	1.23
Chromium	101 - 118	0.37	103	PX-S04-EA05-B7-10	6.98	1.47	10.2	0.992
Cobalt	88 - 118	0.14	7.3	PX-S04-EA01-S2A-02	2.21	0.246	2.08	1.21
Copper	103 - 118	0.61	1890	PX-S04-EA02-S4B-10	22.9	1.29	174	1.27
Cyanide	4 - 118	0.18	1.8	PX-S04-EA05-B7-10	0.120	-2.71	0.191	1.00
Iron	118 - 118	339	23400	PX-S04-EA01-S2A-02	6341	8.29	5638	1.06
Lead	106 - 118	0.84	218	PX-S04-EA05-B7-10	11.7	1.61	27.4	1.22
Magnesium	80 - 118	25.9	1930	PX-S04-EA01-S2A-02	348	5.19	388	1.28
Manganese	115 - 118	1	421	PX-S04-EA06-N5-08	65.4	3.53	73.5	1.33
Mercury	23 - 118	0.045	5.2	PX-S04-EA05-B7-10	0.102	-3.18	0.493	0.748
Nickel	86 - 118	0.41	14.6	PX-S04-EA05-B7-10	3.33	0.787	2.83	1.01
Potassium	56 - 118	10.6	764	PX-S04-EA01-B2C-03	183	4.81	162	0.961
Selenium	26 - 118	0.48	2.2	PX-S04-EA02-N3-03	0.522	-0.788	0.317	0.506
Silver	15 - 118	0.18	68.1	PX-S04-EA05-B7-10	1.54	-0.983	6.95	1.41
Sodium	11 - 118	51.1	203	PX-S04-EA05-S2A-05	188	4.35	227	1.37
Vanadium	113 - 118	0.51	41	PX-S04-EA02-N3-03	9.52	1.76	8.62	1.09
Zinc	97 - 118	1.6	1080	PX-S04-EA01-B2C-03	41.3	2.73	109	1.42
Wet Chemistry (MG/KG)								
pH	6 - 6	5.04	7.02	PX-S04-SB-65-0406	5.96	1.78	0.907	0.153

UG/KG - microgram per kilogram

MG/KG - milligram per kilogram

Table 6-2
OU-4 (Area 4D) Summary Statistics for Detected Constituents in Surface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

Analyte	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	SampleID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Volatile Organic Compounds (UG/KG)								
Acetone	1 - 6	12	12	PX-S04-SS-23-0597	7.92	2.02	2.71	0.335
Bromomethane	1 - 6	8	8	PX-S04-SS-23-0597	5.25	1.60	1.86	0.400
Toluene	2 - 6	2	4	PX-S04-SS-22P-0597	4.92	1.53	1.66	0.440
Xylene, total	1 - 6	3	3	PX-S04-SS-22P-0597	5.42	1.66	1.24	0.282
Semivolatile Organic Compounds (UG/KG)								
bis(2-Ethylhexyl)phthalate	2 - 6	73	540	PX-S04-SS-07-0896	152	4.45	197	1.12
Pesticide/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDE	4 - 6	2.1	9.5	PX-S04-SS-07-0896	3.91	1.17	2.94	0.651
4,4'-DDT	4 - 6	2	11	PX-S04-SS-07-0896	4.14	1.19	3.53	0.708
Total Metals (MG/KG)								
Aluminum	6 - 6	2200	6140	PX-S04-SS-05-0896	3800	8.17	1640	0.420
Arsenic	6 - 6	1.8	3.7	PX-S04-SS-07-0896	2.38	0.841	0.668	0.244
Barium	5 - 6	6.6	18.2	PX-S04-SS-05-0896	12.2	2.38	5.63	0.595
Calcium	3 - 6	60.3	200	PX-S04-SS-07-0896	141	4.89	45.6	0.410
Chromium	6 - 6	3.5	8.8	PX-S04-SS-05-0896	6.05	1.76	1.78	0.310
Cobalt	3 - 6	1.1	3	PX-S04-SS-22-0597	1.33	0.119	0.879	0.619
Copper	6 - 6	2.2	4.4	PX-S04-SS-05-0896	3.35	1.19	0.766	0.242
Iron	6 - 6	3870	6190	PX-S04-SS-09-0896	5230	8.55	835	0.169
Lead	6 - 6	5.6	10	PX-S04-SS-07-0896	7.62	2.02	1.41	0.184
Magnesium	6 - 6	235	468	PX-S04-SS-09-0896	341.5	5.79	105	0.306
Manganese	6 - 6	22.5	49.6	PX-S04-SS-23-0597	41.4	3.69	9.94	0.295
Nickel	4 - 6	1.5	4.7	PX-S04-SS-22-0597	3.23	1.11	1.16	0.408
Potassium	4 - 6	196	430	PX-S04-SS-05-0896	272	5.39	160	0.800
Selenium	1 - 6	0.57	0.57	PX-S04-SS-07-0896	0.341	-1.14	0.135	0.390
Silver	1 - 6	1.1	1.1	PX-S04-SS-07-0896	0.508	-0.792	0.301	0.494
Thallium	4 - 6	0.42	1.5	PX-S04-SS-22P-0597	0.575	-0.772	0.472	0.687
Vanadium	4 - 6	10.9	12.2	PX-S04-SS-07-0896	9.52	2.20	2.97	0.363
Zinc	3 - 6	6.8	12.3	PX-S04-SS-09-0896	7.55	1.95	3.24	0.413

Notes:
UG/KG - Microgram/Kilogram
MG/KG - Milligram/Kilogram
Ln - natural log

Table 6-4
OU-4 (Area 4D) Summary Statistics for Detected Constituents in Subsurface Soil
Sites 4 and 5 Remedial Investigation
NAS Patuxent River, Maryland

AnalyteName	Detection Frequency	Minimum Detected Concentration	Maximum Detected Concentration	Sample ID of Maximum Detected Value	Mean Value (Norm)	Mean Value (Ln)	Standard Deviation (Norm)	Standard Deviation (Ln)
Volatile Organic Compounds (UG/KG)								
Methylcyclohexane	1 - 15	56	56	PX-S04-SB-271-0406	9.10	1.87	13.1	0.646
Semivolatile Organic Compounds (UG/KG)								
Benzaldehyde	1 - 15	200	200	PX-S04-SB-232-0102	195	5.27	22.5	0.106
bis(2-Ethylhexyl)phthalate	2 - 15	100	4000	PX-S04-SB-244-0102	441	5.42	985	0.820
Pesticide/Polychlorinated Biphenyls (UG/KG)								
4,4'-DDD	7 - 15	1.8	4200	PX-S04-SB-232-0102	288	1.70	1080	2.15
4,4'-DDE	10 - 15	0.86	1600	PX-S04-SB-232-0102	138	2.09	411	2.32
4,4'-DDT	9 - 15	2	14000	PX-S04-SB-232-0102	1020	2.43	3600	2.80
Aroclor-1254	1 - 15	33	33	PX-S04-SB-247-0406	141	3.24	473	1.20
Dieldrin	1 - 15	0.7	0.7	PX-S04-SB-234-0102	14.0	0.849	47.3	1.24
Endosulfan I	1 - 15	0.66	0.66	PX-S04-SB-236-0102	7.20	0.229	24.3	1.20
Endrin aldehyde	1 - 15	1	1	PX-S04-SB-233-0102	14.0	0.873	47.3	1.22
Heptachlor epoxide	4 - 15	0.47	0.69	PX-S04-SB-247-0406	7.12	0.113	24.3	1.26
alpha-Chlordane	4 - 15	0.43	5	PX-S04-SB-234-0102	7.54	0.347	24.2	1.30
beta-BHC	2 - 15	0.69	1.2	PX-S04-SB-235-0102	7.23	0.255	24.3	1.20
Total Metals (MG/KG)								
Aluminum	15 - 15	212	10500	PX-S04-SB-254-0304	2731	7.29	3236	1.19
Antimony	3 - 15	0.37	1	PX-S04-SB-254-0304	0.227	-1.73	0.232	0.616
Arsenic	12 - 15	0.32	11.1	PX-S04-SB-254-0304	1.96	-0.065	2.84	1.25
Barium	15 - 15	1.8	46.7	PX-S04-SB-236-0102	10.6	1.90	11.9	0.952
Calcium	9 - 15	108	858	PX-S04-SB-232-0102	168	4.24	216	1.57
Chromium	15 - 15	0.85	27.3	PX-S04-SB-254-0304	5.72	1.27	6.79	0.982
Cobalt	10 - 15	0.11	5	PX-S04-SB-236-0102	1.01	-0.903	1.36	1.52
Copper	10 - 15	2	12.9	PX-S04-SB-236-0102	4.43	0.667	4.47	1.59
Cyanide	4 - 15	0.057	0.3	PX-S04-SB-232-0102	0.073	-3.10	0.086	0.943
Iron	15 - 15	250	36900	PX-S04-SB-254-0304	7544	8.16	9590	1.41
Lead	11 - 15	1.6	61.2	PX-S04-SB-271-0406	13.3	1.59	17.0	1.66
Magnesium	11 - 15	54.4	919	PX-S04-SB-236-0102	220	4.48	300	1.54
Manganese	12 - 15	0.68	203	PX-S04-SB-236-0102	27.1	1.95	52.6	1.74
Nickel	11 - 15	0.2	7.9	PX-S04-SB-236-0102	1.97	-0.073	2.34	1.35
Potassium	15 - 15	22.9	1150	PX-S04-SB-254-0304	202	4.82	275	0.975
Selenium	3 - 15	1.1	1.2	PX-S04-SB-234-0102	0.514	-0.795	0.322	0.480
Vanadium	15 - 15	0.79	41.6	PX-S04-SB-254-0304	8.52	1.58	10.5	1.13
Zinc	10 - 15	2.9	27.7	PX-S04-SB-236-0102	8.90	1.31	9.74	1.56

Notes:
UG/KG - Microgram/Kilogram
MG/KG - Milligram/Kilogram
Ln - natural log

Attachment C – Public Notice and Public Meeting Transcripts

THE DEPARTMENT OF THE NAVY
INVITES PUBLIC COMMENT ON THE
PROPOSED REMEDIAL ACTION PLAN FOR SITE 4 OPERABLE UNITS 2, 3 & 4
UNDER THE INSTALLATION RESTORATION PROGRAM
NAVAL AIR STATION PATUXENT RIVER, MARYLAND

In accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Naval Air Station (NAS) Patuxent River invites public comment on the Proposed Remedial Action Plan (PRAP) for the following operable units (OUs) at Site 4:

OU-2 (Area 4B)

The findings of the remedial investigation (RI) for OU-2 (Area 4B), which consists of the soil associated with the former fire-fighting training area at Site 4, indicate there are no unacceptable risks to human health or the environment from this OU. Therefore, "no action" is proposed for OU-2 (Area 4B).

OU-3 (Area 4C) and OU-4 (Area 4D)

The findings of the RI and the results of the removal action for OU-3 (Area 4C), which consists of the soil associated with the former disposal trenches at Site 4, and OU-4 (Area 4D), which consists of the surface disposal area at Site 4, indicate there are no unacceptable risks to human health or the environment from these OUs. Therefore, "no further action" is proposed for OU-3 (Area 4C) and OU-4 (Area 4D).

Public comment begins on **July 31, 2009, and closes on August 31, 2009. A public meeting is scheduled for 6:00 p.m. on August 25, 2009, at the Frank Knox Employee Development Building, Building 2189, Room 100** to present the PRAP for these Site 4 OUs and to answer questions.

The Navy issues PRAPs as part of its IR Program. The purpose of a PRAP is to describe the background and rationale for the selection of the remedy proposed by the Navy and the U.S. Environmental Protection Agency (EPA). The PRAP includes solicitation of public comments on the selected remedy.

The public is encouraged to comment on this PRAP. The final remedy for these OUs will be implemented only after the public comment period has ended. An alternate remedy may be selected for these OUs only after all comments have been received from the public. Relevant environmental documents for these OUs, including final technical reports and the PRAP, are available for review at the following repositories.

Naval Air Station Patuxent River Library
22269 Cedar Point Road, Building 407
Patuxent River, MD 20629
(301) 342-1927

Hours: Monday-Thursday: 7:30 a.m. – 4:30 p.m.
Friday: 10:00 a.m. – 2:00 p.m.
Closed Saturday and Sunday

St. Mary's County Public Library
Lexington Park Branch
21677 FDR Boulevard
Lexington Park, MD 20653
(301) 863-8188

Hours: Monday-Thursday: 9:00 a.m. – 8:00 p.m.
Friday and Saturday: 9:00 a.m. – 5:00 p.m.
Sunday: 1:00 p.m. to 5:00 p.m.

Comments may be written and mailed (postmarked by the closing date of **August 31, 2009**) to any of the following points of contact:

Public Affairs Officer, NAS
Attn: Mr. John Romer
22268 Cedar Point Road
PAO Building 409, Room 204
Patuxent River, MD 20670-1154

U.S. EPA Region III
Attn: Mr. S. Andrew Sochanski
Hazardous Site Cleanup Division 3HS11
1650 Arch Street
Philadelphia, PA 19103-2029

Maryland Department of the Environment
Attn: Ms. Heather Njo
Federal Facilities Division
Hazardous Waste Program
1800 Washington Boulevard, Suite 645
Baltimore, MD 21230-1719

For further information, contact the Public Affairs Officer at 301-757-6748 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding federal holidays.

North County news

Mechanicsville firefighters mark 75th anniversary

■ Parade and fireworks on tap for Saturday

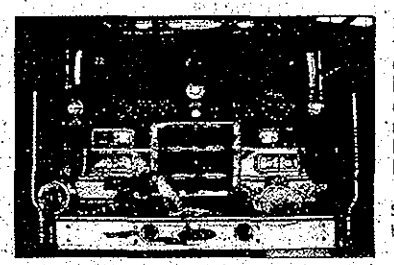
By JOHN WHARTON
Staff writer

Staff photo by JESSE YEATMAN

John Steven Montgomery, left, the current president of the Mechanicsville Volunteer Fire Department, and his father John L. Montgomery sit in the cab of the department's recently refurbished 1950 Ford pumper outside the firehouse.

Submitted photo

Members of the Mechanicsville Volunteer Fire Department gather on and around "Old Betsy," a 1926 American LaFrance chain-driven fire engine that the fledgling organization obtained in 1937, at a price of $600. Plaques below a copy of the photograph in the fire department's social hall list the men pictured as Dale T. Cropper Sr., Paul Bennett, Ambrose Wood Sr., Clifford Jones, Cuthbert Peverly, Henry J. Fowler Sr., William S. Mattingly Sr., Thomas M. Burroughs Sr., Warren H. Burroughs, S. Bernard Burch Sr. and Benjamin H. Burroughs Sr.



Left, a 2003 Pierce firefighting vehicle capable of pumping water at a rate of 1,500 gallons a minute sits in its bay at the Mechanicsville firehouse.

Staff photo by JESSE YEATMAN

"That was the whole reason for starting the fire department," John Steven Mattingly, the department's president, said recently at the Company 2 firehouse on Hills Club Road.

In the last 75 years, the fire department has grown from a bucket brigade to a fully trained team of firefighters, reflecting changes in the northern area of the county and modern qualifications required to carry out the life-saving work.

John L. Montgomery, the president's 74-year-old father, was born less than two years after the fire department was started, and he was only 3 or 4 when he started hanging around to help maintain its equipment, including a 1926 American LaFrance pumper, known as "Old Betsy," a 1941 Ford pumper and a 1950 Ford pumper bought new for about $7,000. It recently cost $95,000 to fully restore and refurbish the pumper.

"In our day, it was seven days a week, 24 hours, to keep them going," he said. "When that [1941] Ford came in, I was 6 or 7 years old, and I got one of the first rides on that truck."

"When he was 6 or 7 years old," Mattingly said while looking at his son, "he was riding in the fire truck with me."

The department had little trouble finding enough people to handle its responsibilities, the father said.

"That was no problem back in that day," he said. "Everybody had to have something to do. Most of them were working in a field or working in a store."

People living more than three miles from the firehouse's location at that time weren't eligible to join.

"They didn't need them," Mattingly said.

The last half century has put most young adults behind the wheel of a car with just a short ride to the nearest firehouse, but now they need to be formally trained to serve. The county helps young people meet those requirements, if they choose, as part of their education.

"The schools have the fire and [emergency medical services] training right in the tech center," John Steven Mattingly said.

The requirements can hamper recruitment.

"It's a whole lot harder today," he said. "We have more people [living in the area], and we have less interest in joining the fire service. Everybody has a full schedule in this day and age. When people have free time, they want to relax."

The new training reflects changes in the firefighting environment, including new types of construction and materials in buildings and toxins to be wary of when entering a burning building.

In addition to meeting the training requirements, the volunteer firefighters who still do much of the maintenance on their vehicles must have them kept in the same professional-grade condition as the equipment owned by paid fire departments, including the departments at Patuxent River Naval Air Station and in and around Washington, D.C.

Firefighters who learned their basic skills close to home before joining the career departments still show a willingness to lend a hand locally when they're off-duty and available, the president said. "A lot of them do," he said. "It's a big benefit to us during the day. Most of them still call this their home, if they started here. A lot of them don't forget us."

The fire department's roster has grown from 87 to more than 100 in the last four years, including 10 people joining in the last two months, Mattingly said. Manpower fluctuations still are a concern.

"The roster's been up and down my whole 30 years here," he said. "We've got some good young fellows in here. They're here to do the job, and they really take up the slack."

jwharton@somdnews.com

If you go

- The Mechanicsville Volunteer Fire Department's 75th Anniversary celebration on Saturday, Aug. 1, will include a parade on Old Village Road from Lockes Crossing Road to Mechanicsville Road. Motorists are encouraged to use caution when trying to access Old Village Road and St. Mary's Avenue that day, and Old Village Road will be closed to traffic from 1 to 5 p.m.
- After the parade, the fire department's carnival grounds will open for food, music, trophy presentations and fireworks at dusk. As a result, Hills Club Road will be closed to traffic from 1 to 11 p.m.
- The fire department has expressed its thanks to the Rev. Peter R. Alliata, pastor of the Immaculate Conception Church in Mechanicsville, for changing the Mass service on that day from 4 p.m. to 5:30 p.m. to allow for the parade.

Thousands of unsafe driving events recorded

■ DriveCam videos reviewed during traffic safety council meeting

By CAROL HARVAT
Staff writer

DriveCam cameras captured 16,000 events since last August of teenage drivers swerving, accelerating or taking corners too fast and hard braking in the Southern Maryland DriveCam program, a study center representative said Monday at a Calvert County Traffic Safety Council meeting.

The program was a "real eye-opener" when the large number of video events started streaming in this past year, said Jackie Milani of the National Study Center for Trauma and EMS, the agency that is tasked to collect, assess and evaluate the data for Maryland State Highway Administration, the program's sponsor.

"We were told that not that many events would happen," Milani said. The agency called in a few more people to help evaluate and score the videos so they could catch up on a backlog, she said.

The camera, placed above the rearview mirror, captures images of both the driver and the driver's view of the road during an event.

"They have to be going above and beyond, jar the car, to trigger these events," Milani said.

Representatives who have been evaluating videos from the Southern Maryland DriveCam program discussed what type of data they have been reviewing and challenged members of the Calvert County Traffic Safety Council to evaluate videos from DriveCam cameras at the council's meeting.

The cameras, which are installed in a young driver's vehicle, record up to 10 seconds prior to a change that is sharp enough to lock the driver's seatbelt. These kinds of sudden movements, or events, include "hard braking, rapid acceleration, hard swerving or cornering," according to an e-mail from the council's coordinator, Debbie Jennings.

Sign up

There are still 10 DriveCam units available. The fiscal year 2009 enrollment deadline for interested parents is Aug. 7. Interested parents need to contact Debbie Jennings at 410-535-2200.

Currently 105 participants are enrolled in Calvert County, with 210 total participants in Southern Maryland, Jennings said at the meeting.

This video may be available for viewing by the person behind the wheel and his or her parents, as well as employees of DriveCam, who prepare a report for each family.

Most of the mistakes that the study center has observed have been "simply mistakes," like taking a corner too fast, said Cindy Burch of the National Study Center for Trauma and EMS.

"We've only had a handful of crashes, it's all been fender benders," Burch said of the captured videos. One video showed a minor crash of a vehicle driven by a teenager who did not stop in time when another vehicle cut in front of her. No one was injured in the crash, Milani said. Two factors of the crash were social influence, because she was talking to her passenger, and inexperience. The driver also did not know where she was going so "her confusion overrides her safety," was one response.

Besides being inexperienced drivers, Milani said, "We seen a number of kids reclined," two people sitting in the driver's seat and in unbelted sitting positions.

One parent of a teenager in the program, who said she was a professional driver, said she wasn't surprised by the number of events captured by the cameras.

"I see what kids do, and it scares me to death," she said of observing teenage drivers. She said she enrolled her daughter in DriveCam so her daughter could learn about safe driving and because she wanted her "daughter to be a part of a study that will help educate."

Her daughter, who has had two events recorded, said she likes the camera and it has made her a cautious driver.

Another parent also commended the program, but his teenage son said getting the camera installed and to work was "a pain in the butt." Jennings acknowledged technical and installation problems with the cameras reported by some participants last November, but added that they appeared to have been cleared up.

The study center is independently evaluating the data collected to determine the effectiveness of DriveCam as a tool to influence parental involvement during the early stages of teen licensure, the study center's material stated.

"It's really an intervention study," Burch said.

When signing up for the program, both the driver participant and his parent take a survey to assess any parental influence the drivers may have, Burch said.

"We see if any of those behaviors are being modeled," she said of the parents' surveys.

Questions to identify potential risk and lifestyle factors are asked of the drivers, who are then randomly divided into three groups, Burch said.

"We didn't want all high-risk [drivers] to be in the same group," she said. Some of the participants received video feedback e-mails for each event; some received them for only half of the program; and a control group did not receive any feedback, explained Burch.

The events are analyzed as well as the behaviors of the driver, road conditions, social influences and distractions. Events of the videos shown at the meeting caught drivers sleeping; talking on cell phones or to passengers; not paying attention; and switching lanes without scanning the road.

The council was asked to assess the video and say if distractions, social influence or environmental factors may have contributed to each event. Milani, who showed a few videos twice, said she was impressed by the observations and the responses of the council who identified several contributing factors.

"We look at videos multiple times so we don't miss anything," she said.

The data has not been extrapolated and no statistics were provided at the meeting. The center's staff is waiting until a full year is up in September to identify specific findings and numbers because they want to look at the rest of the videos without bias, Milani said.

"We're really trying to build the best picture for all of you."

charvat@somdnews.com

SMECO best in survey

By ERICA MITRANO
Staff writer

For the second consecutive year, the Southern Maryland Electric Cooperative has been ranked the best power company in its category by a J.D. Power and Associates survey.

The assessment, based on customer surveys, examined price, reliability and several other factors.

The 2009 Electric Utility Residential Customer Satisfaction Study was performed by the California-based consumer information company. The survey asked customers about power quality and reliability, price, billing and payment, "corporate citizenship," communications and customer service, according to a press release.

In the study's east region, which includes East Coast states from Maryland to Maine, SMECO was the highest rated among 14 midsized power companies, scoring 643 of a possible 1,000. SMECO's score was 25 points above the next-highest-ranked company, Central Vermont Public Service, and 50 points above the category average.

SMECO spokesman Tom Dennison said reliability and community involvement partially explain SMECO's success.

"Our customers have come to appreciate the reliability of their service. We strive to keep interruptions as short-lived as possible," Dennison said. "They see our crews working day and night, in terrible weather conditions in many cases, to restore their power in a timely fashion. Also, they see us out in the community. We're active. We're part of community. Here in Southern Maryland we support everything from the chamber of commerce to coaches in Little League. We're active in our fire departments and churches. I think it's just that we're out there. People recognize the work we're doing and appreciate it."

For the same region, Baltimore Gas & Electric Co., which serves the Beaches area of northern Calvert County, ranked third from the bottom among 17 large companies with a score of 574, 19 points below average.

The survey has been performed since 1999.

THE DEPARTMENT OF THE NAVY INVITES PUBLIC COMMENT ON THE PROPOSED REMEDIAL ACTION PLAN FOR SITE 4 OPERABLE UNITS 2, 3 & 4 UNDER THE INSTALLATION RESTORATION PROGRAM NAVAL AIR STATION PATUXENT RIVER, MARYLAND

In accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Naval Air Station (NAS) Patuxent River invites public comment on the Proposed Remedial Action Plan (PRAP) for the following operable units (OUs) at Site 4:

OU-2 (Area 4B)

The findings of the remedial investigation (RI) for OU-2 (Area 4B), which consists of the soil associated with the former fire-fighting training area at Site 4, indicate there are no unacceptable risks to human health or the environment from this OU. Therefore, "no action" is proposed for OU-2 (Area 4B).

OU-3 (Area 4C) and OU-4 (Area 4D)

The findings of the RI and the results of the removal action for OU-3 (Area 4C), which consists of the soil associated with the former disposal trenches at Site 4, and OU-4 (Area 4D), which consists of the surface disposal area at Site 4, indicate there are no unacceptable risks to human health or the environment from these OUs. Therefore, "no further action" is proposed for OU-3 (Area 4C) and OU-4 (Area 4D).

Public comment begins on **July 31, 2009, and closes on August 31, 2009.** A public meeting is scheduled for **6:00 p.m. on August 25, 2009, at the Frank Knox Employee Development Building, Building 2189, Room 100** to present the PRAP for these Site 4 OUs and to answer questions.

The Navy issues PRAPs as part of its IR Program. The purpose of a PRAP is to describe the background and rationale for the selection of the remedy proposed by the Navy and the U.S. Environmental Protection Agency (EPA). The PRAP includes solicitation of public comments on the selected remedy.

The public is encouraged to comment on this PRAP. The final remedy for these OUs will be implemented only after the public comment period has ended. An alternate remedy may be selected for these OUs only after all comments have been received from the public. Relevant environmental documents for these OUs, including final technical reports and the PRAP, are available for review at the following repositories.

Naval Air Station Patuxent River Library
22269 Cedar Point Road, Building 407
Patuxent River, MD 20629
(301) 342-1927
Hours: Monday-Thursday: 7:30 a.m. – 4:30 p.m.
Friday: 10:00 a.m. – 2:00 p.m.
Closed Saturday and Sunday

St. Mary's County Public Library
Lexington Park Branch
21677 FDR Boulevard
Lexington Park, MD 20653
(301) 863-8188
Hours: Monday-Thursday: 9:00 a.m. – 8:00 p.m.
Friday and Saturday: 9:00 a.m. – 5:00 p.m.
Sunday: 1:00 p.m. to 5:00 p.m.

Comments may be written and mailed (postmarked by the closing date of **August 31, 2009**) to any of the following points of contact:

Public Affairs Officer, NAS
Attn: Mr. John Romer
22268 Cedar Point Road
PAO Building 409, Room 204
Patuxent River, MD 20670-1154

U.S. EPA Region III
Attn: Mr. S. Andrew Sochanski
Hazardous Site Cleanup Division 3HS11
1650 Arch Street
Philadelphia, PA 19103-2029

Maryland Department of the Environment
Attn: Ms. Heather Nio
Federal Facilities Division
Hazardous Waste Program
1800 Washington Boulevard, Suite 645
Baltimore, MD 21230-1719

For further information, contact the Public Affairs Officer at 301-757-6748 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding federal holidays.

NAVAL AIR STATION PATUXENT RIVER

ST. MARY'S COUNTY, MARYLAND

PROPOSED REMEDIAL ACTION PLAN

SITE 4

OPERABLE UNIT 2 [AREA 4B]

OPERABLE UNIT 3 [AREA 4C]

OPERABLE UNIT 4 [AREA 4D]

Tuesday, August 25, 2009

Frank Knox Building

21866 Cedar Point Road

Room 100

Patuxent River, Maryland

A P P E A R A N C E S

JENNIFER MELTON, P.E.
DAVID G. COLLINS, P.G.
CHARLES SKIP SIMPSON
JOHN LEDBETTER
S. ANDREW SOCHANSKI
HEATHER NJO
RICK GRILLS
BRIAN WALLACE
DAVID STECKLER

Reported by: Sally Jo Quade

P R O C E E D I N G S

- - - - -

MS. MELTON: My name is Jennifer Melton, I'm the RPM for Pax River. Today we're going to discuss the proposed remedial action plan, remedial action plan for Site 4, operable units 2, 3 and 4 at the Naval Air Station Patuxent River.

As a side note, I am the RPM presently, but as of tomorrow, Dave Steckler will be the RPM for Pax River, for the Base.

I'm going to hand it over to Dave Collins to go through the details of the presentation, and please feel free to ask any questions. Thank you for being here.

MR. COLLINS: I'm Dave Collins with CH2M Hill, we are the Navy's contractor that conducts investigation and design activities for the installation restoration program, and as Jennifer said, we're going to go through the presentation for Site 4, operational units 2, 3 and 4, also known as the Hermanville Site.

During the presentation we'll do a little introduction and background, we will review the historical aerial photos for the Base, or for the site, summarize the remedial investigation findings, and specifically some information about each of the operable units, OU-2, which is the former firefighting training area, OU-3, the former disposal trenches, and OU-4, a surface disposal area.

We will summarize the RI findings in the proposed plan, and go through the public participation aspect of the proposed plan, and then questions and discussion.

Bottom line is, the preferred alternative is no action for operable unit 2, there's no unacceptable human health risk for soil for unrestricted land use.

For operable units 3 and 4, the proposed plan is no further action, as a result of some interim action that has been taken previously at the site. So, as a result of the interim action, there are no unacceptable risks

to human health for soil for unrestricted land use.

Site 4 is located in the southern area of the Base, adjacent to Gate 3, along Shaw Road. Here's an aerial photo of the sites 4 and 5 area. Sites 4 and 5 have been investigated concurrently, because of the proximity of the sites, and historically, they've been grouped together as a unit.

For the investigation, the site was subdivided into six operable units. Operable unit 1, which is currently under investigation; operable unit 2, which is the former firefighting training area that's part of our discussion tonight; operable unit 3, which is the area that had the historic disposal trenches; operable unit 4, which was a surface disposal area; operable unit 4 is also known as site 5, that is being addressed separately and will be addressed under a separate ROD; and then operable unit 6 is site-wide groundwater, basically groundwater associated with both sites

4 and 5. And the no action ROD for that was issued in 2008, I believe was the year.

So, the Hermanville disposal area was the original landfill for the Base from mid-1940s to 1960. It consists of an area of approximately 77 acres in size. Wastes were placed in long, shallow trenches, and the wastes were burned and covered daily with clean soil.

The wastes are reported to have included municipal waste and trash, petroleum, oil, lubricants, paints, thinners, solvents, sludge, and construction debris. During the interim removal action, munitions items, the term the Navy uses is munitions and explosives of concern, or MEC were discovered in some of the disposal trenches for operable unit 3. I'll talk a little bit more about that later.

And again, this just identifies, just to kind of help you link the operable unit name to the activity that was identified, as I said before, the former firefighting training area, the former disposal trenches and the surface

disposal area.

Remedial investigation activities cover many years. In the 1980s, there was an initial assessment study that the Navy did at all its bases to identify potential environmental problems. That was followed up by a confirmation study for some of the sites identified by the initial study.

The RCRA/facility assessment in the late eighties. And then there have been various phases of remedial investigation activity since the mid-1990s. Those are summarized in the slide, I won't go through each one of them, but a lot of investigation has been done at the Hermanville site.

We will briefly run through the historic aerial photographs, it will give you a sense for changes in the site over time. You can clearly see where the firefighting training area was, where the historic disposal trenches were.

This is 1938, this is before the Navy

acquired the property, it was basically agricultural use.

1943, the Base has been commissioned, and these linear features you see here are two of the disposal trenches. The trenches were typically, according to the records we have, approximately ten feet wide, ten feet deep, and two to 300 feet long. Based on historic photos, it appeared that there were only two or three trenches, however, as we dug during the interim action, we saw that there were actually many trenches side by side, very close together, but from the historic photos, it isn't quite that evident.

1952, you can see three long trenches here. These other disturbed areas, for the most part, I know this area up here was a large borrow material area, where they presumably excavated material for various construction activities at the Base. Here is the first evidence of the former firefighting area. And that's about it. There are some other small

disturbed areas, I can't really tell from the photos what was going on, but obviously vegetation had been cleared.

1957, again, you see these long, linear east/west features that are former disposal trenches. You still have disturbed areas in the northern part. This is basically area or operable unit 4, the surface disposal area. You can still see evidence of the former firefighting training area. Yeah, this photo, if you look at it closely, you can actually see an aircraft here and there are what look like parts of aircraft bodies around that area.

1964, very similar appearance. You can see evidence of the trenches. It doesn't look like they're using them anymore, but they're still clearly visible in the aerial photos.

1965, not a lot of change in conditions. There still appears to be some type of disturbance activity going on for operable unit 4, the northern part of the site.

1969, there's still evidence of some of

the trenches, but a lot of the site has started to revegetate. You can see the construction of the METCOM waste water treatment facility has begun to the east of the site.

1977, you can still see evidence of the trenches that were used. There's now some structures built near the former firefighting training area. For quite a period of time, there was a horse stable for Base personnel to ride horses. You've still got various areas of disturbance on the north end of the site, and as you can see, the treatment plant is substantially larger than the previous photo.

1981, there's been some activity over to the west of Shaw Road, somewhere, I don't remember the timing, but Shaw Road was relocated slightly and it was shifted off of where it was originally located. You can still see the horse stables here. There really isn't any evidence of the firefighting training area any longer; however, the trenches are still visible from the air, and most of the borrow area to the north

has started to revegetate.

1984, not much change from the previous photo. There's another 1984 photo. You can still see from the vegetation that the evidence of the trenches.

1985 is very similar. The borrow area is almost completely revegetated now.

1996, there's very little activity going on anywhere except for the horse stable area.

2002, I'm not sure, I don't think the horse stables were active at that time, so there's really no activity going on out here, other than I know I was involved in the Base at that time, and I know during that time occasionally the Marines on Base would use this area for some military training exercises.

And then 2006, again, the former trenches are still readily visible. Actually, let me back up a little bit here. This is before we did the removal action, in 2006 is after we did the removal action. That happened

in 2003, 2004, so what you're seeing here is actually the remnant of the trenches that were excavated and material was hauled off-site for disposal in the landfill.

Summarizing the remedial investigation, the objectives were to determine if constituents released to soil in OU-2, 3 and 4 posed unacceptable risk to the human environment, and also to determine if anomalies identified during a geophysical screening survey represented munitions and explosives of concern, or materials potentially presenting an explosive hazard.

The concern was as a result of finding the munitions items in the former trenches, that there may have been other areas of the site where potentially munitions could have been buried and it just wasn't evident in the historic area photos. So, the Navy conducted a comprehensive geophysical survey to define target of large areas, because in the trenches where the munitions were found, when they found

them, there was a large group of munitions, not just 1s and 2s, but a substantial amount, I guess magnetic or actually I guess both magnetic and EM surveys were done. No anomalies were found that indicated any munitions. All the subsurface anomalies were eventually investigated to confirm that whatever was creating the anomaly signature was not munitions related.

Here's a profile view of the conceptual site model, basically showing all the OUs related to soil, the ones that this discussion focuses on are OU-2, the former firefighting training area, OU-3, the former trenches, and OU-4, the surface disposal area. Primary concern was any constituents that had been released to soil that would have leeched or migrated vertically into the groundwater.

Remedial investigation activities, the most recent phase began in 2003, and was completed last year with completion of the remedial investigation report. There's been a

lot of different activities conducted. I won't go through each one of those, but they're summarized in the admin record documents. But there's been investigation, there's been removal action, there's been tasks focused just on addressing potential for the presence of munitions, groundwater, and the risk assessments.

This figure is just to show the flow of groundwater beneath the site. Predominantly to the north, but there are some eastward and westward components, depending on where you are on the site. Basically, groundwater is flowing either towards Holton Pond, to the northwest, or to Pine Hill Run, which runs north of the site, and along to the east of the site.

A little more specifics about each of the operable units. The former firefighting training area was in this area, and these locations were focused on the area we could see in the historic photos where the firefighting training took place. Collected soil samples

right there, basically aligned the air photos in our GIS database so we could pull coordinates and go out and say, okay, this is the spot we want to sample. So, there were soil samples collected there.

The constituents of potential concern for human health were identified for surface soil, in both surface and subsurface soil, in this case, it was all metals. The human health risk assessment for OU-2 did not determine that there were any unacceptable risks. For a hypothetical future child resident, the reasonable maximum exposure analysis indicated a hazard index of 1.9, which exceeds the threshold of 1.0; however, in accordance with EPA risk assessment guidance, we also did a central tenancy evaluation, which basically looks at more an average exposure that a receptor could encounter as opposed to the reasonable maximum exposure, or RME, is kind of the worst case exposure.

So, under the CTE, basically determined

that the hazard index was acceptable. So, basically, it was concluded that there's no unacceptable risk associated with exposure to soil for OU-2.

OU-3, former disposal trenches, collected a couple of samples in this area. A lot of these samples, it's a combination of samples that were collected before the trenches were excavated, but a lot of these samples were samples collected after the material was removed.

Basically, the objective was to remove all visible waste from the trenches, and when that occurred, samples were collected from the soil beneath the trench to determine if there were any residual materials and to conduct the risk assessment because that's basically what remained in place.

So, a lot of sampling was done, and basically in transect across the trenches. So, for example, for this trench, I forget the interval, I think it was maybe every hundred

foot they collected like side wall samples and a bottom sample, and they did that in transects perpendicular to the long axis all the way through. So, there's quite an extensive amount of sampling.

The removal action occurred over a little over a year. Part of that was because they had found the munitions and work had to really stop while the Navy did some approval processes for dealing with the munitions. A total of almost 42,000 cubic yards of material was excavated from seven disposal trenches and the material was hauled off-site and disposed as nonhazardous waste in landfills.

The material that was excavated was mechanically screened to identify and collect MEC items before off-site disposal. A total of 606 munitions items and scrap metal were identified, most of which, actually, there were a few practice bombs in the order of 100 to 750 pound in size. A lot of the munitions were five-inch projectiles. And then some

miscellaneous items such as rockets and rocket components, scrap metal and empty cartridges.

Constituents of potential concern for surface soil and combined surface/subsurface soil. These are basically the constituents that failed the initial risk-based screening and were identified for quantitative risk evaluation.

This summarizes the risk assessment results for the various receptors that were evaluated. Again, for the future child resident, we had a similar situation of based on the RME evaluation, there was an exceedence of the 1.0 threshold for the noncarcinogenic risk, however based on a CT evaluation, the risk was determined to be within the acceptable range.

Surface disposal area, operable unit 4 is the northern portion of Site 4. There was a lot of miscellaneous debris scattered through the woods, that was all collected and removed from the site.

There were a few areas that were investigated with test pits, and in one of those

test pits, soil was encountered with high levels of organic vapors in the breathing zone. So, work was stopped, appropriate health and safety plan was put together, the material was removed, packed in drums and shipped off-site.

Samples that were collected of the soil did not identify any hazardous materials; however, as I recall, there were a lot of tentatively identified compounds in the analysis. So, whatever was there, apparently was highly degraded and just had a very low odor threshold, I guess.

Removal action summary, again, the surface debris and the drum, the buried drum that had produced the vapors were removed between June 2003 and November 2004. This summarizes the results of that removal of that drum. There was an unidentified petroleum hydrocarbon compound that had a concentration of greater than one thousand parts per million, but we could not specifically identify what the material was. But about 25 tons of visibly

stained soil was excavated and disposed of off-site.

Constituents of potential concern for surface soil and combined surface/subsurface soil. Metals and a little bit of DDT family pesticides, which I believe were primarily in one sample that was associated with a remnant container that was found on the surface.

Human health risk assessment, there were no unacceptable risks based on carcinogenic and noncarcinogenic evaluations.

So, to summarize the RI findings, there were no unacceptable risks for exposure to soil based on future unrestricted use. Ecological risk, there was no unacceptable risks to the upper trophic level receptors. There was some potential risk to some lower trophic level receptors; however, it was concluded that these lower trophic level ecological receptors were not at substantial risk of exposure based on the level of the constituents of concern and the infrequent exceedence of the few ecological

benchmarks that were available.

It was concluded that a feasibility study was not warranted.

So, the proposed plan for the record of decision is no action for operable unit 2 and no further action for operable units 3 and 4.

Public participation, the public comment period began on July 31st and continues through next Monday, August 31st. The public comment period and public meeting were advertised in three local newspapers before the public comment period began. The public meeting is this meeting tonight. And the plan is for the Navy and EPA to try and execute this ROD by the end of September of this year.

And that's it for the formal presentation. Are there any questions or comments?

(No response.)

MS. MELTON: Thank you for coming.

(Whereupon, at 6:42 p.m., the meeting was concluded.)

CERTIFICATE OF REPORTER

I, Sally Jo Quade, do hereby certify that the foregoing proceedings were recorded by me via stenotype and reduced to typewriting under my supervision; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were transcribed; and further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

_____

SALLY JO QUADE