

N00109.AR.002721  
NWS YORKTOWN  
5090.3a

SIGNATURE PAGE FINAL EXPLANATION OF SIGNIFICANT DIFFERENCES SITE 16 WEST  
ROAD LANDFILL AND SCREENING AREA 16 BUILDING 402 METAL DISPOSAL AREA NWS  
YORKTOWN VA  
02/1/2014  
U S NAVY

---

## SIGNATURE PAGE

Final

### Explanation of Significant Differences Site 16 -West Road Landfill and Site Screening Area 16 - Building 402 Metal Disposal Area

Naval Weapons Station Yorktown  
Yorktown, Virginia



---

The Navy and United States Environmental Protection Agency Region III, in consultation with the Virginia Department of Environmental Quality, agree that the remedy for Site 16/SSA 16 as documented in the Record of Decision and as modified by this Explanation of Significant Differences no longer requires Land Use Controls to protect human health and the environment. There is no need to evaluate the effectiveness of the remedy every 5 years because hazardous substances, pollutants, and contaminants do not remain above levels that allow for unrestricted use and unlimited exposure.

Approved by (Signature/Date):

A handwritten signature in black ink, appearing to read "Lowell D. Crow", written over a horizontal line.

Lowell D. Crow  
Captain, U.S. Navy  
Commanding Officer  
Naval Weapons Station Yorktown

A handwritten signature in blue ink, appearing to read "K. Hodgkiss", written over a horizontal line.

Kathryn A. Hodgkiss, Acting Director  
Hazardous Site Cleanup Division  
United States Environmental Protection Agency  
Region III

**Final**  
**Explanation of Significant Differences**  
**Site 16 -West Road Landfill and**  
**Site Screening Area 16 - Building 402 Metal Disposal Area**  
**Naval Weapons Station, Yorktown**

## **1 Introduction**

This Explanation of Significant Differences (ESD) to the Record of Decision (ROD) for Site 16 -West Road Landfill and Site Screening Area (SSA) 16 – Building 402 Metal Disposal Area (“Site”), Naval Weapons Station (WPNSTA) Yorktown, Virginia, was prepared in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Section 300.435(c)(2)(i) of Title 40 of the Code of Federal Regulations (CFR), as part of the National Contingency Plan. The ROD identified Site 16 and SSA 16 as Operable Unit (OU) II and was signed by the Department of the Navy (Navy), as lead agency in September 1995, and by the United States Environmental Protection Agency (USEPA) Region III, with the concurrence of the Virginia Department of Environmental Quality (VDEQ), in September 1995 (Baker, 1995).

### **1.1 Statement of Purpose**

This ESD documents a significant difference to the land use control (LUC) requirement prescribed in the 1995 ROD, which stipulates the implementation of institutional controls (ICs) to restrict residential land use and aquifer use. The Navy, USEPA Region III, and VDEQ agree the Site poses no unacceptable risk for unlimited use and unrestricted exposure and that no further action or LUCs are required to protect human health and the environment.

Accordingly, the purposes to be accomplished by this ESD are as follows:

1. To remove the LUC requirement from the ROD that restricts residential land use and aquifer use
2. To clarify the Site poses no unacceptable risk for unlimited use and unrestricted exposure and that no further action or LUCs are required to protect human health and the environment.

### **1.2 Public Availability**

This ESD and the documents forming the basis for it will become part of the Administrative Record file for WPNSTA Yorktown, in accordance with the National Contingency Plan (40 CFR Section 300.825[a][2]). The Administrative Record file may be viewed by contacting Ms. Bonnie Capito, Librarian and Records Manager, Naval Facilities Engineering Command, Atlantic, at 757-322-4785 or [bonnie.capito@navy.mil](mailto:bonnie.capito@navy.mil). This document and the ROD will be available for 30 days from the date of delivery to the following Information Repository:

York County Public Library  
8500 George Washington Memorial Highway  
Yorktown, Virginia 23692  
(757) 890-3376  
<http://www.yorkcounty.gov/Default.aspx?alias=www.yorkcounty.gov/library>

## 2 Summary of Site History, Extent of Contamination, and Selected Remedy

WPNSTA Yorktown is a 10,624-acre installation located on the Virginia Peninsula in York and James City counties and in the city of Newport News (**Figure 1**). This installation is bounded on the northwest by the Navy's Cheatham Annex and King's Creek Commerce Park, on the northeast by the York River and the Colonial National Historic Parkway, on the southwest by Route 143 and Interstate 64, and on the southeast by Route 238 and the community of Lackey.

### 2.1 Site Description and History

Site 16 and SSA 16 are located in the northeastern portion of WPNSTA Yorktown. Site 16 is adjacent to West Road, near Lee Road on WPNSTA Yorktown (**Figure 1**). SSA 16 overlies the northern portion of Site 16. Site 16 and SSA 16 cover approximately 8 acres and 1 acre, respectively.

Site 16 operated from the 1950s to the early 1960s. Wastes reportedly disposed at the Site included dry carbon batteries, banding materials, pressure transmitting fluid, other chemicals, and 55-gallon drums with unknown contents. SSA 16 was used for scrap metal storage and waste container storage before the remodeling and conversion of Building 402 into a hazardous waste storage facility (Baker, 1995). Building 402 has since been demolished.

Previous investigations included an Initial Assessment Study (Naval Energy and Environmental Support Activity, 1984), Round One and Two Confirmation Studies (Dames & Moore, 1986 and 1988), and Round I and II Remedial Investigations (Baker 1993 and 1995). Soil, groundwater, surface water, and sediment sampling have been conducted as part of these studies. In 1994, a removal action was completed at Site 16 to remove the entire contents of the landfill and the metal debris, consisting of approximately 420 tons of batteries, 60 tons of debris, 125 tons of silica gel, and other miscellaneous debris and buried waste (IT Corporation, 1995).

Following the removal action, soils, groundwater, surface water, sediments, and biota were sampled, and a quantitative risk assessment was completed. For residential potable groundwater use, the risk assessment identified a non-cancer hazard (3.0) associated with arsenic, antimony, and manganese in groundwater. Cancer risks associated with potable groundwater use for the future child resident ( $10^{-5}$ ) were within the acceptable risk range. Potential non-cancer hazard associated with surface soil ingestion by a future child resident (1.6) slightly exceeded USEPA's target threshold of 1.0. Consequently, the remedy in the ROD identified an LUC to restrict residential land use and groundwater use.

The need for land and aquifer use restrictions was re-evaluated in 2012-2013 timeframe and included the collection of two groundwater samples for analysis of antimony, comparison of the Site data with current risk-based screening criteria and drinking water maximum contaminant levels (MCLs), and a re-evaluation of the risk assessment. This analysis is documented in the *Considerations for Risk Management at Site 16 / Site Screening Area 16* technical memorandum (CH2M HILL 2013a).

### 2.2 Selected Remedy

The remedy described in the ROD is No Further Remedial Action with ICs. The ROD notes that although risk levels at Site 16/SSA 16 under the future child resident scenario are within the generally accepted risk management range, ICs have been included as a conservative measure. These ICs comprise land-use restrictions to restrict future land development of the Site 16/SSA 16 area for residential purposes and aquifer-use restrictions to disallow the placement of potable supply wells within the Site area. The ROD further documents that there are no groundwater areas of concern that require remediation and that the arsenic, antimony, and manganese in groundwater are either below MCLs (arsenic), background (antimony), or exceed a non-enforceable secondary MCL (manganese). The ROD also documents that there are no areas of concern for the surface soil at Site 16/SSA 16 and that no remedial action other than ICs was deemed necessary.

## 2.3 Remedy Implementation

ICs have been implemented since the ROD was signed in 1995, with only minor corrective measures needed, such as replacement of locks on monitoring wells. Site conditions are documented as part of the Five-Year Review process, including interviews with various parties familiar with the Site. Site conditions demonstrating that LUCs have been maintained are documented in the Five-Year Reviews conducted in 2002 (Baker, 2002), 2007 (CH2M HILL, 2007), and 2013 (CH2M HILL, 2013b). There have been no violations of the ROD restrictions on residential development or groundwater use at the Site.

## 3 Basis for the ESD

This ESD documents significant differences to the ROD IC requirement:

1. Removing the ROD requirement for aquifer use restrictions that currently prohibits the placement of potable supply wells within the Site area
2. Removing the ROD requirement that currently restricts future land development of the Site 16/SSA 16 area for residential purposes

### 3.1 Groundwater

Groundwater risk drivers identified during the Round Two Remedial Investigation (Baker, 1995) included antimony, arsenic, and manganese. Restrictions on use of groundwater as a potable water source were included in the ROD to address risks from ingestion of these inorganics. As documented in *Considerations for Risk Management at Site 16 / Site Screening Area 16* technical memorandum (CH2M HILL 2013a), the basis for the determination that there is no unacceptable risk for unlimited use and unrestricted exposure to groundwater at Site 16/SSA 16 is as follows:

- Antimony in Groundwater
  - All detected total and dissolved concentrations are below the maximum background concentrations.
  - Additional groundwater samples collected in August 2012 indicate that there were no detectable total or dissolved concentrations.
- Manganese in Groundwater
  - The future adult resident (0.27) and future child resident (0.64) target organ hazard indexes (HIs) for ingestion of manganese in groundwater are below the target threshold of 1.0.
- Arsenic in Groundwater
  - The future adult resident (0.24) and future child resident (0.55) target organ HIs for ingestion of arsenic in groundwater are below the target threshold of 1.0. Carcinogenic effects from arsenic are also within the acceptable risk range.

### 3.2 Soils

Based on the findings of the Round Two Remedial Investigation (Baker, 1995), surface soils do not pose a potential risk and as such did not warrant the need for land-use restrictions. However, potential risks from exposure to subsurface soils were not evaluated in the Round Two Remedial Investigation. Therefore, potential risks for exposure to subsurface soils were evaluated in 2012 and documented in the *Considerations for Risk Management at Site 16 / Site Screening Area 16* technical memorandum (CH2M HILL 2013a). The result of this evaluation indicated that there is no unacceptable risk for unlimited use and unrestricted exposure to subsurface soils at Site 16/SSA 16 for the following reasons:

- Although the total noncarcinogenic hazard (3) for the child resident exceeded USEPA's target HI of 1, none of the target organs had an HI above 1.

- The total carcinogenic risk for lifetime child resident slightly exceeded USEPA's target risk range of  $10^{-4}$  to  $10^{-6}$  ( $3 \times 10^{-4}$ ). The carcinogenic risk was primarily associated with chromium, using the conservative assumption that all of the chromium detected is the more-toxic hexavalent form of chromium. An evaluation using a more-realistic hexavalent to trivalent chromium ratio did not result in an unacceptable risk. None of the other metals drove risk to human health and the environment.

## 4 Description of Significant Differences

Based on the foregoing, the following significant differences to the No Further Action with ICs remedy are documented by this ESD:

- Remove the ROD requirement for aquifer use restrictions that currently prohibits the placement of potable supply wells within the Site area
- Remove the ROD requirement that currently restricts future land development of the Site 16/SSA 16 area for residential purposes

No further action at Site 16/SSA 16 is necessary to protect human health and the environment, and the Site is available for unlimited use and unrestricted exposure. Consequently, inspections to monitor LUC requirements are no longer required, and evaluation of the remedy protectiveness is no longer required as part of the CERCLA Five-Year Review process.

## 5 Support Agency Comments

VDEQ, the support regulatory agency, has reviewed this ESD and supports the changes discussed above to the remedy.

## 6 Statutory Determinations

The Navy, USEPA Region III, and VDEQ agree that the remedy for Site 16/SSA 16 as documented in the ROD and as modified by this ESD no longer requires LUCs to protect human health and the environment. Therefore, there is no need to evaluate the effectiveness of the remedy every 5 years because hazardous substances, pollutants, and contaminants do not remain above levels that allow for unrestricted use and unlimited exposure.

## 7 Public Participation Activities

In accordance with 40 CFR Section 300.435(c)(2)(i), this ESD and documents relied upon to make the decisions in this ESD will be added to the Administrative Record, and a notice of availability and brief description of this ESD will be published in the *Daily Press* and *The Virginia Gazette* within 30 days of its effective date.

## 8 References

Baker. 1993. *Final Round One Remedial Investigation Report. Sites 1-9, 11, 12, 16-19, and 21. Naval Weapons Station Yorktown, Yorktown, Virginia.* July.

Baker. 1995. *Final Round Two Remedial Investigation and Baseline Risk Assessment, Site 16 and Site Screening Area 16, Naval Weapons Station Yorktown, Yorktown, Virginia.* July.

Baker. 2002. *Final Five-Year Review Report for Sites 1, 6, 7, 12, 16, and 19, Naval Weapons Station Yorktown, Yorktown, Virginia.* September.

CH2M HILL. 2007. *Final Five-Year Review Report for Sites 1, 3, 6, 7, 11, 12, 16/SSA16, 17, and 19, Naval Weapons Station Yorktown, Yorktown, Virginia.* September.

CH2M HILL. 2013a. *Considerations for Risk Management at Site 16 / Site Screening Area 16, Naval Weapons Station Yorktown, Yorktown, Virginia.* February.

CH2M HILL. 2013b. *Final Five-Year Review Report for Sites 1, 6, 7, 12, 16/SSA 16, and 19, Naval Weapons Station Yorktown, Yorktown, Virginia*. February.

Dames and Moore. 1986. *Confirmation Study, Step 1A (Verification) Round One, Naval Weapons Station Yorktown, Yorktown, Virginia*. June.

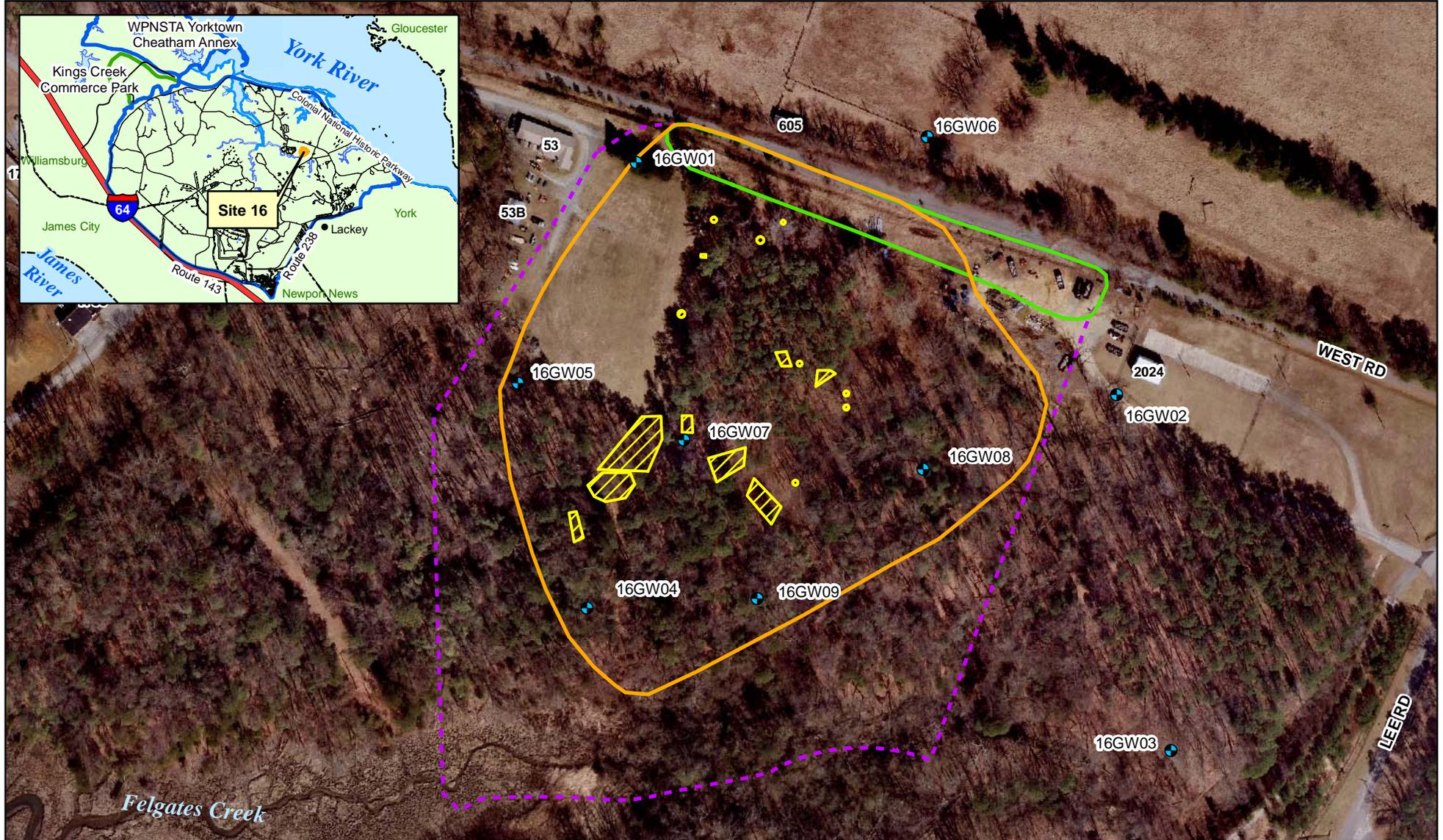
Dames and Moore. 1988. *Confirmation Study, Step 1A (Verification), Round Two, Naval Weapons Station Yorktown, Yorktown, Virginia*. June.

IT Corporation. 1995. *Closeout Report Sites 4, 16, and 21, Battery and Drum Disposal Area, Naval Weapons Station Yorktown, Yorktown, Virginia*. June.

Naval Energy and Environmental Support Activity. 1984. *Initial Assessment Study of Naval Weapons Station Yorktown, Yorktown, Virginia*. July.

## 9 Figure

**Figure 1:** Site 16 -West Road Landfill and Site Screening Area 16 - Building 402 Metal Disposal Area



**Legend**

- Monitoring Well
- Inferred Site 16/SSA 16 LUC Boundary
- Approximate SSA 16 Site Boundary
- Approximate Site 16 Boundary
- Approximate Waste Removal Area  
(Removed During 1994 Removal Action)

Note:  
LUC Requirement:  
Prevent residential development (land  
and aquifer use).

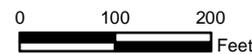


Figure 1  
Site 16 - West Road Landfill  
SSA 16 - Building 402 Metal Disposal Area  
Naval Weapons Station Yorktown  
Yorktown, Virginia