

# Final Preliminary Assessment Report Fort Pickett, Virginia

Perfluorooctane-Sulfonic Acid (PFOS) and Perfluorooctanoic  
Acid (PFOA) Impacted Sites  
ARNG Installations, Nationwide

May 2020

Prepared for:



Army National Guard Bureau  
111 S. George Mason Drive  
Arlington, VA 22204

UNCLASSIFIED

## Table of Contents

Executive Summary .....	1
1. Introduction .....	5
1.1 Authority and Purpose .....	5
1.2 Preliminary Assessment Methods .....	5
1.3 Report Organization .....	5
1.4 Facility Location and Description .....	6
1.5 Facility Environmental Setting .....	7
1.5.1 Soil .....	7
1.5.2 Geology .....	7
1.5.3 Hydrogeology .....	7
1.5.4 Hydrology .....	8
1.5.5 Climate .....	9
1.5.6 Current and Future Land Use .....	9
2. Fire Training Areas .....	13
2.1 Building 1485 (Current Fire Station) .....	13
2.2 Airfield Runway 1/19 .....	13
2.3 Former Live Fire Burn Pit .....	14
2.4 Building 3006 (FORSCOM Petroleum Training Module Area) .....	14
3. Non-Fire Training Areas .....	16
3.1 Building 2860 – Former Fire Station .....	16
3.2 Former Fort Pickett Fire Stations - Demolished .....	16
3.3 Building 977 (Petroleum Training Module Storage) .....	17
3.4 Old Hospital Area/Open Dump Area (Landfill No. 3) .....	17
3.5 Former Blackstone Army Airfield Hangar .....	17
3.6 Fort Pickett Landfills .....	18
3.7 Solar Array Area Former Burn Pit .....	19
4. Emergency Response Areas .....	21
4.1 Northeast Range Rubber Mat Fire Area .....	21
4.2 2009 Navy Helicopter Crash .....	21
4.3 1987 Helicopter Crash .....	21
4.4 Navy Helicopter Crash (date unknown) .....	21
5. Adjacent Sources .....	23
5.1 Blackstone Army Airfield Burn Pits (EBS-103) .....	23
5.2 Building 493 – Former Fire Station (EBS-79) .....	23
5.3 Former Building 755 – Former Fire Station .....	24
5.4 Former Recycle Center (EBS-13) .....	24
5.5 Pickett Park Former Metals Plating Facility .....	24
5.6 Former Fuel Station No. 1 (BCT-22) .....	25
5.7 Wastewater Treatment Plant .....	25
5.8 Southside Regional Fire Training Grounds .....	25
5.9 Nottoway County Landfill .....	26
6. Preliminary Conceptual Site Model .....	28
6.1 AOI 1 Building 1485 (Current Fire Station) .....	28
6.2 AOI 2 Northeast Range Rubber Mat Fire Area .....	29

6.3	AOI 3 Building 3006 (FORSCOM Petroleum Training Module Area) .....	30
6.4	AOI 4 Former Live Fire Burn Pit.....	30
6.5	AOI 5 Airfield Runway 1/19 .....	31
7.	Conclusions .....	35
7.1	Findings.....	35
7.2	Uncertainties.....	36
7.3	Potential Future Actions .....	38
8.	References .....	41

## Figures

Figure ES-1	Summary of Findings
Figure ES-2	Preliminary Conceptual Site Model for Fort Pickett
Figure 1-1	Facility Location
Figure 1-2	Groundwater Features
Figure 1-3	Surface Water Features
Figure 2-1	Fire Training Areas
Figure 3-1	Non-Fire Training Areas
Figure 4-1	Emergency Response Areas
Figure 5-1	Adjacent Sources
Figure 6-1	Areas of Interest
Figure 6-2	Preliminary Conceptual Site Model for Fort Pickett
Figure 7-1	Summary of Findings

## Tables

Table ES-1	AOIs at Fort Pickett
Table 6-1:	Exposure Pathways at AOI 1
Table 6-2:	Exposure Pathways at AOI 2
Table 6-3:	Exposure Pathways at AOI 3
Table 6-4:	Exposure Pathways at AOI 4
Table 6-5:	Exposure Pathways at AOI 5
Table 7-1:	AOIs at Fort Pickett
Table 7-2:	No Suspected Release Areas
Table 7-3:	Sources of Uncertainties
Table 7-4:	PA Findings Summary

## Appendices

Appendix A	Data Resources
Appendix B	Preliminary Assessment Documentation
	B.1 Interview Records
	B.2 Visual Site Inspection Checklists
	B.3 Conceptual Site Model Information
Appendix C	Photographic Log

## Acronyms and Abbreviations

%	percent
°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
bgs	below ground surface
BRAC	Base realignment and closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
DoD	Department of Defense
DPW	Department of Public Works
DRO	diesel-range organics
EA	EA Engineering, Science, and Technology, Inc.
EDR™	Environmental Data Resources, Inc.™
ft	feet/foot
FTA	fire training area
GRO	gasoline-range organics
IED	Installations & Environment Division
LRA	Local Reuse Authority
OHA	Old Hospital Area
PA	Preliminary Assessment
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
RI/FS	Remedial Investigation/Feasibility Study
SI	Site Inspection
SVOC	semi-volatile organic compounds
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VAARNG	Virginia Army National Guard
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compounds
VSI	visual site inspection
WWTP	waste water treatment plant

## Executive Summary

The Army National Guard (ARNG) is performing Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for Fort Pickett (also referred to as the “facility”), Virginia (VA), to assess potential PFAS release areas and exposure pathways to receptors. Fort Pickett is constructed on a parcel of land owned by the Department of the Army and licensed to the Virginia ARNG (VAARNG). The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)<sup>TM</sup> report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility
- Conducted a 1-day site visit on 31 January 2019 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed; and
- Interviewed current and former VAARNG Fort Pickett personnel during the site visit and VAARNG environmental managers and operations staff
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

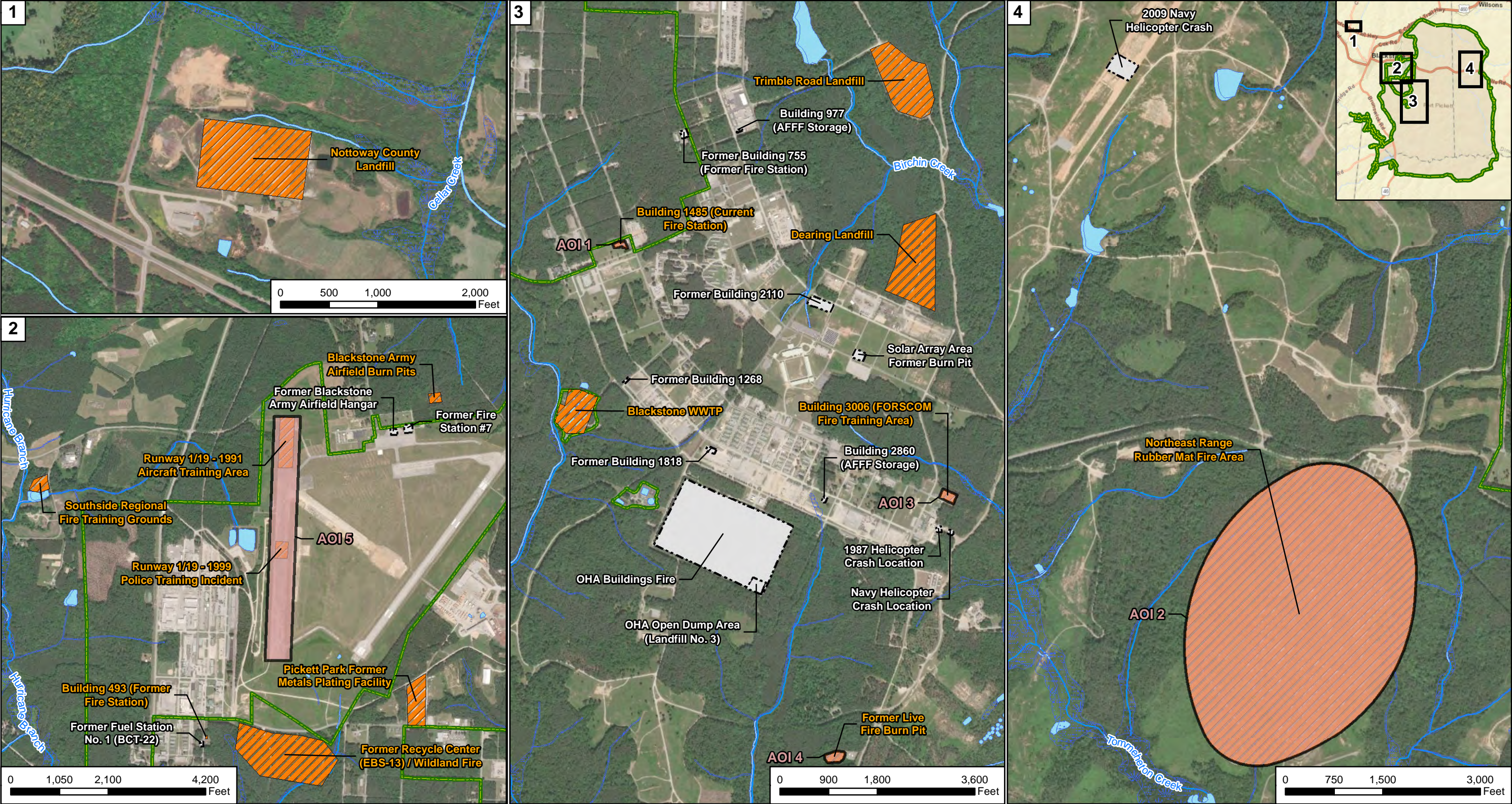
Five AOIs related to potential PFAS releases were identified at Fort Pickett during the PA. AOIs were only identified at PFAS release locations on land licensed to the VAARNG. PFAS release locations outside lands licensed to the VAARNG are not considered AOIs. The AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

**Table ES-1 AOIs at Fort Pickett**

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Building 1485 (Current Fire Station)	VAARNG	1996-2015
AOI 2	Northeast Range Rubber Mat Fire Area	VAARNG	2012
AOI 3	Building 3006 (FORSCOM Petroleum Training Module Area)	FORSCOM / VAARNG / Others	2003-2017
AOI 4	Former Live Fire Burn Pit	VAARNG	1998
AOI 5	Airfield Runway 119	VAARNG	1991 and 1999

Based on a potential PFAS releases at the AOIs, there is potential for exposure to PFAS contamination in surface soil to site workers, construction workers, and trespassers via ingestion and/or inhalation of dust; subsurface soil to construction workers via ingestion and/or inhalation; surface water to site workers, construction workers, trespassers and off-facility recreational users via ingestion; groundwater to construction workers and off-facility residents via ingestion. Potential off-facility PFAS release areas exist adjacent to Fort Pickett, including base realignment and closure (BRAC) properties formerly owned and operated by the VAARNG. Because these areas include property upgradient of the facility, it is unknown whether or not the off-facility sources affect Fort Pickett. The preliminary CSM for Fort Pickett is shown on **Figure ES-2**.

Based on the US Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected in a public water system above the USEPA's lifetime Health Advisories (HAs) within 20 miles of the facility. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.



CLIENT		ARNG			
PROJECT		Preliminary Assessment for PFAS at Fort Pickett, VA			
REVISED	10/29/2019	GIS BY	MS	10/29/2019	
SCALE	1:25,200	CHK BY	JW	10/29/2019	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	10/29/2019	

Area of Interest

Potential PFAS Release

No Suspected Release

Facility Boundary

Water Body

Wetland

River/Stream

N

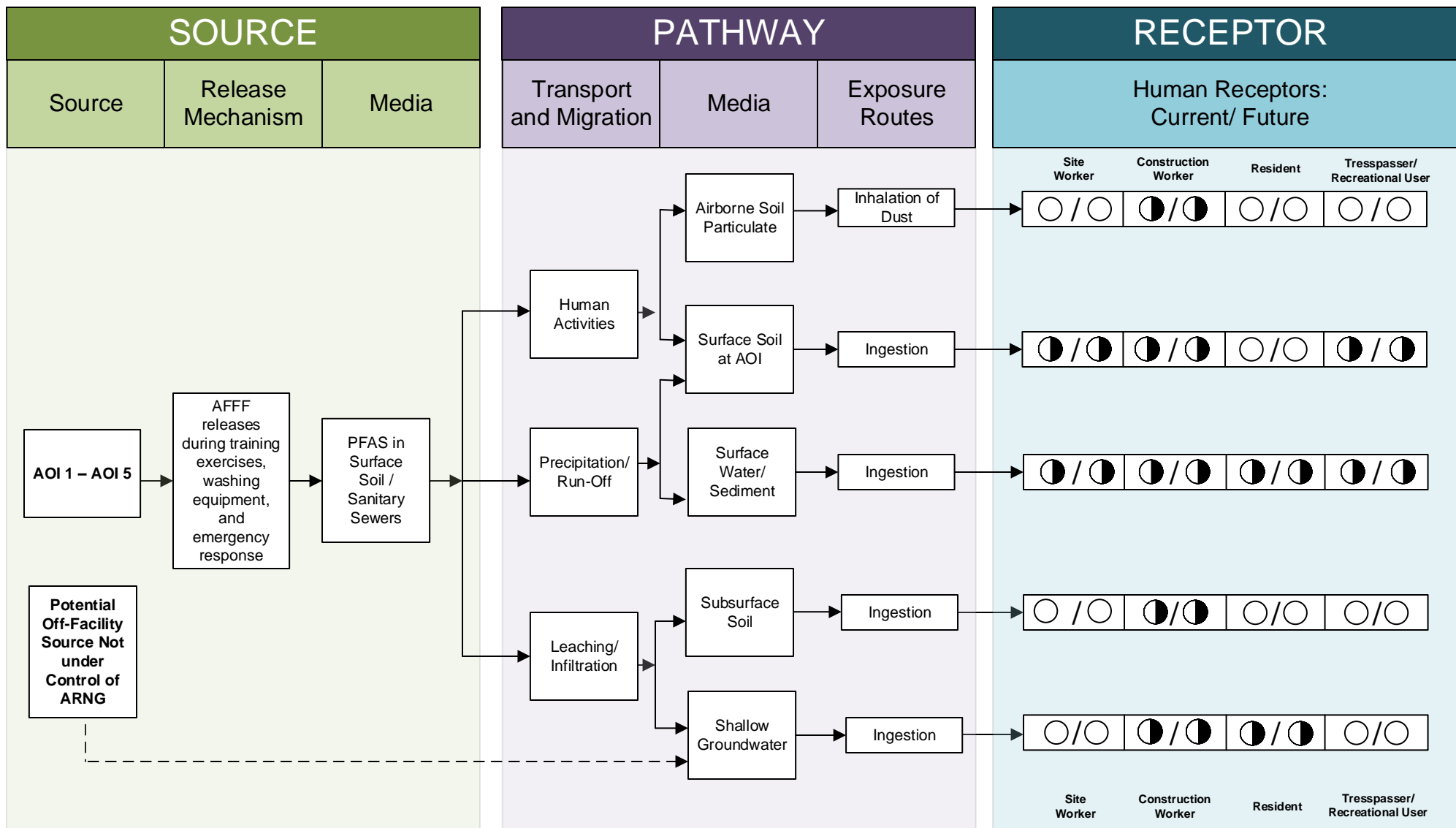
**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

Summary of Findings

Figure ES-1

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### LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- - -  Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

### Notes:

1. The resident and recreational user receptors refer to an off-site resident and recreational user.
2. Dermal contact exposure pathway is incomplete for PFAS.

**Figure ES-2**  
Preliminary Conceptual Site Model  
Fort Pickett, VA

# 1. Introduction

## 1.1 Authority and Purpose

The Army National Guard (ARNG)-Installations & Environment Division is the lead agency in performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) at Impacted Sites at ARNG Facilities Nationwide*. This work is supported by the United States (US) Army Corps of Engineers (USACE) Baltimore District and their contractor AECOM Technical Services, Inc. (AECOM) under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017.

The ARNG is assessing potential effects on human health related to processes at their facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily releases of aqueous film forming foam (AFFF), although other sources of PFAS are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water. In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS. The Commonwealth of Virginia (VA) does not currently have drinking water standards for PFAS.

This report presents the findings of a PA for PFAS-containing materials at Fort Pickett (also referred to as the “facility”), Virginia, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations [CFR] Part 300), and Army requirements and guidance.

This PA documents the known fire training areas (FTAs) as well as other locations where PFAS may have been released into the environment at Fort Pickett. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

## 1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)<sup>™</sup> report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility
- Conducted a 1-day site visit on 31 January 2019 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed; and
- Interviewed current and former VAARNG Fort Pickett personnel during the site visit and VAARNG environmental managers and operations staff

- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

## 1.3 Report Organization

This report has been prepared in accordance with the USEPA *Guidance for Performing Preliminary Assessments under CERCLA* (USEPA 1991). The report sections and descriptions of each are:

- **Section 1 – Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA
- **Section 2 – Fire Training Areas:** describes the FTAs at the facility identified during the site visit
- **Section 3 – Non-Fire Training Areas:** describes other locations of potential PFAS releases at the facility identified during the site visit
- **Section 4 – Emergency Response Areas:** describes areas of potential PFAS release at the facility, specifically in response to emergency situations
- **Section 5 – Adjacent Sources:** describes sources of potential PFAS release adjacent to the facility that are not under the control of ARNG
- **Section 6 – Preliminary Conceptual Site Model:** describes the pathways of PFAS transport and receptors for the AOIs and the facility
- **Section 7 – Conclusions:** summarizes the data findings and presents the conclusions of the PA
- **Section 8 – References:** provides the references used to develop this document
- **Appendix A – Data Resources**
- **Appendix B – Preliminary Assessment Documentation**
- **Appendix C – Photographic Log**

## 1.4 Facility Location and Description

Fort Pickett was established in 1941 as a combat training facility, with the peak number of troops stationed at the installation during 1943. The installation was briefly closed in 1944 and then later fully re-activated in 1950 (Tetra Tech, Inc., 2005a). Fort Pickett encompasses approximately 45,160 acres in Brunswick, Dinwiddie, and Nottoway counties, Virginia. The facility is located approximately 60 miles southwest of Richmond, Virginia, and 3 miles east of the town of Blackstone (**Figure 1-1**). Fort Pickett was established on land purchased by the federal government.

Fort Pickett is currently a maneuver and training center operated by the VAARNG. The facility is used year-round for military training of both active and reserve troops of the ARNG and other Department of Defense (DoD) and non-DoD units.

In 1995 Fort Pickett was selected by the Base Realignment and Closure (BRAC) Commission, and began undergoing closure. 45,008 acres of the facility are BRAC property, subject to transfer or lease; the VAARNG utilizes approximately 42,296 acres of BRAC property as part of the operational Fort Pickett. The majority of the remaining 2,864 acres and buildings of BRAC property have been transferred to the Nottoway County Local Redevelopment Authority (LRA)

and Virginia Polytechnic Institute and State University, Southern Piedmont Agricultural Research and Extension Center (Tetra Tech, Inc., 2005a). Real property information for Fort Pickett provided by VAARNG is included in **Appendix A**.

In 2005, an inventory of the property identified about 41,000 acres as operational training and maneuver areas and the remaining approximately 3,500 as non-operational (Army Range Inventory Database-Geodatabase, 2005).

## 1.5 Facility Environmental Setting

Topography at Fort Pickett is characterized by low, gently rolling terrain with generally level uplands dissected by stream drainages. The northwestern portion of the facility is considered a level upland, with a dendritic drainage pattern. The southeastern portion of the facility shows more relief, with deeply dissected topography with steeper slopes and ravines (EA, 2007).

### 1.5.1 Soil

The majority of the upland soils found at Fort Pickett are not frequently flooded, have a slow to moderate infiltration rate, and are non-hydric. Loams and sandy loams are the most common soil type on Fort Pickett. Soils at Fort Pickett generally consist of a quartz sandy loam surface layer ranging in depth from 6 to 18 inches over a micaceous clay loam, with a frost depth of 24 inches (EA, 2007).

There are four wetland soils found at Fort Pickett: Chewacla, Wehadkee, Worsham, and Chastain. These soils share many of the same characteristics: thermic, slow infiltration rates, and found on low slopes ranging from 0 to 2 percent (%). The large number of wetlands occurring throughout Fort Pickett significantly improves water quality by filtering groundwater and surface run-off (EA, 2007).

### 1.5.2 Geology

Fort Pickett is located in the Piedmont physiographic province, where the geology is primarily folded metamorphic rocks with igneous intrusions (EA, 2001). A layer of saprolite, resulting from the weathering of the metamorphic and igneous rock, overlies the bedrock across the installation. The typical sequence from ground surface to bedrock includes a thin layer of soil, a variable layer of saprolite (as much as 45 feet [ft] thick), and a narrow band of fractured bedrock. The depth to bedrock can vary significantly across the site—from ground surface to more than 30 ft below ground surface (bgs). The regional geology is shown on **Figure 1-2**.

Alluvial deposits, consisting of sand, silt, and clay are also present within the floodplains of the streams that drain the facility. These alluvial deposits are similar in grain size to the saprolite deposits and can be difficult to differentiate (EA, 2007).

### 1.5.3 Hydrogeology

Groundwater systems within the Piedmont province include a combination of saprolite and fractured bedrock occurrences (EA, 2007). Groundwater at Fort Pickett may occur in a multi-aquifer system, with water-producing zones existing in local silt, sand, and/or gravel lenses; broken rock, gravel, sand, silt, and clay within the saprolite; and also, perhaps in fractures within the bedrock. These water-producing zones may be separated both laterally and vertically by impermeable sediments or unfractured rock or by differentially weathered rock. The original rock texture is generally impermeable.

Precipitation infiltrates into water producing zones and recharges the water table aquifer. A component of groundwater flows horizontally, while another component flows vertically downward into interconnected fractures in the underlying bedrock aquifers. The shallow water table aquifer is presumed to be unconfined. Therefore, groundwater flows under the influence of gravity with flow patterns resembling a subdued reflection of local topography. It is assumed that groundwater discharges to local streams in the area. The general shallow groundwater flow direction across the entire facility likely follows topography and ranges from northwest to southeast. Groundwater flow direction is shown on **Figure 1-2**. For deeper aquifers, groundwater is under the influence of the presumed controlling hydraulic head for the region, namely the Nottoway River. Deep groundwater may underflow small streams and tributaries present at the facility, but it will ultimately discharge to the Nottoway River.

A study conducted in 1989 showed depth to groundwater ranges from 7 to 33 ft bgs at Fort Pickett (Woodward Clyde, 1996). The water table begins to fall in April and is replenished in the winter months. The majority of the natural springs on Fort Pickett occur at the head of major drainages and are associated with seepage wetlands.

No drinking water wells exist at Fort Pickett; the facility is provided drinking water by the Nottoway Reservoir. The Virginia Department of Environmental Quality (VDEQ) maintains a database of registered wells in the area. Several domestic, industrial, public/municipal/government, and unknown use wells exist within 4 miles of the facility to the west, northwest, and northeast (**Figure 1-2**). These wells are cross-gradient and upgradient are not likely to be influenced by potential PFAS releases at Fort Pickett. Aerial imagery of the area shows the presence of residences in the rural areas to the east, west, and south surrounding Fort Pickett. It is possible that unregistered domestic wells associated with the residences exist that are not included in the VDEQ database.

#### 1.5.4 Hydrology

Fort Pickett is primarily located within the Nottoway River drainage basin. A small section in the northeast corner of the facility is drained by Butterwood Creek. The major stream networks on the installation include the Nottoway River; Hurricane Branch; and Birch, Tommeheton, and Butterwood Creeks. Hurricane Branch, Birch, and Tommeheton Creek drain into the Nottoway River within the boundaries of the facility. The headwaters of Hurricane Branch, Birch, Tommeheton, and Butterwood creeks largely originate within the boundaries of the facility (**Figure 1-3**).

The Nottoway River drains into the Blackwater River at the Virginia/North Carolina border, which in turn drains into the Albemarle Sound in North Carolina. Butterwood Creek eventually drains into the Nottoway River farther downstream of the facility. On-site streams partly originate as groundwater discharge from shallow aquifers; stream sections within the facility boundary are likely groundwater discharge points or gaining streams. However, the Nottoway River and Butterwood Creek may also have stream segments that act as groundwater recharge points or losing streams downstream of the facility boundary. Many portions of the drainages mentioned above are slow moving and marshy, forming extensive wetlands.

There are approximately 13 lakes, ponds, and surface water impoundments (totaling approximately 600 acres in water surface area) at Fort Pickett (EA, 2007). The largest impoundment, the Nottoway reservoir, is located in the southwest corner of the facility and covers approximately 384 acres in water surface area. Other lakes and ponds include Twin Lakes, Lewis Pond, Floyd Pond, Birch Lake, and Tommeheton Lake.

The Nottoway Reservoir, owned by Fort Pickett, is the source of drinking water for Fort Pickett, the town of Blackstone, and several private residences within a 4-mile radius of the

facility boundary (EA, 2007). The Nottoway Reservoir is located within Fort Pickett near the southwestern corner of the operational range boundary, and cross-gradient of most of Fort Pickett. The next nearest surface water intake downstream of the operational range boundary is on the Nottoway River, approximately 30 miles downstream of the Nottoway River's operational range exit point. Water drawn from the reservoir is treated at a freshwater treatment plant located adjacent to the town of Blackstone wastewater treatment plant (WWTP) in the Fort Pickett cantonment area. The water treatment plant is shared by the town and the installation. Although the WWTP is located within the Fort Pickett cantonment area, the WWTP property is owned and operated by the town of Blackstone, not the VAARNG. In addition to the plant, water distribution mains, three elevated storage tanks, and three pumping stations are located throughout the area within the boundaries of Fort Pickett (United States General Services Administration, 2012). The 2018 Water Quality Report for the Nottoway Reservoir is included in **Appendix A**. Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS were detected in a public water system above the USEPA Health Advisory level within 20 miles of the facility. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today. The Nottoway Reservoir is also used for recreational fishing.

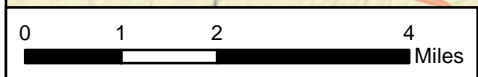
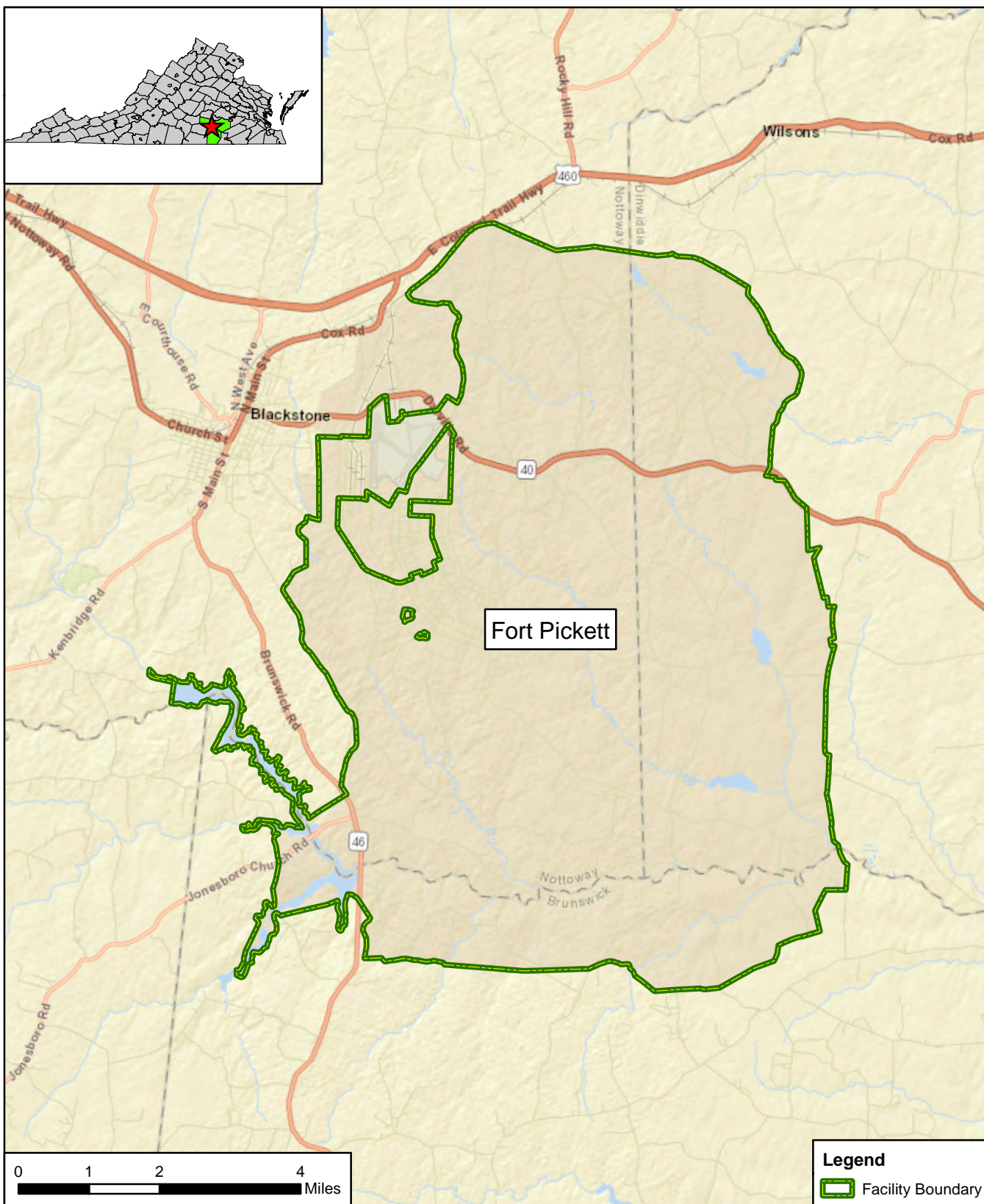
### 1.5.5 Climate

The climate of the Fort Pickett area is characterized as humid sub-tropical, with hot, humid summers and mild winters (EA, 2007). The annual average temperature is 56.7 degrees Fahrenheit (°F). Frequent, short cold spells occur in winter, with temperatures in the low teens. The average lowest temperature (25.1 °F) occurs in January, and the average highest temperature (87.7 °F) occurs in July (National Oceanic and Atmospheric Administration, 2019).

Although precipitation is fairly well distributed throughout the year, on average, the least precipitation occurs in the months of February, November, and December, and the most precipitation occurs in the month of August (4.47 inches) (National Oceanic and Atmospheric Administration, 2019). However, short dry periods occur most years, and several severe droughts have occurred. Prevailing winds come from the southwest except when frontal systems pass through (EA, 2007).

### 1.5.6 Current and Future Land Use

Fort Pickett is currently a maneuver and training center for the VAARNG that provides realistic joint and combined arms training. The facility is used year-round for military training of both active and reserve troops of the Army, Navy, Marines, and Air Force, as well as other government agencies. Future land use is not anticipated to change.



**Legend**  
 Facility Boundary

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Fort Pickett, NH			
REVISED	7/30/2019	GIS BY	MS	7/30/2019
SCALE	1:126,720	CHK BY	JW	7/30/2019
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	7/30/2019



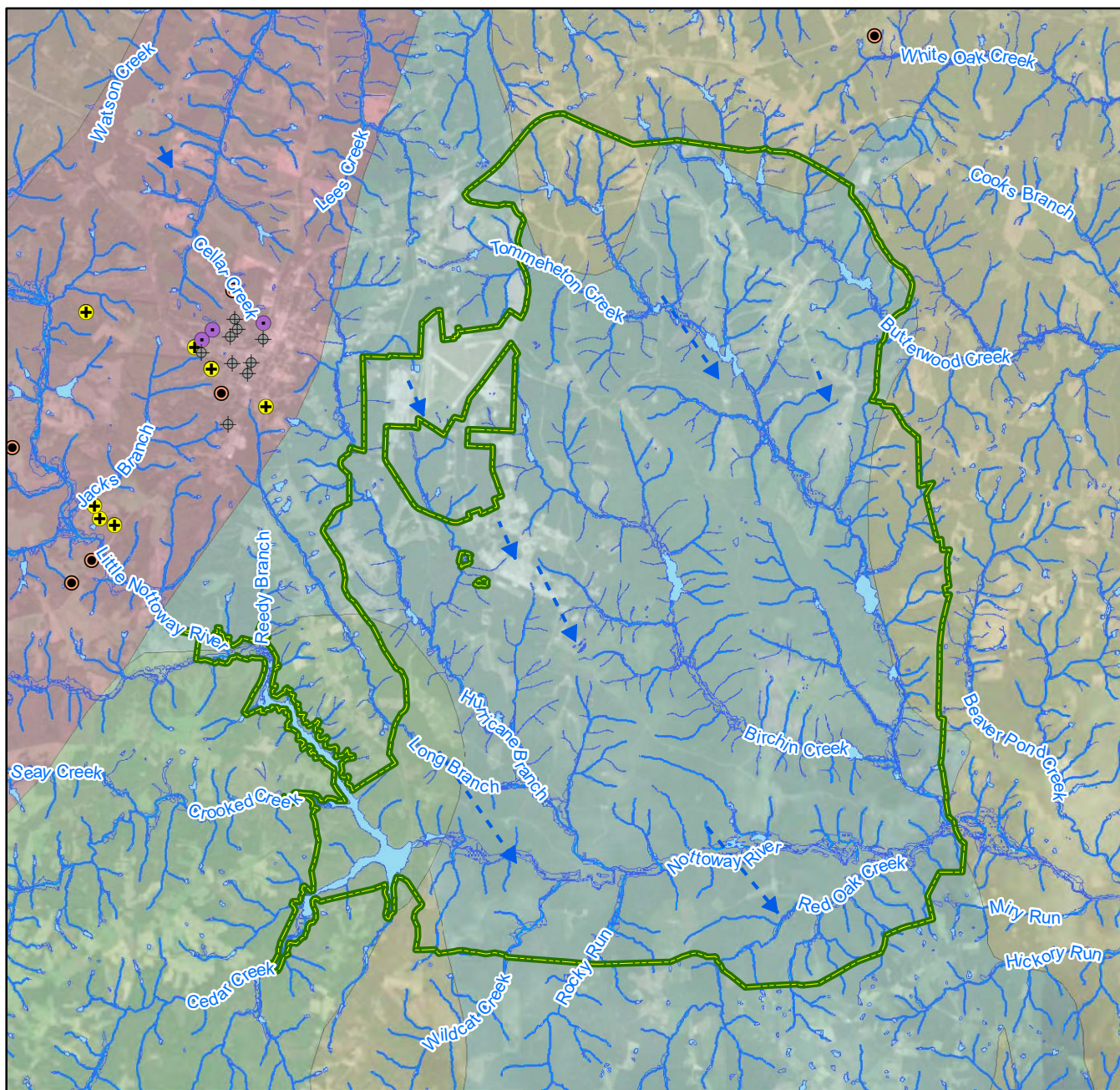
## Facility Location

**AECOM**

12420 Milestone Center Drive  
 Germantown, MD 20876

**Figure 1-1**

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\VA\FT\_Pickett\_Figures\Fig\_1-1\_Ft\_Pickett\_Facility\_Location.mxd



### Legend

Facility Boundary

Water Body

Wetland

River/Stream

Inferred Groundwater Flow Direction

### Geology

Phyllonite

Mylonite

Quartzofeldsparitic Gneiss

Porphyroblastic Garnet-Biotite Gneiss

Gneissic Granite & Granodiorite

Porphyroblastic Granite Gneiss

Biotite Gneiss

### Wells

Domestic

Industrial

Public / Municipal / Government

Unknown

0 1 2 4 Miles

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Camp Pendleton, VA			
REVISED	9/10/2019	GIS BY	MS	9/10/2019
SCALE	1:126,720	CHK BY	AS	9/10/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	9/10/2019



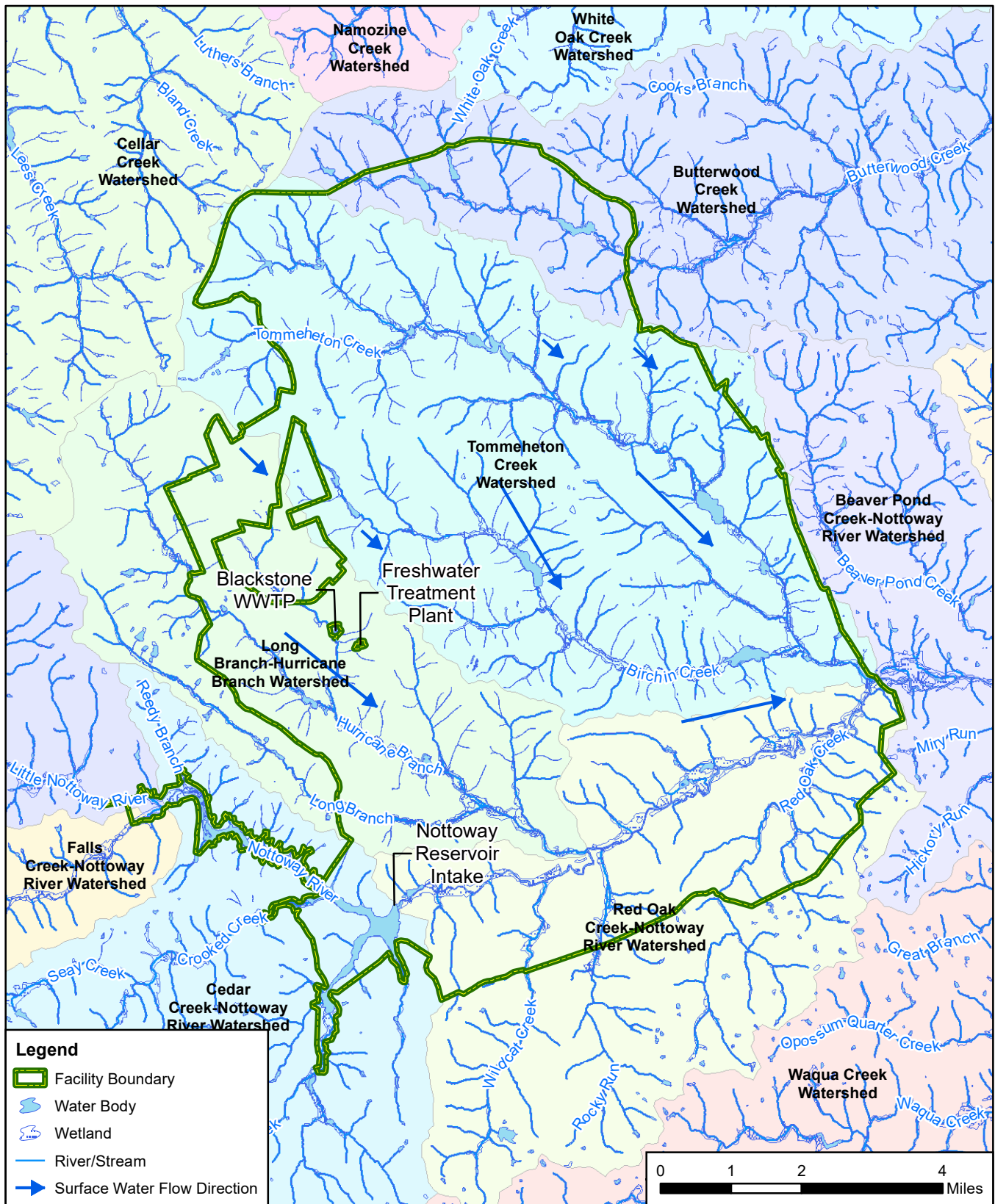
### Groundwater Features



**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 1-2**

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\VA\Ft\_Pickett\_Figures\Fig\_1-2\_Ft\_Pickett\_Groundwater.mxd



CLIENT					ARNG			Surface Water Features				
NOTES					Preliminary Assessment for PFAS at Fort Pickett, VA			 12420 Milestone Center Drive Germantown, MD 20876	Figure 1-3			
REVISED		9/10/2019		GIS BY		MS				9/10/2019		
SCALE		1:126,720		CHK BY		JW				9/10/2019		
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,				PM		RG				9/10/2019		

## 2. Fire Training Areas

FTAs are considered areas where deliberate discharge of AFFF or other firefighting materials is performed for purposes of training personnel. Five FTAs were identified during the PA (**Figure 2-1**). These areas include an area outside of the Building 1485 (Current Fire Station), Airfield Runway 1/19, the Former Live Burn Pit, the Building 3006 Petroleum Training Module Building, and the Blackstone Army Airfield Burn Pits (which are located north of the Fort Pickett facility boundary and are discussed in **Section 5**).

### 2.1 Building 1485 (Current Fire Station)

Building 1485 (the current fire station at Fort Pickett) is located in the cantonment area at Fort Pickett at the intersection of Military Road and West Parade Road (37°02'58.9"N; 77°57'02.0"W). Building 1485 is used for fire equipment maintenance and storage, as well as fire training. Approximately 40 5-gallon buckets of Ansulite Alcohol Resistant Concentrate 3% and 6% AFFF are stored in the maintenance bays at the fire station. Additionally, approximately 200 gallons of the same AFFF are also stored in tanks on two fire rescue trucks; one truck stores 70 gallons, and one truck stores 130 gallons. No AFFF fire suppression system exists at the fire station. Floor drains at the fire station connect to sanitary sewer drains that flow to the Blackstone WWTP.

According to the Fort Pickett Fire Chief, fire training has occurred in the area outside and to the west of Building 1485 approximately every other year between 1996 and 2015. Records of the routine fire training exercises are not kept by the Fort Pickett Fire Department. Approximately 5 to 10 gallons of AFFF were used during each fire training event. AFFF was typically sprayed towards sanitary sewer manhole 460, located near the northwest corner of Building 1485, or sprayed towards the woods north of the building. Sanitary sewer manhole 460 channels runoff west along a sanitary sewer pipe that connects to several other sanitary sewer pipes west of Garnett Avenue (Timmons Group, 2017). Although Ansulite Alcohol Resistant Concentrate 3% and 6% AFFF are stored at Building 1485, various types of AFFF have been stored and used throughout the tenure of the Fort Pickett Fire Chief since 1996.

### 2.2 Airfield Runway 1/19

Blackstone Army Airfield, also known as Allen C. Perkinson Airport, is located towards the northwestern border of Fort Pickett and is bounded to the north by State Highway 40. The airfield is used by both the VAARNG and the town of Blackstone. The airfield was opened in 1937 and has historically served as the center for airborne operations at Fort Pickett. The Blackstone Army Airfield and accompanying hangar property are currently the only architectural resources managed by VAARNG at Fort Pickett that are considered eligible for the National Register of Historic Places (United States General Services Administration, 2012). The Blackstone Army Airfield and accompanying hangar property have remained virtually unchanged, but were renovated in 1994 to accommodate for use of C-130 and C-17 transport aircraft. The airfield remains open to the public and has one active runway (Runway 4/22). Runway 1/19 is no longer listed as available for public use. The runway is not used regularly for fire training exercises, but historical fire training exercises occurred at the runway.

According to interviews with a former range officer, the Army ignited an aircraft fuselage and used Army-provided AFFF to extinguish the flames as part of a one-time fire training exercise on the north end of the runway circa 1991. A P-4 Pumper firefighting vehicle was used to spray AFFF during the exercise, and AFFF was captured using a large canvas or tin pad beneath the fuselage. According to the range officer, other ARNG and non-ARNG DoD units

visited Fort Pickett to perform training activities at the airfield. Records of the training exercises were not available during the PA site visit.

The Fort Pickett Fire Chief also stated that during the fire department's support of police department high speed training at airfield runway 1/19 in 1999, approximately 5 gallons of AFFF were accidentally released by the fire department. This release occurred during the event at the time when water was sprayed on the runway to create wet conditions, and the small volume of AFFF was accidentally sprayed onto the runway as well.

## 2.3 Former Live Fire Burn Pit

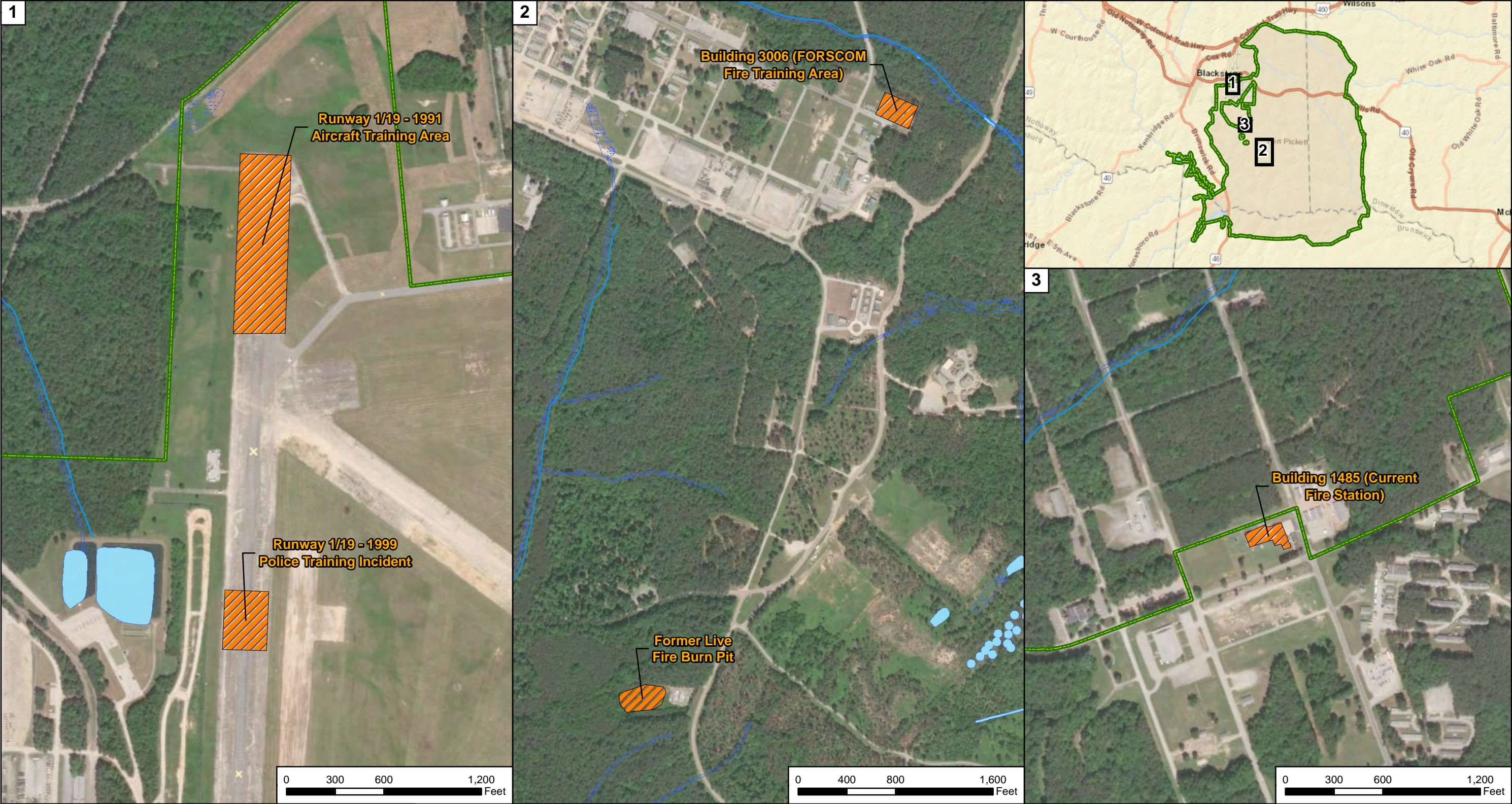
The Former Live Fire Burn Pit is located south of the Fort Pickett cantonment area, west of Garnett Avenue, approximately 0.2 miles southwest of the intersection of Garnett Avenue and Wilcox Road (37°02'42.13"N; 77°93'59.69"W). The area is currently used as an aboveground storage tank storage area and is surrounded by undeveloped, forested land on all sides excluding Garnett Avenue.

According to the Fort Pickett Fire Chief, the former live fire burn pit was used routinely for fire training with class A foams and water; however, in 1998, a fire training exercise involved the discharge of AFFF. During this one-time event, approximately 130 gallons of AFFF were sprayed to extinguish flames on a coast guard helicopter that was set ablaze for training purposes. The AFFF was left in place following the exercise. No record of the training event is available, but a photo of the event is included in **Appendix A** and **Appendix C**.

## 2.4 Building 3006 (FORSCOM Petroleum Training Module Area)

The FORSCOM Petroleum Training Module Area (Building 3006) is located in the southwestern portion of the cantonment area, at the intersection of West Parade Street and West 33<sup>rd</sup> Street (37°03'74.03"N; 77°92'93.22"W). The FORSCOM Petroleum Training Module Area is contracted through the US Army Reserves Center in Richmond, Virginia. The memorandum of agreement allowing the FORSCOM facility to operate as a training facility at Fort Pickett is included in **Appendix A**. According to the FORSCOM Program Manager, the area was used as an FTA beginning in 1989 and has been used for fire training ever since. The FORSCOM Program Manager's tenure spans 2003 to 2017. Fire training includes igniting fuel pans containing diesel west of Building 3006 and extinguishing them with AFFF. The FTA is used by DoD and non-DoD units, including units not stationed at Fort Pickett. The FTA is located on a concrete surface, with gravel beneath the fuel pans, and is surrounded by undeveloped woods to the north, east, and south.

The FORSCOM Program Manager stated during interviews that approximately 5 gallons of 6% AFFF were used per year during training between 2003 and 2005, and approximately 15 gallons of 6% AFFF were used per year from 2005 to 2017. AFFF has not been used for training purposes at the FTA since August 2017, following an Army directive to cease AFFF use except in emergency situations. The AFFF was stored in Building 977, located approximately 1.45 miles northwest of the FTA. Approximately 40 to 60 5-gallon buckets of Ansulite 6% AFFF remain within Building 977. The material safety data sheet for the stored AFFF is included in **Appendix A**. During training, AFFF was transported from Building 977 to the Building 3006 FTA on a trailer equipped to mix and then spray AFFF. AFFF was never mixed at Building 977. Numerous trailers (precise number is unknown) have been used for fire training; they are typically stored at Building 977. During training, AFFF runoff escaping the training area would flow downslope towards a stream located less than 0.1 miles northeast of the area. Sanitary sewer manhole 68 also exists within the vicinity of the FTA and could potentially divert surface water runoff towards the town of Blackstone WWTP.



CLIENT					ARNG					<b>Legend</b> <div><div></div> Potential PFAS Release</div> <div><div></div> Facility Boundary</div> <div><div></div> Water Body</div> <div><div></div> Wetland</div> <div><div></div> River/Stream</div>	<div><div>N</div><div></div></div>	Fire Training Areas				
PROJECT Preliminary Assessment for PFAS at Fort Pickett, VA												<div><div><b>AECOM</b></div><div>12420 Milestone Center Drive Germantown, MD 20876</div></div> <div>Figure 2-1</div>				
REVISED					7/29/2019		GIS BY		MS				7/29/2019			
SCALE					1:9,600		CHK BY		JW				7/29/2019			
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)								PM					RG		7/29/2019	

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\VA\Ft\_Pickett\_Figures\Fig\_2-1\_Ft\_Pickett\_Fire\_Training\_Areas.mxd

### 3. Non-Fire Training Areas

In addition to FTAs, the PA evaluated areas where PFAS-containing materials may have been broadly used, stored, or disposed. This may include buildings with fire suppression systems, paint booths, AFFF storage areas, and areas of compliance demonstrations. Information on these features obtained during the PA are included in **Appendices A and B**. Several non-FTAs where AFFF was potentially stored and/or released were identified during the PA. A description of each non-FTA is presented below, and the non-FTAs are shown on **Figure 3-1**.

#### 3.1 Building 2860 – Former Fire Station

Building 2860 is located in the southern portion of the Fort Pickett cantonment area at the intersection of Armstead Avenue and W 30<sup>th</sup> Street (37°02'13.84"N; 77°56'14.73"W). Building 2860 is used by the Fort Pickett Fire Department to store equipment and materials, and it formerly operated as a fire station, but its dates of use as a fire station are unknown. Fort Pickett Fire Department vehicles, including AFFF-capable fire trucks, have been stored at Building 2860 intermittently as necessary. Currently, two 55-gallon drums containing approximately 100 gallons of AFFF concentrate are stored at Building 2860. The brand and concentration of AFFF are unknown. According to the Fort Pickett Fire Chief, the AFFF was accidentally stored in previously used drums, rendering it impure and unusable. The AFFF remains in the drums at Building 2860 pending disposal. Although Building 2860 is used by the Fort Pickett Fire Department, no training is known to occur at this location, nor is maintenance of the fire department vehicles performed here. Records of AFFF storage at Building 2860 are not kept.

#### 3.2 Former Fort Pickett Fire Stations - Demolished

Fort Pickett has had numerous fire stations since it was established in 1941, most of which have been demolished. Current and former Fort Pickett staff identified the areas and dates of closure and demolition for several former fire station locations.

The former fire station at Building 755 is located on property not licensed to Fort Pickett as a result of property transfer under BRAC. Building 755 is discussed in **Section 5**.

The former fire station at Building 1268 was located at the intersection of Garnett Avenue and W 23<sup>rd</sup> Street (approximately 37°02'34.26"N; 77°57'0.59"W). According to the Fort Pickett Fire Chief, the building's use as a fire station ended prior to the 1970s. Based on the building's use as a fire station ending prior to the 1970s, use and/or storage of AFFF at the building are unlikely. VAARNG real estate records state the building was demolished in 1975.

The former fire station at Building 1818 was located at the intersection of Hospital Road and Armstead Avenue (approximately 37°02'22.14"N; 77°56'40.90"W). According to the Fort Pickett Fire Chief, the building's use as a fire station ended prior to the 1970s. Based on the building's use as a fire station ending prior to the 1970s, use and/or storage of AFFF at the building are unlikely. VAARNG real estate records state that the building was demolished in 1975.

The former fire station at Building 2110 was located at the intersection of Hospital Road and Kemper Avenue (approximately 37°02'49.36"N; 77°56'17.01"W). According to the Fort Pickett Fire Chief, the building's use as a fire station ended prior to the 1970s. Based on the building's use as a fire station ending prior to the 1970s, use and/or storage of AFFF at the building are unlikely. VAARNG real estate records state that the building was demolished in 1975.

The former Fire Station 7 was located adjacent to the former Blackstone Army Airfield Hangar on the north end of the airfield (approximately 37°04'55.86"N; 77°57'13.64"W). According to the

Fort Pickett Fire Chief, the building was a World War II era fire station. The exact date of demolition for the fire station building is unknown. Based on the building's World War II era use as a fire station, no AFFF releases are expected to have occurred at this location.

### 3.3 Building 977 (Petroleum Training Module Storage)

Building 977 is an approximately 0.25 acre storage building area located in the eastern portion of the cantonment area, adjacent to the intersection of Kemper Avenue and E 17<sup>th</sup> Street (37°03'20.65"N; 77°56'36.74"W). The FORSCOM Petroleum Training Module program uses Building 977 for equipment and material storage. Building 977 does not have a fire suppression system; however, approximately 40 to 60 5-gallon buckets of Ansulite 6% AFFF are stored inside (material safety data sheet included in **Appendix A**). Ansul Purple K dry chemical in 5-gallon buckets, dry chemical fire extinguishers, and compressed nitrogen containers are also stored within Building 977. No fire training occurs at Building 977. AFFF stored at Building 977 was transported to the Building 3006 FTA on a trailer equipped to mix and spray AFFF. The Fort Pickett Fire Department has never used Building 977 for storage; only the Petroleum Training Module program uses the building for material storage. Trailers used for fire training at the Petroleum Training Module FTA have also been stored at Building 977. No known releases of AFFF have occurred at Building 977, according to the FORSCOM Program Manager, whose facility knowledge spans 2003 to present. Records of AFFF storage at Building 977 are not kept.

### 3.4 Old Hospital Area/Open Dump Area (Landfill No. 3)

The Old Hospital Area (OHA) is located in the southern portion of the cantonment area, along Garnett Avenue, between Hospital Road and W 30<sup>th</sup> Street (37°01'57.22"N; 77°56'29.41"W). According to a former Forestry Service technician/current Department of Public Works (DPW) equipment operator at Fort Pickett (with facility knowledge spanning 1974 to present), the area was also used as an open dumping burn pit. A 1995 PA memorandum for Fort Pickett depicts Landfill No. 3 in the area described as the open dumping burn pit (included in **Appendix A**). The former Landfill No. 3 was an unlined, approximately 10-acre area, used from approximately 1945 to 1982 for trench and fill operations as well as burning refuse. Wastes typically dumped in the landfill consisted of construction debris and household wastes. The closed landfill has a volume of 132,780 cubic yards (PRC Environmental Management, Inc., 1995). According to interviewees, the burn pit was used between 1980 and 1982, but AFFF was never used in association with the burn pit. Additionally, a VDEQ list of Solid Waste Management Facilities lists a US Army Fort Pickett Sanitary Landfill (SWP256) as having closed in 1982.

During its operational years, the OHA included a complex with numerous buildings and facilities. According to interviewees, a controlled fire was used to demolish 100 OHA buildings circa 1977. No fire retardants were used to control the fire. The Fort Pickett Forestry Service routinely used a bulldozer and fire plow (a tractor with a plow for constructing a fire line by exposing mineral soil). No AFFF is known to have ever been used, trained with, or disposed of at the OHA/Open Dump Area. Records of the dumping, burning, and demolitions do not exist or were unavailable during the site visit.

### 3.5 Former Blackstone Army Airfield Hangar

The Former Blackstone Army Airfield Hangar is located on the north end of the Blackstone Army Airfield (37°03'47.66"N; 77°58'06.10"W). The hangar is no longer operational but has been preserved for historical purposes. The hangar (Building T0025) was built in 1942 and is eligible for listing under the National Historic Preservation Act as a representative example of a type of steel hangar that was developed by the US Engineer Office for US military installations prior to and during World War II (United States General Services Administration, 2012). During its use,

the hangar was served by a water fire suppression system. Components of the water suppression system remain visible today. Floor drains captured runoff, but the fate of runoff is unknown. According to current and former Fort Pickett staff, no fire training ever occurred at the former hangar, nor did any other activities resulting in the release of PFAS via AFFF.

### 3.6 Fort Pickett Landfills

A 1995 EPA Memorandum concerning Fort Pickett identified five landfills at the installation (PRC Environmental Management, Inc., 1995). The approximate locations of Landfills No. 1 through No. 3 are shown on **Figure 3-1**, but the precise locations of Landfills No. 4 and No. 5 are unknown.

Landfill No. 1, also known as the Trimble Road Landfill, is a closed trench-and-fill landfill comprising 20 acres that accepted construction debris and household waste. Waste herbicides, including 2,4-dichlorodiphenoxyacetic acid and 2,4,5-trichlorophenoxyacetic acid, and herbicide containers have also been disposed of in Landfill No. 1. The landfill has been in operation since 1982 and contained a volume of 199,160 cubic yards at the time of 1995 memorandum (PRC Environmental Management, Inc., 1995). The landfill is permitted through VDEQ as Solid Waste Permit SWP-333; however, DEQ records are limited only to the existence of the landfill. The landfill is monitored for contaminants including methylene chloride, tetrachloroethylene, vinyl chloride, and trichloroethylene, among others, but not PFAS (United States General Services Administration, 2012).

Landfill No. 2, also known as the Dearing Road Landfill, is a trench-and-fill landfill comprising 25 acres located adjacent to the southeastern portion of the Fort Pickett cantonment area. From the mid-1960s until 1982, the landfill accepted construction debris, household waste, and waste herbicides. Sludge from the town of Blackstone WWTP clarifiers was disposed of by land spreading at the landfill. The volume of Landfill No. 2 is 331,940 cubic yards (PRC Environmental Management, Inc., 1995). Landfill No. 2 was permitted in 1978, and the permit was terminated in 1982. The official depth and contents of the landfill are unknown, and because the landfill permit was terminated prior to 1988, it does not receive any regulatory oversight by DEQ (United States General Services Administration, 2012).

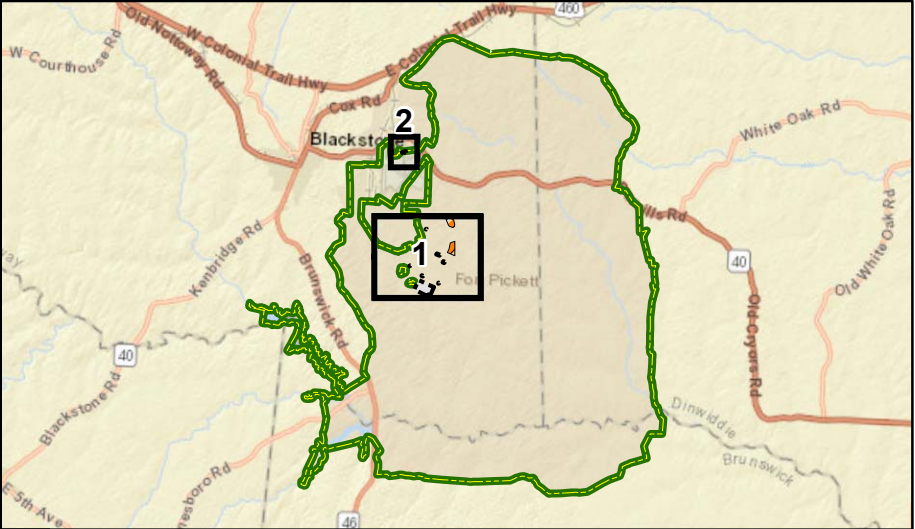
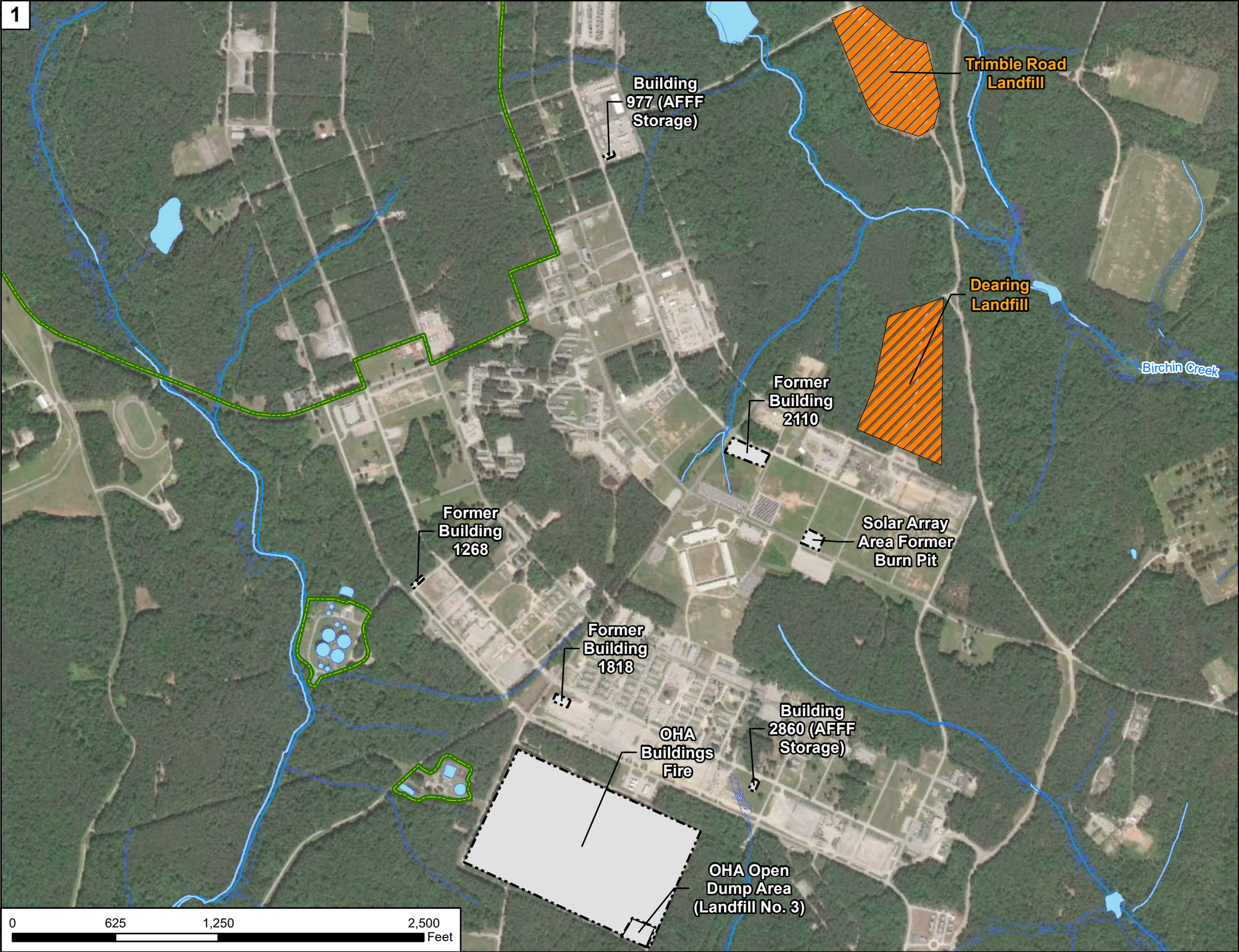
Landfill No. 3, previously discussed in conjunction with the OHA/Open Dump Area, comprised approximately 10 acres in the southwestern portion of the Fort Pickett cantonment area. This landfill was used between 1945 and 1982 for trench-and-fill operations, including refuse burning. Typical wastes included construction debris and household wastes. The volume of Landfill No. 3 is 132,780 cubic yards (PRC Environmental Management, Inc., 1995).

Landfill No. 4 and No. 5 are located adjacent to each other in the southwestern portion of the Fort Pickett cantonment area, and each comprise approximately 5 acres. The landfills were used approximately from 1943 to 1945. The types of waste and disposal methods of Landfill No. 4 and No. 5 are unknown; however, historic disposal operations included selling putrescible garbage, burning flammable refuse, dumping ash and cinders in landfills, and periodically depositing used motor oil and kitchen grease in landfills. Landfill No. 4 has a volume of 66,388 cubic yards. The volume of Landfill No. 5 is unknown (PRC Environmental Management, Inc., 1995). Given the age of the two landfills, AFFF would not have been in use.

Landfills are not usually a primary potential release area of PFAS, but materials disposed of in landfills may create a secondary source of contamination. Such materials, to name a few, may include sludge from a WWTP that processes PFAS-laden water, used AFFF storage containers, or products associated with waterproofing uniforms or boots. It is uncertain whether PFAS-containing materials have been disposed of in any of the Fort Pickett landfills.

### 3.7 Solar Array Area Former Burn Pit

According to a former Forestry Service technician/current DPW equipment operator at Fort Pickett, a burn pit once existed in the area of the current solar array field at the installation. The approximate location of the former burn pit is 37°02'40.24"N; 77°56'07.91"W. The pit was used for burning construction debris in the mid-1980s. Materials disposed of in burn pits may create a secondary source of PFAS contamination; however, no AFFF is known to have been used in association with the pit. No known records for the burn pit were available during PA efforts.

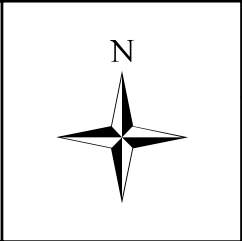


CLIENT ARNG				
PROJECT Preliminary Assessment for PFAS at Fort Pickett, VA				
REVISED	9/10/2019	GIS BY	MS	9/10/2019
SCALE	1:8,400	CHK BY	JW	9/10/2019
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	9/10/2019


**Legend**

- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland

River/Stream



**Non-Fire Training Areas**



12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 3-1**

## 4. Emergency Response Areas

Several emergency response areas were identified at Fort Pickett. A description of the emergency response areas are presented below and shown on **Figure 4-1**. Interview records are included in **Appendix B**.

### 4.1 Northeast Range Rubber Mat Fire Area

At a range in the northeast portion of Fort Pickett, several current and former Fort Pickett staff, including a former Forestry Service technician, former range officer, and the current fire chief stated during interviews that rubber mats used at the range would sometimes catch fire during training. It is unknown how the fires were put out in every instance.

According to current and former Fort Pickett staff, a range fire in 2012 required response from the Fort Pickett Fire Department (see **Figure 4-1**). An unknown volume and concentration of AFFF was sprayed to extinguish the flames; the expended foam was left in place. The exact location of the fire is unknown. Surface water from the area generally flows downrange towards wetlands and Tommeheton Creek, which is located 1.2 miles south of the northernmost firing points. Tommeheton Creek ultimately discharges to the Nottoway River. There are no known wells in the immediate area, but a water spigot exists on the maintenance building restroom across Virginia State Route 40, on the northern end of the range.

### 4.2 2009 Navy Helicopter Crash

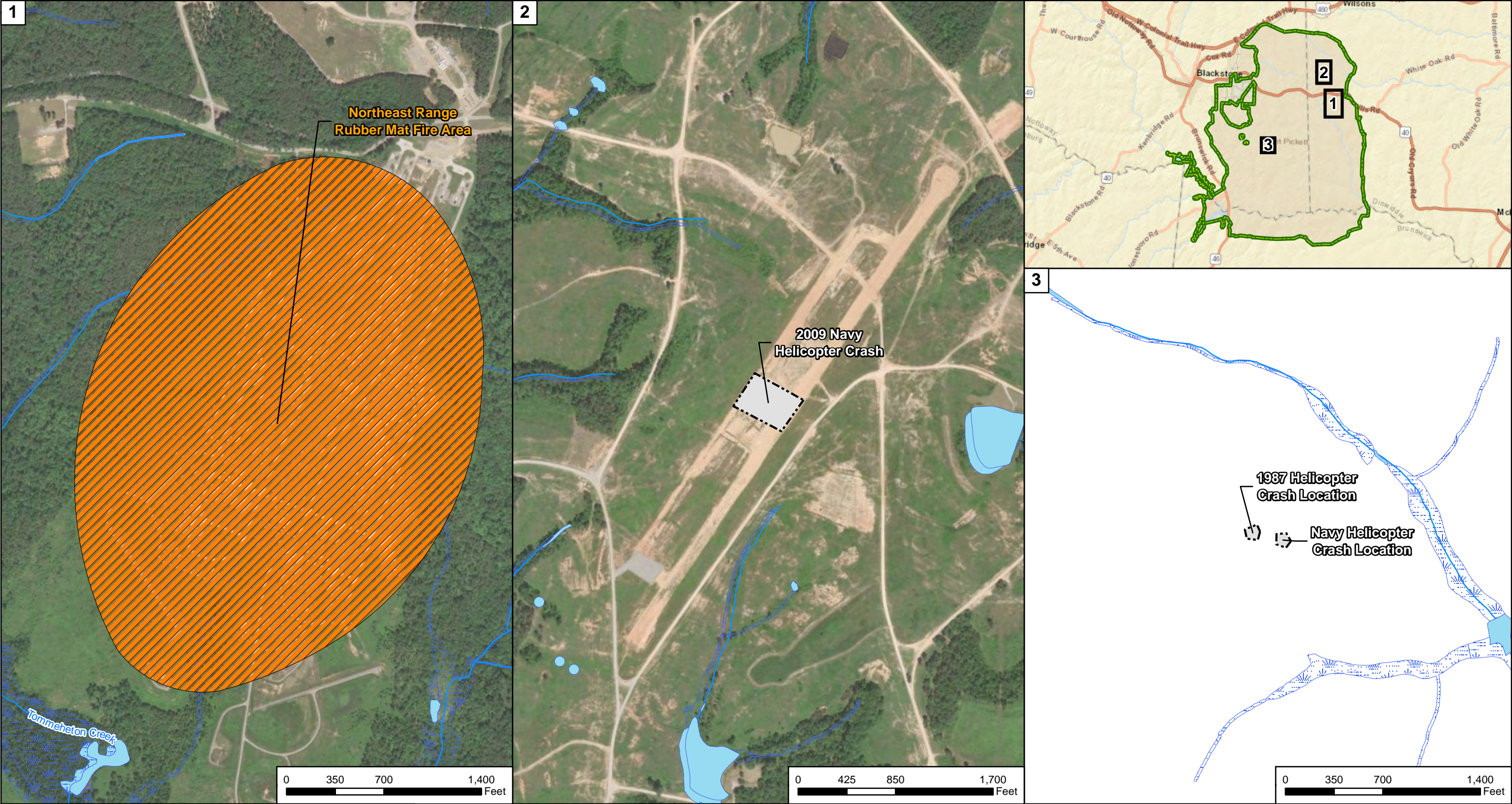
A Navy helicopter crashed at a landing strip used by ARNG and non-ARNG units during a training exercise in 2009. The landing strip is located in the northeastern portion of the facility; the approximate coordinates of the crash are 37°05'21.25"N; 77°52'55.50"W (**Figure 4-1**). According to the Fort Pickett Fire Chief, emergency response to the crash did not include AFFF. Records of the crash do not exist or were not available during PA efforts. The site is not considered a potential PFAS release area.








### 4.3 1987 Helicopter Crash

In February 1987, a helicopter crashed in the southeastern portion of the facility cantonment area on Armstead Avenue, between its intersections with W 33<sup>rd</sup> Street and Trimble Road. The approximate coordinates of the crash are 37°02'08.91"N; 77°55'48.54"W. According to the Fort Pickett Fire Chief, emergency response to the crash did not include AFFF. Records of the crash do not exist or were not available during PA efforts. The site is not considered a potential PFAS release area.

### 4.4 Navy Helicopter Crash (date unknown)

At some time in the late 1990s, a Navy helicopter crashed in the southeastern portion of the facility cantonment; interviewees described the area on Armstead Avenue between its intersections with W 33<sup>rd</sup> Street and Trimble Road. The exact date of the crash is unknown; the approximate crash coordinates are 37°02'08.49"N; 77°55'45.70"W. According to the Fort Pickett Fire Chief, emergency response to the crash did not include AFFF. Records of the crash do not exist or were not available during PA efforts. The site is not considered a potential PFAS release area.



CLIENT ARNG					<b>Legend</b> <div> Potential PFAS Release</div> <div> Facility Boundary</div> <div> Water Body</div> <div> Wetland</div> <div> River/Stream</div>		Emergency Response Areas		
PROJECT Preliminary Assessment for PFAS at Fort Pickett, VA							 12420 Milestone Center Drive Germantown, MD 20876	Figure 4-1	
REVISED	9/10/2019	GIS BY	MS	9/10/2019					
SCALE	1:10,200	CHK BY	JW	9/10/2019					
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)									
		PM	RG	9/10/2019					

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## 5. Adjacent Sources

Potential off-facility sources of PFAS adjacent to Fort Pickett, including areas considered base realignment and closure (BRAC) property, were identified during the PA. No additional potential source areas were identified by the Environmental Data Resources, Inc.<sup>TM</sup> (EDR<sup>TM</sup>) report for the 1-mile radius surrounding the facility. A description of each adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

### 5.1 Blackstone Army Airfield Burn Pits (EBS-103)

The former Blackstone Army Airfield Burn Pits (EBS-103) are located approximately 1000 ft northeast of the former airport hangar at the Blackstone Army Airfield (37°05'02.79"N; 77°57'06.87"W). The former burn pits are part of BRAC property at Fort Pickett managed by the Fort Pickett Local Reuse Authority (LRA). The 5-acre former FTA is bounded to the north and east by Virginia State Route 40. With the exception of the former FTA, EBS-103 is a largely undisturbed, old growth, southern mixed forest. The former FTA was used until 1989 for fire-fighting training. Liquids such as used motor oil, diesel fuel, and jet fuels were poured onto standing water in the pit and ignited. Training staff would extinguish the fire with water (Weston Solutions, Inc., 2002).

According to the Fort Pickett Fire Chief, unknown quantities of AFFF were also sprayed during training a few times per year. It is unknown what year training began at the former FTA; it closed in 1989. The former FTA consisted of an unlined, clay-bottomed pit (approximately 2,500 square ft), which was surrounded by a shallow, clay berm. Surface water at the FTA is limited to a small, intermittent creek in the northeast corner of the parcel. A channeled constructed ditch connects the FTA to the creek; water at the burn pits flows in the ditch only after storm events (Weston Solutions, Inc., 2002).

A 1999 Remedial Investigation/Feasibility Study (RI/FS) of the former FTA included analysis of area soil and groundwater for diesel-range organics (DRO), gasoline-range organics (GRO), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOC), pesticides, polychlorinated biphenyls (PCBs), and inorganics. Site media was not analyzed for PFAS. A 2000 interim removal action included the removal of approximately 1,033 tons of soil from in and around the former burn pits and backfilling of the pits with clean soil. A 2002 Decision Document established that no further action was necessary at the former FTA (Weston Solutions, Inc., 2002) (**Appendix A**).

### 5.2 Building 493 – Former Fire Station (EBS-79)

Building 493 currently occupies the location of the former fire station. The area is located within the Fort Pickett cantonment area approximately 0.5 miles southwest of the Blackstone Army Airfield (37°03'48.99"N; 77°58'04.83"W). The parcel was relinquished by VAARNG as part of BRAC property acquisitions at Fort Pickett. According to interviewees, the former fire station was originally designated Building 460. Building 493 served as the Fort Pickett Fire Station prior to the current fire station located at Building 1485, until it closed in 1987. It is unclear if Building 460 was renamed as Building 493, or whether Building 493 was built on the location where Building 460 formerly existed. The area was also used as a storage area for transformers, PCB oils, and flammable materials. Although no AFFF releases are known to have occurred at the former fire station, based on interviewee recollection and known dates of use, it is likely that AFFF was stored at the building and possibly used in training similarly to the current fire station. The current use of Building 493 is unknown.

The Building 493 area, also referred to as EBS-79, has been investigated for constituents of potential concern including organic and inorganic compounds, PCBs, and polycyclic aromatic hydrocarbons (PAHs). Site media was not analyzed for PFAS. In November 2001, 940 tons of soil were excavated and removed from six areas of concern at the site. A 2004 Phase II RI/FS report (EA Engineering, Science, and Technology, 2004) addendum recommended no further action to address environmental concerns at EBS-79; however, it recommended that future construction workers wear appropriate personal protection equipment such as waterproof boots and gloves if they come in contact with groundwater. Unacceptable risk still exists for construction workers that may come in contact with groundwater. Groundwater across EBS-79 is approximately 12 ft to 16 ft bgs. The 2004 Phase II RI/FS report addendum is included in **Appendix A**.

### 5.3 Former Building 755 – Former Fire Station

The former fire station at Building 755 was located at the intersection of E Parade Avenue and E 16<sup>th</sup> Street (approximately 37°03'19.71"N; 77°56'49.19"W) within the cantonment area. Due to the transfer of property under BRAC, the former building area now falls outside the Fort Pickett facility boundary. According to the Fort Pickett Fire Chief, the building was closed and demolished prior to 1986. Fire training practices and material storage and handling practices at the former Building 755 are unknown. Records documenting use of the building were unavailable during the PA.

### 5.4 Former Recycle Center (EBS-13)

The Former Recycle Center (EBS-13) site is located just south of the Blackstone Airport, near the intersection of W 10<sup>th</sup> St and Compass Trail, approximately 0.3 miles east of the former fire station (Building 493). The EBS-13 parcel is part of BRAC property at Fort Pickett and is not considered to be ARNG property. BRAC property is managed by the Fort Pickett LRA. The Former Recycle Center was constructed in the late 1940s. Between the 1940s and the late 1960s, the site was used for storage of used vehicles, metal containers, crates, and debris piles. In the late 1960s and early 1970s, the Former Recycle Center area was used as a burial site for metal scrap and demolition debris and possibly received paints, solvents, and petroleum products (Tetra Tech, Inc., 2005b). In 1999, an interim removal action performed at EBS-13 included removal of debris piles and steel drums, excavation of black, ash-laden soil, and confirmation sampling of site soil and groundwater. Site media were not analyzed for PFAS.

According to a former Fort Pickett Forestry Service technician, a flare drop incidentally caused a fire on the EBS-13 parcel circa 1977. The Forestry Service responded to extinguish the wildland fire, but did not use AFFF. There is no history of use or storage of AFFF at EBS-13; however, it is unknown whether any materials buried at the site contained PFAS.

### 5.5 Pickett Park Former Metals Plating Facility

An extension of Pickett Park, a commercial park located within the Fort Pickett footprint, is located approximately 0.3 miles southeast of the south end of the Fort Pickett Airfield (37°04'04.86"N; 77°57'03.56"W). The area was transferred under BRAC to the Southside Virginia Community College Occupational/Technical Center. The Occupational/Technical Center offers training in truck driving, heavy equipment operation, and diesel mechanics on property leased from Nottoway County. According to a Fort Pickett former range officer, a metal plating facility formerly existed in the Occupational/Technical Center location. The plating facility operated between 2000 and 2012. No details regarding the former metals plating facility at Pickett Park are known. Chrome plating facilities are common locations for environmental PFAS releases.

## 5.6 Former Fuel Station No. 1 (BCT-22)

BCT-22, formerly Fuel Station No. 1 at Fort Pickett, encompasses about 1.6 acres and is located adjacent to Building 493 (Former Fire Station), approximately 0.5 miles southwest of the Blackstone Army Airfield (37°03'47.66"N; 77°58'06.10"W). The parcel where BCT-22 is located was relinquished by VAARNG as part of BRAC property acquisitions at Fort Pickett. Several aboveground storage tanks are currently staged within the area. The Former Fuel Station No. 1 was the main fueling station for Fort Pickett in the 1940s, connecting to an underground storage tank (UST) system consisting of an unknown number of fuel tanks, which serviced eight other fueling stations around Fort Pickett. The USTs were replaced in 1983, and their replacements closed in 1995. The pipeline was abandoned in the 1940s, but residual fuel was left in the pipeline until it was drained and abandoned in place in 1999. A 2005 Remedial Assessment of BCT-22 (**Appendix A**) analyzed site media for volatile organic compounds, semi-volatile organic compounds, PAHs, and lead (MicroPact, 2005). Site media was not analyzed for PFAS.

According to interviewees, no fire training activities or emergency response requiring AFFF ever took place at BCT-22. No AFFF fire suppression systems or mobile fire extinguishers exist at BCT-22 currently. It is unknown if AFFF were ever historically staged in the area. Currently, no AFFF is stored in mobile fire extinguisher units, such as Tri-Max™ fire extinguishers, anywhere at Fort Pickett. It is possible that AFFF was stored at the adjacent Building 493 and used for training similar to the current fire station.

## 5.7 Wastewater Treatment Plant

The town of Blackstone WWTP is located in the southwestern portion of the Fort Pickett cantonment area on Garnett Avenue (37°04'55.27"N; 77°57'17.60"W); however, the WWTP is considered a potential adjacent PFAS source because it is owned and operated by the town of Blackstone. The treatment plant is located on an unnamed tributary of Hurricane Branch, which flows into Nottoway River several miles downstream to the south. This facility is the subject of VPDES Permit number VA0025194, which allows Blackstone to discharge treated wastewater into an unnamed tributary of Hurricane Branch in strict compliance with the terms, limitations, and requirements delineated in the permit (**Appendix A**). The WWTP provides primary, secondary and tertiary treatment that includes grit removal, trickling filters, clarifiers, chlorination, and dechlorination. With the exception of two buildings in the cantonment area that use septic tanks and drain fields, the WWTP services the entire cantonment area (United States General Services Administration, 2012). Sludge generated at the WWTP is currently disposed of at the Nottoway County Landfill. Sludge from the WWTP was formerly disposed of at Landfill No. 2, also known as Dearing Landfill, which is located on Fort Pickett property.

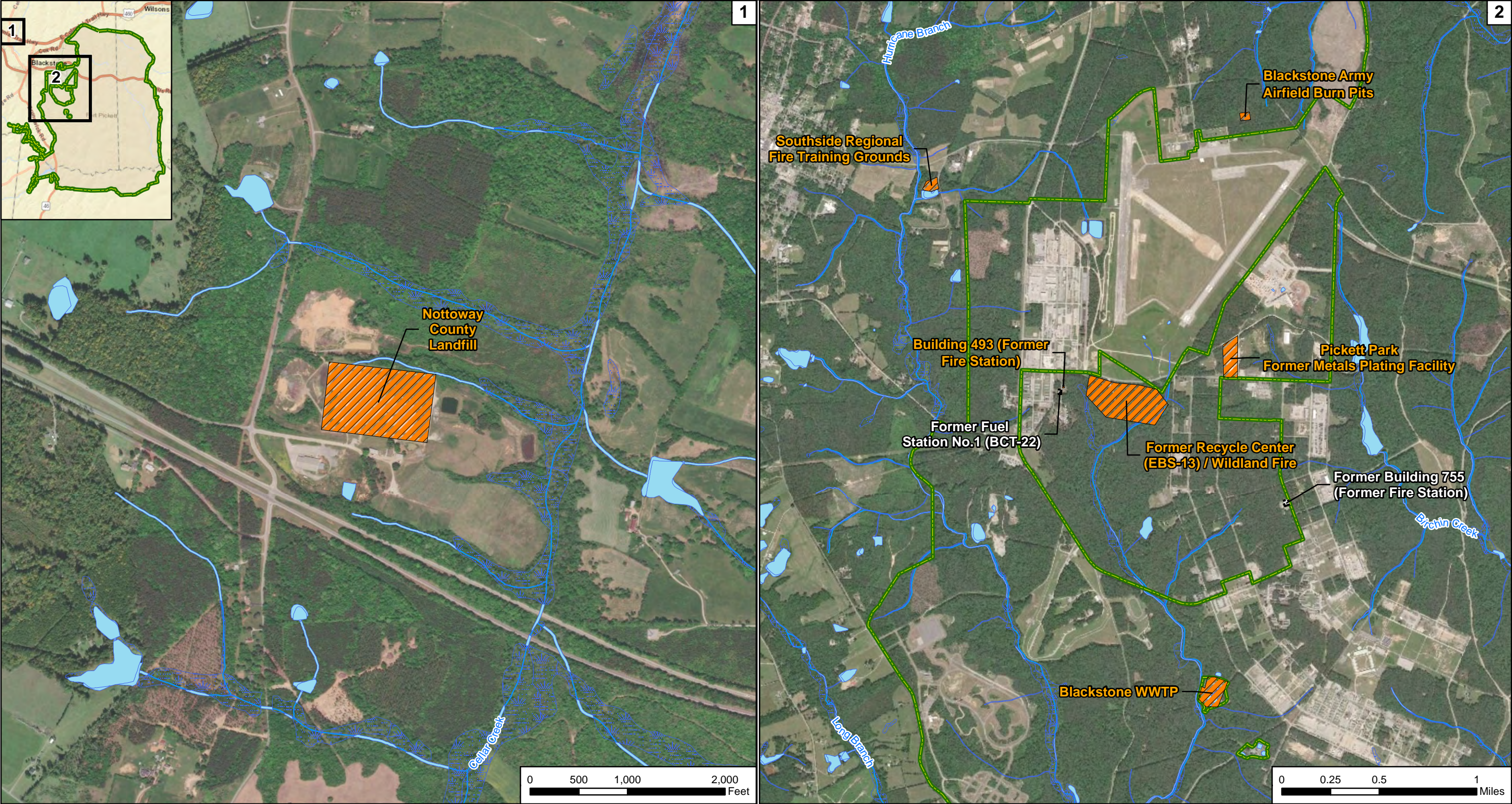
Because releases of AFFF at Fort Pickett have resulted in AFFF entering the sanitary sewer system, the WWTP is considered a potential PFAS release area to the environment (United States General Services Administration, 2012).

## 5.8 Southside Regional Fire Training Grounds

The Southside Regional Fire Training Center Burn Building is located approximately 0.5 miles west of the Fort Pickett northwestern guard post on Military Road (37°04'41.78"N; 77°58'51.38"W). The building is designed to accommodate National Fire Protection Association training for live fire evolutions, search and rescue, laddering evolutions, vertical and horizontal ventilation, rappelling, breaching, confined space, horizontal trench ventilation, and mask confidence scenarios. Training at the Burn Building is managed by the Southside Regional Fire Academy. It is unknown whether AFFF is ever used in training at the Burn Building or elsewhere by the Southside Regional Fire Academy.

## 5.9 Nottoway County Landfill

The Nottoway County Landfill is located approximately 4 miles northwest of the Blackstone Army Airfield (37°06'49.32"N; 77°1'06.93"W). Solid waste generated in Nottoway County is collected and taken to the landfill located in Blackstone. The landfill facility does not accept out-of-county waste, nor does it accept any type of hazardous waste. The landfill is expected to have capacity for waste until the year 2027 (United States General Services Administration, 2012). Because sludge generated at the town of Blackstone WWTP is disposed of at the Nottoway County Landfill, it is possible that PFAS-laden materials have been disposed of at the landfill.



CLIENT		ARNG			
PROJECT		Preliminary Assessment for PFAS at Fort Pickett, VA			
REVISED	10/29/2019	GIS BY	MS	10/29/2019	
SCALE	1:12,000	CHK BY	JW	10/29/2019	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	10/29/2019	

N

Adjacent Sources

**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 5-1**

## 6. Preliminary Conceptual Site Model

Based on the PA findings, five areas of interest (AOIs) were identified at Fort Pickett: Building 1485 (Current Fire Station), Northeast Range Rubber Mat Fire Area, Building 3006 Petroleum Training Module Area, the Former Live Burn Pit, and Airfield Runway 119. AOIs were only identified at PFAS release locations on land licensed to the VAARNG. PFAS release locations outside lands licensed to the VAARNG are not considered AOIs. The Blackstone Army Airfield Burn Pits and Building 493 (Former Fire Station) are not considered AOIs because they are located on BRAC property outside the VAARNG installation. The AOI locations are shown on **Figure 6-1**. The following sections describe the CSM components and the specific preliminary CSMs developed for each AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways is sparse and continues to be the subject of PFAS toxicological study (National Ground Water Association, 2018). Receptors at Fort Pickett include site workers, construction workers, trespassers, off-facility recreational users, and off-facility residents. The preliminary CSM for Fort Pickett indicates which specific receptors could potentially be exposed to PFAS. The preliminary CSM for all AOIs at Fort Pickett is shown on **Figure 6-2**.

### 6.1 AOI 1 Building 1485 (Current Fire Station)

AOI 1 comprises Building 1485 (Current Fire Station), its parking area, and two support buildings west of the fire station. The AOI is used for fire equipment maintenance and storage, including AFFF and AFFF-capable vehicles, as well as fire training with AFFF. Fire training included the discharge of AFFF towards sanitary sewers near the northwest corner of the building or towards the woods to the north.

AFFF releases at AOI 1 occurred on both paved areas and grassy surfaces. Some AFFF releases occurred directly onto surface soil, but may also have infiltrated subsurface soil via cracks in pavement or joints between areas that are paved with different materials. If AFFF released at the AOI infiltrated the subsurface, then ground-disturbing activities in the grassy and wooded areas as well as beneath the pavement may result in potential PFAS exposure to construction workers. Accidental ingestion of groundwater may also occur during construction activities due to the potential for shallow depth to groundwater across Fort Pickett.

PFAS are water soluble and can migrate readily from soil to groundwater via leaching; however, drinking water at Fort Pickett is resourced from the Nottoway Reservoir, which is located cross-gradient approximately 4 miles southwest of Building 1485. No drinking water wells exist at Fort Pickett. Several wells exist within 4 miles to the west and northwest of the AOI, but these wells are upgradient and cross-gradient of Building 1485. It is possible unregistered, private, domestic wells exist south of the AOI.

Surface water runoff at AOI 1 is captured by sanitary sewers that channel flow west to several other sanitary sewer pipes and is ultimately diverted to the town of Blackstone WWTP. There are no surface water bodies in the vicinity of the AOI. The WWTP discharges its wastewater to an unnamed tributary of Hurricane Branch, which flows into Nottoway River several miles downstream. As a result of AFFF releases at Building 1485, it is possible PFAS have been transported to the WWTP, the unnamed tributary of Hurricane Branch, and the Nottoway River. It is also possible that PFAS has been transported in sludge from the WWTP to Landfill No. 2.

Potential PFAS exposure pathways resulting from releases at AOI 1 are described in **Table 6-1**:

**Table 6-1 Exposure Pathways at AOI 1**

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers and trespassers via ingestion or inhalation of dust
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

## 6.2 AOI 2 Northeast Range Rubber Mat Fire Area

AOI 2 is located within the original Northeast Range footprint. AFFF was released by the Fort Pickett Fire Department in response to a range fire in 2012 at the range firing points. AFFF was left in place following the range fire. The range has multiple firing positions, and the exact firing position where the fire occurred is unknown.

AFFF releases to any firing point within the AOI could have occurred directly onto surface soil or migrated a short distance to surface soil. PFAS releases to surface soil at the AOI may have infiltrated subsurface soil. Ground-disturbing activities on the range may result in exposure of PFAS in subsurface soil and groundwater to construction workers.

A water spigot exists on the maintenance building restroom across Virginia State Route 40 to the north, but is not used for drinking water. As such, groundwater is considered an incomplete pathway for PFAS contamination exposure to site workers via ingestion. No domestic-use wells are listed in the Virginia State database within a 4-mile radius of the range. If AFFF releases at the AOI infiltrated the subsurface, and unregistered, private wells exist within the vicinity of the AOI, then PFAS in groundwater may reach off-facility receptors.

Surface water runoff at AOI 2 generally flows downrange towards wetlands and Tommeheton Creek, located approximately 1 mile downrange from the northernmost firing positions. Tommeheton Creek ultimately discharges to the Nottoway River, located approximately 6 miles south of the the range northern firing positions.

Potential PFAS exposure pathways resulting from releases at AOI 2 are described in **Table 6-2**:

**Table 6-2 Exposure Pathways at AOI 2**

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers and trespassers via ingestion or inhalation of dust
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

### 6.3 AOI 3 Building 3006 (FORSCOM Petroleum Training Module Area)

AOI 3 comprises the Building 3006 FORSCOM Petroleum Training Module Area. Fire training at AOI 3 has historically included AFFF use. During training, AFFF was sprayed towards fuel pans west of Building 3006.

During training, AFFF runoff escaping the paved training area would flow downslope into the wooded areas east of the FTA. AFFF released to surface soils and/or paved surfaces at AOI 3 may have infiltrated subsurface soil, where it could create an exposure pathway in subsurface soil and groundwater to construction workers during ground-disturbing activities.

The Nottoway Reservoir is located cross-gradient approximately 3.8 miles to the southwest, and as stated previously, no drinking water wells exist at AOI 3. No domestic-use wells are listed in the Virginia State database within a 4-mile radius of AOI 3. If AFFF releases at the AOI infiltrated the subsurface, and unregistered private wells exist within the vicinity of the AOI, then PFAS in groundwater may reach off-facility receptors.

Surface water runoff at AOI 3 generally flows downslope towards a stream located less than 0.1 miles northeast of the area. The stream connects with Birchin Creek, which discharges to the Nottoway River. Sanitary sewer manhole 68 also exists within the vicinity of the FTA and could potentially divert surface water runoff towards the town of Blackstone WWTP. As a result, it is possible that PFAS has migrated to Birchin Creek, the unnamed tributary of Hurricane Branch that the WWTP discharges to, and the Nottoway River. It is also possible that PFAS has been transported in sludge from the WWTP to Landfill No. 2.

Potential PFAS exposure pathways resulting from releases at AOI 3 are described in **Table 6-3**:

**Table 6-3 Exposure Pathways at AOI 3**

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers and trespassers via ingestion or inhalation of dust
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

### 6.4 AOI 4 Former Live Fire Burn Pit

AOI 4 comprises the Former Live Burn Pit. The former live fire burn pit was used for a fire training exercise in 1998 involving the discharge of approximately 130 gallons of AFFF. The AFFF was left in place following the exercise.

The one time AFFF release at AOI 4 occurred directly onto surface soil. AFFF released may have infiltrated subsurface soil, where it may create an exposure pathway to PFAS in groundwater and subsurface soil during potential ground-disturbing activities.

The Nottoway Reservoir is located cross-gradient of the AOI approximately 2.7 miles to the southwest. No domestic-use wells are listed in the Virginia State database within a 4-mile radius of AOI 4. If AFFF releases at the AOI infiltrated the subsurface and unregistered private wells exist within the vicinity of the AOI, then PFAS in groundwater may reach off-facility receptors.

Surface water runoff at AOI 4 generally flows southwest, towards an unnamed tributary of Hurricane Branch located approximately 0.3 miles away. The tributary discharges to the Nottoway River, located approximately 2.7 miles south of the Former Live Burn Pit. As a result, it is possible PFAS migrated to the unnamed tributary of Hurricane Branch, Hurricane Branch, and the Nottoway River.

Potential PFAS exposure pathways resulting from releases at AOI 4 are described in **Table 6-4**:

**Table 6-4 Exposure Pathways at AOI 4**

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers and trespassers via ingestion or inhalation of dust
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

## 6.5 AOI 5 Airfield Runway 1/19

AOI 5 encompasses the entire Airfield Runway 1/19, including the northern portion where 1991 Army fire training was described during interviews. The location of the accidental release during 1999 police high speed training is unknown. Runway 1/19 is paved but surrounded by grass on all sides. The paved runway currently has many cracks in the pavement, but the quality of the runway at the time of the 1991 and 1999 releases is unknown.

AFFF releases at AOI 5 may have occurred on paved surfaces but could have migrated a short distance onto the surrounding surface soil, and may have infiltrated subsurface soil.

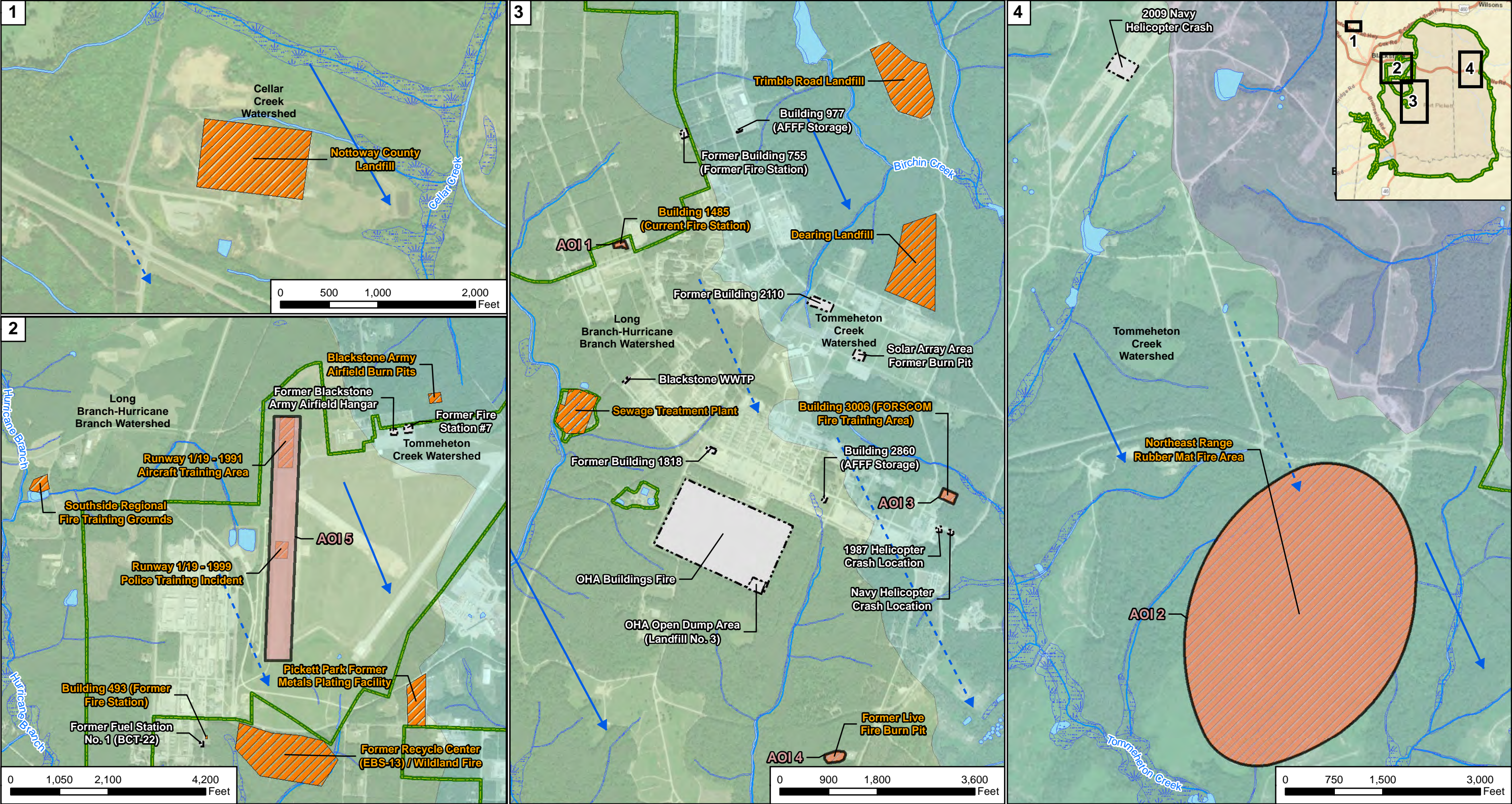
Several off-facility wells exist within 4 miles to the west and northwest of the AOI, but the wells are upgradient and cross-gradient of the airfield. Due to the lack of downgradient wells and the distance of the AOI to the Nottoway Reservoir (5.8 miles to the southwest), groundwater is considered an incomplete pathway for PFAS exposure to site workers. If unregistered private wells exist within the vicinity of the AOI, then PFAS in groundwater may reach off-facility receptors..

Surface water runoff at AOI 5 generally flows east and west off the runway surface. A pond associated with the installation wash rack is located adjacent to the west of AOI 5, connects to an unnamed tributary of Hurricane Branch, and discharges to the Nottoway River. As a result, it is possible PFAS migrated to the unnamed tributary of Hurricane Branch, Hurricane Branch, and the Nottoway River.

Potential PFAS exposure pathways resulting from releases at AOI 5 are described in **Table 6-5**:

**Table 6-5 Exposure Pathways at AOI 5**

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers and trespassers via ingestion or inhalation of dust
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion



CLIENT					ARNG					
PROJECT					Preliminary Assessment for PFAS at Fort Pickett, VA					
REVISED		10/29/2019		GIS BY		MS		10/29/2019		
SCALE		1:25,200		CHK BY		JW		10/29/2019		
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)					PM		RG		10/29/2019	

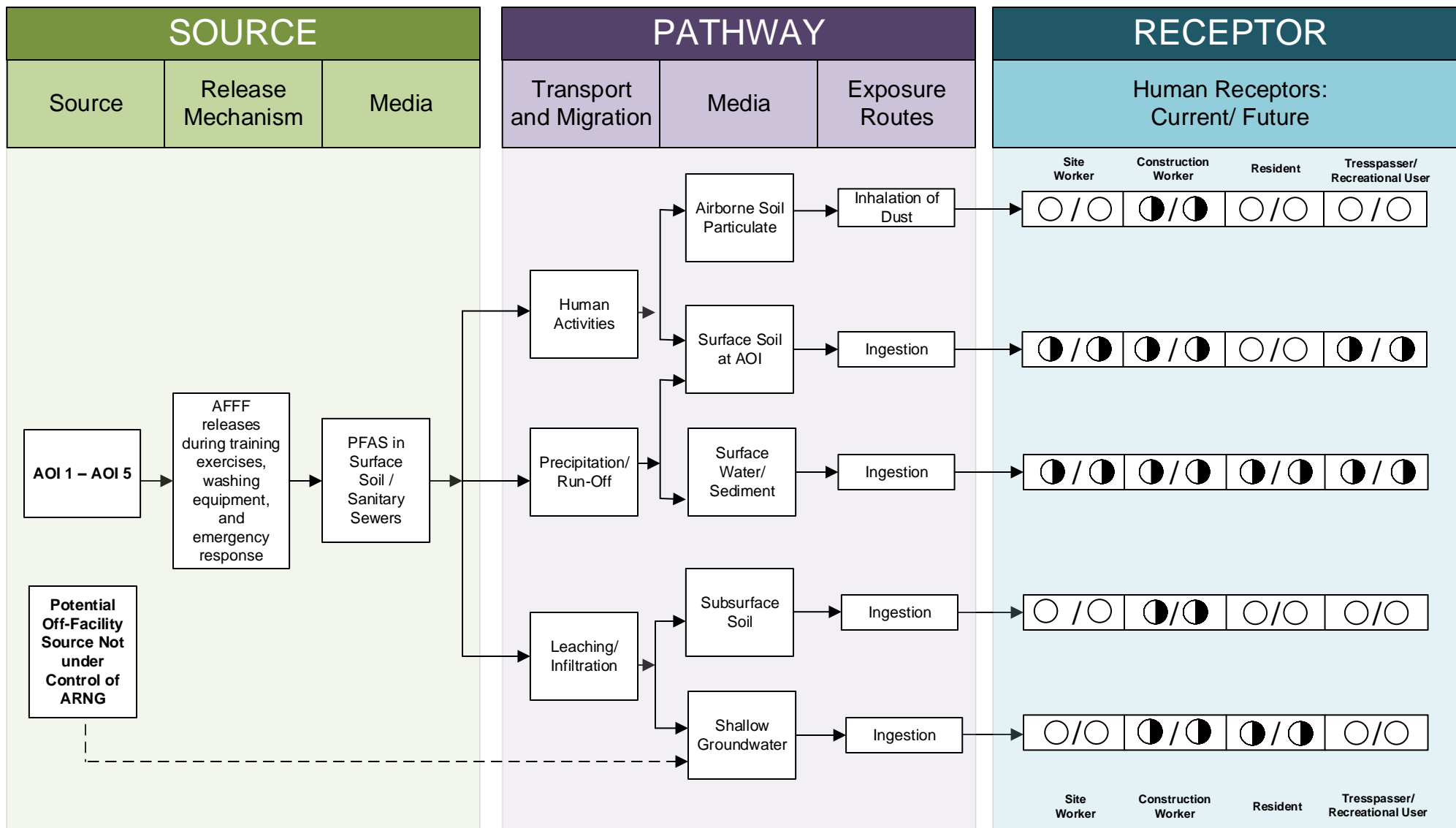
Area of Interest	Water Body
Potential PFAS Release	Wetland
No Suspected Release	River/Stream
Facility Boundary	Surface Water Flow Direction
	Inferred Groundwater Flow Direction

N

Areas of Interest	
	12420 Milestone Center Drive Germantown, MD 20876

Figure 6-1

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### LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- - -  Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

### Notes:

1. The resident and recreational user receptors refer to an off-site resident and recreational user.
2. Dermal contact exposure pathway is incomplete for PFAS.

**Figure 6-2**  
Preliminary Conceptual Site Model  
Fort Pickett, VA

## 7. Conclusions

This report presents a summary of available information gathered during PA efforts on the use and storage of AFFF and other PFAS-related activities at the VAARNG Fort Pickett. The PA findings are based on personnel interviews, environmental investigations and reports, historical documents, and the visual site inspection (**Appendix A** and **Appendix B**).

### 7.1 Findings

Five AOIs related to potential PFAS release were identified at Fort Pickett based on PA data (**Figure 7-1**) and are summarized in **Table 7-1** below. AOIs were only identified at PFAS release locations on land licensed to the VAARNG. PFAS release locations outside lands licensed to the VAARNG are not considered AOIs.

**Table 7-1: AOIs at Fort Pickett**

Areas of Interest	Name	Used by	Potential Release Dates
AOI 1	Building 1485 (Current Fire Station)	VAARNG	1996-2015
AOI 2	Northeast Range Rubber Mat Fire Area	VAARNG	2012
AOI 3	Building 3006 (FORSCOM Petroleum Training Module Area)	VAARNG	2003-2017
AOI 4	Former Live Fire Burn Pit	VAARNG	1998
AOI 5	Airfield Runway 119	VAARNG	1991 and 1999

Based on the known or possible PFAS releases at the AOIs, there is potential for exposure to PFAS contamination in surface soil to site workers, construction workers, and trespassers via ingestion and/or inhalation of dust; subsurface soil to construction workers via ingestion and/or inhalation; surface water to site workers, construction workers, trespassers and off-facility recreational users via ingestion; groundwater to construction workers and off-facility residents via ingestion. Potential off-facility PFAS release areas exist adjacent to Fort Pickett, including BRAC properties formerly owned by operated by the VAARNG. Because these areas include property upgradient of the facility, it is unknown whether the off-facility sources affect Fort Pickett. The preliminary CSM for Fort Pickett is shown on **Figure 6-2**.

The following areas discussed in **Section 2** through **Section 5** were determined to have no suspected release:

**Table 7-2: No Suspected Release Areas**

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Solar Array Area Former Burn Pit	VAARNG	According to interviewees, no AFFF was used in association with the burn pit.
Old Hospital Area / Open Dump Area (Landfill No. 3)	VAARNG	There is no evidence suggesting AFFF was used or stored at the OHA or its associated landfill.

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Former Blackstone Army Airfield Hangar	VAARNG	There is no evidence suggesting AFFF was used or stored at the OHA or its associated landfill. The fire suppression system components observed during the site visit supported water only.
Building 977	VAARNG	According to interviewees, no AFFF has ever been released at this location despite its use for storage.
Former Fuel Station No. 1 (BCT-22)	VAARNG	There is no evidence suggesting AFFF was used or stored at this location.
Building 2860 (Former Fire Station)	VAARNG	There is no evidence suggesting AFFF has ever been released at this location despite its use for storage.
Former Building 755 (Former Fire Station)	VAARNG	There is no evidence suggesting AFFF was released at this location.
Former Building 1268 (Former Fire Station)	VAARNG	According to interviewees, use of this fire station ended prior to the 1970s, prior to the era of widespread use of AFFF.
Former Building 1818 (Former Fire Station)	VAARNG	According to interviewees, use of this fire station ended prior to the 1970s, prior to the era of widespread use of AFFF.
Former Building 2110 (Former Fire Station)	VAARNG	According to interviewees, use of this fire station ended prior to the 1970s, prior to the era of widespread use of AFFF.
Former Fire Station #7	VAARNG	According to interviewees, use of this fire station ended prior to the 1970s, prior to the era of widespread use of AFFF.
2009 Navy Helicopter Crash	VAARNG, other DOD Units	According to interviewees, no AFFF was used in response to the helicopter crash.
1987 Helicopter Crash Location	VAARNG	According to interviewees, no AFFF was used in response to the helicopter crash.
Navy Helicopter Crash Location	VAARNG	According to interviewees, no AFFF was used in response to the helicopter crash.

## 7.2 Uncertainties

A number of information sources were investigated during this PA to determine the potential for PFAS-containing materials to have been present, used, or released at the facility. Historically, documentation of PFAS use was not required because PFAS were considered benign. Therefore, records were not typically kept by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposition.

The conclusions of this PA are based on all available information, including: previous environmental reports, EDRs™, observations made during the VSI, and interviews. Interviews of personnel with direct knowledge of a facility generally provided the most useful insights regarding

a facility's historical and current PFAS-containing materials. Sometimes the provided information was vague, such as the exact locations of fires at the Northeast Range or the volumes of AFFF used in response to emergencies. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS was first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

**Table 7-3** summarizes the uncertainties associated with the PA:

**Table 7-3: Sources of Uncertainties**

Location	Source of Uncertainty
AOI 1 Building 1485	The volume of AFFF per release during fire training between 1996 and 2015 is unknown. The type and concentration per releases are unknown. Training practices with AFFF prior to tenure of Fort Pickett Fire Chief (1996) are unknown.
AOI 2 Northeast Range Rubber Mat Fire Area	The exact date, location, volume of AFFF, and concentration of AFFF sprayed during the Northeast Range Rubber Mat Fire is unknown. It is unknown if similar fire requiring AFFF response occurred prior to the tenure of Fort Pickett Fire Chief (1996).
AOI 3 Building 3006 (FORSCOM Petroleum Training Module Area)	The exact dates of use, frequencies of use by ARNG and other DoD entities, and volumes and concentrations of AFFF used at the FTA are unknown. Training practices with AFFF prior to tenure of FORSCOM Program Manager's (2003) are unknown. The FTA opened in 1989.
AOI 4 Former Live Fire Burn Pit	It is unknown whether fire training events involving AFFF occurred prior to the single known AFFF fire training exercise in 1998.
AOI 5 Airfield Runway 1/19	The exact date of Army training circa 1991 resulting in the release of AFFF is unknown. The type, concentration and volume of AFFF used during the training is unknown. The exact location of the training is unknown. The location of the police training incident resulting in the release of an unknown volume of AFFF is unknown.
Solar Array Area Former Burn Pit	The dates of use for the burn pit are unknown. The exact location of the burn pit is unknown. Records verifying the contents of the burn pit are unavailable.
Old Hospital Area / Open Dump Area (Landfill No. 3)	The dates of use for the Open Dump Area/Landfill No. 3 are unknown. The exact location of the dump area is unknown. Records verifying the contents of the landfill are unknown.
Former Blackstone Army Airfield Hangar	The dates of use of the former hangar are unclear. The routine use by non-ARNG units are unknown. It is unknown whether AFFF was ever previously stored within the former hangar.

Building 977	The date that Building 977 began being used for AFFF storage is unknown. It is unknown whether trailers used in training are stored at Building 977 prior to washing.
Former Fuel Station No. 1 (BCT-22)	The type of fire suppression at the Former Fuel Station No. 1 during its active use is unknown.
Building 2860 (Former Fire Station)	The dates of use as an active fire station are unknown. The former training practices are unknown.
Former Building 755 (Former Fire Station)	The dates of use as an active fire station are unknown. The former training practices are unknown.
Former Building 1268 (Former Fire Station)	The dates of use as an active fire station are unknown. The former training practices are unknown.
Former Building 1818 (Former Fire Station)	The dates of use as an active fire station are unknown. The former training practices are unknown.
Former Building 2110 (Former Fire Station)	The dates of use as an active fire station are unknown. The former training practices are unknown.
Former Fire Station #7	The dates of use as an active fire station are unknown. The former training practices are unknown.
1987 Helicopter Crash Location	The exact date and location of the crash are unknown.
Navy Helicopter Crash Location	The exact date and location of the crash are unknown.
Former Recycle Center (EBS-13)	The dates of use as a recycle center are unknown. It is unknown if any buried debris contained PFAS-laden materials. The precise date of the wildland fire circa 1977 is unknown.
Pickett Park Former Metals Plating Facility	The dates of use as a metals plating facility are unknown. It is unknown whether plating facility practices resulted in PFAS-laden material releases.
Southside Regional Fire Training Grounds	The training practices by the Southside Regional Fire Training Academy are unknown.

Potential off-facility PFAS release areas exist adjacent to Fort Pickett. Because these areas include property upgradient of the facility, it is unknown whether or not the off-facility sources effect Fort Pickett.

### 7.3 Potential Future Actions

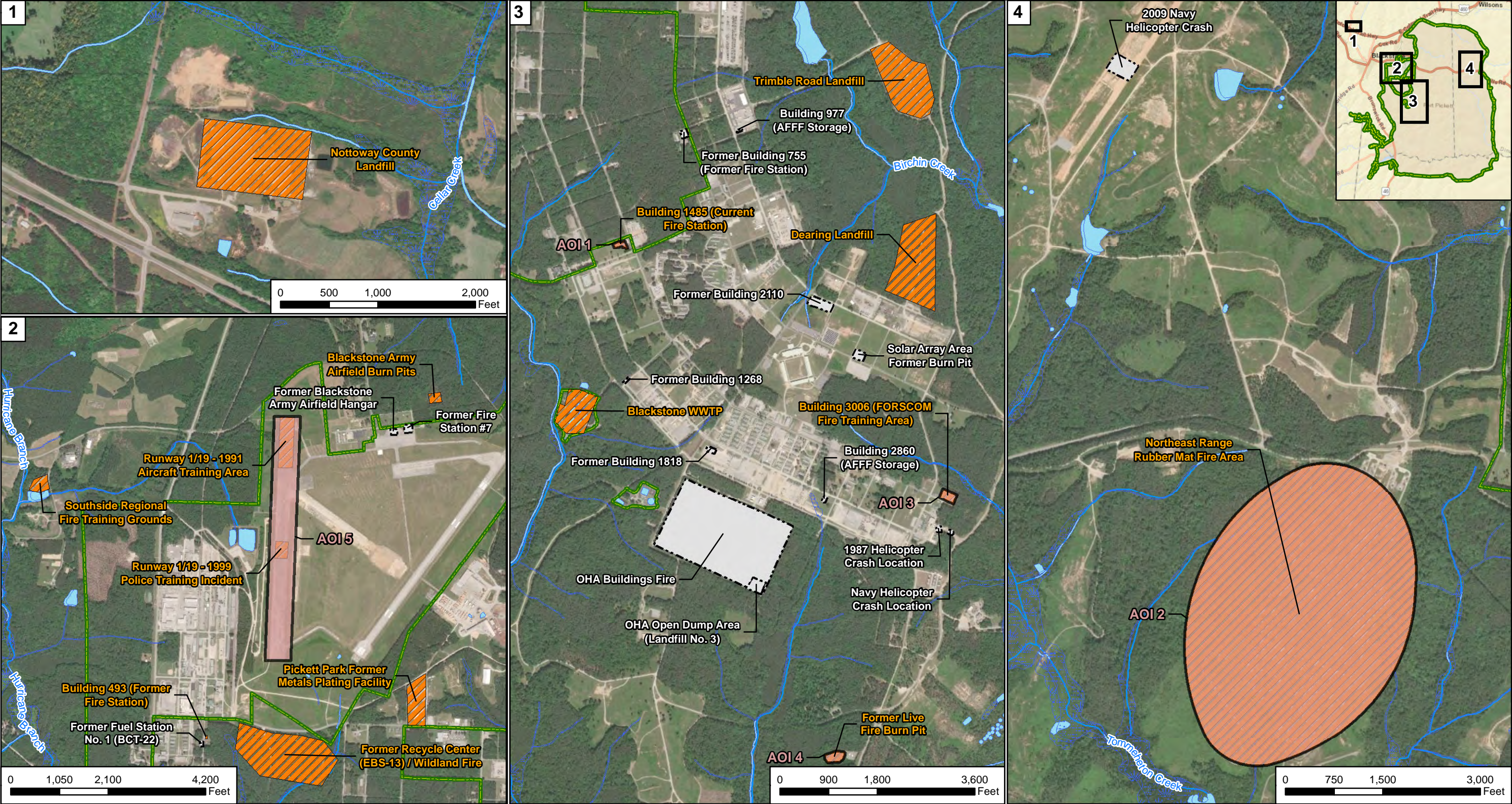
Interviews with current and former VAARNG facility staff whose first-hand knowledge at Fort Pickett span 1974-present indicate that ARNG activities may have resulted in a potential PFAS release at five AOIs identified during the PA. Based on the preliminary CSM developed for the AOIs, there is potential for PFAS to be exposed to human receptors as a result of releases at Fort Pickett (see **Section 7.1**). **Table 7-4** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo an SI.

**Table 7-4: PA Findings Summary**

Area of Interest	AOI Location	Rationale	Potential Future Action
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AOI 1 Building 1485 (Current Fire Station)	37°02'58.9"N; 77°57'02.0"W	Multiple AFFF releases to surface soil and sanitary sewers between 1996-2015	Proceed to an SI, focus on soil, sediment, surface water and groundwater
AOI 2 Northeast Range Rubber Mat Fire Area	37°04'19.11"N; 77°52'03.84"W	Known AFFF release during emergency response to firing position area(s) in 2012	Proceed to an SI, focus on soil, sediment, surface water, and groundwater
AOI 3 Building 3006 (FORSCOM Petroleum Training Module Area)	37°03'74.03"N; 77°92'93.22"W	Known AFFF releases to surface soil and sanitary sewers during training between 2003-2017	Proceed to an SI, focus on soil, sediment, surface water, and groundwater
AOI 4 Former Live Fire Burn Pit	37°02'42.13"N; 77°93'59.69"W	Known AFFF release to surface soil during training event in 1998	Proceed to an SI, focus on soil, sediment, surface water, and groundwater
AOI 5 Airfield Runway 1/19	37°04'29.35"N; 77°57'46.33"W	Known AFFF release(s) to surface soil and runway surface during Army (1991) and Police (1999) training activities	Proceed to an SI, focus on soil, sediment, surface water, and groundwater

ARNG will evaluate the need for an SI at Fort Pickett based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources.



CLIENT		ARNG			
PROJECT		Preliminary Assessment for PFAS at Fort Pickett, VA			
REVISED	10/29/2019	GIS BY	MS	10/29/2019	
SCALE	1:25,200	CHK BY	JW	10/29/2019	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	10/29/2019	

Area of Interest

Potential PFAS Release

No Suspected Release

Facility Boundary

Water Body

Wetland

River/Stream

N

**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

Figure 7-1

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\VA\Ft\_Pickett\_Figures\Fig\_7-1\_Ft\_Pickett\_Summary.mxd

## 8. References

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- Weston, 2002. Final Decision Document EBS-103 Parcel Fort Pickett Army Garrison Blackstone, Virginia Delivery Order 0005; Contract Number DACA65-02-D-0023. September 25, 2002.
- Woodward Clyde, 1996. U.S. Army Base Realignment and Closure Plan 95 Program, BRAC Cleanup Plan, Fort Pickett, Virginia. November.

## **Appendix A**

### **Data Resources**

Data Resources will be provided separately on CD. Data Resources for Fort Pickett includes:

#### **Fort Pickett EDR Report**

- 2019 Fort Pickett EDR Report 5675972.16s
- 2019 Fort Pickett EDR Report 5675972.9s
- 2019 Fort Pickett EDR Report 5675972.2s

#### **Facility Background Information Sources**

- 1995 Summary of U.S. Environmental Protection Agency Review and Preliminary Assessment Scoring Activities at U.S. Army, Fort Pickett, Blackstone, Virginia
- 2002 Final Decision Document EBS-103 Parcel, Fort Pickett Army Garrison, Blackstone, Virginia
- 2004 Final Phase II Remedial Investigation / Feasibility Study Report Addendum for EBS-79, Fort Pickett, Virginia
- 2005 Final Remedial Action Report for the Final Action at EBS-13 Salvage Yard, Fort Pickett, Virginia
- 2009 Virginia Department of Game and Inland Fisheries Pickett Reservoir

#### **Real Property Documents**

- 1999 Quitclaim Deed, Nottoway County Local Redevelopment Authority Exhibit A
- 1999 Quitclaim Deed, Nottoway County Local Redevelopment Authority Exhibit B-1
- 1999 Quitclaim Deed, Nottoway County Local Redevelopment Authority Exhibit B-2
- 1999 Quitclaim Deed, Nottoway County Local Redevelopment Authority Exhibit C: Legal Descriptions of Nine Environmental Sites Withheld from the Economic Development Conveyance to The Fort Pickett Local Redevelopment Authority (Nottoway County) (Sites EBS-115, BCT-18, BCT-13, EBS-24, EBS-79, EBS-13, BCT-19, EBS-103, BCT-15);
- 2000 Quitclaim Deed, Former Fort Pickett Military Installation, Nottoway County, Virginia, Local Redevelopment Authority;
- 2005 Quitclaim Deed, Former Fort Pickett Military Installation, Nottoway County, Virginia, Parcel EBS-13, Former Salvage Yard
- 2005 Quitclaim Deed, Former Fort Pickett Military Installation, Nottoway County, Virginia, Parcel No. BCT-22
- 2005 Quitclaim Deed, Former Fort Pickett Military Installation, Nottoway County, Virginia, Parcel Nos. 1, 2 & 3 (EBS-115, EBS-124, & EBS-79)

#### **Water Treatment Plants Documents**

- 2011 Town of Blackstone WWTP VPDES Permit No. VA0025194
- 2018 Annual Water Quality Report (Consumer Confidence Report) for Blackstone Reservoir

#### **FORSCOM Documents**

- 2006 Amex Corporation AFFF Foam Concentrate Material Safety Data Sheet
- 2016 Memorandum of Agreement Between FORSCOM (80<sup>th</sup> Training Command TASS) and Commander, Maneuver Training Center, Fort Pickett, Virginia Army National Guard

#### **Live Fire Burn Pit Photos**

- 1998 Former Live Fire Burn Pit Fire Training Photo



**Blackstone Army Airfield**

Military Road

Blackstone, VA 23824

Inquiry Number: 5675972.16s

June 06, 2019

## The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	8
Orphan Summary .....	9
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting Source Map .....	A-7
Physical Setting Source Map Findings .....	A-8
Physical Setting Source Records Searched .....	PSGR-1

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### **TARGET PROPERTY INFORMATION**

#### **ADDRESS**

MILITARY ROAD  
BLACKSTONE, VA 23824

#### **COORDINATES**

Latitude (North):	37.0782880 - 37° 4' 41.83"
Longitude (West):	77.9561050 - 77° 57' 21.97"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	237208.8
UTM Y (Meters):	4107443.0
Elevation:	445 ft. above sea level

### **USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY**

Target Property Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

### **AERIAL PHOTOGRAPHY IN THIS REPORT**

Portions of Photo from:	20140814, 20141017
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:  
MILITARY ROAD  
BLACKSTONE, VA 23824

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.)
<a href="#">Reg</a>	FORT PICKETT MILITAR		DOD	Same	1 ft.

## EXECUTIVE SUMMARY

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

#### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

#### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
SEMS..... Superfund Enterprise Management System

#### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

#### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

#### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

#### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

#### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List

## EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent CERCLIS***

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Management Facilities

### ***State and tribal leaking storage tank lists***

LUST..... Leaking Underground Storage Tank Tracking Database

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

LTANKS..... Leaking Petroleum Storage Tanks

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing

UST..... Registered Petroleum Storage Tanks

AST..... Registered Petroleum Storage Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

ENG CONTROLS..... Engineering Controls Sites Listing

INST CONTROL..... Voluntary Remediation Program Database

### ***State and tribal voluntary cleanup sites***

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Remediation Program

### ***State and tribal Brownfields sites***

BROWNFIELDS..... Brownfields Site Specific Assessments

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

### ***Local Lists of Landfill / Solid Waste Disposal Sites***

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

IHS OPEN DUMPS..... Open Dumps on Indian Land

## EXECUTIVE SUMMARY

### **Local Lists of Hazardous waste / Contaminated Sites**

US HIST CDL..... Delisted National Clandestine Laboratory Register  
US CDL..... National Clandestine Laboratory Register

### **Local Land Records**

LIENS 2..... CERCLA Lien Information

### **Records of Emergency Release Reports**

HMIRS..... Hazardous Materials Information Reporting System  
SPILLS..... Prep/Spills Database Listing  
SPILLS 90..... SPILLS 90 data from FirstSearch

### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
FUDS..... Formerly Used Defense Sites  
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
US FIN ASSUR..... Financial Assurance Information  
EPA WATCH LIST..... EPA WATCH LIST  
2020 COR ACTION..... 2020 Corrective Action Program List  
TSCA..... Toxic Substances Control Act  
TRIS..... Toxic Chemical Release Inventory System  
SSTS..... Section 7 Tracking Systems  
ROD..... Records Of Decision  
RMP..... Risk Management Plans  
RAATS..... RCRA Administrative Action Tracking System  
PRP..... Potentially Responsible Parties  
PADS..... PCB Activity Database System  
ICIS..... Integrated Compliance Information System  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)  
MLTS..... Material Licensing Tracking System  
COAL ASH DOE..... Steam-Electric Plant Operation Data  
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List  
PCB TRANSFORMER..... PCB Transformer Registration Database  
RADINFO..... Radiation Information Database  
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing  
DOT OPS..... Incident and Accident Data  
CONSENT..... Superfund (CERCLA) Consent Decrees  
INDIAN RESERV..... Indian Reservations  
FUSRAP..... Formerly Utilized Sites Remedial Action Program  
UMTRA..... Uranium Mill Tailings Sites  
LEAD SMELTERS..... Lead Smelter Sites  
US AIRS..... Aerometric Information Retrieval System Facility Subsystem  
US MINES..... Mines Master Index File  
ABANDONED MINES..... Abandoned Mines  
FINDS..... Facility Index System/Facility Registry System  
DOCKET HWC..... Hazardous Waste Compliance Docket Listing  
UXO..... Unexploded Ordnance Sites  
ECHO..... Enforcement & Compliance History Information  
FUELS PROGRAM..... EPA Fuels Program Registered Listing

## EXECUTIVE SUMMARY

AIRS.....	Permitted Airs Facility List
NPDES.....	Comprehensive Environmental Data System
COAL ASH.....	Coal Ash Disposal Sites
DRYCLEANERS.....	Drycleaner List
ENF.....	Enforcement Actions Data
Financial Assurance.....	Financial Assurance Information Listing
TIER 2.....	Tier 2 Information Listing
UIC.....	Underground Injection Control Wells

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### ADDITIONAL ENVIRONMENTAL RECORDS

#### ***Other Ascertainable Records***

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

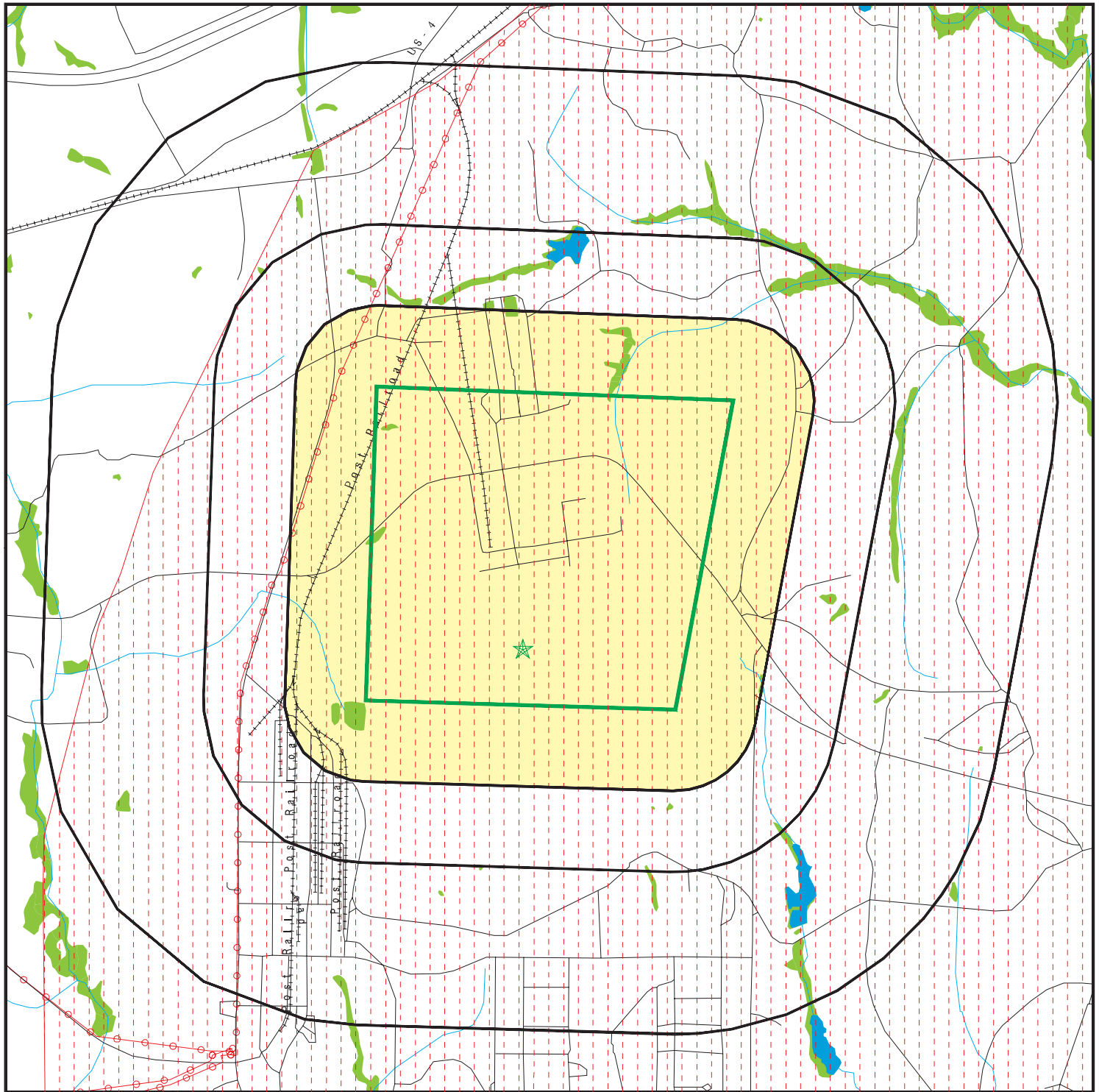
A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.












<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORT PICKETT MILITAR		0 - 1/8 (0.000 mi.)	0	8

## EXECUTIVE SUMMARY

There were no unmapped sites in this report.

# OVERVIEW MAP - 5675972.16S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  Power transmission lines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Blackstone Army Airfield  
 ADDRESS: Military Road  
 Blackstone VA 23824  
 LAT/LONG: 37.078288 / 77.956105

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.16s  
 DATE: June 06, 2019 4:30 pm

Copyright © 2019 EDR, Inc. © 2015 TomTom Rel. 2015.

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LTANKS	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
FEMA UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		1	0	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
TIER 2	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### **EDR Exclusive Records**

EDR MGP	1.000	0	0	0	0	NR	0
EDR Hist Auto	0.125	0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125	0	NR	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### **Exclusive Recovered Govt. Archives**

RGA LF	TP	NR	NR	NR	NR	NR	0
--------	----	----	----	----	----	----	---

## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>&lt; 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>&gt; 1</u>	<u>Total Plotted</u>
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	1	0	0	0	0	1

### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

DOD  
Region

FORT PICKETT MILITARY RESERVATION (CLOSED)  
FORT PICKETT MILITARY RES (County), VA

DOD CUSA136934  
N/A

< 1/8  
1 ft.

DOD:  
Feature 1: Army DOD  
Feature 2: Not reported  
Feature 3: Not reported  
URL: Not reported  
Name 1: Fort Pickett Military Reservation (Closed)  
Name 2: Not reported  
Name 3: Not reported  
State: VA  
DOD Site: Yes  
Tile name: VANOTTOWAY

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

#### **NPL Site Boundaries**

##### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

#### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991  
Date Data Arrived at EDR: 02/02/1994  
Date Made Active in Reports: 03/30/1994  
Number of Days to Update: 56

Source: EPA  
Telephone: 202-564-4267  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: No Update Planned

### ***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 26

Source: EPA  
Telephone: N/A  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019  
Date Data Arrived at EDR: 04/05/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 703-603-8704  
Last EDR Contact: 04/05/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: 800-424-9346
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 35	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019	Source: EPA
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-424-9346
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal institutional controls / engineering controls registries***

#### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019	Source: Department of the Navy
Date Data Arrived at EDR: 03/07/2019	Telephone: 843-820-7326
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 05/10/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

#### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

#### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019  
Date Data Arrived at EDR: 03/26/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 36

Source: National Response Center, United States Coast Guard  
Telephone: 202-267-2180  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: Department of Environmental Quality  
Telephone: 804-698-4236  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: N/A

## ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF: Solid Waste Management Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/10/2019  
Number of Days to Update: 36

Source: Department of Environmental Quality  
Telephone: 804-698-4238  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Semi-Annually

## ***State and tribal leaking storage tank lists***

LUST REG SW: Leaking Underground Storage Tank Database

Leaking underground storage tank site locations. Includes: counties of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe; cities of Bristol, Galax, Norton.

Date of Government Version: 07/15/2013  
Date Data Arrived at EDR: 07/18/2013  
Date Made Active in Reports: 09/16/2013  
Number of Days to Update: 60

Source: Department of Environmental Quality Southwest Regional Office  
Telephone: 276-676-4800  
Last EDR Contact: 10/11/2016  
Next Scheduled EDR Contact: 01/23/2017  
Data Release Frequency: No Update Planned

LUST REG TD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Accomack, Isle of Wight, James City, Northampton, Southampton, York; cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg.

Date of Government Version: 06/30/2013  
Date Data Arrived at EDR: 07/05/2013  
Date Made Active in Reports: 09/16/2013  
Number of Days to Update: 73

Source: Department of Environmental Quality Tidewater Regional Office  
Telephone: trofoia@deq.vir  
Last EDR Contact: 09/26/2016  
Next Scheduled EDR Contact: 01/09/2017  
Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LUST REG VA: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren; cities of Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester.

Date of Government Version: 12/06/2011	Source: Department of Environmental Quality Valley Regional Office
Date Data Arrived at EDR: 12/08/2011	Telephone: 540-574-7800
Date Made Active in Reports: 01/16/2012	Last EDR Contact: 08/29/2016
Number of Days to Update: 39	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG WC: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Patrick, Pulaski, Roanoke; cities of Bedford, Clifton Forge, Covington, Martinsville, Radford, Roanoke, Salem.

Date of Government Version: 06/04/2015	Source: Department of Environmental Quality West Central Regional Office
Date Data Arrived at EDR: 06/05/2015	Telephone: 540-562-6700
Date Made Active in Reports: 07/07/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 32	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG PD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greenville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland; cities of Colonial Heights, Emporia, Hopewell, Petersburg.

Date of Government Version: 12/02/2014	Source: Department of Environmental Quality Piedmont Regional Office
Date Data Arrived at EDR: 12/04/2014	Telephone: 804-527-5020
Date Made Active in Reports: 01/16/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 43	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Quarterly

### LUST REG SC: Leaking Underground Storage Tanks

Leaking underground storage tank site locations. Includes: counties of Amherst, Appomattox, Buckingham, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Pittsylvania, Prince Edward; cities of Danville, Lynchburg.

Date of Government Version: 09/06/2013	Source: Department of Environmental Quality, South Central Region
Date Data Arrived at EDR: 09/06/2013	Telephone: 434-582-5120
Date Made Active in Reports: 09/17/2013	Last EDR Contact: 08/29/2016
Number of Days to Update: 11	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Semi-Annually

### LUST REG NO: Leaking Underground Storage Tank Tracking Database

Leaking underground storage tank site locations. Includes: counties of Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford; cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park.

Date of Government Version: 05/18/2004	Source: Department of Environmental Quality Northern Regional Office
Date Data Arrived at EDR: 05/22/2004	Telephone: 703-583-3800
Date Made Active in Reports: 07/09/2004	Last EDR Contact: 09/06/2011
Number of Days to Update: 48	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/17/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018  
Date Data Arrived at EDR: 03/08/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/24/2018  
Date Data Arrived at EDR: 03/12/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 50

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-6597
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

LTANKS: Leaking Petroleum Storage Tanks  
Includes releases of petroleum from underground storage tanks and aboveground storage tanks.

Date of Government Version: 02/05/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/28/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 39	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### ***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing  
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017	Source: FEMA
Date Data Arrived at EDR: 05/30/2017	Telephone: 202-646-5797
Date Made Active in Reports: 10/13/2017	Last EDR Contact: 04/25/2019
Number of Days to Update: 136	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

UST: Registered Petroleum Storage Tanks  
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

AST: Registered Petroleum Storage Tanks  
Registered Aboveground Storage Tanks.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/17/2018	Source: EPA Region 10
Date Data Arrived at EDR: 03/07/2019	Telephone: 206-553-2857
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018	Source: EPA Region 9
Date Data Arrived at EDR: 03/08/2019	Telephone: 415-972-3368
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018	Source: EPA Region 8
Date Data Arrived at EDR: 03/07/2019	Telephone: 303-312-6137
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018	Source: EPA Region 7
Date Data Arrived at EDR: 03/07/2019	Telephone: 913-551-7003
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-7591
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018	Source: EPA Region 5
Date Data Arrived at EDR: 03/07/2019	Telephone: 312-886-6136
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/24/2018	Source: EPA Region 4
Date Data Arrived at EDR: 03/12/2019	Telephone: 404-562-9424
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018	Source: EPA, Region 1
Date Data Arrived at EDR: 03/07/2019	Telephone: 617-918-1313
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### ***State and tribal institutional control / engineering control registries***

#### ENG CONTROLS: Engineering Controls Sites Listing

A listing of sites with Engineering Controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INST CONTROL: Voluntary Remediation Program Database

Sites included in the Voluntary Remediation Program database that have deed restrictions.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### ***State and tribal voluntary cleanup sites***

#### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

#### VRP: Voluntary Remediation Program

The Voluntary Cleanup Program encourages owners of elected contaminated sites to take the initiative and conduct voluntary cleanups that meet state environmental standards.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/25/2019
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **State and tribal Brownfields sites**

### **BROWNFIELDS: Brownfields Site Specific Assessments**

To qualify for Brownfields Assessment, the site must meet the Federal definition of a Brownfields and should have contaminant issues that need to be addressed and a redevelopment plan supported by the local government and community. Virginia's Department of Environmental Quality performs brownfields assessments under a cooperative agreement with the U.S. Environmental Protection Agency at no cost to communities, property owners or, prospective purchasers. The assessment is an evaluation of environmental impacts caused by previous site uses similar to a Phase II Environmental Assessment.

Date of Government Version: 01/23/2019  
Date Data Arrived at EDR: 01/24/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 29

Source: Department of Environmental Quality  
Telephone: 804-698-4207  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### **US BROWNFIELDS: A Listing of Brownfields Sites**

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018  
Date Data Arrived at EDR: 12/18/2018  
Date Made Active in Reports: 01/11/2019  
Number of Days to Update: 24

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 06/04/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### **INDIAN ODI: Report on the Status of Open Dumps on Indian Lands**

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

#### **ODI: Open Dump Inventory**

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### **DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations**

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: No Update Planned

### IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### Local Lists of Hazardous waste / Contaminated Sites

#### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: No Update Planned

#### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Quarterly

#### PFAS: Per- and Polyfluoroalkyl Substances

PFOS and PFOA stand for perfluorooctane sulfonate and perfluorooctanoic acid, respectively. Both are fluorinated organic chemicals, part of a larger family of compounds referred to as perfluoroalkyl substances (PFASs).

Date of Government Version: 04/08/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/08/2019  
Number of Days to Update: 28

Source: Department of Environmental Quality  
Telephone: 804-698-4336  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### Local Land Records

#### LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Records of Emergency Release Reports***

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/25/2019	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 03/26/2019	Telephone: 202-366-4555
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### **SPILLS BRL: Prep/Spills Database Listing**

A listing of spills locations located in the Blue Ridge Regional area, Lynchburg.

Date of Government Version: 09/18/2009	Source: DEQ, Blue Ridge Regional Office
Date Data Arrived at EDR: 09/18/2009	Telephone: 434-582-6218
Date Made Active in Reports: 10/06/2009	Last EDR Contact: 11/28/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/12/2012
	Data Release Frequency: Varies

### **SPILLS: Prep/Spills Database Listing**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4287
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### **SPILLS PC: Pollution Complaint Database**

Pollution Complaints Database. The pollution reports contained in the PC database include the initial release reporting of Leaking Underground Storage Tanks and all other releases of petroleum to the environment as well as releases to state waters. The database is current through 12/1/93. Since that time, all spill and pollution reporting information has been collected and tracked through the DEQ regional offices.

Date of Government Version: 06/01/1996	Source: Department of Environmental Quality
Date Data Arrived at EDR: 10/22/1996	Telephone: 804-698-4287
Date Made Active in Reports: 11/21/1996	Last EDR Contact: 03/08/2010
Number of Days to Update: 30	Next Scheduled EDR Contact: 06/21/2010
	Data Release Frequency: No Update Planned

### **SPILLS NO: PREP Database**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/23/2009	Source: Department of Environmental Quality, Northern Region
Date Data Arrived at EDR: 09/29/2009	Telephone: 703-583-3864
Date Made Active in Reports: 10/30/2009	Last EDR Contact: 09/06/2011
Number of Days to Update: 31	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### **SPILLS PD: PREP Database**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/20/2009  
Date Data Arrived at EDR: 10/29/2009  
Date Made Active in Reports: 12/03/2009  
Number of Days to Update: 35

Source: Department of Environmental Quality, Piedmont Region  
Telephone: 804-527-5020  
Last EDR Contact: 02/06/2012  
Next Scheduled EDR Contact: 05/21/2012  
Data Release Frequency: Quarterly

### SPILLS SW: Reportable Spills

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 01/21/2010  
Date Data Arrived at EDR: 01/22/2010  
Date Made Active in Reports: 02/16/2010  
Number of Days to Update: 25

Source: Department of Environmental Quality, Southwest Region  
Telephone: 276-676-4839  
Last EDR Contact: 07/13/2012  
Next Scheduled EDR Contact: 10/29/2012  
Data Release Frequency: No Update Planned

### SPILLS TD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/17/2009  
Date Data Arrived at EDR: 09/23/2009  
Date Made Active in Reports: 10/06/2009  
Number of Days to Update: 13

Source: Department of Environmental Quality, Tidewater Region  
Telephone: trofoia@deq.vir  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: Quarterly

### SPILLS VA: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 08/08/2012  
Date Data Arrived at EDR: 08/09/2012  
Date Made Active in Reports: 10/05/2012  
Number of Days to Update: 57

Source: Department of Environmental Quality, Valley Regional Office  
Telephone: 540-574-7800  
Last EDR Contact: 05/06/2013  
Next Scheduled EDR Contact: 08/19/2013  
Data Release Frequency: Quarterly

### SPILLS WC: Prep Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/21/2009  
Date Data Arrived at EDR: 09/29/2009  
Date Made Active in Reports: 10/30/2009  
Number of Days to Update: 31

Source: Department of Environmental Quality, West Central Region  
Telephone: 540-562-6700  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: No Update Planned

### SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/01/2012  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/15/2013  
Number of Days to Update: 43

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### **Other Ascertainable Records**

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 03/07/2019	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 04/03/2019	Telephone: 202-528-4285
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 05/21/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: N/A

### SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/13/2019
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

### US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/25/2019  
Date Data Arrived at EDR: 03/26/2019  
Date Made Active in Reports: 05/07/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Quarterly

### EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013  
Date Data Arrived at EDR: 03/21/2014  
Date Made Active in Reports: 06/17/2014  
Number of Days to Update: 88

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 05/06/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 05/08/2018  
Date Made Active in Reports: 07/20/2018  
Number of Days to Update: 73

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 06/21/2017  
Date Made Active in Reports: 01/05/2018  
Number of Days to Update: 198

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Every 4 Years

### TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 01/10/2018  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 2

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Annually

### ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Annually

### RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019  
Date Data Arrived at EDR: 05/02/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-564-8600  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995  
Date Data Arrived at EDR: 07/03/1995  
Date Made Active in Reports: 08/07/1995  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-4104  
Last EDR Contact: 06/02/2008  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned

### PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/20/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 34

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016  
Date Data Arrived at EDR: 11/23/2016  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 79

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Quarterly

**FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

**FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016  
Date Data Arrived at EDR: 09/08/2016  
Date Made Active in Reports: 10/21/2016  
Number of Days to Update: 43

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

### COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 03/07/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: N/A  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017  
Date Data Arrived at EDR: 11/30/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 15

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/02/2019  
Date Data Arrived at EDR: 04/02/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 04/02/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 51

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 04/30/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2019	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 04/23/2019	Telephone: Varies
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/05/2019
Number of Days to Update: 30	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015	Source: EPA/NTIS
Date Data Arrived at EDR: 02/22/2017	Telephone: 800-424-9346
Date Made Active in Reports: 09/28/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 218	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Biennially

### INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 04/11/2019
Number of Days to Update: 546	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017	Source: Department of Energy
Date Data Arrived at EDR: 09/11/2018	Telephone: 202-586-3559
Date Made Active in Reports: 09/14/2018	Last EDR Contact: 05/02/2019
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Varies

### UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017	Source: Department of Energy
Date Data Arrived at EDR: 10/11/2017	Telephone: 505-845-0011
Date Made Active in Reports: 11/03/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/11/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/18/2019	Telephone: 703-603-8787
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018  
Date Data Arrived at EDR: 02/27/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 05/29/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Semi-Annually

### US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

### US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/27/2019	Source: Department of Interior
Date Data Arrived at EDR: 03/28/2019	Telephone: 202-208-2609
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 03/21/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019	Source: EPA
Date Data Arrived at EDR: 03/05/2019	Telephone: (215) 814-5000
Date Made Active in Reports: 03/15/2019	Last EDR Contact: 06/05/2019
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/16/2019
	Data Release Frequency: Quarterly

### UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017	Source: Department of Defense
Date Data Arrived at EDR: 01/17/2019	Telephone: 703-704-1564
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/15/2019
Number of Days to Update: 74	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Varies

### DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/26/2018	Telephone: 202-564-0527
Date Made Active in Reports: 10/05/2018	Last EDR Contact: 05/24/2019
Number of Days to Update: 71	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

### ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/09/2019	Telephone: 202-564-2280
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/09/2019
Number of Days to Update: 44	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 02/21/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 39

Source: EPA  
Telephone: 800-385-6164  
Last EDR Contact: 05/21/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Quarterly

### AIRS: Permitted Airs Facility List

A listing of permitted Airs facilities.

Date of Government Version: 01/14/2019  
Date Data Arrived at EDR: 01/17/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 81

Source: Department of Environmental Quality  
Telephone: 804-698-4000  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

### CEDS: Comprehensive Environmental Data System

Virginia Water Protection Permits, Virginia Pollution Discharge System (point discharge) permits and Virginia Pollution Abatement (no point discharge) permits.

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 34

Source: Department of Environmental Quality  
Telephone: 804-698-4077  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Quarterly

### COAL ASH: Coal Ash Disposal Sites

A listing of facilities with coal ash impoundments.

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/12/2018  
Date Made Active in Reports: 01/30/2019  
Number of Days to Update: 49

Source: Department of Environmental Protection  
Telephone: 804-698-4285  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Varies

### DRYCLEANERS: Drycleaner List

A listing of registered drycleaners.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 11/01/2018  
Date Made Active in Reports: 12/26/2018  
Number of Days to Update: 55

Source: Department of Environmental Quality  
Telephone: 804-698-4407  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### ENFORCEMENT: Enforcement Actions Data

A listing of enforcement actions.

Date of Government Version: 02/04/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4031  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### Financial Assurance 1: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 01/30/2019  
Date Data Arrived at EDR: 01/31/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 22

Source: Department of Environmental Quality  
Telephone: 804-698-4205  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 05/11/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance 2: Financial Assurance Information listing  
Solid waste financial assurance information.

Date of Government Version: 01/31/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4123  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 01/20/2017  
Date Made Active in Reports: 02/14/2017  
Number of Days to Update: 25

Source: Department of Environmental Quality  
Telephone: 804-698-4159  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

UIC: Underground Injection Control Wells

A listing of underground injection controls wells.

Date of Government Version: 01/29/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/25/2019  
Number of Days to Update: 26

Source: Department of Mines, Minerals and Energy  
Telephone: 276-415-9700  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/20/2014  
Number of Days to Update: 203

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia and at the Regional VA Levels.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/15/2014  
Number of Days to Update: 198

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

#### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/04/2019  
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 05/14/2019  
Next Scheduled EDR Contact: 08/26/2019  
Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/16/2019  
Number of Days to Update: 36

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/14/2019  
Number of Days to Update: 15

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/27/2018  
Number of Days to Update: 35

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 02/23/2018  
Date Made Active in Reports: 04/09/2018  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 05/17/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 06/15/2018  
Date Made Active in Reports: 07/09/2018  
Number of Days to Update: 24

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/11/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Annually

### Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

### Electric Power Transmission Line Data

Source: PennWell Corporation

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

### Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

### Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

### Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

### Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

### Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 804-692-1900

**Flood Zone Data:** This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **STREET AND ADDRESS INFORMATION**

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

BLACKSTONE ARMY AIRFIELD  
MILITARY ROAD  
BLACKSTONE, VA 23824

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.078288 - 37° 4' 41.84"
Longitude (West):	77.956105 - 77° 57' 21.98"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	237208.8
UTM Y (Meters):	4107443.0
Elevation:	445 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

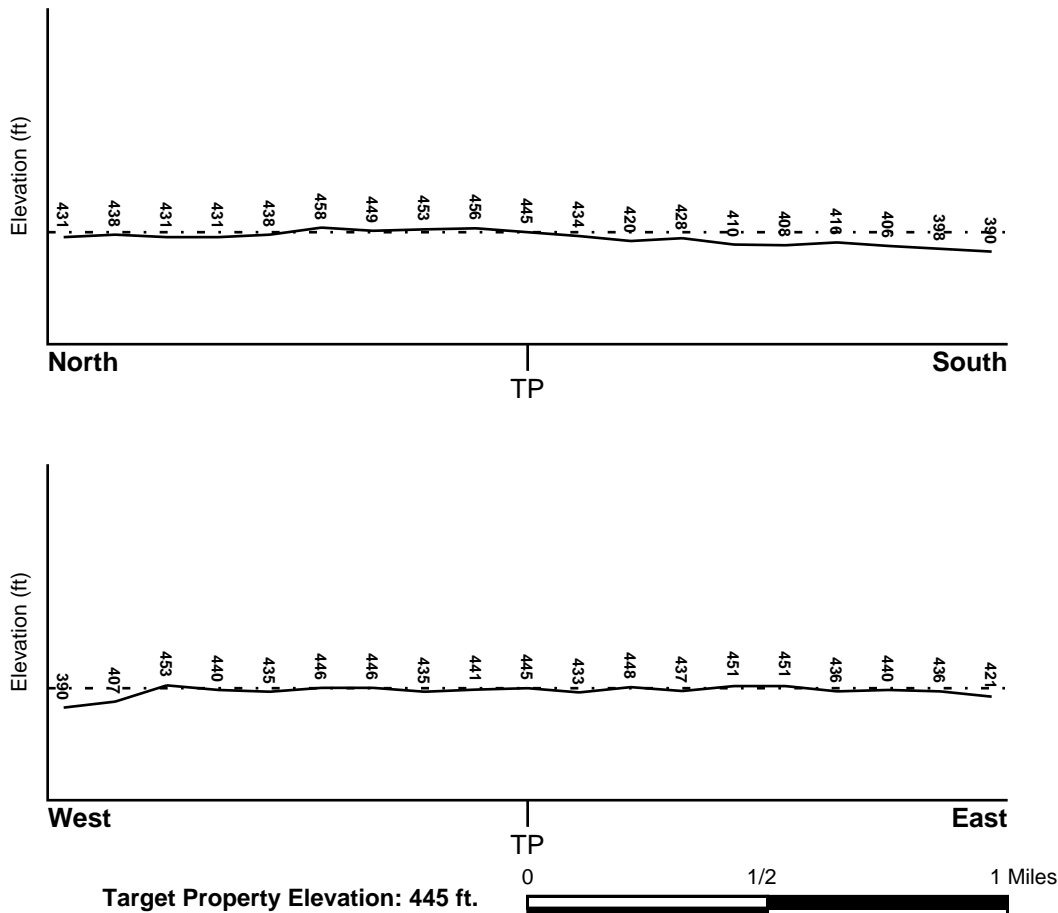
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

#### Flood Plain Panel at Target Property

51135C0225C

#### Additional Panels in search area:

Not Reported

#### FEMA Source Type

FEMA FIRM Flood data

#### FEMA Source Type

### NATIONAL WETLAND INVENTORY

#### NWI Quad at Target Property

BLACKSTONE EAST

#### NWI Electronic

#### Data Coverage

YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### ***Site-Specific Hydrogeological Data\*:***

Search Radius: 1.25 miles

Status: Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### ROCK STRATIGRAPHIC UNIT

Era: Paleozoic  
System: Devonian  
Series: Middle Paleozoic granitic rocks  
Code: Pzg2 (*decoded above as Era, System & Series*)

#### GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: APPLING

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 4.50
2	9 inches	35 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
3	35 inches	46 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
4	46 inches	65 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Surficial Soil Types: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Shallow Soil Types: loam

Deeper Soil Types: sandy clay loam  
sandy loam  
unweathered bedrock

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### **FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

### **FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

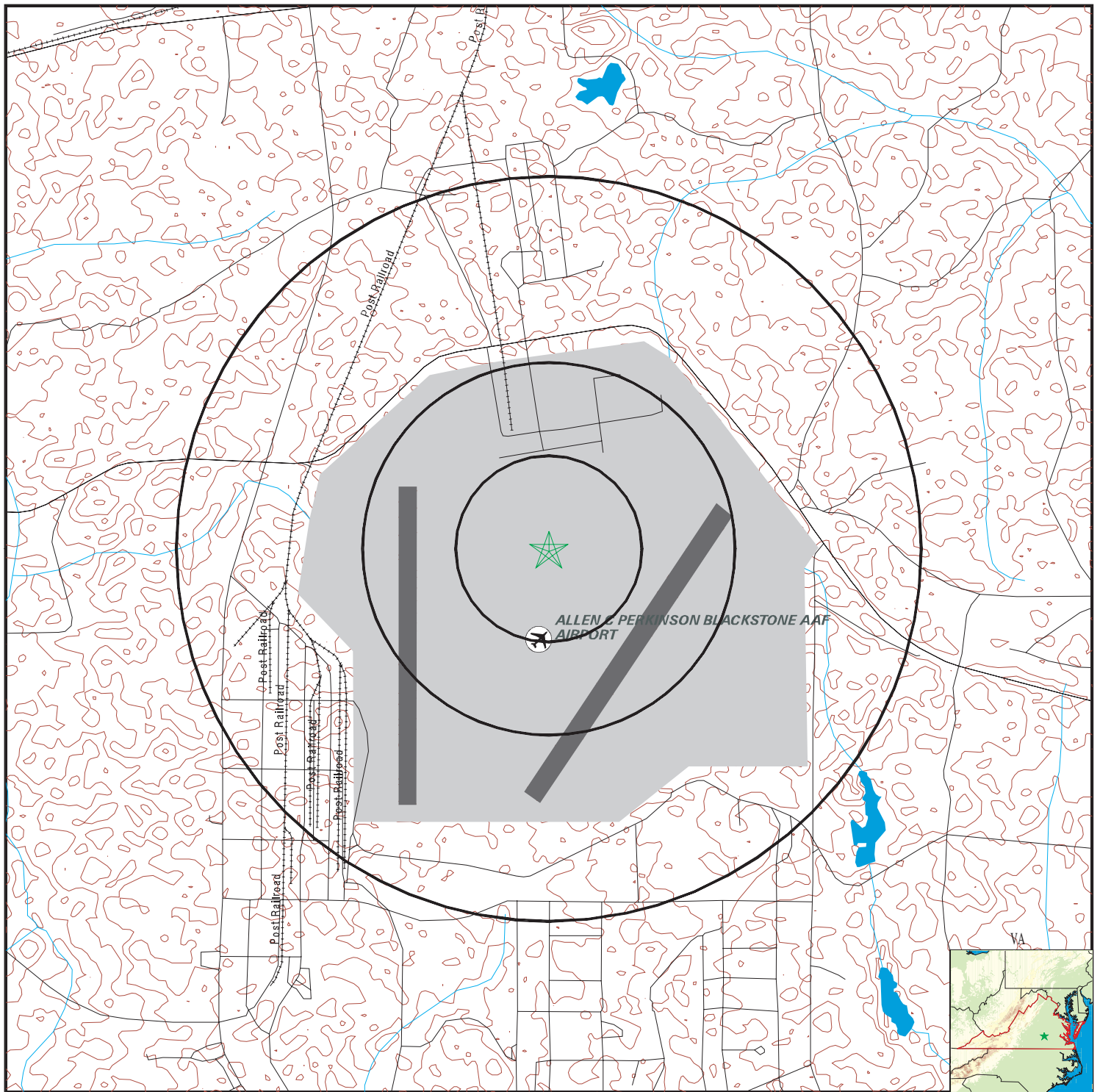
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### **STATE DATABASE WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

# PHYSICAL SETTING SOURCE MAP - 5675972.16s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: Blackstone Army Airfield  
 ADDRESS: Military Road  
 Blackstone VA 23824  
 LAT/LONG: 37.078288 / 77.956105

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.16s  
 DATE: June 06, 2019 4:32 pm

## **GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON**

### **AREA RADON INFORMATION**

EPA Region 3 Statistical Summary Readings for Zip Code: 23824

Number of sites tested: 19.

Maximum Radon Level: 13.8 pCi/L.

Minimum Radon Level: 0.3 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
15 (78.95%)	3 (15.79%)	1 (5.26%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

---

Federal EPA Radon Zone for NOTTOWAY County: 1

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Virginia Public Water Supplies

Source: Department of Health, Office of Water Programs

Telephone: 804-786-1756

## OTHER STATE DATABASE INFORMATION

#### Virginia Oil and Gas Wells

Source: Department of Mines, Minerals and Energy

Telephone: 804-692-3200

A listing of oil and gas well locations.

### RADON

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

#### EPA Region 3 Statistical Summary Readings

Source: Region 3 EPA

Telephone: 215-814-2082

Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STREET AND ADDRESS INFORMATION

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**Blackstone Army Airfield**

Military Road

Blackstone, VA 23824

Inquiry Number: 5675972.19

June 07, 2019

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## EDR Aerial Photo Decade Package

06/07/19

**Site Name:**

Blackstone Army Airfield  
Military Road  
Blackstone, VA 23824  
EDR Inquiry # 5675972.19

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Hans Sund



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

### Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=875'	Flight Year: 2016	USDA/NAIP
2012	1"=875'	Flight Year: 2012	USDA/NAIP
2009	1"=875'	Flight Year: 2009	USDA/NAIP
2006	1"=875'	Flight Year: 2006	USDA/NAIP
2000	1"=875'	Flight Date: March 26, 2000	USGS
1994	1"=875'	Acquisition Date: March 12, 1994	USGS/DOQQ
1989	1"=1000'	Flight Date: April 13, 1989	USGS
1984	1"=1000'	Flight Date: April 02, 1984	USGS
1979	1"=1000'	Flight Date: March 16, 1979	USGS
1974	1"=875'	Flight Date: April 01, 1974	USGS
1967	1"=875'	Flight Date: February 26, 1967	USGS
1963	1"=875'	Flight Date: March 29, 1963	USGS

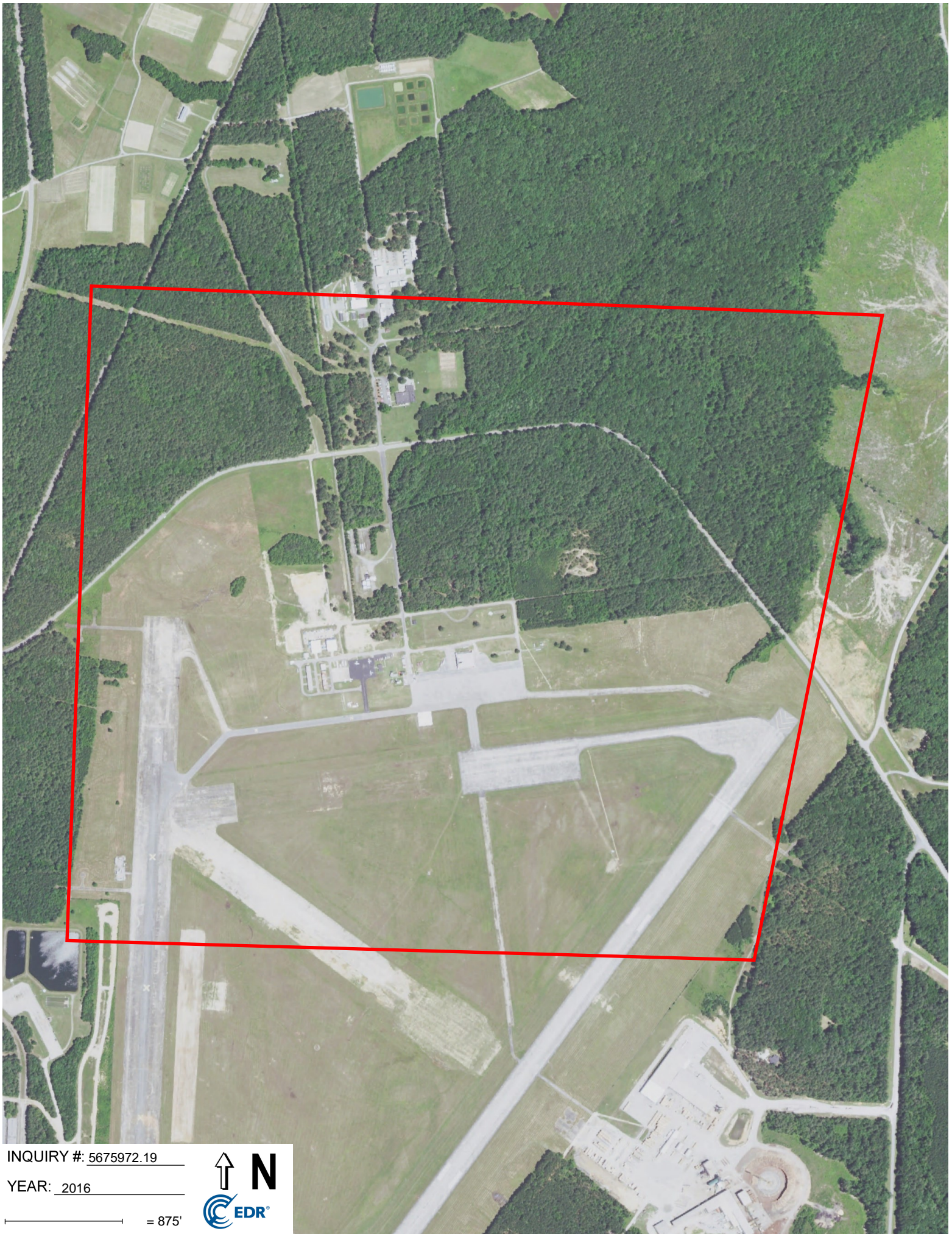
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INQUIRY #: 5675972.19

YEAR: 2016

— = 875'





INQUIRY #: 5675972.19

YEAR: 2012

— = 875'





INQUIRY #: 5675972.19

YEAR: 2009

— = 875'





Blackstone Army Airfield

Military Road

Blackstone, VA 23824

Inquiry Number: 5675972.17

June 06, 2019

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## Certified Sanborn® Map Report

06/06/19

**Site Name:**

Blackstone Army Airfield  
Military Road  
Blackstone, VA 23824  
EDR Inquiry # 5675972.17

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Hans Sund



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AECOM were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

### Certified Sanborn Results:

**Certification #** 3DB5-4239-9559

**PO #** NA

**Project** Blackstone Army Airfield

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results

Certification #: 3DB5-4239-9559

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☒ Library of Congress
- ☒ University Publications of America
- ☒ EDR Private Collection

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**Buildings 1485 and 3006**

Armstead Avenue

Blackstone, VA 23824

Inquiry Number: 5675972.9s

June 06, 2019

# The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	8
Orphan Summary .....	33
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting Source Map .....	A-7
Physical Setting Source Map Findings .....	A-8
Physical Setting Source Records Searched .....	PSGR-1

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### **TARGET PROPERTY INFORMATION**

#### **ADDRESS**

ARMSTEAD AVENUE  
BLACKSTONE, VA 23824

#### **COORDINATES**

Latitude (North):	37.0410900 - 37° 2' 27.92"
Longitude (West):	77.9410600 - 77° 56' 27.81"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	238418.8
UTM Y (Meters):	4103273.5
Elevation:	390 ft. above sea level

### **USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY**

Target Property Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

### **AERIAL PHOTOGRAPHY IN THIS REPORT**

Portions of Photo from:	20140814, 20141017
Source:	USDA

# MAPPED SITES SUMMARY

Target Property Address:  
ARMSTEAD AVENUE  
BLACKSTONE, VA 23824

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
<a href="#">Reg</a>	FORT PICKETT MILITAR		DOD	Same	1 ft.
<a href="#">A1</a>	PICKETT PARK	800 GARNETT AVENUE	VA LUST, VA LTANKS	Lower	1 ft.
<a href="#">A2</a>	LOCAL REDEVELOPMENT	800 GARNETT AVENUE	VA AST	Lower	1 ft.
<a href="#">3</a>	FORMER FORT PICKETT	1100 GARNET AVE	VA LTANKS	Higher	1 ft.
<a href="#">4</a>	FORT PICKETT	KEMPER AVENUE	SEMS, US ENG CONTROLS, US INST CONTROL, ROD	Higher	59, 0.011, NNW
<a href="#">5</a>	BRAC PROPERTY FT PIC	403 MILITARY RD	CORRACTS, RCRA NonGen / NLR, ICIS, NY MANIFEST	Lower	509, 0.096, NW
<a href="#">6</a>	PRACTICE BAZOOKA RAN	AFZC-ECM	UXO	Lower	1693, 0.321, ESE
<a href="#">7</a>	FORT PICKETT ARMY AI		FUDS	Lower	3703, 0.701, NNE

## EXECUTIVE SUMMARY

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

#### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

#### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing

#### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

#### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

#### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

#### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System

#### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

#### ***State- and tribal - equivalent CERCLIS***

VA SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

## EXECUTIVE SUMMARY

### ***State and tribal landfill and/or solid waste disposal site lists***

VA SWF/LF..... Solid Waste Management Facilities

### ***State and tribal leaking storage tank lists***

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing

VA UST..... Registered Petroleum Storage Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

VA ENG CONTROLS..... Engineering Controls Sites Listing

VA INST CONTROL..... Voluntary Remediation Program Database

### ***State and tribal voluntary cleanup sites***

VA VCP..... Voluntary Remediation Program

INDIAN VCP..... Voluntary Cleanup Priority Listing

### ***State and tribal Brownfields sites***

VA BROWNFIELDS..... Brownfields Site Specific Assessments

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

### ***Local Lists of Landfill / Solid Waste Disposal Sites***

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

IHS OPEN DUMPS..... Open Dumps on Indian Land

### ***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL..... Delisted National Clandestine Laboratory Register

US CDL..... National Clandestine Laboratory Register

### ***Local Land Records***

LIENS 2..... CERCLA Lien Information

### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System

## EXECUTIVE SUMMARY

VA SPILLS..... Prep/Spills Database Listing  
 VA SPILLS 90..... SPILLS 90 data from FirstSearch

### ***Other Ascertainable Records***

SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
 US FIN ASSUR..... Financial Assurance Information  
 EPA WATCH LIST..... EPA WATCH LIST  
 2020 COR ACTION..... 2020 Corrective Action Program List  
 TSCA..... Toxic Substances Control Act  
 TRIS..... Toxic Chemical Release Inventory System  
 SSTS..... Section 7 Tracking Systems  
 RMP..... Risk Management Plans  
 RAATS..... RCRA Administrative Action Tracking System  
 PRP..... Potentially Responsible Parties  
 PADS..... PCB Activity Database System  
 FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)  
 MLTS..... Material Licensing Tracking System  
 COAL ASH DOE..... Steam-Electric Plant Operation Data  
 COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List  
 PCB TRANSFORMER..... PCB Transformer Registration Database  
 RADINFO..... Radiation Information Database  
 HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing  
 DOT OPS..... Incident and Accident Data  
 CONSENT..... Superfund (CERCLA) Consent Decrees  
 INDIAN RESERV..... Indian Reservations  
 FUSRAP..... Formerly Utilized Sites Remedial Action Program  
 UMTRA..... Uranium Mill Tailings Sites  
 LEAD SMELTERS..... Lead Smelter Sites  
 US AIRS..... Aerometric Information Retrieval System Facility Subsystem  
 US MINES..... Mines Master Index File  
 ABANDONED MINES..... Abandoned Mines  
 FINDS..... Facility Index System/Facility Registry System  
 DOCKET HWC..... Hazardous Waste Compliance Docket Listing  
 ECHO..... Enforcement & Compliance History Information  
 FUELS PROGRAM..... EPA Fuels Program Registered Listing  
 VA AIRS..... Permitted Airs Facility List  
 VA NPDES..... Comprehensive Environmental Data System  
 VA COAL ASH..... Coal Ash Disposal Sites  
 VA DRYCLEANERS..... Drycleaner List  
 VA ENF..... Enforcement Actions Data  
 VA Financial Assurance..... Financial Assurance Information Listing  
 VA TIER 2..... Tier 2 Information Listing  
 VA UIC..... Underground Injection Control Wells

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP..... EDR Proprietary Manufactured Gas Plants  
 EDR Hist Auto..... EDR Exclusive Historical Auto Stations  
 EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

### **EDR RECOVERED GOVERNMENT ARCHIVES**

#### ***Exclusive Recovered Govt. Archives***

VA RGA LF..... Recovered Government Archive Solid Waste Facilities List

## EXECUTIVE SUMMARY

VA RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal CERCLIS list***

SEMS: SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the SEMS list, as provided by EDR, and dated 04/11/2019 has revealed that there is 1 SEMS site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>FORT PICKETT</i></b> Site ID: 0302847 EPA Id: VA2210020705	<b><i>KEMPER AVENUE</i></b>	<b><i>NNW 0 - 1/8 (0.011 mi.)</i></b>	<b><i>4</i></b>	<b><i>11</i></b>

#### ***Federal RCRA CORRACTS facilities list***

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/25/2019 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>BRAC PROPERTY FT PIC</i></b> EPA ID:: VA0213720931	<b><i>403 MILITARY RD</i></b>	<b><i>NW 0 - 1/8 (0.096 mi.)</i></b>	<b><i>5</i></b>	<b><i>26</i></b>

## EXECUTIVE SUMMARY

### ***Federal institutional controls / engineering controls registries***

US ENG CONTROLS: A listing of sites with engineering controls in place.

A review of the US ENG CONTROLS list, as provided by EDR, and dated 01/31/2019 has revealed that there is 1 US ENG CONTROLS site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>FORT PICKETT</b> EPA ID:: VA2210020705 EPA ID:: VA2210020705	<b>KEMPER AVENUE</b>	<b>NNW 0 - 1/8 (0.011 mi.)</b>	<b>4</b>	<b>11</b>

US INST CONTROL: A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

A review of the US INST CONTROL list, as provided by EDR, and dated 01/31/2019 has revealed that there is 1 US INST CONTROL site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>FORT PICKETT</b> EPA ID:: VA2210020705	<b>KEMPER AVENUE</b>	<b>NNW 0 - 1/8 (0.011 mi.)</b>	<b>4</b>	<b>11</b>

### ***State and tribal leaking storage tank lists***

VA LUST: The Leaking Underground Storage Tank Database.

A review of the VA LUST list, as provided by EDR, has revealed that there is 1 VA LUST site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>PICKETT PARK</b> Database: LUST REG SC, Date of Government Version: 09/06/2013 Facility ID: 20027044 Release Status: Confirmed Facility Status: Closed	<b>800 GARNETT AVENUE</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>A1</b>	<b>8</b>

VA LTANKS: The Leaking Tanks Database contains current Leaking petroleum tanks. The data comes from the Department of Environmental Quality.

A review of the VA LTANKS list, as provided by EDR, and dated 02/05/2019 has revealed that there are 2 VA LTANKS sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>FORMER FORT PICKETT</b> Facility Status: Closed	<b>1100 GARNET AVE</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>3</b>	<b>10</b>

## EXECUTIVE SUMMARY

CEDS Facility Id: 200000880510  
Pollution Complaint #: 20152442

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>PICKETT PARK</b> Facility Status: Closed CEDS Facility Id: 200000206307 Pollution Complaint #: 20027044	<b>800 GARNETT AVENUE</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>A1</b>	<b>8</b>

### ***State and tribal registered storage tank lists***

VA AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environmental Quality's Aboveground Storage Tank Data Notification Information.

A review of the VA AST list, as provided by EDR, and dated 02/04/2019 has revealed that there is 1 VA AST site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>LOCAL REDEVELOPMENT</b> Facility ID: 7038419 CEDS Facility ID: 200000205776	<b>800 GARNETT AVENUE</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>A2</b>	<b>9</b>

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Other Ascertainable Records***

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>BRAC PROPERTY FT PIC</b> EPA ID:: VA0213720931	<b>403 MILITARY RD</b>	<b>NW 0 - 1/8 (0.096 mi.)</b>	<b>5</b>	<b>26</b>

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 03/07/2019 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

## EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORT PICKETT ARMY AI		NNE 1/2 - 1 (0.701 mi.)	7	31

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORT PICKETT MILITAR		0 - 1/8 (0.000 mi.)	0	8

ROD: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 04/11/2019 has revealed that there is 1 ROD site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>FORT PICKETT</b> EPA ID:: VA2210020705	<b>KEMPER AVENUE</b>	<b>NNW 0 - 1/8 (0.011 mi.)</b>	<b>4</b>	<b>11</b>

UXO: A listing of unexploded ordnance site locations

A review of the UXO list, as provided by EDR, and dated 12/31/2017 has revealed that there is 1 UXO site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
PRACTICE BAZOOKA RAN	AFZC-ECM	ESE 1/4 - 1/2 (0.321 mi.)	6	31

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list, as provided by EDR, and dated 01/01/2019 has revealed that there is 1 NY MANIFEST site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>BRAC PROPERTY FT PIC</b> EPA ID: VA0213720931	<b>403 MILITARY RD</b>	<b>NW 0 - 1/8 (0.096 mi.)</b>	<b>5</b>	<b>26</b>

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

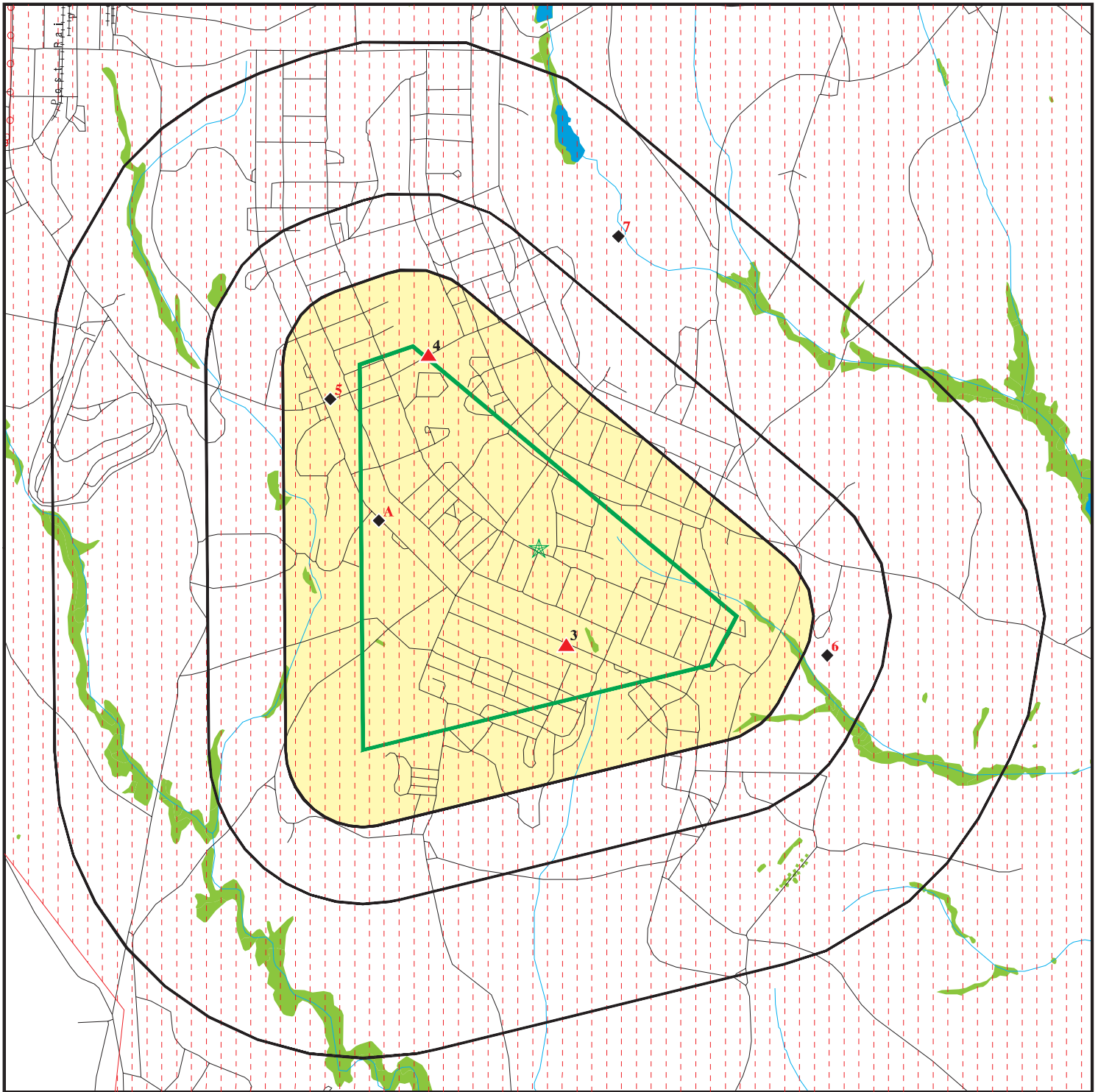
Site Name

Database(s)

FORMER FORT PICKETT BUILDING 1413

VA LTANKS

# OVERVIEW MAP - 5675972.9S



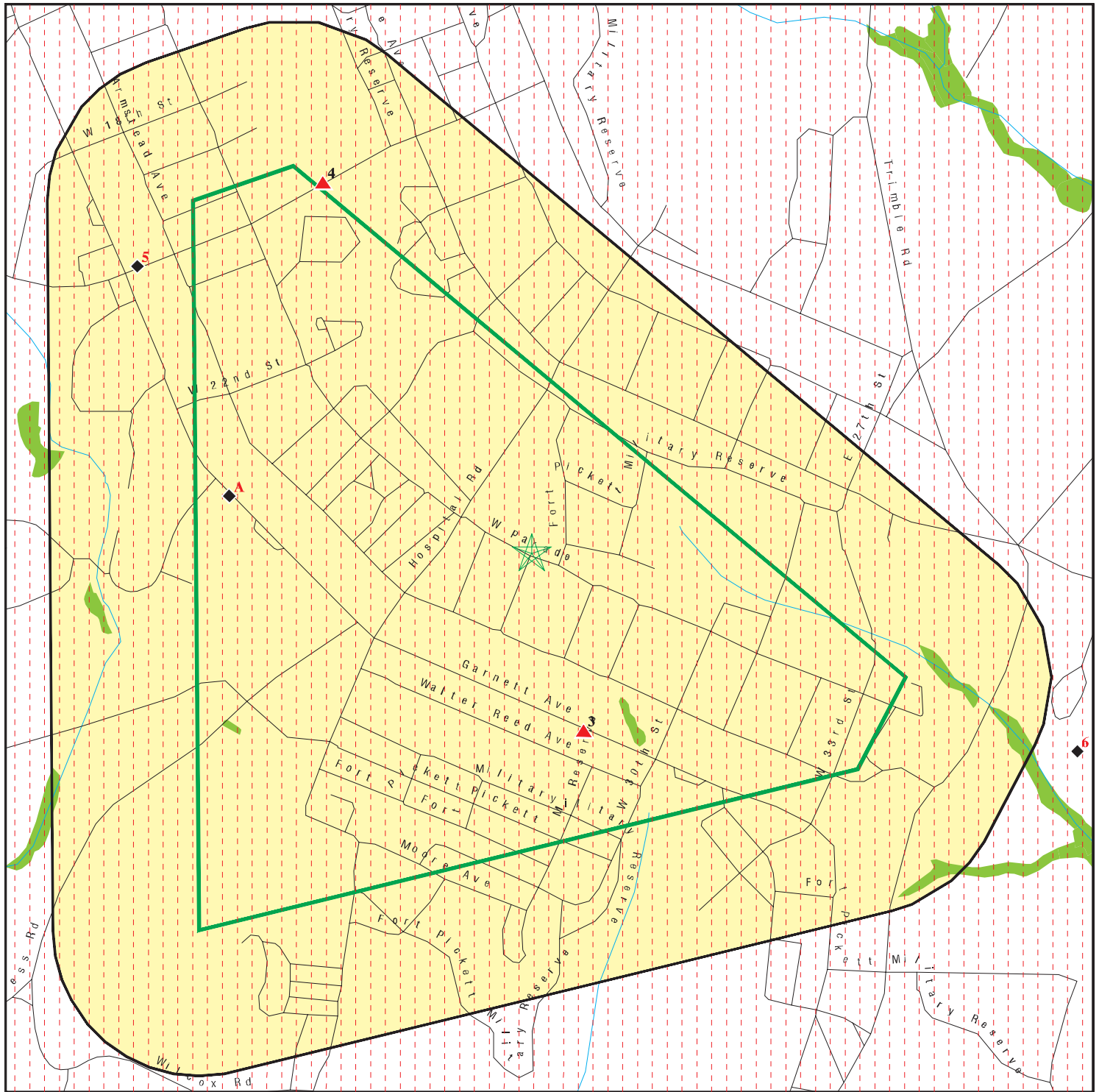
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Buildings 1485 and 3006  
 ADDRESS: Armstead Avenue  
 Blackstone VA 23824  
 LAT/LONG: 37.04109 / 77.94106

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.9s  
 DATE: June 06, 2019 4:34 pm

# DETAIL MAP - 5675972.9S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

0 1/8 1/4 1/2 Miles



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Buildings 1485 and 3006  
 ADDRESS: Armstead Avenue  
 Blackstone VA 23824  
 LAT/LONG: 37.04109 / 77.94106

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.9s  
 DATE: June 06, 2019 4:35 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		1	0	0	NR	NR	1
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		1	0	0	0	NR	1
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		1	0	0	NR	NR	1
US INST CONTROL	0.500		1	0	0	NR	NR	1
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
VA SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
VA SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
VA LUST	0.500		1	0	0	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
VA LTANKS	0.500		2	0	0	NR	NR	2
<b><i>State and tribal registered storage tank lists</i></b>								
FEMA UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
VA UST	0.250		0	0	NR	NR	NR	0
VA AST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
VA ENG CONTROLS	0.500		0	0	0	NR	NR	0
VA INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VA VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
VA BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
VA SPILLS	TP		NR	NR	NR	NR	NR	0
VA SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		1	0	NR	NR	NR	1
FUDS	1.000		0	0	0	1	NR	1
DOD	1.000		1	0	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		1	0	0	0	NR	1
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	1	0	NR	1
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
VA AIRS	TP		NR	NR	NR	NR	NR	0
VA NPDES	TP		NR	NR	NR	NR	NR	0
VA COAL ASH	0.500		0	0	0	NR	NR	0
VA DRYCLEANERS	0.250		0	0	NR	NR	NR	0
VA ENF	TP		NR	NR	NR	NR	NR	0
VA Financial Assurance	TP		NR	NR	NR	NR	NR	0
NY MANIFEST	0.250		1	0	NR	NR	NR	1
VA TIER 2	TP		NR	NR	NR	NR	NR	0
VA UIC	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

VA RGA LF	TP		NR	NR	NR	NR	NR	0
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## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>&lt; 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>&gt; 1</u>	<u>Total Plotted</u>
VA RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	12	0	1	1	0	14

### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

DOD  
Region

**FORT PICKETT MILITARY RESERVATION (CLOSED)**  
**FORT PICKETT MILITARY RES (County), VA**

DOD CUSA136934  
N/A

< 1/8  
1 ft.

DOD:

Feature 1: Army DOD  
Feature 2: Not reported  
Feature 3: Not reported  
URL: Not reported  
Name 1: Fort Pickett Military Reservation (Closed)  
Name 2: Not reported  
Name 3: Not reported  
State: VA  
DOD Site: Yes  
Tile name: VANOTTOWAY

A1

**PICKETT PARK**  
**800 GARNETT AVENUE**  
**BLACKSTONE, VA 23824**

VA LUST S106565359  
VA LTANKS N/A

< 1/8  
1 ft.

Site 1 of 2 in cluster A

Relative:  
Lower

LUST REG SC:

Actual:  
331 ft.

Region: SC  
Facility ID: 20027044  
**Facility Status: Closed**  
Facility Addr 2: FORT PICKETT  
Release Status: Confirmed  
Program: RP Lead  
Responsible Party: Not reported  
Case Mgr Name: Joey A Daniel  
Completed Date: 04/04/2002  
RP Address: Not reported  
RP City,St,Zip: Not reported  
RP Phone: Not reported

LTANKS:

Region: PRO  
CEDS Facility Id: 200000206307  
**Case Status: Closed**  
Pollution Complaint #: 20027044  
Reported: 04/04/2002  
Case Closed Date: 04/23/2002  
Program: RP Lead  
Federally Regulated UST (Y/N): N  
Regulated Petroleum UST (1): N  
Excluded UST (1): N  
Deferred UST (1): N  
Partially Deferred UST (1): N  
Exempt 1 UST (2): N  
Exempt 2 Heating Oil UST (2): N  
Small Heating Oil AST (2): Y  
Regulated AST (3): N  
Unregulated AST (3): N  
Other Y/N: N  
Unknown Y/N: N  
Other Description: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PICKETT PARK (Continued)**

**S106565359**

Heating Oil Category:

Category 2

**A2**

**LOCAL REDEVELOPMENT AUTHORITY  
800 GARNETT AVENUE  
BLACKSTONE, VA 23824**

**VA AST**

**A100200276  
N/A**

**< 1/8  
1 ft.**

**Site 2 of 2 in cluster A**

**Relative:  
Lower  
Actual:  
331 ft.**

AST:

Facility ID: 7038419  
Facility Type: LOCAL  
CEDS Facility ID: 200000205776

Tank Info:

Owner:

Owner Id: 40780  
Owner Name: Local Redevelopment Authority  
Owner Address: 2193 Military Rd  
Owner Address2: Not reported  
Owner City/State/Zip: Blackstone, VA 23824  
Owner Type: LOCAL  
Number of Active AST: 0  
Number of Active UST: 0  
Number of Inactive AST: 1  
Number of Inactive UST: 0

Fed Regulated: No  
Tank Number: 800  
Tank Type: AST  
Tank Capacity: 2000  
Tank Contents: HEATING OIL  
Tank Status: DISMANTLED

Tank Containment:

Install Date: 6/1/1975  
Containment: Curbing No  
Containment: Weirs No  
Containment: Sorbent No  
Containment: Culvert No  
Containment: Diversion No  
Containment: Retention No  
Containment: Dike No  
Containment: Unknown No  
Containment: Other No  
Containment: Other Note Not reported

Release Detection:

Release Detection: Ground Water No  
Release Detection: Visual No  
Release Detection: Vapor No  
Release Detection: Interstitial No  
Release Detection: None No  
Release Detection: Other No  
Release Detection: Other Note Not reported  
Release Prevention: Double Bottom No  
Release Prevention: Double Walled No  
Release Prevention: Lined Interior Not reported  
Release Prevention: Poly Jacket No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

LOCAL REDEVELOPMENT AUTHORITY (Continued)

A100200276

Release Prevention: Exc Liner No  
Release Prevention: None No  
Release Prevention: Unknown No  
Release Prevention: Other No  
Release Prevention: Other Note Not reported

Tank Foundation: Steel No  
Tank Foundation: Earthen No  
Tank Foundation: Concrete Imp No  
Tank Foundation: Unknown No  
Tank Foundation: Other No  
Tank Foundation: Other Note Not reported  
Tank Roof: Float No  
Tank Roof: Cone No  
Tank Roof: Breather Not reported  
Tank Roof: Dbldck Not reported  
Tank Roof: Pontoon Not reported  
Tank Roof: Balloon Not reported  
Tank Roof: Lifter Not reported  
Tank Roof: Pan Not reported  
Tank Roof: Other No  
Tank Roof: Other Note Not reported

Tank Material:

Tank Materials: Bare Steel No  
Tank Materials: Concrete No  
Tank Materials: Insulated Tank Jacket No  
Tank Materials: Unknown No  
Tank Materials: Other No  
Tank Materials: Other Note Not reported  
Tank Type Cathodic/CP: N  
Tank Type Single Wall: N  
Tank Type Double Wall: N  
Tank Type Lined Interior: N  
Tank Type Double Bottom: N  
Tank Type Potable/Skid: N  
Tank Type Shop Fabricated/Built: N  
Tank Type Vaulted Below Grade: N  
Tank Type Vertical: N  
Tank Type Horizontal: N  
Tank Type Unknown: N  
Tank Type Other: N  
Tank Type Other Specify: N

3 FORMER FORT PICKETT BUILDING 1488  
1100 GARNET AVE  
< 1/8 BLACKSTONE, VA 23824  
1 ft.

VA LTANKS S118172629  
N/A

Relative:  
Higher  
Actual:  
393 ft.

LTANKS:

Region: PRO  
CEDs Facility Id: 200000880510  
Case Status: Closed  
Pollution Complaint #: 20152442  
Reported: 04/22/2015

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORMER FORT PICKETT BUILDING 1488 (Continued)**

**S118172629**

Case Closed Date: 12/10/2015  
Program: RP Lead  
Federally Regulated UST (Y/N): N  
Regulated Petroleum UST (1): N  
Excluded UST (1): N  
Deferred UST (1): N  
Partially Deferred UST (1): N  
Exempt 1 UST (2): N  
Exempt 2 Heating Oil UST (2): N  
Small Heating Oil AST (2): Y  
Regulated AST (3): N  
Unregulated AST (3): N  
Other Y/N: N  
Unknown Y/N: N  
Other Description: Not reported  
Heating Oil Category: Category 2

**4**  
**NNW**  
**< 1/8**  
**0.011 mi.**  
**59 ft.**

**FORT PICKETT**  
**KEMPER AVENUE**  
**BLACKSTONE, VA 23824**

**SEMS**  
**US ENG CONTROLS**  
**US INST CONTROL**  
**ROD**

**1000114666**  
**VA2210020705**

**Relative:**  
**Higher**  
**Actual:**  
**404 ft.**

SEMS:  
Site ID: 0302847  
EPA ID: VA2210020705  
Cong District: 04  
FIPS Code: 51135  
Latitude: Not reported  
Longitude: Not reported  
FF: Y  
NPL: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

SEMS Detail:  
Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: SI  
Action Name: SI  
SEQ: 2  
Start Date: 1998-06-16 04:00:00  
Finish Date: 4/5/1999 4:00:00 AM  
Qual: L  
Current Action Lead: EPA Perf

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: SI

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Action Name: SI  
SEQ: 1  
Start Date: 1997-07-31 04:00:00  
Finish Date: 10/27/1997 5:00:00 AM  
Qual: L  
Current Action Lead: EPA Perf

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: ES  
Action Name: ESI  
SEQ: 1  
Start Date: 1999-06-01 04:00:00  
Finish Date: 11/1/1999 5:00:00 AM  
Qual: L  
Current Action Lead: EPA Perf

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: LZ  
Action Name: FF CR  
SEQ: 1  
Start Date: 1998-06-16 04:00:00  
Finish Date: 10/20/1998 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: PA  
Action Name: PA  
SEQ: 1  
Start Date: 1990-02-01 05:00:00  
Finish Date: 2/1/1995 5:00:00 AM  
Qual: L  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

FF: Y  
OU: 04  
Action Code: LV  
Action Name: FF RV  
SEQ: 7  
Start Date: 2003-01-06 05:00:00  
Finish Date: 3/10/2003 5:00:00 AM  
Qual: C  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 01  
Action Code: LV  
Action Name: FF RV  
SEQ: 4  
Start Date: 2000-10-25 04:00:00  
Finish Date: 6/27/2001 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 04  
Action Code: LY  
Action Name: FF RA  
SEQ: 4  
Start Date: 2005-01-15 05:00:00  
Finish Date: 2/1/2005 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 04  
Action Code: LX  
Action Name: FF RD  
SEQ: 4  
Start Date: 2004-10-01 04:00:00  
Finish Date: 12/1/2004 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 02  
Action Code: LY  
Action Name: FF RA  
SEQ: 2  
Start Date: 2002-09-30 04:00:00  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 02  
Action Code: LX  
Action Name: FF RD  
SEQ: 2  
Start Date: 2002-09-30 04:00:00  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 01  
Action Code: LY  
Action Name: FF RA  
SEQ: 1  
Start Date: 2002-09-30 04:00:00  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 01  
Action Code: LX  
Action Name: FF RD  
SEQ: 1  
Start Date: 2002-09-30 04:00:00  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 06  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 6  
Start Date: 2001-05-30 04:00:00  
Finish Date: 9/1/2004 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: LV  
Action Name: FF RV  
SEQ: 3  
Start Date: 1999-02-26 05:00:00  
Finish Date: 1/21/2000 5:00:00 AM  
Qual: C  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 04  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 4  
Start Date: 1999-09-08 04:00:00  
Finish Date: 10/29/2004 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: LV  
Action Name: FF RV  
SEQ: 5  
Start Date: 2000-10-25 04:00:00  
Finish Date: 6/27/2001 4:00:00 AM

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Qual: Not reported  
Current Action Lead: Fed Fac  
  
Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 04  
Action Code: RO  
Action Name: ROD  
SEQ: 4  
Start Date: Not reported  
Finish Date: 5/18/2005 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 01  
Action Code: RO  
Action Name: ROD  
SEQ: 1  
Start Date: Not reported  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 03  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 3  
Start Date: 1999-05-25 04:00:00  
Finish Date: 8/1/2004 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: VA  
Action Name: OTHR CLEANUP

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

SEQ: 1  
Start Date: 2004-09-27 04:00:00  
Finish Date: Not reported  
Qual: L  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 03  
Action Code: RO  
Action Name: ROD  
SEQ: 3  
Start Date: Not reported  
Finish Date: 2/23/2005 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 03  
Action Code: LV  
Action Name: FF RV  
SEQ: 6  
Start Date: 2002-01-15 05:00:00  
Finish Date: 5/23/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 06  
Action Code: RO  
Action Name: ROD  
SEQ: 6  
Start Date: Not reported  
Finish Date: 2/23/2005 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

OU: 05  
Action Code: RO  
Action Name: ROD  
SEQ: 5  
Start Date: Not reported  
Finish Date: 2/23/2005 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 05  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 5  
Start Date: 2001-05-30 04:00:00  
Finish Date: 8/1/2004 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 01  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 1  
Start Date: 1998-12-20 05:00:00  
Finish Date: 3/15/2002 5:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 06  
Action Code: LV  
Action Name: FF RV  
SEQ: 8  
Start Date: 2003-04-29 04:00:00  
Finish Date: 5/9/2003 4:00:00 AM  
Qual: C  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 04  
Action Code: LV  
Action Name: FF RV  
SEQ: 2  
Start Date: 1998-08-30 04:00:00  
Finish Date: 3/8/2000 5:00:00 AM  
Qual: S  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: AS  
Action Name: AIR SRVY  
SEQ: 1  
Start Date: 1997-10-01 04:00:00  
Finish Date: Not reported  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 02  
Action Code: RO  
Action Name: ROD  
SEQ: 2  
Start Date: Not reported  
Finish Date: 9/30/2002 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 02  
Action Code: LW  
Action Name: FF RI/FS  
SEQ: 2  
Start Date: 1999-04-26 04:00:00  
Finish Date: 10/20/2001 4:00:00 AM  
Qual: Not reported  
Current Action Lead: Fed Fac

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Region: 03  
Site ID: 0302847  
EPA ID: VA2210020705  
Site Name: FORT PICKETT  
NPL: N  
FF: Y  
OU: 00  
Action Code: DS  
Action Name: DISCVRY  
SEQ: 1  
Start Date: 1990-02-01 05:00:00  
Finish Date: 2/1/1990 5:00:00 AM  
Qual: Not reported  
Current Action Lead: St Perf

**US ENG CONTROLS:**

EPA ID: VA2210020705  
Site ID: 0302847  
Name: FORT PICKETT  
Address: KEMPER AVENUE  
BLACKSTONE, VA 23824

EPA Region: 03  
County: NOTTOWAY  
Event Code: Not reported  
Actual Date: 06/01/2005  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 001  
Action Name: RECORD OF DECISION  
Action Completion date: 09/30/2002  
Operable Unit: 01  
Contaminated Media : Groundwater  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 001  
Action Name: RECORD OF DECISION  
Action Completion date: 09/30/2002  
Operable Unit: 01  
Contaminated Media : Soil  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 002  
Action Name: RECORD OF DECISION  
Action Completion date: 09/30/2002  
Operable Unit: 02  
Contaminated Media : Groundwater  
Engineering Control: No Further Action  
Contact Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 002  
Action Name: RECORD OF DECISION  
Action Completion date: 09/30/2002  
Operable Unit: 02  
Contaminated Media : Soil  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 003  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 03  
Contaminated Media : Groundwater  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 003  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 03  
Contaminated Media : Sediment  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 003  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 03  
Contaminated Media : Soil  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 003  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 03  
Contaminated Media : Surface Water  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 004  
Action Name: RECORD OF DECISION  
Action Completion date: 05/18/2005  
Operable Unit: 04

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Contaminated Media : Groundwater  
Engineering Control: Bioremediation (In-Situ)  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 004  
Action Name: RECORD OF DECISION  
Action Completion date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Groundwater  
Engineering Control: Monitoring  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 004  
Action Name: RECORD OF DECISION  
Action Completion date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Groundwater  
Engineering Control: Natural Attenuation  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 004  
Action Name: RECORD OF DECISION  
Action Completion date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Soil  
Engineering Control: Disposal  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 004  
Action Name: RECORD OF DECISION  
Action Completion date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Soil  
Engineering Control: Excavation  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 005  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 05  
Contaminated Media : Groundwater  
Engineering Control: No Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 005

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 05  
Contaminated Media : Sediment  
Engineering Control: No Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 005  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 05  
Contaminated Media : Soil  
Engineering Control: No Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 005  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 05  
Contaminated Media : Surface Water  
Engineering Control: No Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 006  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 06  
Contaminated Media : Groundwater  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 006  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 06  
Contaminated Media : Sediment  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

Action ID: 006  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 06  
Contaminated Media : Soil  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Event Code Description: Not reported

Action ID: 006  
Action Name: RECORD OF DECISION  
Action Completion date: 02/23/2005  
Operable Unit: 06  
Contaminated Media : Surface Water  
Engineering Control: No Further Action  
Contact Name: Not reported  
Contact Phone and Ext: Not reported  
Event Code Description: Not reported

**US INST CONTROL:**

EPA ID: VA2210020705  
Site ID: 0302847  
Name: FORT PICKETT  
Action Name: RECORD OF DECISION  
Address: KEMPER AVENUE  
BLACKSTONE, VA 23824  
  
EPA Region: 03  
County: NOTTOWAY  
Event Code: Not reported  
Inst. Control: Covenant  
Actual Date: 06/01/2005  
Comple. Date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Groundwater  
Contact Name : Not reported  
Contact Phone and Ext : Not reported  
Event Code Description: Not reported

EPA ID: VA2210020705  
Site ID: 0302847  
Name: FORT PICKETT  
Action Name: RECORD OF DECISION  
Address: KEMPER AVENUE  
BLACKSTONE, VA 23824  
  
EPA Region: 03  
County: NOTTOWAY  
Event Code: Not reported  
Inst. Control: Covenant  
Actual Date: 06/01/2005  
Comple. Date: 05/18/2005  
Operable Unit: 04  
Contaminated Media : Soil  
Contact Name : Not reported  
Contact Phone and Ext : Not reported  
Event Code Description: Not reported

**ROD:**

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Operable Unit Number: FIRE TRAINING AREA (EBS-103)  
SEQ ID: 1  
Action Completion: 2002-09-30 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)  
Operable Unit Number: FORMER SERVICE STATION (PI-1)  
SEQ ID: 2  
Action Completion: 2002-09-30 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)  
Operable Unit Number: FORMER MAINTENANCE COMPOUND  
SEQ ID: 3  
Action Completion: 2005-02-23 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)  
Operable Unit Number: FORMER SALVAGE YARD (EBS-13)  
SEQ ID: 4  
Action Completion: 2005-05-18 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)  
Operable Unit Number: MOTOR POOL AREA (EBS 115)  
SEQ ID: 5  
Action Completion: 2005-02-23 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

EPA ID: VA2210020705  
RG: 3  
Site ID: 302847  
Name: FORT PICKETT  
Action: FF ROD (RCRA Statement of Basis/RTC)  
Operable Unit Number: MOTORPOOL AREA (EBS 124)  
SEQ ID: 6

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT (Continued)**

**1000114666**

Action Completion: 2005-02-23 00:00:00  
NPL Status: Not on the NPL  
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup

**5**  
**NW**  
**< 1/8**  
**0.096 mi.**  
**509 ft.**

**BRAC PROPERTY FT PICKETT**  
**403 MILITARY RD**  
**BLACKSTONE, VA 23824**

**CORRACTS** **1000885083**  
**RCRA NonGen / NLR** **VA0213720931**  
**ICIS**  
**NY MANIFEST**

**Relative:**  
**Lower**  
**Actual:**  
**368 ft.**

**CORRACTS:**  
EPA ID: VA0213720931  
EPA Region: 03  
Area Name: ENTIRE FACILITY  
Actual Date: 19950930  
Action: CA210SF - CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA  
NAICS Code(s): 92811  
National Security  
Original schedule date: Not reported  
Schedule end date: Not reported  
  
EPA ID: VA0213720931  
EPA Region: 03  
Area Name: ENTIRE FACILITY  
Actual Date: 19950930  
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority  
NAICS Code(s): 92811  
National Security  
Original schedule date: Not reported  
Schedule end date: Not reported

**RCRA NonGen / NLR:**

Date form received by agency: 02/06/2008  
Facility name: BRAC PROPERTY FT PICKETT  
Facility address: 403 MILITARY RD  
BLACKSTONE, VA 23824  
EPA ID: VA0213720931  
Mailing address: US ARMY BRAC D, RM 5000  
2530 CRYSTAL DRIVE  
ARLINGTON, VA 22202  
Contact: AARON BUTLER  
Contact address: Not reported  
Not reported  
Contact country: US  
Contact telephone: 703-602-5946  
Contact email: AARON.STARR.BUTLER@US.ARMY.MAIL  
EPA Region: 03  
Land type: Federal  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

**Owner/Operator Summary:**

Owner/operator name: NATIONAL GUARD - DAVID SHORT  
Owner/operator address: Not reported  
Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**BRAC PROPERTY FT PICKETT (Continued)**

**1000885083**

Owner/operator country: Not reported  
Owner/operator telephone: Not reported  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Federal  
Owner/Operator Type: Operator  
Owner/Op start date: 01/01/1999  
Owner/Op end date: Not reported

Owner/operator name: NATIONAL GUARD - DAVID SHORT  
Owner/operator address: Not reported  
Not reported

Owner/operator country: Not reported  
Owner/operator telephone: Not reported  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Federal  
Owner/Operator Type: Owner  
Owner/Op start date: 01/01/1999  
Owner/Op end date: Not reported

Owner/operator name: OPERNAME  
Owner/operator address: OPERSTREET  
OPERCITY, AK 99999

Owner/operator country: Not reported  
Owner/operator telephone: 215-555-1212  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Federal  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

**Historical Generators:**

Date form received by agency: 03/11/1999  
Site name: BRAC PROPERTY FT PICKETT

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**BRAC PROPERTY FT PICKETT (Continued)**

**1000885083**

Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 02/20/1986

Site name: BRAC PROPERTY FT PICKETT

Classification: Conditionally Exempt Small Quantity Generator

. Waste code: D001

. Waste name: IGNITABLE WASTE

. Waste code: D002

. Waste name: CORROSIVE WASTE

. Waste code: D004

. Waste name: ARSENIC

. Waste code: D006

. Waste name: CADMIUM

. Waste code: D007

. Waste name: CHROMIUM

. Waste code: D008

. Waste name: LEAD

. Waste code: D009

. Waste name: MERCURY

. Waste code: D011

. Waste name: SILVER

. Waste code: D018

. Waste name: BENZENE

. Waste code: D035

. Waste name: METHYL ETHYL KETONE

. Waste code: D039

. Waste name: TETRACHLOROETHYLENE

. Waste code: D040

. Waste name: TRICHLORETHYLENE

. Waste code: P042

. Waste name: 1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR)  
EPINEPHRINE

. Waste code: U212

. Waste name: Not Defined

**Corrective Action Summary:**

Event date: 09/30/1995

Event: REFERRED TO A NON-RCRA AUTHORITY-REFERRED TO CERCLA

Event date: 09/30/1995

Event: CA PRIORITIZATION-HIGH CA PRIORITY

Violation Status: No violations found

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**BRAC PROPERTY FT PICKETT (Continued)**

**1000885083**

Evaluation Action Summary:

Evaluation date: 12/21/1987  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

ICIS:

Enforcement Action ID: 03-1986-0749  
FRS ID: 110041994599  
Action Name: FORT PICKETT  
Facility Name: BRAC PROPERTY FT PICKETT  
Facility Address: 403 MILITARY RD  
BLACKSTONE, VA 23824  
Enforcement Action Type: TSCA Notice Of Non Compliance  
Facility County: NOTTOWAY  
Program System Acronym: ICIS  
Enforcement Action Forum Desc: Administrative - Formal  
EA Type Code: TSCANON  
Facility SIC Code: 9711  
Federal Facility ID: Not reported  
Latitude in Decimal Degrees: 37.052735  
Longitude in Decimal Degrees: -77.940723  
Permit Type Desc: Not reported  
Program System Acronym: 31419  
Facility NAICS Code: Not reported  
Tribal Land Code: Not reported

NY MANIFEST:

Country: USA  
EPA ID: VA0213720931  
Facility Status: Not reported  
Location Address 1: FT PICKETT ARMY BASE  
Code: BP  
Location Address 2: Not reported  
Total Tanks: Not reported  
Location City: BLACKSTONE  
Location State: VA  
Location Zip: 23824  
Location Zip 4: Not reported

NY MANIFEST:

EPAID: VA0213720931  
Mailing Name: DIRECTORATE OF PUBLIC WORKS  
Mailing Contact: STEVE A BOWER  
Mailing Address 1: FT PICKETTE ARMY BASE  
Mailing Address 2: Not reported  
Mailing City: BLACKSTONE  
Mailing State: VA  
Mailing Zip: 23824  
Mailing Zip 4: Not reported  
Mailing Country: USA  
Mailing Phone: 8042922630

NY MANIFEST:

Document ID: NYB7421535

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**BRAC PROPERTY FT PICKETT (Continued)**

**1000885083**

Manifest Status: K  
seq: Not reported  
Year: 1997  
Trans1 State ID: 11277PNY  
Trans2 State ID: Not reported  
Generator Ship Date: 09/11/1997  
Trans1 Recv Date: 09/11/1997  
Trans2 Recv Date: / /  
TSD Site Recv Date: 09/18/1997  
Part A Recv Date: 09/19/1997  
Part B Recv Date: 10/14/1997  
Generator EPA ID: VA0213720931  
Trans1 EPA ID: NYD980769947  
Trans2 EPA ID: Not reported  
TSDF ID 1: NYD000632372  
TSDF ID 2: Not reported  
Manifest Tracking Number: Not reported  
Import Indicator: Not reported  
Export Indicator: Not reported  
Discr Quantity Indicator: Not reported  
Discr Type Indicator: Not reported  
Discr Residue Indicator: Not reported  
Discr Partial Reject Indicator: Not reported  
Discr Full Reject Indicator: Not reported  
Manifest Ref Number: Not reported  
Alt Facility RCRA ID: Not reported  
Alt Facility Sign Date: Not reported  
MGMT Method Type Code: Not reported  
Waste Code: D003 - NON-LISTED REACTIVE WASTES  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00050  
Units: P - Pounds  
Number of Containers: 001  
Container Type: DM - Metal drums, barrels  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 100  
Waste Code: D003 - NON-LISTED REACTIVE WASTES  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00006  
Units: P - Pounds  
Number of Containers: 001  
Container Type: DM - Metal drums, barrels  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 100  
Waste Code: D003 - NON-LISTED REACTIVE WASTES  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Waste Code: Not reported  
Quantity: 00436

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**BRAC PROPERTY FT PICKETT (Continued)**

**1000885083**

Units: P - Pounds  
Number of Containers: 001  
Container Type: DM - Metal drums, barrels  
Handling Method: R Material recovery of more than 75 percent of the total material.  
Specific Gravity: 100

[Click this hyperlink](#) while viewing on your computer to access  
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

**6**  
**ESE**  
**1/4-1/2**  
**0.321 mi.**  
**1693 ft.**

**PRACTICE BAZOOKA RANGE**  
**AFZC-ECM**  
**BRUNSWICK COUNTY, VA**

**UXO 1024715882**  
**N/A**

**Relative:**  
**Lower**

**UXO:**

**Actual:**  
**333 ft.**

DoD Component: Army  
Installation Name: FORT PICKETT ARNG MTC  
Facility Address 2: Not reported  
Site ID: BCT-001-R-01  
Site Type: Unexploded Munitions and Ordnance Area  
Latitude: 37.036121000000001  
Longitude: -77.924143999999998

**7**  
**NNE**  
**1/2-1**  
**0.701 mi.**  
**3703 ft.**

**FORT PICKETT ARMY AIRFIELD**  
**BLACKSTONE, VA**

**FUDS 1007211985**  
**N/A**

**Relative:**  
**Lower**

**FUDS:**

**Actual:**  
**338 ft.**

EPA Region: 3  
Installation ID: VA39799F167400  
Congressional District Number: 7  
Facility Name: FORT PICKETT ARMY AIRFIELD  
FUDS Number: C03VA0220  
City: BLACKSTONE  
State: VA  
County: NOTTOWAY COUNTY  
Telephone: 410-962-2809  
USACE Division: North Atlantic Division (NAD)  
USACE District: Baltimore District (NAB)  
Status: Properties with projects  
Current Owner: Local Government  
X Coord: -8678289.0571244303  
Y Coord: 4450500.7006473802  
Latitude: 37.081699  
Longitude: -77.958396999999906

**FUDS Detail as of Jan 2015:**

Fiscal Year: 2013  
Federal Facility ID: VA9799F1674  
RAB: Not reported  
NPL Status: Not Listed  
Description: The site is located off of Virginia State Route 40, about 24 miles southwest of Petersburg, Virginia. The site was used for the storage

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**FORT PICKETT ARMY AIRFIELD (Continued)**

**1007211985**

History:

of gasoline and motor oil and included three 25,000 gallons underground fuel storage tanks, a fuel pump house, a small storage building, covered pipeline access pits, a paved fuel loading area, and four small concrete block structures. These buildings were used in the operations of the airfield. Mr. Richard Lee, Town Manager, was contacted on April 2, 1991, concerning the property acquired by the Town of Blackstone. He stated that the National Guard Armory had been constructed on the 6.92 acre site and most of the other facilities abandoned by the Army remain on the 31.02 acre site. Most of these facilities are being used by the City, with the exception being the old fuel depot area where the underground fuel tanks are located. The subject 37.94 acre parcel was a portion of the Blackstone Army Airfield, Fort Pickett, in Blackstone, Virginia. DOD acquired fee title to this site by Declaration of Taking No. 5, entitled "United States of America vs. 48,883 acres of land, more or less, situated in Nottoway, Dinwiddie, Brunswick and Lunenburg Counties, Commonwealth of Virginia, and P. B. Palmer, et al, Miscellaneous No. 1598". It was filed 21 April 1942 in U.S. District Court for the Eastern District of Virginia. During the period of 1967 and 1983, DOD leased a 25-acre tract of the subject parcel to the Town of Blackstone in connection with their airport operations. By Deed of Exchange dated 14 December 1983, the Government transferred two parcels (37.94 acres) to the Town of Blackstone in exchange for a 76.0 acre parcel. One parcel transferred by the Government was 31.02 acres and the other was 6.92 acres. The deed of exchange limited the use of the parcels to airfield-related industrial or municipal government-related construction. The deed also specified that: (a) Any construction must conform to Federal Aviation Administration regulations, (b) Reserved perpetual rights and privileges for ingress/egress over, along and across existing, or any improved access roads leading to the airport, and (c) Reserved a perpetual right to make joint use of the landing area and rail lines. The remainder of the 48,883 acres originally acquired, as well as the subsequent parcels acquired, continues to be under the control of the Department of the Army and is known as Fort Pickett, Virginia.

CTC:  
Current Program:  
Future Program:  
Institutional ID:

185.59999999999999  
Not reported  
Not reported  
57850

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLACKSTONE	S118172628	FORMER FORT PICKETT BUILDING 1413	1125 W PARADE AVE	23824	VA LTANKS

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

##### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

##### **NPL Site Boundaries**

###### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

##### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

##### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991  
Date Data Arrived at EDR: 02/02/1994  
Date Made Active in Reports: 03/30/1994  
Number of Days to Update: 56

Source: EPA  
Telephone: 202-564-4267  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: No Update Planned

### ***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 26

Source: EPA  
Telephone: N/A  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019  
Date Data Arrived at EDR: 04/05/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 703-603-8704  
Last EDR Contact: 04/05/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: 800-424-9346
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 35	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019	Source: EPA
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-424-9346
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal institutional controls / engineering controls registries***

#### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019	Source: Department of the Navy
Date Data Arrived at EDR: 03/07/2019	Telephone: 843-820-7326
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 05/10/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

#### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

#### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019

Date Data Arrived at EDR: 03/26/2019

Date Made Active in Reports: 05/01/2019

Number of Days to Update: 36

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 03/26/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A

Date Data Arrived at EDR: N/A

Date Made Active in Reports: N/A

Number of Days to Update: N/A

Source: Department of Environmental Quality

Telephone: 804-698-4236

Last EDR Contact: 03/18/2019

Next Scheduled EDR Contact: 07/01/2019

Data Release Frequency: N/A

## ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF: Solid Waste Management Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/04/2019

Date Data Arrived at EDR: 03/05/2019

Date Made Active in Reports: 04/10/2019

Number of Days to Update: 36

Source: Department of Environmental Quality

Telephone: 804-698-4238

Last EDR Contact: 06/03/2019

Next Scheduled EDR Contact: 09/16/2019

Data Release Frequency: Semi-Annually

## ***State and tribal leaking storage tank lists***

LUST REG SW: Leaking Underground Storage Tank Database

Leaking underground storage tank site locations. Includes: counties of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe; cities of Bristol, Galax, Norton.

Date of Government Version: 07/15/2013

Date Data Arrived at EDR: 07/18/2013

Date Made Active in Reports: 09/16/2013

Number of Days to Update: 60

Source: Department of Environmental Quality Southwest Regional Office

Telephone: 276-676-4800

Last EDR Contact: 10/11/2016

Next Scheduled EDR Contact: 01/23/2017

Data Release Frequency: No Update Planned

LUST REG TD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Accomack, Isle of Wight, James City, Northampton, Southampton, York; cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg.

Date of Government Version: 06/30/2013

Date Data Arrived at EDR: 07/05/2013

Date Made Active in Reports: 09/16/2013

Number of Days to Update: 73

Source: Department of Environmental Quality Tidewater Regional Office

Telephone: trofoia@deq.vir

Last EDR Contact: 09/26/2016

Next Scheduled EDR Contact: 01/09/2017

Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LUST REG VA: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren; cities of Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester.

Date of Government Version: 12/06/2011	Source: Department of Environmental Quality Valley Regional Office
Date Data Arrived at EDR: 12/08/2011	Telephone: 540-574-7800
Date Made Active in Reports: 01/16/2012	Last EDR Contact: 08/29/2016
Number of Days to Update: 39	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG WC: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Patrick, Pulaski, Roanoke; cities of Bedford, Clifton Forge, Covington, Martinsville, Radford, Roanoke, Salem.

Date of Government Version: 06/04/2015	Source: Department of Environmental Quality West Central Regional Office
Date Data Arrived at EDR: 06/05/2015	Telephone: 540-562-6700
Date Made Active in Reports: 07/07/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 32	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG PD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greenville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland; cities of Colonial Heights, Emporia, Hopewell, Petersburg.

Date of Government Version: 12/02/2014	Source: Department of Environmental Quality Piedmont Regional Office
Date Data Arrived at EDR: 12/04/2014	Telephone: 804-527-5020
Date Made Active in Reports: 01/16/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 43	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Quarterly

### LUST REG SC: Leaking Underground Storage Tanks

Leaking underground storage tank site locations. Includes: counties of Amherst, Appomattox, Buckingham, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Pittsylvania, Prince Edward; cities of Danville, Lynchburg.

Date of Government Version: 09/06/2013	Source: Department of Environmental Quality, South Central Region
Date Data Arrived at EDR: 09/06/2013	Telephone: 434-582-5120
Date Made Active in Reports: 09/17/2013	Last EDR Contact: 08/29/2016
Number of Days to Update: 11	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Semi-Annually

### LUST REG NO: Leaking Underground Storage Tank Tracking Database

Leaking underground storage tank site locations. Includes: counties of Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford; cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park.

Date of Government Version: 05/18/2004	Source: Department of Environmental Quality Northern Regional Office
Date Data Arrived at EDR: 05/22/2004	Telephone: 703-583-3800
Date Made Active in Reports: 07/09/2004	Last EDR Contact: 09/06/2011
Number of Days to Update: 48	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/17/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018  
Date Data Arrived at EDR: 03/08/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land**  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land**  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/24/2018  
Date Data Arrived at EDR: 03/12/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 50

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

**INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-6597
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

LTANKS: Leaking Petroleum Storage Tanks  
Includes releases of petroleum from underground storage tanks and aboveground storage tanks.

Date of Government Version: 02/05/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/28/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 39	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### **State and tribal registered storage tank lists**

FEMA UST: Underground Storage Tank Listing  
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017	Source: FEMA
Date Data Arrived at EDR: 05/30/2017	Telephone: 202-646-5797
Date Made Active in Reports: 10/13/2017	Last EDR Contact: 04/25/2019
Number of Days to Update: 136	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

UST: Registered Petroleum Storage Tanks  
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

AST: Registered Petroleum Storage Tanks  
Registered Aboveground Storage Tanks.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/17/2018	Source: EPA Region 10
Date Data Arrived at EDR: 03/07/2019	Telephone: 206-553-2857
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018	Source: EPA Region 9
Date Data Arrived at EDR: 03/08/2019	Telephone: 415-972-3368
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018	Source: EPA Region 8
Date Data Arrived at EDR: 03/07/2019	Telephone: 303-312-6137
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018	Source: EPA Region 7
Date Data Arrived at EDR: 03/07/2019	Telephone: 913-551-7003
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-7591
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018	Source: EPA Region 5
Date Data Arrived at EDR: 03/07/2019	Telephone: 312-886-6136
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/24/2018	Source: EPA Region 4
Date Data Arrived at EDR: 03/12/2019	Telephone: 404-562-9424
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018	Source: EPA, Region 1
Date Data Arrived at EDR: 03/07/2019	Telephone: 617-918-1313
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### ***State and tribal institutional control / engineering control registries***

#### ENG CONTROLS: Engineering Controls Sites Listing

A listing of sites with Engineering Controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INST CONTROL: Voluntary Remediation Program Database

Sites included in the Voluntary Remediation Program database that have deed restrictions.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### ***State and tribal voluntary cleanup sites***

#### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

#### VRP: Voluntary Remediation Program

The Voluntary Cleanup Program encourages owners of elected contaminated sites to take the initiative and conduct voluntary cleanups that meet state environmental standards.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/25/2019
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **State and tribal Brownfields sites**

### **BROWNFIELDS: Brownfields Site Specific Assessments**

To qualify for Brownfields Assessment, the site must meet the Federal definition of a Brownfields and should have contaminant issues that need to be addressed and a redevelopment plan supported by the local government and community. Virginia's Department of Environmental Quality performs brownfields assessments under a cooperative agreement with the U.S. Environmental Protection Agency at no cost to communities, property owners or, prospective purchasers. The assessment is an evaluation of environmental impacts caused by previous site uses similar to a Phase II Environmental Assessment.

Date of Government Version: 01/23/2019  
Date Data Arrived at EDR: 01/24/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 29

Source: Department of Environmental Quality  
Telephone: 804-698-4207  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### **US BROWNFIELDS: A Listing of Brownfields Sites**

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018  
Date Data Arrived at EDR: 12/18/2018  
Date Made Active in Reports: 01/11/2019  
Number of Days to Update: 24

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 06/04/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### **INDIAN ODI: Report on the Status of Open Dumps on Indian Lands**

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

#### **ODI: Open Dump Inventory**

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### **DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations**

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: No Update Planned

### IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### Local Lists of Hazardous waste / Contaminated Sites

#### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: No Update Planned

#### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Quarterly

#### PFAS: Per- and Polyfluoroalkyl Substances

PFOS and PFOA stand for perfluorooctane sulfonate and perfluorooctanoic acid, respectively. Both are fluorinated organic chemicals, part of a larger family of compounds referred to as perfluoroalkyl substances (PFASs).

Date of Government Version: 04/08/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/08/2019  
Number of Days to Update: 28

Source: Department of Environmental Quality  
Telephone: 804-698-4336  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### Local Land Records

#### LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## *Records of Emergency Release Reports*

### HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/25/2019	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 03/26/2019	Telephone: 202-366-4555
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### SPILLS BRL: Prep/Spills Database Listing

A listing of spills locations located in the Blue Ridge Regional area, Lynchburg.

Date of Government Version: 09/18/2009	Source: DEQ, Blue Ridge Regional Office
Date Data Arrived at EDR: 09/18/2009	Telephone: 434-582-6218
Date Made Active in Reports: 10/06/2009	Last EDR Contact: 11/28/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/12/2012
	Data Release Frequency: Varies

### SPILLS: Prep/Spills Database Listing

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4287
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### SPILLS PC: Pollution Complaint Database

Pollution Complaints Database. The pollution reports contained in the PC database include the initial release reporting of Leaking Underground Storage Tanks and all other releases of petroleum to the environment as well as releases to state waters. The database is current through 12/1/93. Since that time, all spill and pollution reporting information has been collected and tracked through the DEQ regional offices.

Date of Government Version: 06/01/1996	Source: Department of Environmental Quality
Date Data Arrived at EDR: 10/22/1996	Telephone: 804-698-4287
Date Made Active in Reports: 11/21/1996	Last EDR Contact: 03/08/2010
Number of Days to Update: 30	Next Scheduled EDR Contact: 06/21/2010
	Data Release Frequency: No Update Planned

### SPILLS NO: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/23/2009	Source: Department of Environmental Quality, Northern Region
Date Data Arrived at EDR: 09/29/2009	Telephone: 703-583-3864
Date Made Active in Reports: 10/30/2009	Last EDR Contact: 09/06/2011
Number of Days to Update: 31	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### SPILLS PD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/20/2009  
Date Data Arrived at EDR: 10/29/2009  
Date Made Active in Reports: 12/03/2009  
Number of Days to Update: 35

Source: Department of Environmental Quality, Piedmont Region  
Telephone: 804-527-5020  
Last EDR Contact: 02/06/2012  
Next Scheduled EDR Contact: 05/21/2012  
Data Release Frequency: Quarterly

### SPILLS SW: Reportable Spills

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 01/21/2010  
Date Data Arrived at EDR: 01/22/2010  
Date Made Active in Reports: 02/16/2010  
Number of Days to Update: 25

Source: Department of Environmental Quality, Southwest Region  
Telephone: 276-676-4839  
Last EDR Contact: 07/13/2012  
Next Scheduled EDR Contact: 10/29/2012  
Data Release Frequency: No Update Planned

### SPILLS TD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/17/2009  
Date Data Arrived at EDR: 09/23/2009  
Date Made Active in Reports: 10/06/2009  
Number of Days to Update: 13

Source: Department of Environmental Quality, Tidewater Region  
Telephone: trofoia@deq.vir  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: Quarterly

### SPILLS VA: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 08/08/2012  
Date Data Arrived at EDR: 08/09/2012  
Date Made Active in Reports: 10/05/2012  
Number of Days to Update: 57

Source: Department of Environmental Quality, Valley Regional Office  
Telephone: 540-574-7800  
Last EDR Contact: 05/06/2013  
Next Scheduled EDR Contact: 08/19/2013  
Data Release Frequency: Quarterly

### SPILLS WC: Prep Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/21/2009  
Date Data Arrived at EDR: 09/29/2009  
Date Made Active in Reports: 10/30/2009  
Number of Days to Update: 31

Source: Department of Environmental Quality, West Central Region  
Telephone: 540-562-6700  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: No Update Planned

### SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/01/2012  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/15/2013  
Number of Days to Update: 43

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### **Other Ascertainable Records**

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 03/07/2019	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 04/03/2019	Telephone: 202-528-4285
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 05/21/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: N/A

### SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/13/2019
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

### US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/25/2019  
Date Data Arrived at EDR: 03/26/2019  
Date Made Active in Reports: 05/07/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Quarterly

### EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013  
Date Data Arrived at EDR: 03/21/2014  
Date Made Active in Reports: 06/17/2014  
Number of Days to Update: 88

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 05/06/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 05/08/2018  
Date Made Active in Reports: 07/20/2018  
Number of Days to Update: 73

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 06/21/2017  
Date Made Active in Reports: 01/05/2018  
Number of Days to Update: 198

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Every 4 Years

### TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 01/10/2018  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 2

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Annually

### ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Annually

### RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019  
Date Data Arrived at EDR: 05/02/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-564-8600  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995  
Date Data Arrived at EDR: 07/03/1995  
Date Made Active in Reports: 08/07/1995  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-4104  
Last EDR Contact: 06/02/2008  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned

### PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/20/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 34

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016  
Date Data Arrived at EDR: 11/23/2016  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 79

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Quarterly

**FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

**FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016  
Date Data Arrived at EDR: 09/08/2016  
Date Made Active in Reports: 10/21/2016  
Number of Days to Update: 43

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

### COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 03/07/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: N/A  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017  
Date Data Arrived at EDR: 11/30/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 15

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/02/2019  
Date Data Arrived at EDR: 04/02/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 04/02/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 51

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 04/30/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2019	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 04/23/2019	Telephone: Varies
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/05/2019
Number of Days to Update: 30	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015	Source: EPA/NTIS
Date Data Arrived at EDR: 02/22/2017	Telephone: 800-424-9346
Date Made Active in Reports: 09/28/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 218	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Biennially

### INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 04/11/2019
Number of Days to Update: 546	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017	Source: Department of Energy
Date Data Arrived at EDR: 09/11/2018	Telephone: 202-586-3559
Date Made Active in Reports: 09/14/2018	Last EDR Contact: 05/02/2019
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Varies

### UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017	Source: Department of Energy
Date Data Arrived at EDR: 10/11/2017	Telephone: 505-845-0011
Date Made Active in Reports: 11/03/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/11/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/18/2019	Telephone: 703-603-8787
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018  
Date Data Arrived at EDR: 02/27/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 05/29/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Semi-Annually

### US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

### US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/27/2019	Source: Department of Interior
Date Data Arrived at EDR: 03/28/2019	Telephone: 202-208-2609
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 03/21/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019	Source: EPA
Date Data Arrived at EDR: 03/05/2019	Telephone: (215) 814-5000
Date Made Active in Reports: 03/15/2019	Last EDR Contact: 06/05/2019
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/16/2019
	Data Release Frequency: Quarterly

### UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017	Source: Department of Defense
Date Data Arrived at EDR: 01/17/2019	Telephone: 703-704-1564
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/15/2019
Number of Days to Update: 74	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Varies

### DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/26/2018	Telephone: 202-564-0527
Date Made Active in Reports: 10/05/2018	Last EDR Contact: 05/24/2019
Number of Days to Update: 71	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

### ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/09/2019	Telephone: 202-564-2280
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/09/2019
Number of Days to Update: 44	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 02/21/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 39

Source: EPA  
Telephone: 800-385-6164  
Last EDR Contact: 05/21/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Quarterly

### AIRS: Permitted Airs Facility List

A listing of permitted Airs facilities.

Date of Government Version: 01/14/2019  
Date Data Arrived at EDR: 01/17/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 81

Source: Department of Environmental Quality  
Telephone: 804-698-4000  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

### CEDS: Comprehensive Environmental Data System

Virginia Water Protection Permits, Virginia Pollution Discharge System (point discharge) permits and Virginia Pollution Abatement (no point discharge) permits.

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 34

Source: Department of Environmental Quality  
Telephone: 804-698-4077  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Quarterly

### COAL ASH: Coal Ash Disposal Sites

A listing of facilities with coal ash impoundments.

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/12/2018  
Date Made Active in Reports: 01/30/2019  
Number of Days to Update: 49

Source: Department of Environmental Protection  
Telephone: 804-698-4285  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Varies

### DRYCLEANERS: Drycleaner List

A listing of registered drycleaners.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 11/01/2018  
Date Made Active in Reports: 12/26/2018  
Number of Days to Update: 55

Source: Department of Environmental Quality  
Telephone: 804-698-4407  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### ENFORCEMENT: Enforcement Actions Data

A listing of enforcement actions.

Date of Government Version: 02/04/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4031  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### Financial Assurance 1: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 01/30/2019  
Date Data Arrived at EDR: 01/31/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 22

Source: Department of Environmental Quality  
Telephone: 804-698-4205  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 05/11/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance 2: Financial Assurance Information listing  
Solid waste financial assurance information.

Date of Government Version: 01/31/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4123  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 01/20/2017  
Date Made Active in Reports: 02/14/2017  
Number of Days to Update: 25

Source: Department of Environmental Quality  
Telephone: 804-698-4159  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

UIC: Underground Injection Control Wells

A listing of underground injection controls wells.

Date of Government Version: 01/29/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/25/2019  
Number of Days to Update: 26

Source: Department of Mines, Minerals and Energy  
Telephone: 276-415-9700  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/20/2014  
Number of Days to Update: 203

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia and at the Regional VA Levels.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/15/2014  
Number of Days to Update: 198

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

#### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/04/2019  
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 05/14/2019  
Next Scheduled EDR Contact: 08/26/2019  
Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/16/2019  
Number of Days to Update: 36

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/14/2019  
Number of Days to Update: 15

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/27/2018  
Number of Days to Update: 35

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 02/23/2018  
Date Made Active in Reports: 04/09/2018  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 05/17/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 06/15/2018  
Date Made Active in Reports: 07/09/2018  
Number of Days to Update: 24

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/11/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Annually

### Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

### Electric Power Transmission Line Data

Source: PennWell Corporation

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

### Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

### Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

### Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

### Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

### Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 804-692-1900

**Flood Zone Data:** This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **STREET AND ADDRESS INFORMATION**

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

BUILDINGS 1485 AND 3006  
ARMSTEAD AVENUE  
BLACKSTONE, VA 23824

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.04109 - 37° 2' 27.92"
Longitude (West):	77.94106 - 77° 56' 27.82"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	238418.8
UTM Y (Meters):	4103273.5
Elevation:	390 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

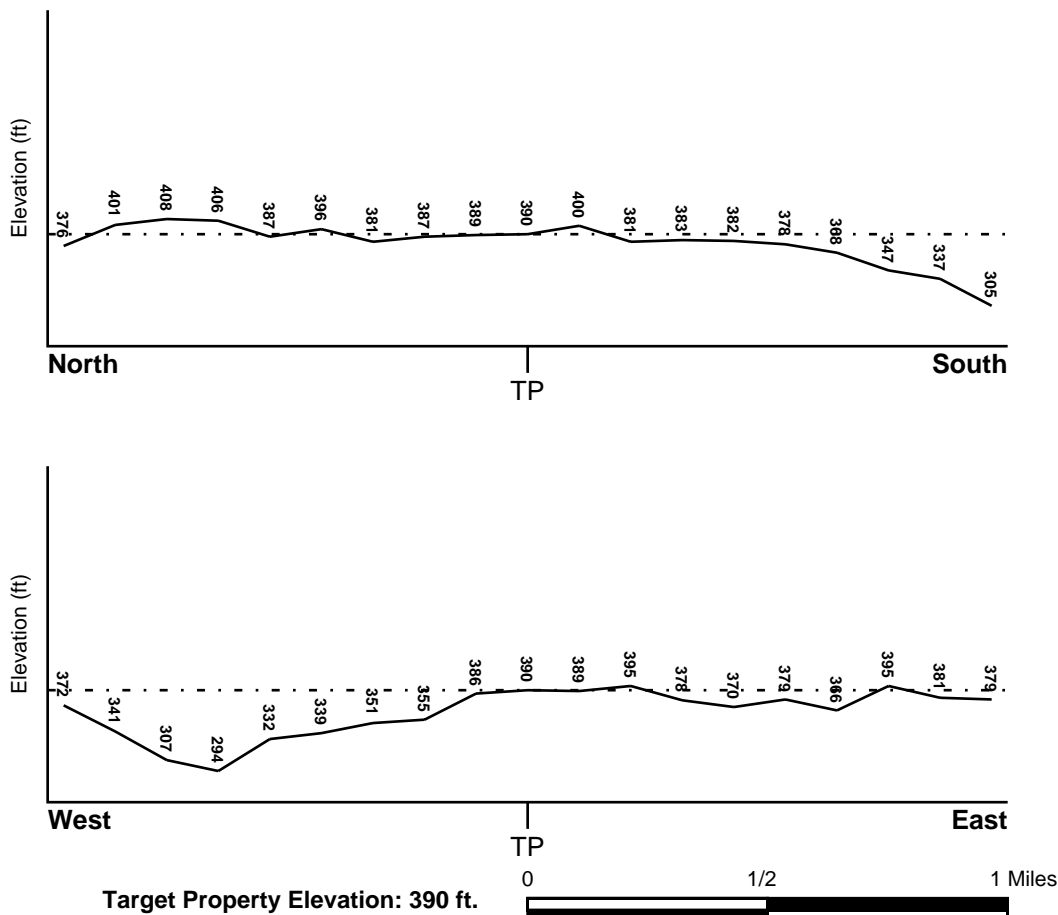
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

#### Flood Plain Panel at Target Property

51135C0225C

#### Additional Panels in search area:

Not Reported

#### FEMA Source Type

FEMA FIRM Flood data

#### FEMA Source Type

### NATIONAL WETLAND INVENTORY

NWI Quad at Target Property  
BLACKSTONE EAST

NWI Electronic  
Data Coverage  
YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### ***Site-Specific Hydrogeological Data\*:***

Search Radius: 1.25 miles  
Status: Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

Era: Paleozoic  
System: Devonian  
Series: Middle Paleozoic granitic rocks  
Code: Pzg2 (*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: APPLING

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 4.50
2	9 inches	35 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
3	35 inches	46 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
4	46 inches	65 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Surficial Soil Types: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Shallow Soil Types: loam

Deeper Soil Types: sandy clay loam  
sandy loam  
unweathered bedrock

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **WELL SEARCH DISTANCE INFORMATION**

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### **FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

### **FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

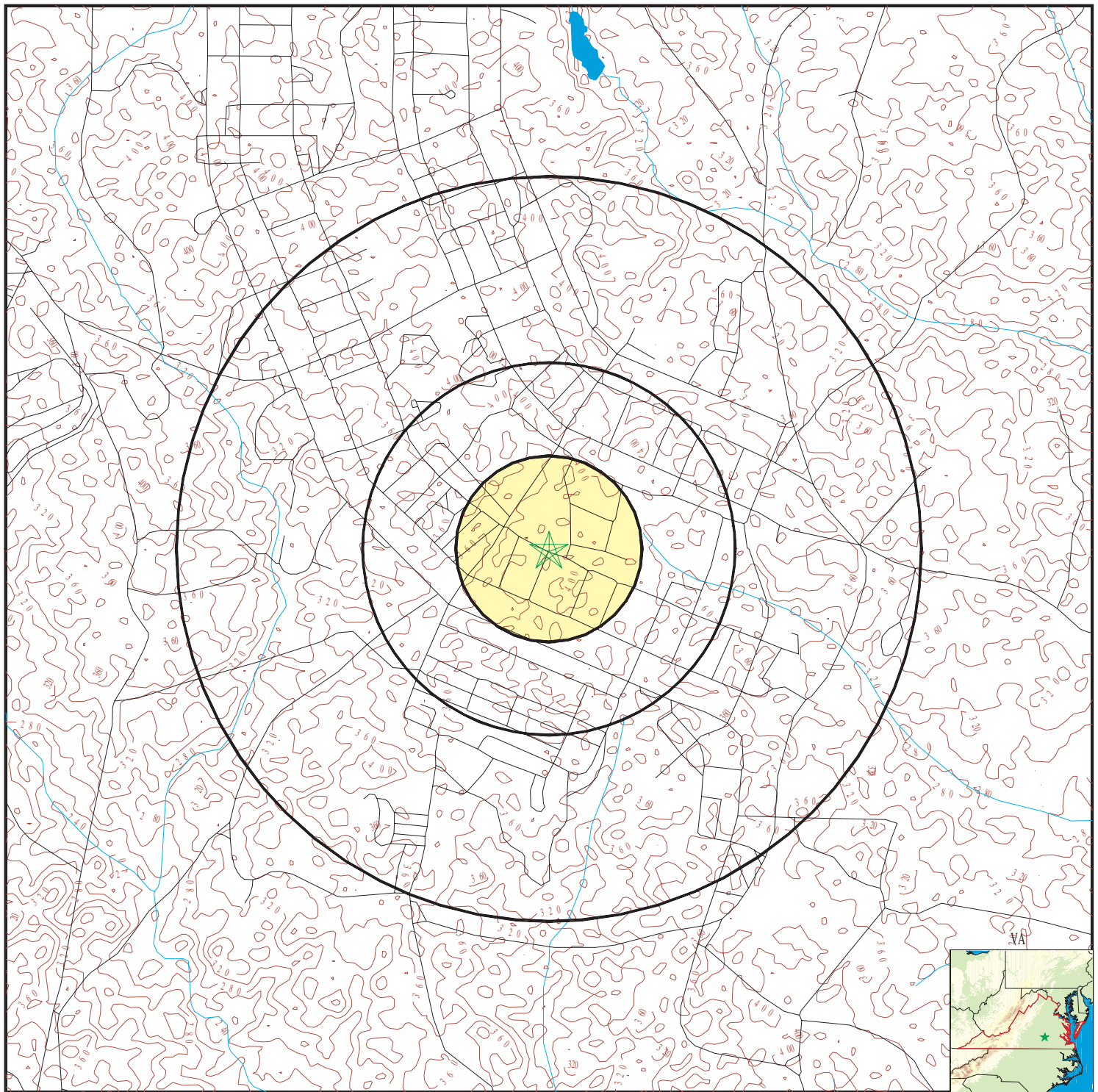
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### **STATE DATABASE WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

# PHYSICAL SETTING SOURCE MAP - 5675972.9s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: Buildings 1485 and 3006  
 ADDRESS: Armstead Avenue  
 Blackstone VA 23824  
 LAT/LONG: 37.04109 / 77.94106

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.9s  
 DATE: June 06, 2019 4:36 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

### AREA RADON INFORMATION

EPA Region 3 Statistical Summary Readings for Zip Code: 23824

Number of sites tested: 19.

Maximum Radon Level: 13.8 pCi/L.

Minimum Radon Level: 0.3 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
15 (78.95%)	3 (15.79%)	1 (5.26%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

---

Federal EPA Radon Zone for NOTTOWAY County: 1

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## **TOPOGRAPHIC INFORMATION**

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **HYDROLOGIC INFORMATION**

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

## **HYDROGEOLOGIC INFORMATION**

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## **GEOLOGIC INFORMATION**

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Virginia Public Water Supplies

Source: Department of Health, Office of Water Programs

Telephone: 804-786-1756

## OTHER STATE DATABASE INFORMATION

#### Virginia Oil and Gas Wells

Source: Department of Mines, Minerals and Energy

Telephone: 804-692-3200

A listing of oil and gas well locations.

### RADON

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

#### EPA Region 3 Statistical Summary Readings

Source: Region 3 EPA

Telephone: 215-814-2082

Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

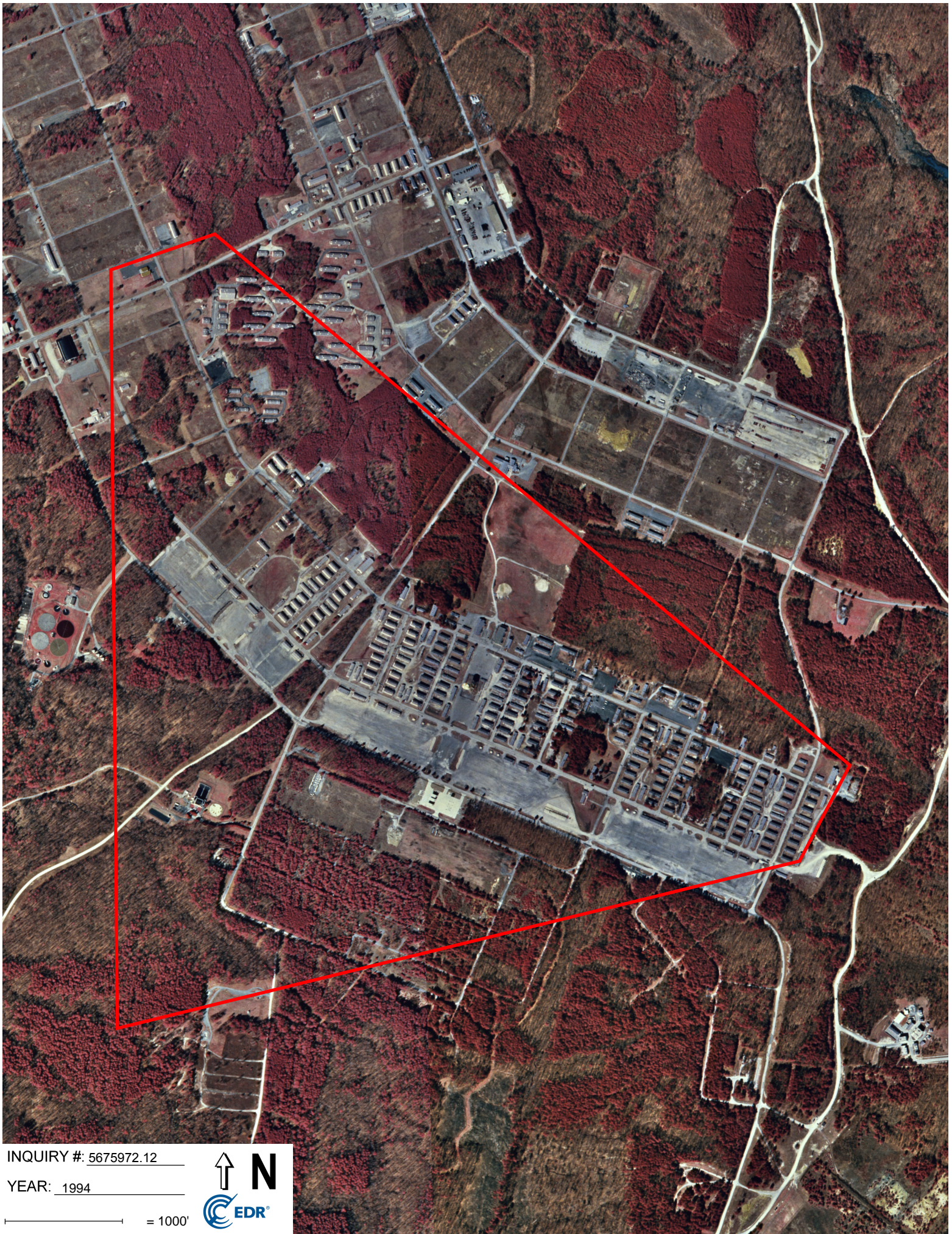
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STREET AND ADDRESS INFORMATION

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INQUIRY #: 5675972.12

YEAR: 1994

1" = 1000'





INQUIRY #: 5675972.12

YEAR: 1989

— = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY #: 5675972.12

YEAR: 1984

1" = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY #: 5675972.12

YEAR: 1979

— = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



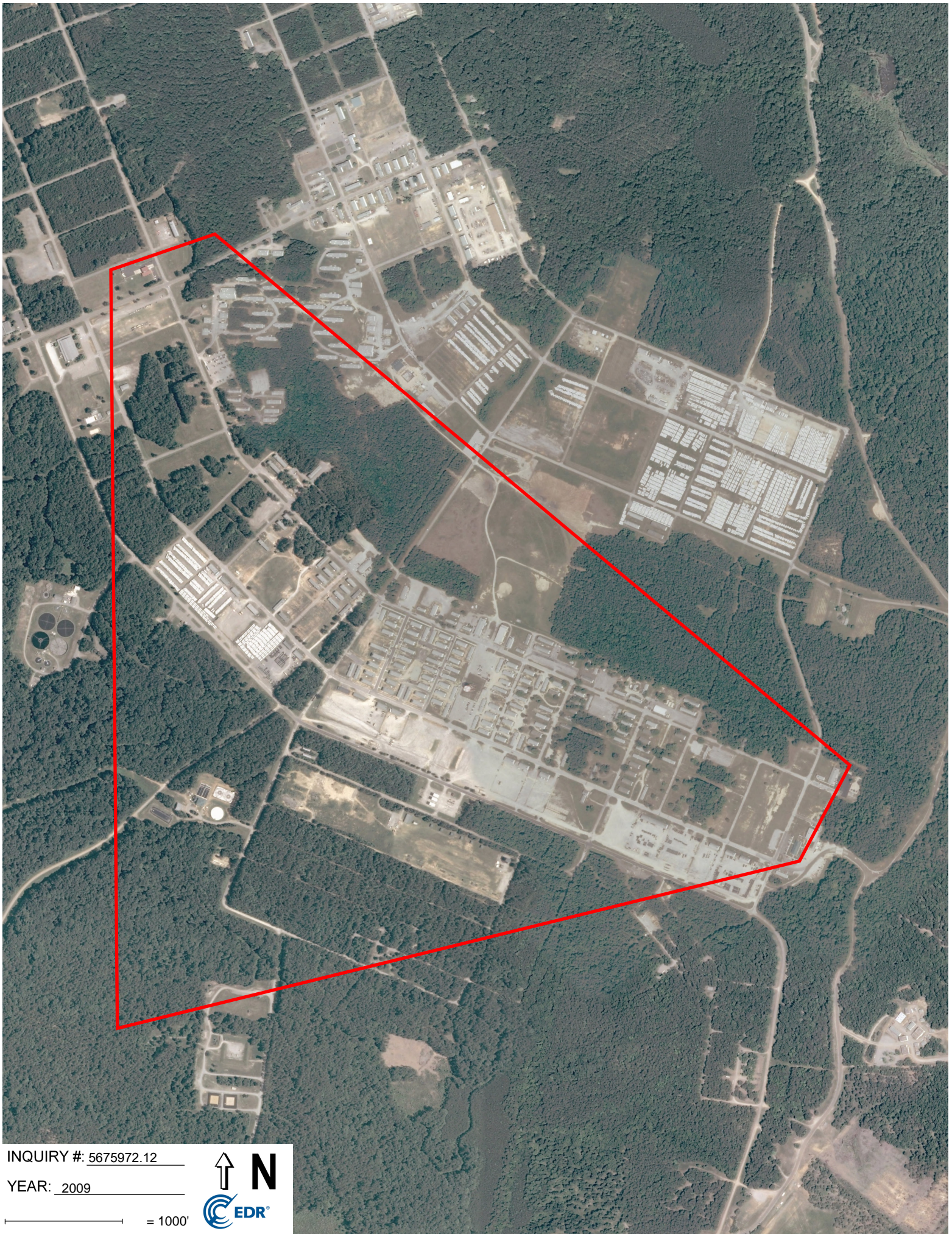


INQUIRY #: 5675972.12

YEAR: 1950

— = 1000'



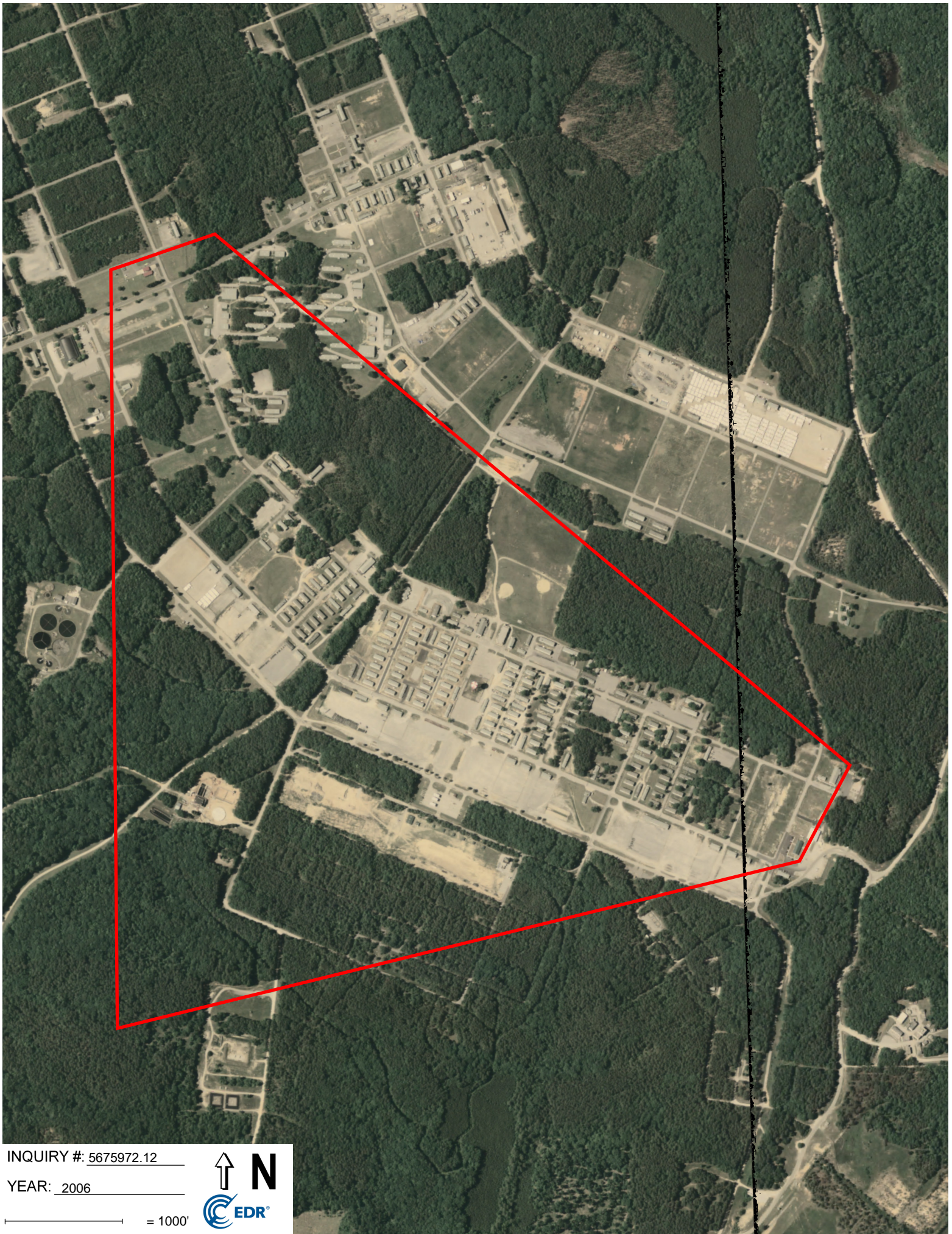


INQUIRY #: 5675972.12

YEAR: 2009

1" = 1000'





INQUIRY #: 5675972.12

YEAR: 2006

1" = 1000'





INQUIRY #: 5675972.12

YEAR: 2000

1" = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



Buildings 1485 and 3006

Armstead Avenue

Blackstone, VA 23824

Inquiry Number: 5675972.10

June 06, 2019

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

## Certified Sanborn® Map Report

06/06/19

**Site Name:**

Buildings 1485 and 3006  
Armstead Avenue  
Blackstone, VA 23824  
EDR Inquiry # 5675972.10

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Hans Sund



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AECOM were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

### Certified Sanborn Results:

**Certification #** FED9-453A-BA0E

**PO #** NA

**Project** Fort Pickett EDRs

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results

Certification #: FED9-453A-BA0E

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☒ Library of Congress
- ☒ University Publications of America
- ☒ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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**Range 15 Rubber Mat Area**

2411 Darvills Road

Mc Kenney, VA 23872

Inquiry Number: 5675972.2s

June 06, 2019

# The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	8
Orphan Summary .....	9
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting Source Map .....	A-7
Physical Setting Source Map Findings .....	A-8
Physical Setting Source Records Searched .....	PSGR-1

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

2411 DARVILLS ROAD  
MC KENNEY, VA 23872

#### COORDINATES

Latitude (North):	37.0714740 - 37° 4' 17.30"
Longitude (West):	77.8679610 - 77° 52' 4.65"
Universal Transverse Mercator:	Zone 18
UTM X (Meters):	245023.6
UTM Y (Meters):	4106446.5
Elevation:	357 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5951057 DARVILLS, VA
Version Date:	2013
West Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140814
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:  
2411 DARVILLS ROAD  
MC KENNEY, VA 23872

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.)
<a href="#">Reg</a>	FORT PICKETT MILITAR		DOD	Same	1 ft.

## EXECUTIVE SUMMARY

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

#### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

#### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
SEMS..... Superfund Enterprise Management System

#### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

#### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

#### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

#### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

#### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List

## EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent CERCLIS***

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Management Facilities

### ***State and tribal leaking storage tank lists***

LUST..... Leaking Underground Storage Tank Tracking Database

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

LTANKS..... Leaking Petroleum Storage Tanks

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing

UST..... Registered Petroleum Storage Tanks

AST..... Registered Petroleum Storage Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

ENG CONTROLS..... Engineering Controls Sites Listing

INST CONTROL..... Voluntary Remediation Program Database

### ***State and tribal voluntary cleanup sites***

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Remediation Program

### ***State and tribal Brownfields sites***

BROWNFIELDS..... Brownfields Site Specific Assessments

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

### ***Local Lists of Landfill / Solid Waste Disposal Sites***

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

IHS OPEN DUMPS..... Open Dumps on Indian Land

## EXECUTIVE SUMMARY

### **Local Lists of Hazardous waste / Contaminated Sites**

US HIST CDL..... Delisted National Clandestine Laboratory Register  
US CDL..... National Clandestine Laboratory Register

### **Local Land Records**

LIENS 2..... CERCLA Lien Information

### **Records of Emergency Release Reports**

HMIRS..... Hazardous Materials Information Reporting System  
SPILLS..... Prep/Spills Database Listing  
SPILLS 90..... SPILLS 90 data from FirstSearch

### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
FUDS..... Formerly Used Defense Sites  
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
US FIN ASSUR..... Financial Assurance Information  
EPA WATCH LIST..... EPA WATCH LIST  
2020 COR ACTION..... 2020 Corrective Action Program List  
TSCA..... Toxic Substances Control Act  
TRIS..... Toxic Chemical Release Inventory System  
SSTS..... Section 7 Tracking Systems  
ROD..... Records Of Decision  
RMP..... Risk Management Plans  
RAATS..... RCRA Administrative Action Tracking System  
PRP..... Potentially Responsible Parties  
PADS..... PCB Activity Database System  
ICIS..... Integrated Compliance Information System  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)  
MLTS..... Material Licensing Tracking System  
COAL ASH DOE..... Steam-Electric Plant Operation Data  
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List  
PCB TRANSFORMER..... PCB Transformer Registration Database  
RADINFO..... Radiation Information Database  
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing  
DOT OPS..... Incident and Accident Data  
CONSENT..... Superfund (CERCLA) Consent Decrees  
INDIAN RESERV..... Indian Reservations  
FUSRAP..... Formerly Utilized Sites Remedial Action Program  
UMTRA..... Uranium Mill Tailings Sites  
LEAD SMELTERS..... Lead Smelter Sites  
US AIRS..... Aerometric Information Retrieval System Facility Subsystem  
US MINES..... Mines Master Index File  
ABANDONED MINES..... Abandoned Mines  
FINDS..... Facility Index System/Facility Registry System  
DOCKET HWC..... Hazardous Waste Compliance Docket Listing  
UXO..... Unexploded Ordnance Sites  
ECHO..... Enforcement & Compliance History Information  
FUELS PROGRAM..... EPA Fuels Program Registered Listing

## EXECUTIVE SUMMARY

AIRS.....	Permitted Airs Facility List
NPDES.....	Comprehensive Environmental Data System
COAL ASH.....	Coal Ash Disposal Sites
DRYCLEANERS.....	Drycleaner List
ENF.....	Enforcement Actions Data
Financial Assurance.....	Financial Assurance Information Listing
TIER 2.....	Tier 2 Information Listing
UIC.....	Underground Injection Control Wells

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### ADDITIONAL ENVIRONMENTAL RECORDS

#### ***Other Ascertainable Records***

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORT PICKETT MILITAR		0 - 1/8 (0.000 mi.)	0	8

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 133 records.

Site Name	Database(s)
FORT PICKETT MOTOR POOL	LUST
FORT PICKETT BLDG 432	LUST, LTANKS
FORT PICKETT BLDG 404	LUST, LTANKS
FORT PICKETT BLDG 415	LUST, LTANKS
FORT PICKETT BUILDING 1667	LUST, LTANKS
FORT PICKETT BLDG 1084	LUST, LTANKS
FORT PICKETT BLDG 2844	LUST, LTANKS
FORT PICKETT BLDG 634	LUST, LTANKS
FORT PICKETT BUILDING 2627/2628	LUST, LTANKS
FORT PICKETT BUILDING 2813	LUST, LTANKS
FORT PICKETT FUEL STATION 1	LUST, LTANKS
FORT PICKETT BUILDING 2824	LUST, LTANKS
FORT PICKETT BUILDING 220	LUST, LTANKS
FORT PICKETT BUILDING 1692	LUST, LTANKS
FORT PICKETT BLDG 311	LUST, LTANKS
FORT PICKETT BLDG 408	LUST, LTANKS
FORT PICKETT BLDG 2403	LUST, LTANKS
FORT PICKETT FUEL STATION 3	LUST, LTANKS
FORT PICKETT D3	LUST, LTANKS
FORT PICKETT D13	LUST, LTANKS
FORT PICKETT BUILDING 1673	LUST, LTANKS
FORT PICKETT BUILDING 1675	LUST, LTANKS
FORT PICKETT BUILDING 2639/2640	LUST, LTANKS
US ARMY FORT PICKETT BUILDING 142	LUST, LTANKS
FORT PICKETT EXCAVATION 12	LUST, LTANKS
FORT PICKETT BLDG 2442	LUST, LTANKS
FORT PICKETT BLDG 306	LUST, LTANKS
FORT PICKETT BLDG 416	LUST, LTANKS
FORT PICKETT BLDG 2448 & 2449	LUST, LTANKS
FORT PICKETT BLDG 319 MOTOR POOL	LUST, LTANKS
FORT PICKETT BLDG 2421	LUST, LTANKS
FORT PICKETT BLDG 2430	LUST, LTANKS
FORT PICKETT BLDG 2438	LUST, LTANKS
FORT PICKETT BUILDING 1656	LUST, LTANKS
FORT PICKETT BLDG 2620	LUST, LTANKS
FORT PICKETT BLDG 1727	LUST, LTANKS
FORT PICKETT BLDG 2414	LUST, LTANKS
FORT PICKETT BLDG 2406	LUST, LTANKS
FORT PICKETT BUILDING 2846	LUST, LTANKS
FORT PICKETT BUILDING 2638	LUST, LTANKS
FORT PICKETT BUILDING 2852 AND 285	LUST, LTANKS
FORT PICKETT BLDG 2870	LUST, LTANKS
FT PICKETT TRAINING AREA 12 FSSP	LUST, LTANKS
FORT PICKETT BLDG 1558	LUST, LTANKS
FORT PICKETT BLDG 564	LUST, LTANKS
FORT PICKETT BLDG 671	LUST, LTANKS
FORT PICKETT BLDG 414	LUST, LTANKS
FORT PICKETT BLDG 427	LUST, LTANKS
FORT PICKETT BLDG 975	LUST, LTANKS
US ARMY FORT PICKETT - BUILDING 30	LUST, LTANKS
FORT PICKETT BUILDING 2847	LUST, LTANKS
FORT PICKETT BUILDING 2633	LUST, LTANKS
FORT PICKETT BLDG 2601	LUST, LTANKS
FORT PICKETT DPW VEHICLE COMPOUND	LUST, LTANKS
FORT PICKETT BUILDING 2802	LUST, LTANKS
FORT PICKETT BUILDING 2839	LUST, LTANKS
FT PICKETT BUILDING 135A (MATES BO	LUST, LTANKS
FORT PICKETT BLDG 2445	LUST, LTANKS
FORT PICKETT BLDG 318	LUST, LTANKS

## EXECUTIVE SUMMARY

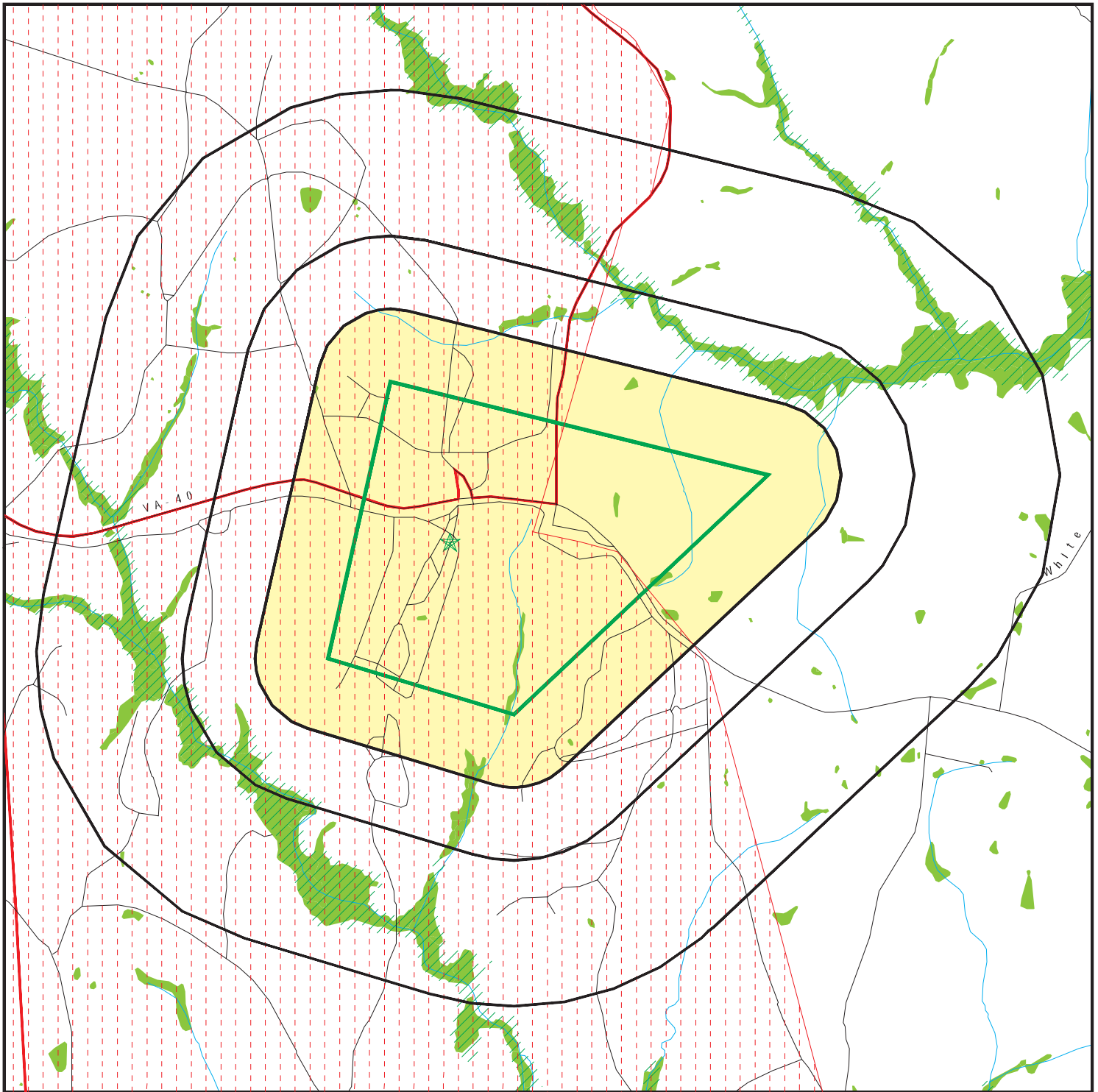
FORT PICKETT BLDG 307 A	LUST, LTANKS
FORT PICKETT BLDG 2010	LUST, LTANKS
FORT PICKETT BLDG 3430	LUST, LTANKS
FORT PICKETT BLDG 3018 & 3019	LUST, LTANKS
FORT PICKETT BLDG 1351	LUST, LTANKS
FORT PICKETT BLDG 2404	LUST, LTANKS
FORT PICKETT BUILDING 2644/2645	LUST, LTANKS
FORT PICKETT BLDG 143 MATES	LUST, LTANKS
FORT PICKETT BLDG 627-628	LUST, LTANKS
FORT PICKETT BLDG TRO21	LUST, LTANKS
FORT PICKETT BLDG 1613	LUST, LTANKS
FORT PICKETT BLDG 2421 A	LUST, LTANKS
FORT PICKETT BLDG 2437	LUST, LTANKS
FORT PICKETT BLDG 2441	LUST, LTANKS
FORT PICKETT BLDG 465	LUST, LTANKS
FORT PICKETT BLDG 466	LUST, LTANKS
FORT PICKETT BLDG 761	LUST, LTANKS
FORT PICKETT BLDG 2430 A	LUST, LTANKS
FORT PICKETT BLDG 320	LUST, LTANKS
FORT PICKETT BLDG 1082	LUST, LTANKS
FORT PICKETT BLDG 1319	LUST, LTANKS
FORT PICKETT POL FACILITY	LUST, LTANKS
FORT PICKETT BLDG 1360	LUST, LTANKS
FORT PICKETT BUILDINGS 2651 AND 26	LUST, LTANKS
FORT PICKETT BUILDINGS 2814 AND 28	LUST, LTANKS
FORT PICKETT BUILDING 2830	LUST, LTANKS
FORT PICKETT BUILDING 2845	LUST, LTANKS
FORT PICKETT BLDG 407	LUST, LTANKS
FORT PICKETT BLDG 317	LUST, LTANKS
FORT PICKETT BLDG NW100	LUST, LTANKS
FORT PICKETT BLDG 2439	LUST, LTANKS
FORT PICKETT BLDG 1724	LUST, LTANKS
FORT PICKETT BLDG 2405	LUST, LTANKS
FORT PICKETT BLDG 212	LUST, LTANKS
FORT PICKETT BLDG 434	LUST, LTANKS
FORT PICKETT BLDG 1306	LUST, LTANKS
FORT PICKETT BLDG 130 MATES	LUST, LTANKS
FORT PICKETT BUILDING 1655	LUST, LTANKS
FORT PICKETT BUILDINGS 2641	LUST, LTANKS
FORT PICKETT BLDG 2673	LUST, LTANKS
FORT PICKETT BLDG 976	LUST, LTANKS
FORT PICKETT BLDG 406	LUST, LTANKS
FORT PICKETT BLDG 463	LUST, LTANKS
FORT PICKETT BLDG 1390	LUST, LTANKS
FORT PICKETT BLDG 2440	LUST, LTANKS
FORT PICKETT BUILDING 2648/2649	LUST, LTANKS
FORT PICKETT BLDG T2422/2423	LUST, LTANKS
FORT PICKETT BLDG 2480	LUST, LTANKS
FORT PICKETT BLDG 671 A	LUST, LTANKS
FORT PICKETT BLDG 409	LUST, LTANKS
FORT PICKETT BLDG 135/136	LUST, LTANKS
FORT PICKETT BUILDING 2854 AND 285	LUST, LTANKS
FORT PICKETT BLDG 430	LUST, LTANKS
FORT PICKETT BLDG 403	LUST, LTANKS
FORT PICKETT BUILDING 2800	LUST, LTANKS
FORT PICKETT BUILDING 2650	LUST, LTANKS
FORT PICKETT BUILDING 2840	LUST, LTANKS
FORT PICKETT BLDG 1386	LUST, LTANKS
FORT PICKETT BULK FUEL STATION 4	LUST, LTANKS
FORT PICKETT BLDG 426	LUST, LTANKS
FORT PICKETT BLDG 1307	LUST, LTANKS
FORT PICKETT BLDG 2672	LUST, LTANKS












## EXECUTIVE SUMMARY

FORT PICKETT BLDG 1614  
FORT PICKETT BUILDING 2829  
VIRGINIA NATIONAL GUARD MANEUVER T  
FORT PICKETT D46  
FORT PICKETT BLDG T2608  
FORT PICKETT BLDG T2610  
FORT PICKETT BLDG 2617  
FORT PICKETT BLDG 224  
FORT PICKETT BLDG T 1311  
FORT PICKETT MATES BUILDING 134  
FORT PICKETT BUILDING 464  
FORT PICKETT

LUST, LTANKS  
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LTANKS

# OVERVIEW MAP - 5675972.2S



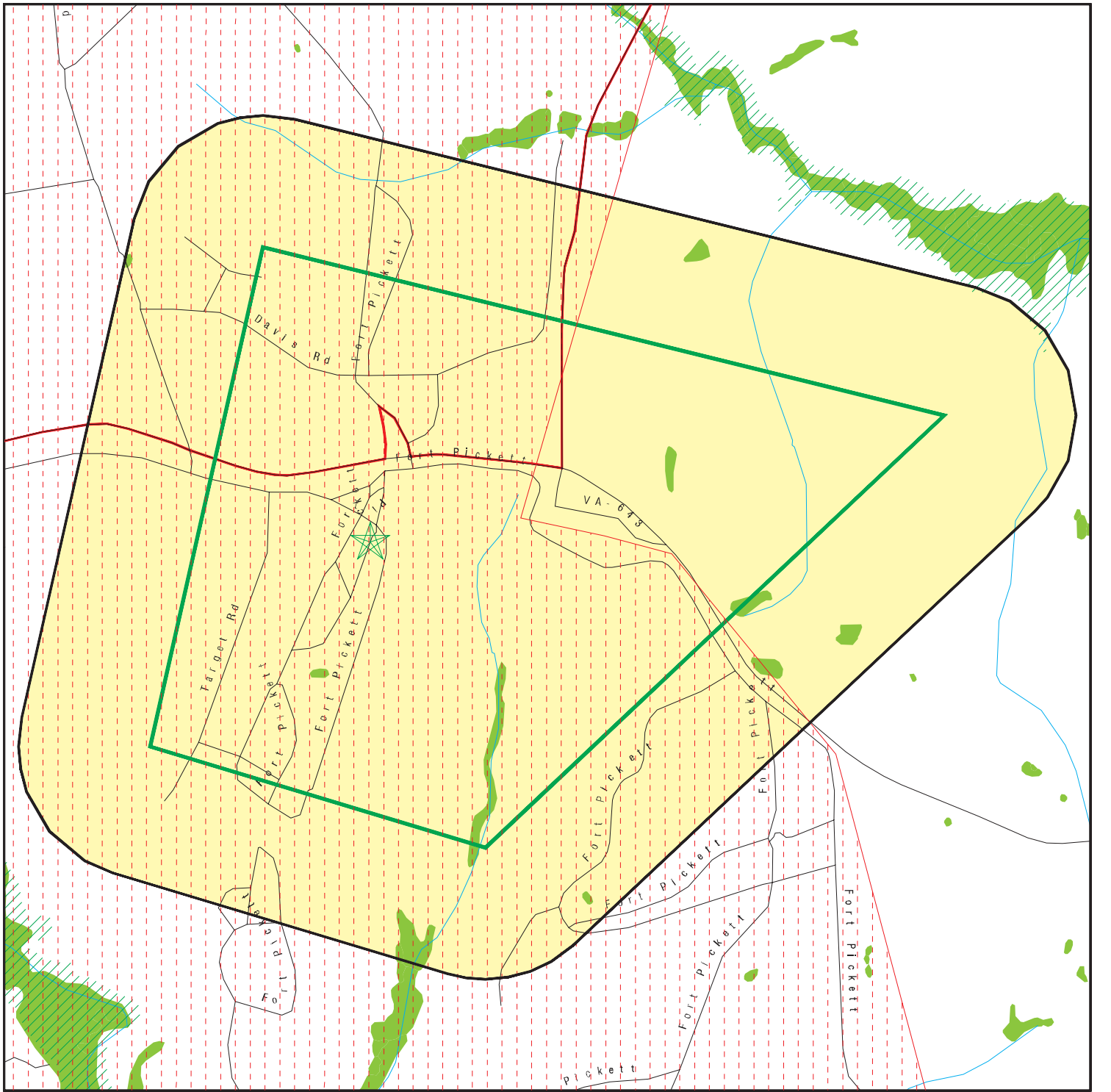
-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  County Boundary
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Range 15 Rubber Mat Area  
 ADDRESS: 2411 Darvills Road  
 Mc Kenney VA 23872  
 LAT/LONG: 37.071474 / 77.867961

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.2s  
 DATE: June 06, 2019 4:32 pm

# DETAIL MAP - 5675972.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Range 15 Rubber Mat Area  
 ADDRESS: 2411 Darvills Road  
 Mc Kenney VA 23872  
 LAT/LONG: 37.071474 / 77.867961

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.2s  
 DATE: June 06, 2019 4:33 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LTANKS	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
FEMA UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		1	0	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
TIER 2	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### **EDR Exclusive Records**

EDR MGP	1.000	0	0	0	0	NR	0
EDR Hist Auto	0.125	0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125	0	NR	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### **Exclusive Recovered Govt. Archives**

RGA LF	TP	NR	NR	NR	NR	NR	0
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## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>&lt; 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>&gt; 1</u>	<u>Total Plotted</u>
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	1	0	0	0	0	1

### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

DOD  
Region

FORT PICKETT MILITARY RESERVATION (CLOSED)

DOD CUSA136934  
N/A

FORT PICKETT MILITARY RES (County), VA

< 1/8  
1 ft.

DOD:

Feature 1: Army DOD  
Feature 2: Not reported  
Feature 3: Not reported  
URL: Not reported  
Name 1: Fort Pickett Military Reservation (Closed)  
Name 2: Not reported  
Name 3: Not reported  
State: VA  
DOD Site: Yes  
Tile name: VANOTTOWAY

Count: 133 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLACKSTONE	S111684577	FORT PICKETT MOTOR POOL	MTC-FORT PICKETT, VAFF-FE, BLD		LUST
BLACKSTONE	S108992698	FORT PICKETT BLDG 432	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992682	FORT PICKETT BLDG 404	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992710	FORT PICKETT BLDG 415	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S109236659	FORT PICKETT BUILDING 1667	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992680	FORT PICKETT BLDG 1084	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992707	FORT PICKETT BLDG 2844	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992703	FORT PICKETT BLDG 634	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992414	FORT PICKETT BUILDING 2627/2628	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992410	FORT PICKETT BUILDING 2813	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992476	FORT PICKETT FUEL STATION 1	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992393	FORT PICKETT BUILDING 2824	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992458	FORT PICKETT BUILDING 220	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992415	FORT PICKETT BUILDING 1692	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992727	FORT PICKETT BLDG 311	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992715	FORT PICKETT BLDG 408	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S117368482	FORT PICKETT MATES BUILDING 134	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LTANKS
BLACKSTONE	S108992557	FORT PICKETT BLDG 2403	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992486	FORT PICKETT FUEL STATION 3	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992468	FORT PICKETT D3	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992488	FORT PICKETT D13	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992380	FORT PICKETT BUILDING 1673	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992376	FORT PICKETT BUILDING 1675	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992421	FORT PICKETT BUILDING 2639/2640	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S110761878	US ARMY FORT PICKETT BUILDING 142	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992474	FORT PICKETT EXCAVATION 12	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992655	FORT PICKETT BLDG 2442	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992738	FORT PICKETT BLDG 306	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992711	FORT PICKETT BLDG 416	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992650	FORT PICKETT BLDG 2448 & 2449	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992752	FORT PICKETT BLDG 319 MOTOR POOL	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992670	FORT PICKETT BLDG 2421	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992652	FORT PICKETT BLDG 2430	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992671	FORT PICKETT BLDG 2438	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992403	FORT PICKETT BUILDING 1656	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992575	FORT PICKETT BLDG 2620	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992644	FORT PICKETT BLDG 1727	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992541	FORT PICKETT BLDG 2414	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992570	FORT PICKETT BLDG 2406	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992396	FORT PICKETT BUILDING 2846	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992424	FORT PICKETT BUILDING 2638	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992394	FORT PICKETT BUILDING 2852 AND 285	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992811	FORT PICKETT BLDG 2870	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS

Count: 133 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLACKSTONE	S108992383	FT PICKETT TRAINING AREA 12 FSSP	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	1001801800	FORT PICKETT BLDG 1558	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992718	FORT PICKETT BLDG 564	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992714	FORT PICKETT BLDG 671	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992734	FORT PICKETT BLDG 414	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992721	FORT PICKETT BLDG 427	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992683	FORT PICKETT BLDG 975	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992427	US ARMY FORT PICKETT - BUILDING 30	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992412	FORT PICKETT BUILDING 2847	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992413	FORT PICKETT BUILDING 2633	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992640	FORT PICKETT BLDG 2601	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992444	FORT PICKETT DPW VEHICLE COMPOUND	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992407	FORT PICKETT BUILDING 2802	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992398	FORT PICKETT BUILDING 2839	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S106707265	FT PICKETT BUILDING 135A (MATES BO	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992664	FORT PICKETT BLDG 2445	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992697	FORT PICKETT BLDG 318	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992694	FORT PICKETT BLDG 307 A	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992681	FORT PICKETT BLDG 2010	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992702	FORT PICKETT BLDG 3430	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992732	FORT PICKETT BLDG 3018 & 3019	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992690	FORT PICKETT BLDG 1351	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992689	FORT PICKETT BLDG 2404	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992423	FORT PICKETT BUILDING 2644/2645	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992654	FORT PICKETT BLDG 143 MATES	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992660	FORT PICKETT BLDG 627-628	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992712	FORT PICKETT BLDG TRO21	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992688	FORT PICKETT BLDG 1613	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992656	FORT PICKETT BLDG 2421 A	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992648	FORT PICKETT BLDG 2437	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992667	FORT PICKETT BLDG 2441	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992708	FORT PICKETT BLDG 465	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992729	FORT PICKETT BLDG 466	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992692	FORT PICKETT BLDG 761	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992663	FORT PICKETT BLDG 2430 A	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992724	FORT PICKETT BLDG 320	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992704	FORT PICKETT BLDG 1082	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992722	FORT PICKETT BLDG 1319	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992685	FORT PICKETT POL FACILITY	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992696	FORT PICKETT BLDG 1360	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S117622615	FORT PICKETT BUILDING 464	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LTANKS
BLACKSTONE	S108992406	FORT PICKETT BUILDINGS 2651 AND 26	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992395	FORT PICKETT BUILDINGS 2814 AND 28	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992399	FORT PICKETT BUILDING 2830	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992397	FORT PICKETT BUILDING 2845	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992741	FORT PICKETT BLDG 407	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992725	FORT PICKETT BLDG 317	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS

Count: 133 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLACKSTONE	S108992706	FORT PICKETT BLDG NW100	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992651	FORT PICKETT BLDG 2439	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992684	FORT PICKETT BLDG 1724	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992686	FORT PICKETT BLDG 2405	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992699	FORT PICKETT BLDG 212	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992720	FORT PICKETT BLDG 434	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992709	FORT PICKETT BLDG 1306	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992658	FORT PICKETT BLDG 130 MATES	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S109236658	FORT PICKETT BUILDING 1655	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992401	FORT PICKETT BUILDINGS 2641	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992701	FORT PICKETT BLDG 2673	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992677	FORT PICKETT BLDG 976	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992705	FORT PICKETT BLDG 406	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992723	FORT PICKETT BLDG 463	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992675	FORT PICKETT BLDG 1390	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992662	FORT PICKETT BLDG 2440	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992422	FORT PICKETT BUILDING 2648/2649	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992669	FORT PICKETT BLDG T2422/2423	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992649	FORT PICKETT BLDG 2480	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992483	FORT PICKETT BLDG 671 A	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992726	FORT PICKETT BLDG 409	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S121308312	FORT PICKETT	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LTANKS
BLACKSTONE	S108992828	FORT PICKETT BLDG 135/136	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992390	FORT PICKETT BUILDING 2854 AND 285	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992728	FORT PICKETT BLDG 430	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992735	FORT PICKETT BLDG 403	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992404	FORT PICKETT BUILDING 2800	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992405	FORT PICKETT BUILDING 2650	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992402	FORT PICKETT BUILDING 2840	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992798	FORT PICKETT BLDG 1386	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992730	FORT PICKETT BULK FUEL STATION 4	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992719	FORT PICKETT BLDG 426	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992733	FORT PICKETT BLDG 1307	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992695	FORT PICKETT BLDG 2672	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992678	FORT PICKETT BLDG 1614	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992408	FORT PICKETT BUILDING 2829	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S110323329	VIRGINIA NATIONAL GUARD MANEUVER T	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992465	FORT PICKETT D46	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992489	FORT PICKETT BLDG T2608	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992467	FORT PICKETT BLDG T2610	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992661	FORT PICKETT BLDG 2617	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S108992642	FORT PICKETT BLDG 224	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS
BLACKSTONE	S105096413	FORT PICKETT BLDG T 1311	MTC-FORT PICKETT, VAFF-FE, BLD	23824	LUST, LTANKS

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

##### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

##### **NPL Site Boundaries**

###### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

##### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: N/A
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Quarterly

##### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991  
Date Data Arrived at EDR: 02/02/1994  
Date Made Active in Reports: 03/30/1994  
Number of Days to Update: 56

Source: EPA  
Telephone: 202-564-4267  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: No Update Planned

### ***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 26

Source: EPA  
Telephone: N/A  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019  
Date Data Arrived at EDR: 04/05/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 703-603-8704  
Last EDR Contact: 04/05/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Quarterly

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/11/2019	Source: EPA
Date Data Arrived at EDR: 04/18/2019	Telephone: 800-424-9346
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 35	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019	Source: EPA
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-424-9346
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### ***Federal institutional controls / engineering controls registries***

#### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019	Source: Department of the Navy
Date Data Arrived at EDR: 03/07/2019	Telephone: 843-820-7326
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 05/10/2019
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

#### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

#### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/04/2019	Telephone: 703-603-0695
Date Made Active in Reports: 03/08/2019	Last EDR Contact: 05/29/2019
Number of Days to Update: 32	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019

Date Data Arrived at EDR: 03/26/2019

Date Made Active in Reports: 05/01/2019

Number of Days to Update: 36

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 03/26/2019

Next Scheduled EDR Contact: 07/08/2019

Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A

Date Data Arrived at EDR: N/A

Date Made Active in Reports: N/A

Number of Days to Update: N/A

Source: Department of Environmental Quality

Telephone: 804-698-4236

Last EDR Contact: 03/18/2019

Next Scheduled EDR Contact: 07/01/2019

Data Release Frequency: N/A

## ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF: Solid Waste Management Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/04/2019

Date Data Arrived at EDR: 03/05/2019

Date Made Active in Reports: 04/10/2019

Number of Days to Update: 36

Source: Department of Environmental Quality

Telephone: 804-698-4238

Last EDR Contact: 06/03/2019

Next Scheduled EDR Contact: 09/16/2019

Data Release Frequency: Semi-Annually

## ***State and tribal leaking storage tank lists***

LUST REG SW: Leaking Underground Storage Tank Database

Leaking underground storage tank site locations. Includes: counties of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe; cities of Bristol, Galax, Norton.

Date of Government Version: 07/15/2013

Date Data Arrived at EDR: 07/18/2013

Date Made Active in Reports: 09/16/2013

Number of Days to Update: 60

Source: Department of Environmental Quality Southwest Regional Office

Telephone: 276-676-4800

Last EDR Contact: 10/11/2016

Next Scheduled EDR Contact: 01/23/2017

Data Release Frequency: No Update Planned

LUST REG TD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Accomack, Isle of Wight, James City, Northampton, Southampton, York; cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg.

Date of Government Version: 06/30/2013

Date Data Arrived at EDR: 07/05/2013

Date Made Active in Reports: 09/16/2013

Number of Days to Update: 73

Source: Department of Environmental Quality Tidewater Regional Office

Telephone: trofoia@deq.vir

Last EDR Contact: 09/26/2016

Next Scheduled EDR Contact: 01/09/2017

Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LUST REG VA: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren; cities of Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester.

Date of Government Version: 12/06/2011	Source: Department of Environmental Quality Valley Regional Office
Date Data Arrived at EDR: 12/08/2011	Telephone: 540-574-7800
Date Made Active in Reports: 01/16/2012	Last EDR Contact: 08/29/2016
Number of Days to Update: 39	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG WC: Leaking Underground Storage Tank List

Leaking underground storage tank site locations. Includes: counties of Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Patrick, Pulaski, Roanoke; cities of Bedford, Clifton Forge, Covington, Martinsville, Radford, Roanoke, Salem.

Date of Government Version: 06/04/2015	Source: Department of Environmental Quality West Central Regional Office
Date Data Arrived at EDR: 06/05/2015	Telephone: 540-562-6700
Date Made Active in Reports: 07/07/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 32	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: No Update Planned

### LUST REG PD: Leaking Underground Storage Tank Sites

Leaking underground storage tank site locations. Includes: counties of Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greenville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland; cities of Colonial Heights, Emporia, Hopewell, Petersburg.

Date of Government Version: 12/02/2014	Source: Department of Environmental Quality Piedmont Regional Office
Date Data Arrived at EDR: 12/04/2014	Telephone: 804-527-5020
Date Made Active in Reports: 01/16/2015	Last EDR Contact: 08/29/2016
Number of Days to Update: 43	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Quarterly

### LUST REG SC: Leaking Underground Storage Tanks

Leaking underground storage tank site locations. Includes: counties of Amherst, Appomattox, Buckingham, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Pittsylvania, Prince Edward; cities of Danville, Lynchburg.

Date of Government Version: 09/06/2013	Source: Department of Environmental Quality, South Central Region
Date Data Arrived at EDR: 09/06/2013	Telephone: 434-582-5120
Date Made Active in Reports: 09/17/2013	Last EDR Contact: 08/29/2016
Number of Days to Update: 11	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Semi-Annually

### LUST REG NO: Leaking Underground Storage Tank Tracking Database

Leaking underground storage tank site locations. Includes: counties of Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford; cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park.

Date of Government Version: 05/18/2004	Source: Department of Environmental Quality Northern Regional Office
Date Data Arrived at EDR: 05/22/2004	Telephone: 703-583-3800
Date Made Active in Reports: 07/09/2004	Last EDR Contact: 09/06/2011
Number of Days to Update: 48	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/17/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018  
Date Data Arrived at EDR: 03/08/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/24/2018  
Date Data Arrived at EDR: 03/12/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 50

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 03/07/2019  
Date Made Active in Reports: 05/01/2019  
Number of Days to Update: 55

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-6597
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

LTANKS: Leaking Petroleum Storage Tanks  
Includes releases of petroleum from underground storage tanks and aboveground storage tanks.

Date of Government Version: 02/05/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/28/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 39	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### ***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing  
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017	Source: FEMA
Date Data Arrived at EDR: 05/30/2017	Telephone: 202-646-5797
Date Made Active in Reports: 10/13/2017	Last EDR Contact: 04/25/2019
Number of Days to Update: 136	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

UST: Registered Petroleum Storage Tanks  
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

AST: Registered Petroleum Storage Tanks  
Registered Aboveground Storage Tanks.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4010
Date Made Active in Reports: 04/05/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 37	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/17/2018	Source: EPA Region 10
Date Data Arrived at EDR: 03/07/2019	Telephone: 206-553-2857
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018	Source: EPA Region 9
Date Data Arrived at EDR: 03/08/2019	Telephone: 415-972-3368
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018	Source: EPA Region 8
Date Data Arrived at EDR: 03/07/2019	Telephone: 303-312-6137
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018	Source: EPA Region 7
Date Data Arrived at EDR: 03/07/2019	Telephone: 913-551-7003
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/01/2018	Source: EPA Region 6
Date Data Arrived at EDR: 03/07/2019	Telephone: 214-665-7591
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018	Source: EPA Region 5
Date Data Arrived at EDR: 03/07/2019	Telephone: 312-886-6136
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/24/2018	Source: EPA Region 4
Date Data Arrived at EDR: 03/12/2019	Telephone: 404-562-9424
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018	Source: EPA, Region 1
Date Data Arrived at EDR: 03/07/2019	Telephone: 617-918-1313
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 04/26/2019
Number of Days to Update: 55	Next Scheduled EDR Contact: 08/05/2019
	Data Release Frequency: Varies

### ***State and tribal institutional control / engineering control registries***

#### ENG CONTROLS: Engineering Controls Sites Listing

A listing of sites with Engineering Controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INST CONTROL: Voluntary Remediation Program Database

Sites included in the Voluntary Remediation Program database that have deed restrictions.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### ***State and tribal voluntary cleanup sites***

#### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

#### VRP: Voluntary Remediation Program

The Voluntary Cleanup Program encourages owners of elected contaminated sites to take the initiative and conduct voluntary cleanups that meet state environmental standards.

Date of Government Version: 01/07/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 01/08/2019	Telephone: 804-698-4228
Date Made Active in Reports: 02/25/2019	Last EDR Contact: 04/08/2019
Number of Days to Update: 48	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

#### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/25/2019
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **State and tribal Brownfields sites**

### **BROWNFIELDS: Brownfields Site Specific Assessments**

To qualify for Brownfields Assessment, the site must meet the Federal definition of a Brownfields and should have contaminant issues that need to be addressed and a redevelopment plan supported by the local government and community. Virginia's Department of Environmental Quality performs brownfields assessments under a cooperative agreement with the U.S. Environmental Protection Agency at no cost to communities, property owners or, prospective purchasers. The assessment is an evaluation of environmental impacts caused by previous site uses similar to a Phase II Environmental Assessment.

Date of Government Version: 01/23/2019  
Date Data Arrived at EDR: 01/24/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 29

Source: Department of Environmental Quality  
Telephone: 804-698-4207  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### **US BROWNFIELDS: A Listing of Brownfields Sites**

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018  
Date Data Arrived at EDR: 12/18/2018  
Date Made Active in Reports: 01/11/2019  
Number of Days to Update: 24

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 06/04/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### **INDIAN ODI: Report on the Status of Open Dumps on Indian Lands**

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

#### **ODI: Open Dump Inventory**

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### **DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations**

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: No Update Planned

### IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 04/23/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

### Local Lists of Hazardous waste / Contaminated Sites

#### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: No Update Planned

#### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019  
Date Data Arrived at EDR: 02/26/2019  
Date Made Active in Reports: 04/17/2019  
Number of Days to Update: 50

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Quarterly

#### PFAS: Per- and Polyfluoroalkyl Substances

PFOS and PFOA stand for perfluorooctane sulfonate and perfluorooctanoic acid, respectively. Both are fluorinated organic chemicals, part of a larger family of compounds referred to as perfluoroalkyl substances (PFASs).

Date of Government Version: 04/08/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/08/2019  
Number of Days to Update: 28

Source: Department of Environmental Quality  
Telephone: 804-698-4336  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### Local Land Records

#### LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Records of Emergency Release Reports***

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/25/2019	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 03/26/2019	Telephone: 202-366-4555
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 03/26/2019
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### **SPILLS BRL: Prep/Spills Database Listing**

A listing of spills locations located in the Blue Ridge Regional area, Lynchburg.

Date of Government Version: 09/18/2009	Source: DEQ, Blue Ridge Regional Office
Date Data Arrived at EDR: 09/18/2009	Telephone: 434-582-6218
Date Made Active in Reports: 10/06/2009	Last EDR Contact: 11/28/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 03/12/2012
	Data Release Frequency: Varies

### **SPILLS: Prep/Spills Database Listing**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies, federal agencies, and responsible parties, as may be needed, to manage pollution incidents. Oil spills, fish kills, and hazardous materials spills are examples of incidents that may involve the DEQ's PREP Program.

Date of Government Version: 02/04/2019	Source: Department of Environmental Quality
Date Data Arrived at EDR: 02/27/2019	Telephone: 804-698-4287
Date Made Active in Reports: 04/08/2019	Last EDR Contact: 05/30/2019
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Quarterly

### **SPILLS PC: Pollution Complaint Database**

Pollution Complaints Database. The pollution reports contained in the PC database include the initial release reporting of Leaking Underground Storage Tanks and all other releases of petroleum to the environment as well as releases to state waters. The database is current through 12/1/93. Since that time, all spill and pollution reporting information has been collected and tracked through the DEQ regional offices.

Date of Government Version: 06/01/1996	Source: Department of Environmental Quality
Date Data Arrived at EDR: 10/22/1996	Telephone: 804-698-4287
Date Made Active in Reports: 11/21/1996	Last EDR Contact: 03/08/2010
Number of Days to Update: 30	Next Scheduled EDR Contact: 06/21/2010
	Data Release Frequency: No Update Planned

### **SPILLS NO: PREP Database**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/23/2009	Source: Department of Environmental Quality, Northern Region
Date Data Arrived at EDR: 09/29/2009	Telephone: 703-583-3864
Date Made Active in Reports: 10/30/2009	Last EDR Contact: 09/06/2011
Number of Days to Update: 31	Next Scheduled EDR Contact: 12/19/2011
	Data Release Frequency: No Update Planned

### **SPILLS PD: PREP Database**

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/20/2009  
Date Data Arrived at EDR: 10/29/2009  
Date Made Active in Reports: 12/03/2009  
Number of Days to Update: 35

Source: Department of Environmental Quality, Piedmont Region  
Telephone: 804-527-5020  
Last EDR Contact: 02/06/2012  
Next Scheduled EDR Contact: 05/21/2012  
Data Release Frequency: Quarterly

### SPILLS SW: Reportable Spills

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 01/21/2010  
Date Data Arrived at EDR: 01/22/2010  
Date Made Active in Reports: 02/16/2010  
Number of Days to Update: 25

Source: Department of Environmental Quality, Southwest Region  
Telephone: 276-676-4839  
Last EDR Contact: 07/13/2012  
Next Scheduled EDR Contact: 10/29/2012  
Data Release Frequency: No Update Planned

### SPILLS TD: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/17/2009  
Date Data Arrived at EDR: 09/23/2009  
Date Made Active in Reports: 10/06/2009  
Number of Days to Update: 13

Source: Department of Environmental Quality, Tidewater Region  
Telephone: trofoia@deq.vir  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: Quarterly

### SPILLS VA: PREP Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 08/08/2012  
Date Data Arrived at EDR: 08/09/2012  
Date Made Active in Reports: 10/05/2012  
Number of Days to Update: 57

Source: Department of Environmental Quality, Valley Regional Office  
Telephone: 540-574-7800  
Last EDR Contact: 05/06/2013  
Next Scheduled EDR Contact: 08/19/2013  
Data Release Frequency: Quarterly

### SPILLS WC: Prep Database

The Department of Environmental Quality's POLLUTION RESPONSE PROGRAM, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment.

Date of Government Version: 09/21/2009  
Date Data Arrived at EDR: 09/29/2009  
Date Made Active in Reports: 10/30/2009  
Number of Days to Update: 31

Source: Department of Environmental Quality, West Central Region  
Telephone: 540-562-6700  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: No Update Planned

### SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/01/2012  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/15/2013  
Number of Days to Update: 43

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### **Other Ascertainable Records**

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2019	Telephone: 800-438-2474
Date Made Active in Reports: 04/17/2019	Last EDR Contact: 03/27/2019
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/08/2019
	Data Release Frequency: Quarterly

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 03/07/2019	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 04/03/2019	Telephone: 202-528-4285
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 05/21/2019
Number of Days to Update: 50	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/12/2019
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: N/A

### SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/13/2019
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/26/2019
	Data Release Frequency: Varies

### US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/25/2019  
Date Data Arrived at EDR: 03/26/2019  
Date Made Active in Reports: 05/07/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 03/26/2019  
Next Scheduled EDR Contact: 07/08/2019  
Data Release Frequency: Quarterly

### EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013  
Date Data Arrived at EDR: 03/21/2014  
Date Made Active in Reports: 06/17/2014  
Number of Days to Update: 88

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 05/06/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 05/08/2018  
Date Made Active in Reports: 07/20/2018  
Number of Days to Update: 73

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Varies

### TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 06/21/2017  
Date Made Active in Reports: 01/05/2018  
Number of Days to Update: 198

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 03/22/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Every 4 Years

### TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 01/10/2018  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 2

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 05/24/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 04/24/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Annually

### ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 04/18/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Annually

### RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019  
Date Data Arrived at EDR: 05/02/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-564-8600  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995  
Date Data Arrived at EDR: 07/03/1995  
Date Made Active in Reports: 08/07/1995  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-4104  
Last EDR Contact: 06/02/2008  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned

### PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/11/2019  
Date Data Arrived at EDR: 04/18/2019  
Date Made Active in Reports: 05/23/2019  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 05/10/2019  
Next Scheduled EDR Contact: 08/19/2019  
Data Release Frequency: Quarterly

### PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/20/2019  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 34

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016  
Date Data Arrived at EDR: 11/23/2016  
Date Made Active in Reports: 02/10/2017  
Number of Days to Update: 79

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Quarterly

**FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

**FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016  
Date Data Arrived at EDR: 09/08/2016  
Date Made Active in Reports: 10/21/2016  
Number of Days to Update: 43

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 04/22/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Quarterly

### COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 03/07/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: N/A  
Last EDR Contact: 03/05/2019  
Next Scheduled EDR Contact: 06/17/2019  
Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017  
Date Data Arrived at EDR: 11/30/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 15

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 04/26/2019  
Next Scheduled EDR Contact: 08/05/2019  
Data Release Frequency: Varies

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/02/2019  
Date Data Arrived at EDR: 04/02/2019  
Date Made Active in Reports: 05/14/2019  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 04/02/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018  
Date Data Arrived at EDR: 01/29/2019  
Date Made Active in Reports: 03/21/2019  
Number of Days to Update: 51

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 04/30/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2019	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 04/23/2019	Telephone: Varies
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/05/2019
Number of Days to Update: 30	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Varies

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015	Source: EPA/NTIS
Date Data Arrived at EDR: 02/22/2017	Telephone: 800-424-9346
Date Made Active in Reports: 09/28/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 218	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Biennially

### INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 04/11/2019
Number of Days to Update: 546	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Semi-Annually

### FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017	Source: Department of Energy
Date Data Arrived at EDR: 09/11/2018	Telephone: 202-586-3559
Date Made Active in Reports: 09/14/2018	Last EDR Contact: 05/02/2019
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/19/2019
	Data Release Frequency: Varies

### UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017	Source: Department of Energy
Date Data Arrived at EDR: 10/11/2017	Telephone: 505-845-0011
Date Made Active in Reports: 11/03/2017	Last EDR Contact: 05/24/2019
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/02/2019
	Data Release Frequency: Varies

### LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/11/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/18/2019	Telephone: 703-603-8787
Date Made Active in Reports: 05/14/2019	Last EDR Contact: 04/18/2019
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/15/2019
	Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

### US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018  
Date Data Arrived at EDR: 02/27/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 05/29/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Semi-Annually

### US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

### US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/31/2019  
Next Scheduled EDR Contact: 09/09/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/27/2019	Source: Department of Interior
Date Data Arrived at EDR: 03/28/2019	Telephone: 202-208-2609
Date Made Active in Reports: 05/01/2019	Last EDR Contact: 03/21/2019
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/24/2019
	Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019	Source: EPA
Date Data Arrived at EDR: 03/05/2019	Telephone: (215) 814-5000
Date Made Active in Reports: 03/15/2019	Last EDR Contact: 06/05/2019
Number of Days to Update: 10	Next Scheduled EDR Contact: 09/16/2019
	Data Release Frequency: Quarterly

### UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017	Source: Department of Defense
Date Data Arrived at EDR: 01/17/2019	Telephone: 703-704-1564
Date Made Active in Reports: 04/01/2019	Last EDR Contact: 04/15/2019
Number of Days to Update: 74	Next Scheduled EDR Contact: 07/29/2019
	Data Release Frequency: Varies

### DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/26/2018	Telephone: 202-564-0527
Date Made Active in Reports: 10/05/2018	Last EDR Contact: 05/24/2019
Number of Days to Update: 71	Next Scheduled EDR Contact: 09/09/2019
	Data Release Frequency: Varies

### ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/09/2019	Telephone: 202-564-2280
Date Made Active in Reports: 05/23/2019	Last EDR Contact: 04/09/2019
Number of Days to Update: 44	Next Scheduled EDR Contact: 07/22/2019
	Data Release Frequency: Quarterly

### FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/19/2019  
Date Data Arrived at EDR: 02/21/2019  
Date Made Active in Reports: 04/01/2019  
Number of Days to Update: 39

Source: EPA  
Telephone: 800-385-6164  
Last EDR Contact: 05/21/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Quarterly

### AIRS: Permitted Airs Facility List

A listing of permitted Airs facilities.

Date of Government Version: 01/14/2019  
Date Data Arrived at EDR: 01/17/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 81

Source: Department of Environmental Quality  
Telephone: 804-698-4000  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

### CEDS: Comprehensive Environmental Data System

Virginia Water Protection Permits, Virginia Pollution Discharge System (point discharge) permits and Virginia Pollution Abatement (no point discharge) permits.

Date of Government Version: 03/04/2019  
Date Data Arrived at EDR: 03/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 34

Source: Department of Environmental Quality  
Telephone: 804-698-4077  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Quarterly

### COAL ASH: Coal Ash Disposal Sites

A listing of facilities with coal ash impoundments.

Date of Government Version: 12/10/2018  
Date Data Arrived at EDR: 12/12/2018  
Date Made Active in Reports: 01/30/2019  
Number of Days to Update: 49

Source: Department of Environmental Protection  
Telephone: 804-698-4285  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 09/16/2019  
Data Release Frequency: Varies

### DRYCLEANERS: Drycleaner List

A listing of registered drycleaners.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 11/01/2018  
Date Made Active in Reports: 12/26/2018  
Number of Days to Update: 55

Source: Department of Environmental Quality  
Telephone: 804-698-4407  
Last EDR Contact: 04/08/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Varies

### ENFORCEMENT: Enforcement Actions Data

A listing of enforcement actions.

Date of Government Version: 02/04/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4031  
Last EDR Contact: 06/03/2019  
Next Scheduled EDR Contact: 07/15/2019  
Data Release Frequency: Quarterly

### Financial Assurance 1: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 01/30/2019  
Date Data Arrived at EDR: 01/31/2019  
Date Made Active in Reports: 02/22/2019  
Number of Days to Update: 22

Source: Department of Environmental Quality  
Telephone: 804-698-4205  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 05/11/2019  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance 2: Financial Assurance Information listing  
Solid waste financial assurance information.

Date of Government Version: 01/31/2019  
Date Data Arrived at EDR: 02/05/2019  
Date Made Active in Reports: 04/08/2019  
Number of Days to Update: 62

Source: Department of Environmental Quality  
Telephone: 804-698-4123  
Last EDR Contact: 04/29/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 01/20/2017  
Date Made Active in Reports: 02/14/2017  
Number of Days to Update: 25

Source: Department of Environmental Quality  
Telephone: 804-698-4159  
Last EDR Contact: 03/18/2019  
Next Scheduled EDR Contact: 07/01/2019  
Data Release Frequency: Annually

UIC: Underground Injection Control Wells

A listing of underground injection controls wells.

Date of Government Version: 01/29/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/25/2019  
Number of Days to Update: 26

Source: Department of Mines, Minerals and Energy  
Telephone: 276-415-9700  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/20/2014  
Number of Days to Update: 203

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Virginia and at the Regional VA Levels.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/15/2014  
Number of Days to Update: 198

Source: Department of Environmental Quality  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

### OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

#### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019  
Date Data Arrived at EDR: 02/12/2019  
Date Made Active in Reports: 03/04/2019  
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 05/14/2019  
Next Scheduled EDR Contact: 08/26/2019  
Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018  
Date Data Arrived at EDR: 04/10/2019  
Date Made Active in Reports: 05/16/2019  
Number of Days to Update: 36

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/10/2019  
Next Scheduled EDR Contact: 07/22/2019  
Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019  
Date Data Arrived at EDR: 01/30/2019  
Date Made Active in Reports: 02/14/2019  
Number of Days to Update: 15

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/01/2019  
Next Scheduled EDR Contact: 08/12/2019  
Data Release Frequency: Quarterly

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 10/23/2018  
Date Made Active in Reports: 11/27/2018  
Number of Days to Update: 35

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/15/2019  
Next Scheduled EDR Contact: 07/29/2019  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 02/23/2018  
Date Made Active in Reports: 04/09/2018  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 05/17/2019  
Next Scheduled EDR Contact: 09/02/2019  
Data Release Frequency: Annually

### WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 06/15/2018  
Date Made Active in Reports: 07/09/2018  
Number of Days to Update: 24

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/11/2019  
Next Scheduled EDR Contact: 06/24/2019  
Data Release Frequency: Annually

### Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

### Electric Power Transmission Line Data

Source: PennWell Corporation

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

### Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

### Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

### Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

### Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

### Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 804-692-1900

**Flood Zone Data:** This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **STREET AND ADDRESS INFORMATION**

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

RANGE 15 RUBBER MAT AREA  
2411 DARVILLS ROAD  
MC KENNEY, VA 23872

### **TARGET PROPERTY COORDINATES**

Latitude (North):	37.071474 - 37° 4' 17.31"
Longitude (West):	77.867961 - 77° 52' 4.66"
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	245023.6
UTM Y (Meters):	4106446.5
Elevation:	357 ft. above sea level

### **USGS TOPOGRAPHIC MAP**

Target Property Map:	5951057 DARVILLS, VA
Version Date:	2013
West Map:	5951041 BLACKSTONE EAST, VA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

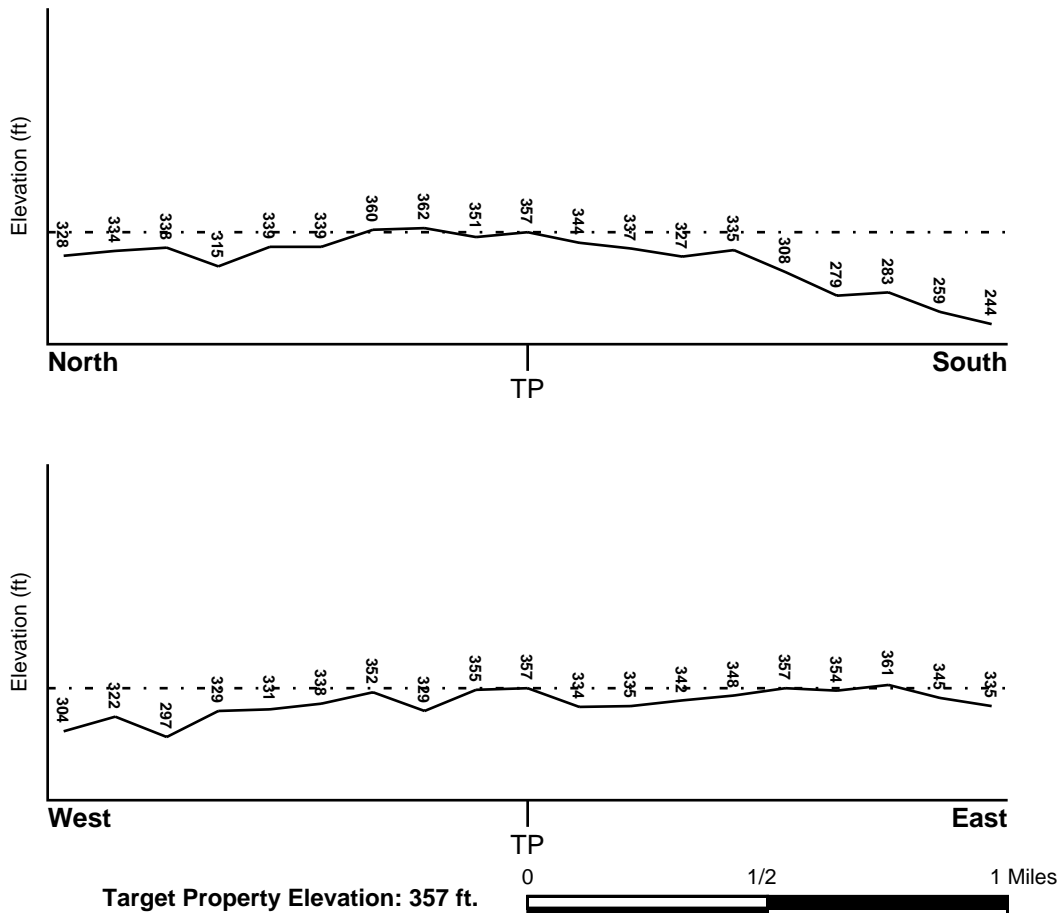
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSE

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
51053C0225B	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
51135C0225C	FEMA FIRM Flood data

### NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
DARVILLS	YES - refer to the Overview Map and Detail Map

### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

#### ***Site-Specific Hydrogeological Data\*:***

Search Radius:	1.25 miles
Status:	Not found

### AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

Era: Paleozoic  
System: Devonian  
Series: Middle Paleozoic granitic rocks  
Code: Pzg2 (*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### **DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: APPLING

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 4.50
2	9 inches	35 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
3	35 inches	46 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 4.50
4	46 inches	65 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Surficial Soil Types: sandy loam  
silt loam  
sandy clay loam  
gravelly - sandy loam

Shallow Soil Types: loam

Deeper Soil Types: sandy clay loam  
sandy loam  
unweathered bedrock

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### **FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

### **FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

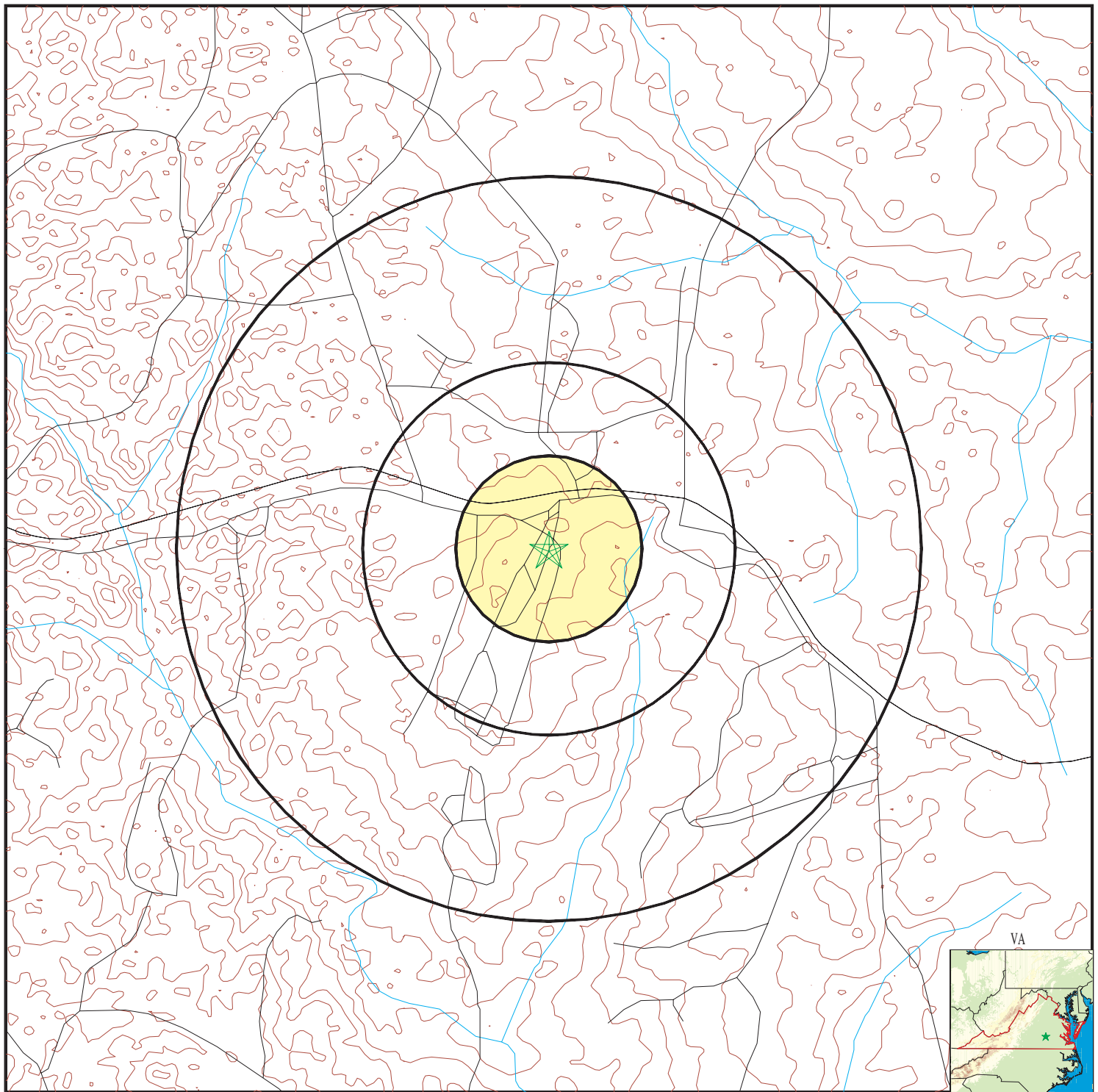
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### **STATE DATABASE WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

# PHYSICAL SETTING SOURCE MAP - 5675972.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: Range 15 Rubber Mat Area  
 ADDRESS: 2411 Darvills Road  
 Mc Kenney VA 23872  
 LAT/LONG: 37.071474 / 77.867961

CLIENT: AECOM  
 CONTACT: Hans Sund  
 INQUIRY #: 5675972.2s  
 DATE: June 06, 2019 4:33 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

### AREA RADON INFORMATION

EPA Region 3 Statistical Summary Readings for Zip Code: 23872

Number of sites tested: 4.

Maximum Radon Level: 2.9 pCi/L.

Minimum Radon Level: 0.8 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
4 (100.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

---

Federal EPA Radon Zone for DINWIDDIE County: 1

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## **TOPOGRAPHIC INFORMATION**

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **HYDROLOGIC INFORMATION**

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

## **HYDROGEOLOGIC INFORMATION**

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## **GEOLOGIC INFORMATION**

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Virginia Public Water Supplies

Source: Department of Health, Office of Water Programs

Telephone: 804-786-1756

## OTHER STATE DATABASE INFORMATION

#### Virginia Oil and Gas Wells

Source: Department of Mines, Minerals and Energy

Telephone: 804-692-3200

A listing of oil and gas well locations.

### RADON

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

#### EPA Region 3 Statistical Summary Readings

Source: Region 3 EPA

Telephone: 215-814-2082

Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STREET AND ADDRESS INFORMATION

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**Range 15 Rubber Mat Area**

2411 Darvills Road

Mc Kenney, VA 23872

Inquiry Number: 5675972.6

June 07, 2019

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



INQUIRY #: 5675972.6

YEAR: 1963

— = 1125'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY #: 5675972.6

YEAR: 1994

1125'





INQUIRY #: 5675972.6

YEAR: 1974

— = 1125'





INQUIRY #: 5675972.6

YEAR: 2006

1" = 1125'





INQUIRY #: 5675972.6

YEAR: 2009

1" = 1125'



## EDR Aerial Photo Decade Package

06/07/19

**Site Name:**

Range 15 Rubber Mat Area  
2411 Darvills Road  
Mc Kenney, VA 23872  
EDR Inquiry # 5675972.6

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Hans Sund



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### Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=1125'	Flight Year: 2016	USDA/NAIP
2012	1"=1125'	Flight Year: 2012	USDA/NAIP
2009	1"=1125'	Flight Year: 2009	USDA/NAIP
2006	1"=1125'	Flight Year: 2006	USDA/NAIP
1994	1"=1125'	Acquisition Date: March 12, 1994	USGS/DOQQ
1974	1"=1125'	Flight Date: April 01, 1974	USGS
1963	1"=1125'	Flight Date: March 29, 1963	USGS

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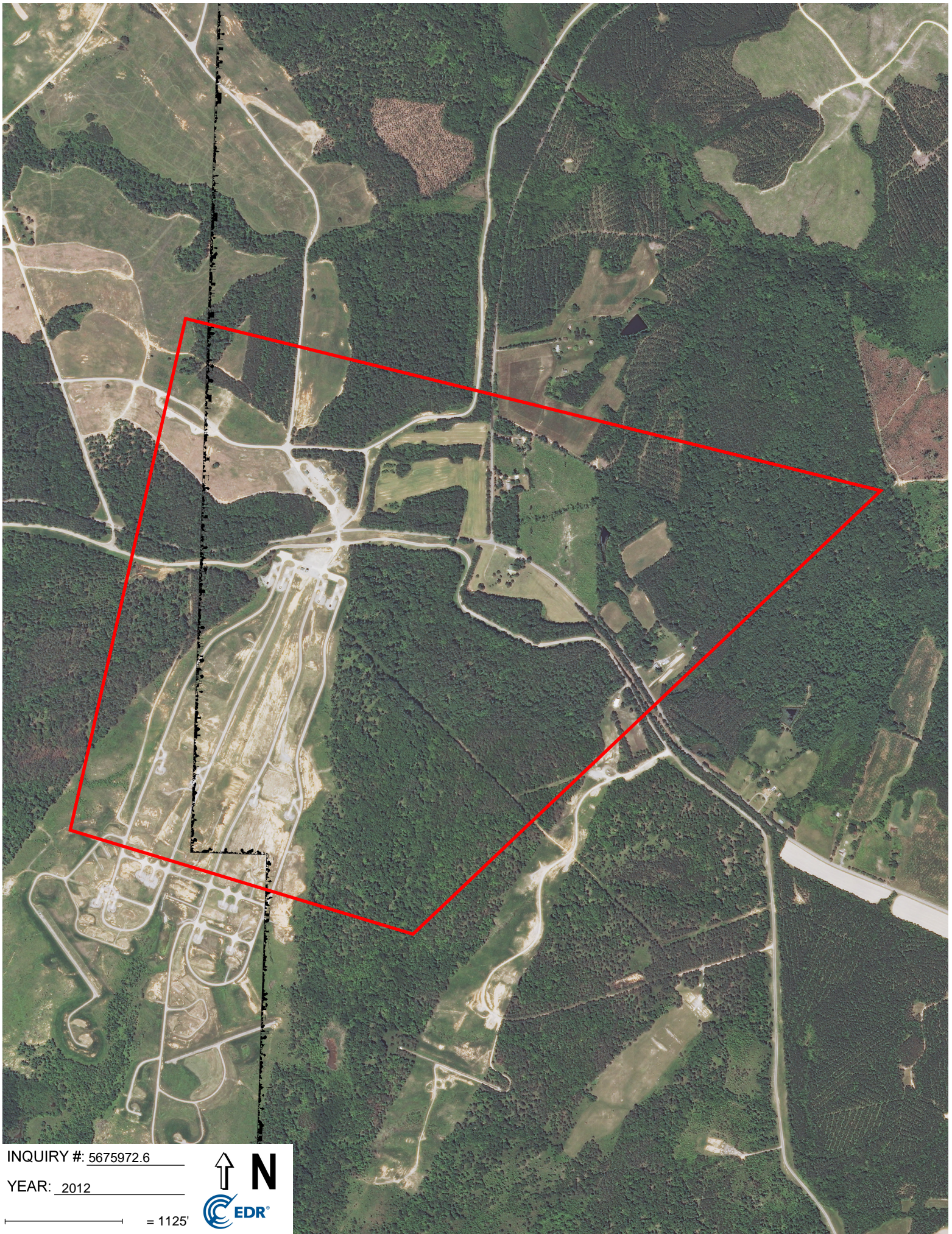


INQUIRY #: 5675972.6

YEAR: 2016

— = 1125'





INQUIRY #: 5675972.6

YEAR: 2012

1" = 1125'





Range 15 Rubber Mat Area

2411 Darvills Road

Mc Kenney, VA 23872

Inquiry Number: 5675972.3

June 06, 2019

## Certified Sanborn® Map Report



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Toll Free: 800.352.0050  
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## Certified Sanborn® Map Report

06/06/19

**Site Name:**

Range 15 Rubber Mat Area  
2411 Darvills Road  
Mc Kenney, VA 23872  
EDR Inquiry # 5675972.3

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Hans Sund



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### Certified Sanborn Results:

**Certification #** EF44-4A6B-B1E0

**PO #** NA

**Project** Range 15 Fire Mat Area

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Sanborn® Library search results

Certification #: EF44-4A6B-B1E0

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- ☒ University Publications of America
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Summary of the U.S. Environmental Protection Agency Review  
and Preliminary Assessment Scoring Activities  
July 20, 1995

Facility: U.S. Army, Fort Pickett  
Blackstone, Virginia

Federal Facility ID No.: VAD213720705

EPA ID No.: VA2210020705

Dump Site No.: VA-102

Docket Date: February 12, 1988

## BACKGROUND

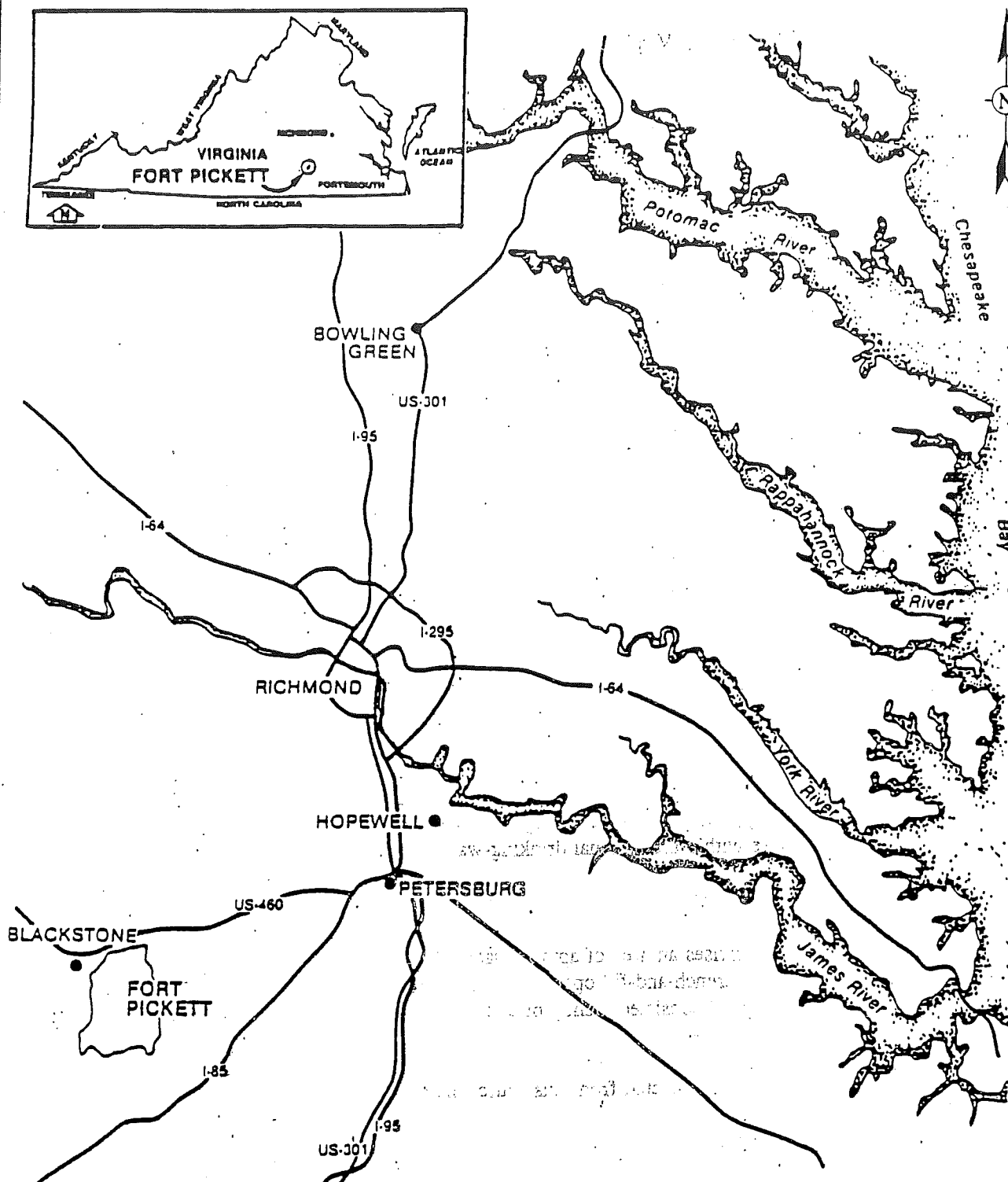
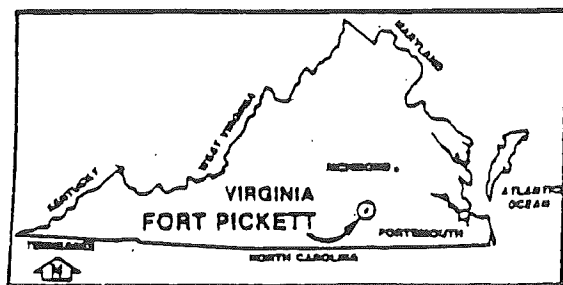
The U.S. Environmental Protection Agency (EPA) evaluated the U.S. Army, Fort Pickett facility in Blackstone, Virginia by reviewing documents submitted to EPA Region 3 and by using the Preliminary Assessment (PA) Score (PA-Score) Program. The sources of information reviewed to complete this evaluation are presented in the attached list of reviewed materials.

Fort Pickett is located in a rural area, in the southern Piedmont section of the Commonwealth of Virginia, approximately three miles east of the Town of Blackstone (Figure 1). The facility occupies areas of Nottoway, Brunswick, Dinwiddie, and Lenoir Counties. The site consists of 45,218 acres, which include commercial forest land, improved grounds, semi-improved grounds, unimproved grounds, and freshwater lakes and ponds. Surrounding land use consists of pasture and cropland.

Fort Pickett was established in 1941 as a training camp for World War II troops. The facility is currently a semiactive subinstallation used to provide artillery and armor training to units of the active Army, Army Reserves, Navy, National Guard, and Air Force. A portion of the property is leased to Virginia Polytechnic Institute for use as a multi-purpose agricultural research station.

Major installation operations include vehicle and facility maintenance, military training, water and sewage treatment plant laboratories, a photographic laboratory, and a medical clinic. Normal activities at Fort Pickett include the generation of waste photographic solutions, waste solvents, waste oil, medical waste, battery acids, paint wastes, oil contaminated by polychlorinated biphenyls (PCB), and wastewater treatment sludges.

Thirty-three underground storage tanks (UST) are located at Fort Pickett. Twenty-one USTs are currently used to store petroleum, oils, and lubricants (POL), and are leak checked annually. Waste oil generated in the vehicle maintenance areas is stored in two USTs. The 12 tanks not in service are not leak checked. USTs are regulated by EPA (40 CFR Part 280) and the Virginia Department of Environmental Quality (VR 680-13-02) and are not eligible as CERCLA sources.



SCALE:  
 5 0 5 10 20 MILES  
 5 0 5 10 20 30 KILOMETERS

**U.S. ARMY FORT PICKETT  
 BLACKSTONE, VIRGINIA**

**FIGURE 1  
 SITE LOCATION MAP**

SOURCE: MODIFIED FROM ENVIRONMENTAL SCIENCE AND  
 ENGINEERING, INC. 1982. INSTALLATION  
 ASSESSMENT OF THE U.S. ARMY GARRISON, FORT  
 PICKETT, BLACKSTONE, VIRGINIA. REPORT NO. 316B

**PRC** Environmental Management, Inc.

## SOURCE DESCRIPTIONS

Seven sources were evaluated with the PA-Score Program. They include Landfill Nos. 1 to 5, the Fire Training Area, and contaminated soil at Building 1082 (Figure 2). All of the sources are unlined. Closed landfills are capped with native soils that generally consist of silt loam to loam with moderate infiltration rates, and are vegetated.

### Landfill No. 1

Landfill No. 1 comprises an area of 20 acres and currently accepts construction debris and household waste. The landfill has been in operation since 1982. Reportedly, waste herbicides, including 2,4-dichlorodiphenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and herbicide containers were disposed of in this landfill. This a trench-and-fill landfill with a volume of 199,160 cubic yards (yd<sup>3</sup>).

No samples have been collected from this source area.

### Landfill No. 2

Landfill No. 2 comprises an area of 25 acres located south of and adjacent to the southern edge of the cantonment area. From the mid-1960s until 1982 the landfill accepted construction debris, household wastes, and waste herbicides in a trench-and-fill operation. Sludge from the Fort Pickett sewage treatment plant clarifiers was disposed of by landspreading at the landfill. The volume of this landfill is 331,940 yd<sup>3</sup>.

Groundwater samples collected from monitoring wells at Landfill No. 2 contained levels of lindane, cadmium, mercury, and phenols exceeding the Commonwealth of Virginia groundwater standards; however, all were within the national drinking-water standards or criteria.

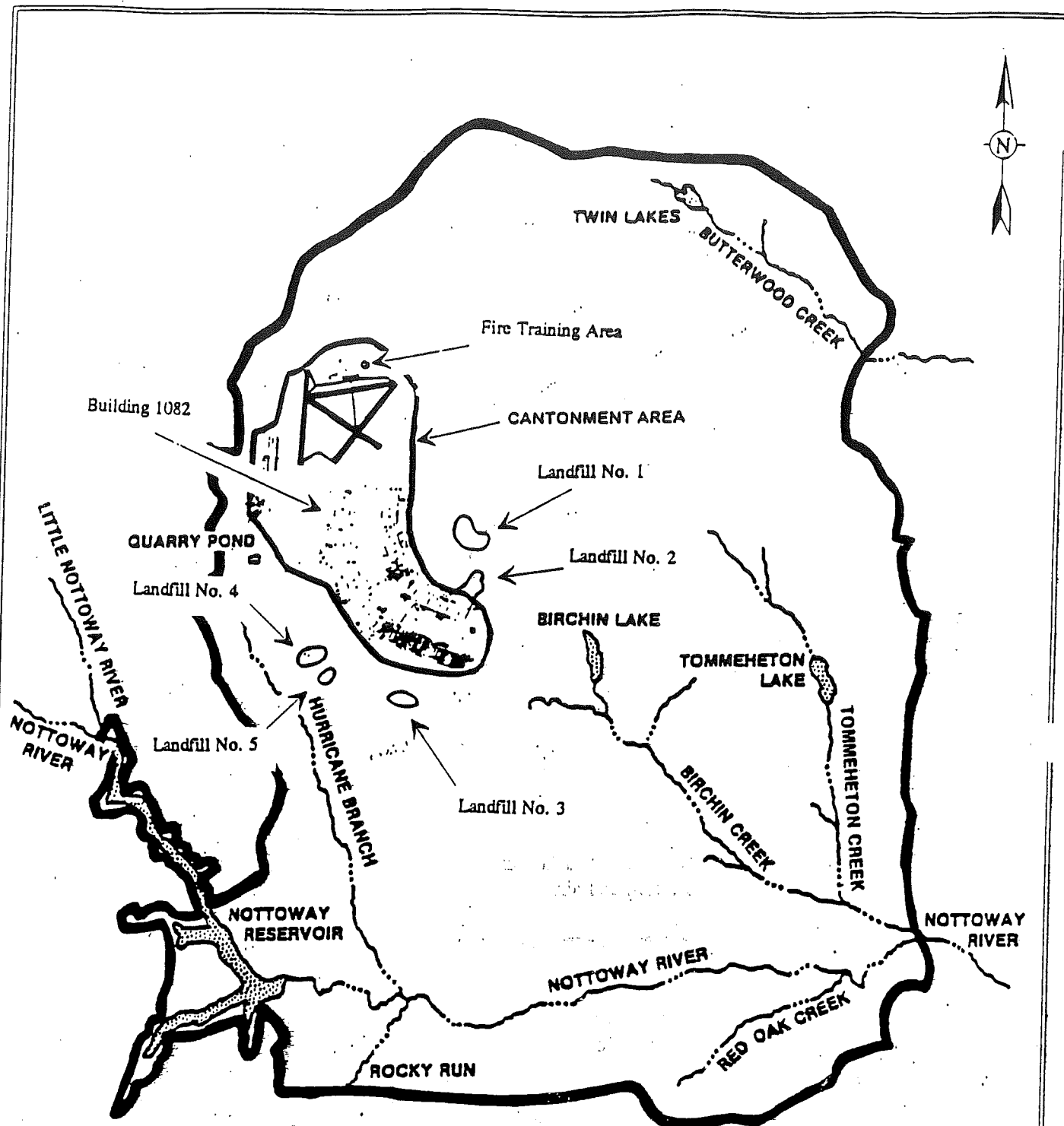
### Landfill No. 3

Landfill No. 3 comprises an area of approximately 10 acres. The area was used from approximately 1945 until 1981 for trench-and-fill operations, as well as for burning refuse. Wastes typically dumped in this landfill consisted mainly of construction debris and household wastes. The volume of this landfill is 132,780 yd<sup>3</sup>.

No samples have been collected from this source area.

### Landfill Nos. 4 and 5

Landfill Nos. 4 and 5 are adjacent to each other and lie southwest of the cantonment area. Each landfill comprises an area of approximately five acres and was used from about 1943 until 1945. The types of wastes and disposal methods at the landfills are unknown. However, past disposal operations reportedly involved selling putrescible garbage, burning flammable refuse, dumping ash and cinders



NOT TO SCALE

U.S. ARMY FORT PICKETT  
BLACKSTONE, VIRGINIA

FIGURE 2  
SOURCE LOCATION MAP

SOURCE: MODIFIED FROM ENVIRONMENTAL SCIENCE AND  
ENGINEERING, INC. 1982. INSTALLATION  
ASSESSMENT OF THE U.S. ARMY GARRISON, FORT  
PICKETT, BLACKSTONE, VIRGINIA. REPORT NO. 316B

**PRC** Environmental Management, Inc.

in the landfills, and periodically depositing used motor oil and kitchen grease. The volume of Landfill No. 4 is 66,388 yd<sup>3</sup> and the volume of Landfill No. 5 is unknown.

No samples have been collected from these source areas.

#### Fire Training Area

The Fire Training Area was used from 1975 until 1990 for training military personnel. The area is an unlined pit of approximately 50 square feet (ft<sup>2</sup>). A shallow, oil-stained clay berm that surrounded the Fire Training Area was bulldozed over the area after arsenic, barium, chromium, and lead were detected in the soil.

Groundwater samples collected from monitoring wells installed at the Fire Training Area contained lead in concentrations that significantly and consistently exceeded proposed maximum concentration levels, maximum concentration level goals, and the Virginia State Water Control Board drinking water standards.

#### Contaminated Soil at Building 1082

In 1981, a pole-mounted transformer overheated and exploded near Building 1082, spilling about 15 gallons of PCB-contaminated oil. Visible stains were present on the ground in an area measuring about 3 feet by 9 feet. Chemical analysis of samples collected from the top 10 centimeters (cm) of soil indicated PCB concentrations ranging from 5.6 to 61 parts per million (ppm). A five-cm layer of soil was placed over the stained area.

### **MIGRATION PATHWAYS AND TARGETS**

The potential migration pathways for hazardous substances from all on-site sources include groundwater, surface water, soil, and air.

Hazardous substances have been detected in the groundwater beneath the site. All of the sources are unlined and have the potential to leach hazardous substances to groundwater. Groundwater is about 15 feet below ground surface (bgs). The depths of private wells outside Fort Pickett and the wells on Fort Pickett are believed to be about 30 feet bgs based on the depths of on-site monitoring wells. The direction of shallow groundwater flow in the area of the facility is variable and generally towards local streams. The nearest drinking water well (Post Quarters 4072) is 12,000 feet from a potential source of contamination. Up to 6,511 residents obtain their drinking water from wells located within a 4-mile radius of the site. There is an unknown number of livestock farms within a 4-mile radius of the facility that use groundwater to water cattle.

The Nottoway River flows west to east across the southern section of Fort Pickett. About 90 percent of the facility belongs to the Nottoway drainage basin, which consists of six tributaries flowing into the Nottoway River. The northeast corner of the facility forms part of the drainage basin for Butterwood Creek, which flows across Fort Pickett from northwest to southeast. The Nottoway River has been dammed on the western edge of the facility, forming the Nottoway Reservoir. A surface

water intake in the reservoir serves as a drinking water source for about 7,600 people at Fort Pickett and the Town of Blackstone. The Nottoway River, Butterwood Creek, and associated tributaries provide habitat for the Roanoke Log Perch, which is a federally endangered fish species. In addition, the Nottoway River is a state designated scenic river.

Runoff originating from the sources at the facility may have entered surface waters at the facility. Areas of contamination are located near several streams that drain the facility and enter the Nottoway River. Targets along the surface water pathway include fisheries and sensitive environments (wetlands, federally designated endangered species, and a state designated scenic river). No commercial fisheries exist within the 15-mile downstream distance limit, but this evaluation assumes that at least one pound of human food chain organisms is taken for human consumption. No surface water intakes exist within 15 miles downstream of the site.

Surface soil contamination exists at both the Fire Training Area and Building 1082. Access to the areas are restricted by chains and/or capping. Fort Pickett is patrolled regularly and guard stations are located at each entrance to the facility. No residences, schools, or day-care facilities are located within 200 feet of these sources. Several workers are located at Building 1082.

A release to the air of contaminated dust-borne particles near Building 1082 is a potential if the thinly covered area of PCB-contamination is disturbed. There are no sensitive environments located within a 0.5-mile radius of this source.

*Final*

**Decision Document  
EBS-103 Parcel**

**Fort Pickett Army Garrison  
Blackstone, Virginia**

Delivery Order 0005  
Contract Number DACA65-02-D-0023

Prepared for

**THE FORT PICKETT BASE REALIGNMENT  
AND CLOSURE OFFICE**

Blackstone, Virginia

Prepared by

**WESTON SOLUTIONS, INC.**  
1000 Perimeter Park Drive, Suite E  
Morrisville, North Carolina 27560

**25 September 2002**

W.O. No. 03886.182.005



**TABLE OF CONTENTS**

SECTION	PAGE
<b>1 SITE NAME, LOCATION, AND DESCRIPTION .....</b>	<b>2</b>
<b>2 SITE HISTORY AND ENFORCEMENT ACTIVITIES .....</b>	<b>2</b>
<b>3 COMMUNITY PARTICIPATION.....</b>	<b>4</b>
<b>4 SCOPE AND ROLE OF OPERABLE UNIT.....</b>	<b>4</b>
<b>5 SITE CHARACTERISTICS.....</b>	<b>4</b>
5.1 Overview of Conceptual Site Model.....	4
5.2 Field Investigations .....	5
5.3 Analytical Results .....	5
<b>6 CURRENT AND POTENTIAL FUTURE SITE     AND RESOURCE USES .....</b>	<b>7</b>
<b>7 SUMMARY OF SITE RISKS .....</b>	<b>7</b>
7.1 Overview and Objectives.....	7
7.2 Baseline Human Health Risk Assessment .....	7
7.3 Baseline Ecological Risk Assessment .....	8
7.4 Risk Assessment Conclusions .....	8
<b>8 DOCUMENTATION OF SIGNIFICANT CHANGES .....</b>	<b>8</b>
<b>APPENDIX A RESPONSIVENESS SUMMARY.....</b>	<b>A-1</b>

## LIST OF FIGURES

SECTION	TITLE	PAGE
Figure 1	Site Map .....	9
Figure 2	Human Health Site Conceptual Model .....	10
Figure 3	Ecological Site Conceptual Model.....	11

## LIST OF TABLES

SECTION	TITLE	PAGE
Table 1	Soil Analytical Summary Table .....	12
Table 2	Organic Groundwater Analytical Summary .....	14
Table 3	Inorganic Groundwater Analytical Summary.....	15

FORT PICKETT ARMY GARRISON  
EBS-103 SITE  
(FORMER FIRE TRAINING AREA)  
OPERABLE UNIT 1  
**DECLARATION FOR THE DECISION  
DOCUMENT**

SEPTEMBER 2002

**SITE NAME AND LOCATION**

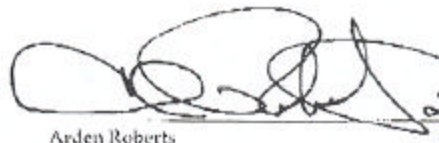
Former Fire Training Area  
EBS-103, Operable Unit 1  
Fort Pickett Army Garrison  
Blackstone, Nottoway County, Virginia

with FTA do not present an unacceptable risk to human health and the environment. A five-year review will not be necessary for Operable Unit 1.

**STATEMENT OF BASIS AND PURPOSE**

This Decision Document presents a finding that no further action is necessary for the Former Fire Training Area (FTA) Base Realignment and Closure (BRAC) site at Fort Pickett Army Garrison, Blackstone, Virginia. This finding of no further action necessary was determined following the Community Environmental Response Facilitation Act (CERFA) and DOD BRAC Cleanup Plan Guidebook (DOD, 1993) guidelines and 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). This Decision Document is based on the Administrative Record for this site. The U.S. Environmental Protection Agency (EPA), Region III and the Virginia Department of Environmental Quality (DEQ), Commonwealth of Virginia concur with the determination of no further action for this site.

**DECISION DOCUMENT  
AUTHORIZING SIGNATURE**



26 Sep 02  
Date

Arden Roberts  
U.S. Army FORSCOM  
Fort McPherson, Georgia

**Assessment of the Site**

**Description of the Selected Remedy**

No further action is necessary for the FTA site to protect public health, welfare, or the environment.

**Statutory Determinations**

The no further action remedy selection is based upon a remedial investigation at the FTA site.

The results of a risk assessment, which was conducted following a removal action with confirmatory sampling, indicate that, based on available information, FTA soils, sediment, surface water, and ground water associated

# FORT PICKETT ARMY GARRISON

## *EBS-103 SITE*

### *(FORMER FIRE TRAINING AREA)*

### *OPERABLE UNIT 1*

## DECISION DOCUMENT

SEPTEMBER 2002

## DECISION SUMMARY

### SECTION 1

#### SITE NAME, LOCATION, AND DESCRIPTION

##### INFORMATION

The U.S. Army Garrison at Fort Pickett, Virginia is in the final stages of a base closure process under the Base Realignment and Closure (BRAC) act. This process was conducted following Community Environmental Response Facilitation Act (CERFA) and DOD BRAC Cleanup Plan Guidebook (DOD, 1993) guidelines. This Decision Document addresses the results of the Remedial Investigation/Feasibility Study (RI/FS) and remedial alternatives considered for the Fort Pickett parcel known as EBS-103 (Former Fire Training Area - FTA) in Blackstone, Virginia, which is located within the base closure area. The FTA is listed as Area Operable Unit (OU) 1. This Decision Document provides a brief summary of the investigations and evaluations that have been conducted.

This document is issued by the U.S. Army, the lead agency for CERCLA response activities at the site. The strategy for remediation, closure, and reuse of the property included is being overseen by the BRAC Cleanup Team (BCT), comprised of members from the U.S. Environmental Protection Agency (EPA), Region III, the Virginia Department of Environmental Quality (DEQ), and the Fort Pickett Army Garrison BRAC Environmental Coordinator. The BCT has been involved throughout the RI/FS process at the FTA reviewing, commenting on, and concurring with Work Plans, Sampling Plans, and the RI/FS report. The United States Army Corps of Engineers-Norfolk District (USACE) also was involved in the oversight process. The Fort Pickett Restoration Advisory Board (RAB) was regularly briefed on progress. The RI/FS was conducted in accordance with the Guidance for Conducting Remedial Investigations and Feasibility Studies Under

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (U.S. EPA, October 1988).

Fort Pickett is located 60 miles southwest of Richmond, Virginia, and approximately 2 miles east of Blackstone, Virginia within Brunswick, Dinwiddie, and Nottoway Counties. Fort Pickett encompasses approximately 45,160 acres, of which 2,863 acres have been identified as BRAC property, subject to transfer or lease. Approximately 42,196 acres of the BRAC property are being used by the Virginia Army National Guard (VAARNG) as of 1 October 1997. Approximately 2,863 acres are considered excess to the Department of Defense (DOD) and 2,792 acres are in the process of being transferred for private use through the Fort Pickett Local Redevelopment Authority (LRA) and other public entities. The remaining 71 acres, including the FTA, are being retained by the Army pending environmental investigations and possible cleanup. It is noted that the acreage associated with these transfers has not been included in the installation's total acreage of 45,160 acres.

### SECTION 2

#### SITE HISTORY AND ENFORCEMENT ACTIVITIES

##### PROPERTY HISTORY

Fort Pickett was established in 1941 as a combat training facility, with a peak number of 85,000 troops stationed at the installation during 1943. The installation was briefly closed in 1944, and fully re-activated in 1950. The installation was selected for closure by the BRAC 95 Commission.

As part of the BRAC process, Woodward-Clyde conducted an Environmental Baseline Survey (EBS, 1997) of the installation, and the results of this survey were documented in the Environmental Baseline Survey Report. The EBS included the review of existing installation environmental documents; federal, state, and local government records; and aerial photographs, as well as site visits. The EBS

report described the environmental condition of the property. This process was conducted following CERFA and DOD BRAC Cleanup Plan Guidebook guidelines.

From the EBS document, some sites were determined to have little or no documentation and would need further investigation. For the most part, these sites were conservatively designated for Preliminary Assessment/Site Inspection (PA/SI) review based on limited knowledge of historical site activities.

The FTA is approximately 5 acres in size and is located approximately 1000 feet northeast of the (former) airport hangar (Building 25). The site (Figure 1) is bounded to the north and east by State Highway 40 and can be accessed from this road via the entrance into the airfield facilities. The former fire training area consisted of an unlined, clay-bottomed pit (approximately 2,500 square feet) which was surrounded by a shallow, oil-stained clay berm. It was noted that the clay at the bottom of the pit had low permeability, as standing water was reported (indicating that fluids did not quickly seep from the bottom of the pit). The fire training area was used until 1989 for fire-fighting training. Liquids such as used motor oil, diesel fuel, and jet fuels were poured onto standing water in the pit and ignited. Then, the training staff would extinguish the fire with water.

The FTA is located on vacated land, and consists primarily of wooded and grassy areas. Surface soils in the vicinity of the FTA are predominantly silty sand. This coarser grained material typically occurred with depth greater than 4 feet BGS. Depth to saprolite ranged across the site from 8 to 15 feet BGS. Drainage from the sites flows to the northeast and is discharged into a tributary of the Tommeheton Creek. No wetlands are located near the FTA, and no federal or state threatened or endangered species are known or suspected to have habitats within the areas encompassing the FTA.

A PA/SI report was prepared for the FTA in May 1990. Additional groundwater monitoring was conducted at the FTA in October 1990 and again in February 1997. The focus of the effort was analyses of volatile organic compounds, polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), and metals.

As other identifiable records have not been located that document site activities, WESTON reviewed the ERI Aerial Photographic Analysis of Fort Pickett. In a 1949 aerial photograph, twenty-three buildings were identified at the site. Staining was visible in the central portion of the site; a large circular area of staining or liquid was visible to the south; two ground scarred areas were visible in the northeast corner of the site; and a drainage ditch led from a building to the easternmost ground scarred area.

A 1955 aerial photograph showed the ground scarred areas. An access road entered the site from the west and led toward a rectangular-shaped stain and/or liquid. A 1959 aerial photograph indicated that the buildings were removed and that staining remained. Re-vegetation of a portion of the site, along with the lack of buildings could be considered evidence that the site was mostly inactive. A 1964 aerial photograph showed buildings were not present within the site. The central portion of the site remained scarred, but staining was not evident. 1968, 1977, 1979, 1984, 1989, and 1994 aerial photographs indicate similar ground scarring.

In May of 1990, Hunter/ESE of Gainesville, Florida developed a PA/SI report on the former fire training area site, at the request of the Kansas City District, United States Army Corps of Engineers (USACE). The scope of the PA/SI consisted of the following major tasks:

1. Task 1 – Pre-field activities,
2. Task 2 – Soil gas survey,
3. Task 3 – Soil sampling, and
4. Task 4 – Monitor well installation and sampling.

Task 1 included development of a Work Plan, Chemical Data Acquisition Plan, and a Site Safety and Health Plan. Task 2 resulted in the collection of 21 soil gas samples at various locations. The results of the soil gas survey indicated the possible presence of organic vapors at five of the twenty-one locations. These locations included the four corners of the pit and the probe positioned midway on the northern edge of the pit.

Based on this information, Task 3 activities included soil sampling for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics. The analytical results of the soil indicated that VOCs and Polynuclear aromatic compounds (PAHs) were not present in the soil above MCL, RBC, health and ecological risk-based action levels. Of the chemicals analyzed in soil samples, only the metals had reported detections. Arsenic exceeded the EPA Region III risk-based concentration for carcinogenic effects for residential soil ingestion (4 of 4 samples). Barium, cadmium, chromium and lead did not exceed their respective benchmarks.

Based on the comparison of detected soil concentrations with ecological benchmarks, chromium and lead exceeded EPA Region III ecological screening (BTAG) levels in all of the soil samples collected and analyzed. Chromium also exceeded benchmarks for phytotoxicity and earthworms/microorganisms/microbial processes.

Task 4 involved the installation of three monitor wells at the site. The locations included one upgradient well (MW-1) to 25 feet BGS and two downgradient wells (MW-2 to

25 feet BGS and MW-3 to 30 feet BGS). Groundwater sampling activities were conducted on 29 November 1989. Analytical results for the groundwater samples indicated that TPH and VOCs were not present above detection limits. Of the total metals constituents, barium, chromium, and lead were detected. Arsenic and cadmium, found in soil sample analyses, were not detected in the groundwater analyses. A second set of groundwater samples was collected on 24 October 1990 for specific metal constituents. A third set of groundwater data was collected on 18 February 1997 to monitor site conditions. The maximum detected chemical concentrations in groundwater samples collected from wells at EBS-103 were compared with the various benchmarks to determine if there were exceedances. It was found that the maximum detected concentrations for barium and cadmium exceeded their respective EPA Region III risk-based levels for groundwater ingestion (WESTON, 1997b). Barium and lead exceeded their respective MCLs or action levels.

The PA/SI evaluation of the sampling results proposed that additional investigations were not warranted at this site. The report further recommended that the use of the fire training pit be discontinued to prevent future potential contamination.

It is noted that after the release of the Hunter/ESE PA/SI, an unknown amount of soil in and around the fire training area, including the berm, was excavated and removed from the site in 1991. A written report documenting this activity was not developed. Mr. Dave Foley (former BCT member) provided this information verbally to the BCT. The excavated pit was reportedly filled with clean fill material. The depth of the excavation has not been confirmed, nor was analytical sampling conducted following excavation.

Overall, previously collected data in the former PA/SI report were useful as background information. Of concern in this report were the laboratory reporting limits, the lack of soil sampling at depth, and the purging and sampling methodology. The sample detection limits for a number of organic and inorganic chemicals in both groundwater and soil exceeded their respective health risk-based benchmarks. Because many of these chemicals were reported as "non-detect", the level of confidence in the conclusion that these chemicals were not present in sufficient amounts to pose a health risk was deemed low.

The BCT decision to further investigate the FTA was mandated by the concern generated about making final transfer decisions on the basis of the Hunter/ESE PA/SI document. Based on this information, the Hunter/ESE PA/SI data was not used in the RI/FS Report.

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## SECTION 3

### COMMUNITY PARTICIPATION

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The Final Decision Document becomes part of the Fort Pickett Administrative Record. In addition, a Proposed Plan (PP) was issued for the FTA, pursuant to CERCLA Section 113(k)(2)(B)(i-v) and Section 117. The PP was released to the public for a 30-day comment period, starting 20 August 2002 through 20 September 2002. The PP is available to the public in the Information Repository, located at the Fort Pickett BRAC Environmental Office. The notice and availability of the PP and notification of the PP public meeting was published in the [Blackstone Courier Record on 15 August 2002](#). The public meeting was held on 21 August 2002. The public was invited to attend. There were no public attendees at this meeting. This information was also presented to the Fort Pickett Restoration Advisory Board (RAB) on 16 July 2002. The RAB was presented the findings of the RI/FS and has concurred with this remedy

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## SECTION 4

### SCOPE AND ROLE OF OPERABLE UNIT

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This decision is limited to the FTA site (OU 1). Final measures for the other five Fort Pickett OUs will be documented in separate Decision Documents (DDs) for the separate phases of BRAC property transfers.

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## SECTION 5

### SITE CHARACTERISTICS

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#### 5.1 OVERVIEW AND CONCEPTUAL SITE MODEL

The FTA is approximately 5 acres in size. The FTA is relatively flat with a slight slope, which increases to the northeast. With the exception of the former fire training pit and its surrounding region, EBS-103 is largely undisturbed, old growth, southern mixed forest. Approximately 75% of the site is covered by vegetation; the remainder is primarily exposed barren soils from previously developed land that has not been used for over 10 years. Figures 2 and 3 present Human Health and Ecological conceptual site models for the FTA, including potential receptors. The primary receptors are future construction workers and site commercial workers.

Surface water at the FTA is limited to a small, unnamed, intermittent creek located in the northeast corner of the site. A channeled manmade ditch connects EBS-103 to this creek. There is water flowing in the ditch only after storm events.

Groundwater in the region of Fort Pickett is present within a multi-aquifer system, with aquifers existing in the sand,

gravel, saprolite, or rock fractures. Unfractured rock and/or locally impermeable sediments can separate the producing zones laterally and vertically. The original rock texture is generally impermeable. Groundwater flow throughout the installation is primarily governed by surface topography and direction of drainage discharging to the many on-post streams. Regional recharge is the direct result of rainfall at the site.

## 5.2 FIELD INVESTIGATIONS

The primary source of impact at the FTA was the pit area that was used as a fire training area. This area was approximately 2,500 square feet and was located in the southwest central area of EBS-103. Burning of petroleum products such as used motor oil, diesel fuel and jet fuel occurred here for purposes of training fire fighters up to the late 1980's. The contaminants of potential concern (COPCs) in groundwater, based on historical data, appeared to be metals, including: barium, cadmium, chromium and lead. In soil, the same four inorganics were known to be present, with the addition of arsenic. Analysis of the historical groundwater and soils data indicated that, although most organics were not detected at the site, the analytical detection limits were not all sufficiently risk-based.

The RI/FS effort (1999) included collecting a minimum of thirty-seven soil samples from twelve (12) locations to be analyzed for diesel-range organics (DRO), gasoline-range organics (GRO), VOCs, SVOC, pesticides, polychlorinated biphenyls (PCBs), and inorganics. Three existing and eight new monitoring wells were installed and the groundwater sampled for VOCs, SVOC, pesticides, PCBs, and metals. In addition, an Interim Removal Action was conducted during the investigation phase for the purpose of removing DRO contaminated soil. Confirmatory sampling was conducted and utilized to finalize the RI/FS document.

The samples were collected and analyzed (including quality assurance/quality control [QA/QC] procedures) in accordance with the procedures contained in the following documents:

- *EBS-103 Remedial Investigation Work Plan, Fort Pickett, Virginia, Final. May 1999.* (Roy F. Weston, Inc.).
- *EBS-103 Remedial Investigation Sampling and Analysis Plan. Fort Pickett, Virginia, Final. May 1999.* (Roy F. Weston, Inc.).

The soil and groundwater samples were analyzed for the following

- Target Compound List (TCL).
  - Volatile Organic Compounds (VOCs) by EPA SW-846 Method 8260B.
  - Semivolatile Organic Compounds (SVOCs) by EPA SW-846 Method 8270C.
  - Pesticides by EPA SW-846 Method 8081A
  - PCBs by EPA SW-846 Method 8082

- Target Analyte List (TAL) Metals by EPA SW-846 Method 6010A and 7000.
- Total Petroleum Hydrocarbons (TPH)-Diesel Range Organics (DRO) by EPA SW-846 Method 3550B/8015B.
- Total Petroleum Hydrocarbons (TPH)-Gasoline Range Organics (GRO) by EPA SW-846 Method 5030B/8015B.
- Methyl tert-butyl ether (MTBE) by EPA SW-846 Method 8021B.
- Total Organic Carbon (TOC) by EPA SW-846 Method 9060 (Lloyd Kahn method).

Chemical analytical services were provided by GP Environmental Services Laboratory (GPL), located in Gaithersburg, Maryland. This laboratory is certified by the Missouri River Division (MRD) of the Corps of Engineers. Chemical analysis were conducted using EPA SW-846 analytical methods with CLP QA/QC protocols and CLP reporting. SW-846 analytical methods were proposed to achieve lower detection limits, while maintaining the MRD requirement for CLP QA/QC and reporting. The sample results were independently validated for data quality and usability by Meridian Science and Technology, Inc. (MSTI) using *U.S. EPA Region III Modifications to the National Functional Guidelines for Organic Data Review* (EPA, 1994).

## 5.3 ANALYTICAL RESULTS

A summary of the validated analytical results for the FTA soils and groundwater are shown in Table 1, 2, and 3.

Acetone, carbon disulfide, methylene chloride, trichloroethene (TCE), and xylenes were the VOCs detected in the soil. Twelve SVOCs, including 10 PAHs, were detected at the site. The non-PAHs were di-n-butylphthalate and bis(2-ethylhexyl)phthalate (DHEP), ranging in concentration from 20 micrograms per kilogram (ug/kg) to 51 ug/kg. The PAHs were detected in a drainage ditch surface soil sample, at concentrations ranging from 19 ug/kg to 124 ug/kg.

Two pesticides were detected in a drainage ditch surface soil sample. 4,4'-DDD was detected at an estimated concentration of 2.3 ug/kg, and 4,4'-DDE was detected at an estimated concentration of 1.7 ug/kg. Further downgradient, 4,4'-DDD was not detected at a sample quantitation limit of 1.9 ug/kg, and 4,4'-DDE was detected at an estimated concentration of 0.61 ug/kg.

DRO were detected in eight of the thirty-two soil samples collected during this investigation. DRO were detected in concentrations ranging from 3.9 mg/kg to 1,531.5 mg/kg.

The analytical results showed that nineteen inorganics were detected in the soils at the site. Some inorganics were detected in each of the 32 soil samples. These inorganics were: aluminum (with concentrations ranging from 5,130

to 44,400 mg/kg), barium in 32 of the 32 samples (4.9 to 334 mg/kg), chromium in 32 of the 32 samples (1.4 to 367 mg/kg), iron (3,770 to 169,000 mg/kg), lead (5.3 to 128 mg/kg), magnesium in 32 of the 32 samples (122 to 4060 mg/kg), manganese (4.3 to 1,830 mg/kg), potassium in 32 of the 32 samples (170 to 3,730 mg/kg), and zinc (5.6 to 68.3 mg/kg). Other inorganics detected at the site included: arsenic in 30 of the 32 samples (1.3 to 13.4 mg/kg), beryllium in 7 of the 32 samples (0.72 to 5.7 mg/kg), cadmium in 2 of the 32 samples (0.84 to 2.2 mg/kg), calcium in 7 of the 32 samples (167 to 636 mg/kg), copper in 24 of the 32 samples (1.2 to 96.8 mg/kg), mercury in 9 of the 32 samples (0.04 to 0.22 mg/kg), nickel in 27 of the 32 samples (1.1 to 35.6 mg/kg), selenium in 1 of the 32 samples at 1.4 mg/kg, and vanadium in 30 of the 32 samples (9.3 to 252 mg/kg).

A comparative review of these inorganic results indicates they are "typical" for soils in the Excess property at Fort Pickett, when compared to the results of the Fort Pickett site-specific Background Survey (June 2001). In general, with the exception of iron, copper, vanadium, and chromium results at SB-109, a comparison of results indicates that these inorganics are comparable to site specific background levels established for Fort Pickett.

A summary of the groundwater analytical results for detected constituents is presented below. Chloroform, carbon disulfide, benzene, ethylbenzene, methyl tert butyl ether (MTBE), and xylenes were the VOCs detected in the groundwater during this investigation. Six SVOCs, including three PAHs, were detected in groundwater at the site. The non-PAHs were di-n-Butylphthalate, bis(2-Ethylhexylphthalate (DHEP), and 2-Methylnaphthalene. The detected PAHs were fluorene, phenanthrene, and phenol. VOCs and SVOCs detected in groundwater did not exceed federal maximum contaminant levels (MCLs) or Virginia Groundwater Quality Standards (VAGWQS) for groundwater quality.

Two pesticides were detected in groundwater at MW-103, MW-104, and MW-107. Alpha-chlordane was detected in groundwater at MW-103, MW-104 and MW-107 at concentrations of 0.035 ug/L, 0.039 ug/L, and 0.045 ug/L, respectively. Alpha chlordane detected in groundwater did not exceed the federal MCL of 2 ug/L for this constituent, but did exceed the VAGWQS of 0.01 ug/L. 4,4'-DDD was also detected in groundwater at MW-103, MW-104 and MW-107 at concentrations of 0.069 ug/L, 0.075 ug/L, and 0.065 ug/L, respectively. 4,4'-DDD detected in groundwater did not exceed the federal MCL or VAGWQS groundwater quality standards for this constituent.

The PCB constituent Aroclor 1254 was detected in groundwater at MW-101S and MW-101D at estimated concentrations of 0.36 ug/L and 0.15 ug/L, respectively. This detected constituent did not exceed federal MCLs or

VAGWQS for groundwater quality. However, the BCT requested a second round of groundwater samples be collected from these wells to better ascertain PCB concentrations at the site. Phase 2 analytical results at these locations for Aroclors were non-detects below a detection limit of 1.1 ug/L (excepting Aroclor 1260 non-detect below a detection limit of 2.1 ug/L).

GRO were not detected in the samples analyzed for this constituent. DRO were detected in three of the twelve monitoring wells sampled. DRO were detected at MW-3, MW-101S, and MW-104 at concentrations of 1.2 mg/L, 2.4 mg/L, and 0.3 mg/L, respectively. Based on the VADEQ typical action level of 1mg/L for DRO constituents in groundwater, the samples from the monitoring well through the former fire training pit and the monitoring well directly downgradient of the former pit indicated exceedances.

The analytical results showed that fifteen inorganics were detected in the groundwater. The inorganics results indicated the following: aluminum in 6 of the 12 samples (with concentrations ranging from 321 to 10,900 ug/L), barium in 12 of the 12 samples (32.7 to 124 ug/L), calcium in 10 of the 12 samples (568 to 17,500 ug/L), chromium in 8 of the 12 samples (5.5 to 46 ug/L), cobalt in 4 of the 12 samples (5.5 to 9.6 ug/L), copper in 1 of the 12 samples (5.2 ug/L), iron in 9 of the 12 samples (131 to 9,270 ug/L), lead in 7 of the 12 samples (3.1 to 25.1 ug/L), magnesium in 9 of the 12 samples (305 to 3,230 ug/L), manganese in 11 of the 12 samples (13.1 to 283 ug/L), nickel in 8 of the 12 samples (5.4 to 33.8 ug/L), potassium in 12 of the 12 samples (1,290 to 6,180 ug/L), sodium in 11 of the 12 samples (1,030 to 13,800 ug/L), vanadium in 1 of the 12 samples (10.4 ug/L), and zinc in 12 of the 12 samples (5.6 to 53.4 ug/L). Federal MCLs were not exceeded for inorganics at these sample locations. VAGWQS were exceeded for iron at MW-101S, MW-102S, MW-102D, MW-103, MW-104, MW-105, and MW-107. VAGWQS were exceeded for manganese at MW-101S, MW-102S, MW-102D, MW-103, MW-104, MW-105, and MW-107. VAGWQS were exceeded for zinc at MW-104.

Based on the results of early remedial investigation activities (October 2000), the removal of 1,033 tons of soil from in and around the former burn pit was determined to be the best method of removing petroleum-contacted soil. Analytical results and field observations indicated that soils could be removed to an approximate depth of 7 feet BGS from an area of approximately 50 feet by 50 feet to effectively remove the DRO-contacted soil.

The initial interim removal action was conducted in October and November 2000. DRO soil sampling was conducted again following the excavation to verify DRO-contacted soil removal. Samples were collected every 20 feet on the side-walls of the excavation at the approximate mid-point of the side-wall and every 400 square feet of the

exposed excavation base. Verification soil sample results were below the typical VADEQ action level for DRO (100 mg/kg). The results of this activity have been documented in the Final RI/FS Report (2001). The site was then back-filled with clean soil. The clean fill material was delivered to the site and compacted into place by the on-site track-hoe. The site was then raked smooth, grass seed was placed, and a top coat of straw was placed on the surface to minimize erosion.

Additionally, a one-thousand gallon above-ground storage tank (AST), with approximately 10 gallons of a kerosene/water mixture was removed. The liquid was collected into a 55-gallon drum, characterized, and transported off-site for fuel blending. After removal of the liquid contents, the AST was removed using DEQ-approved methods. The tank was cleaned and removed from the site. The concrete secondary containment was broken into pieces and removed from the site. WESTON collected two confirmatory samples from under the concrete secondary containment for DRO, GRO, VOCs, SVOCs, PCBs, Pesticides, cyanide, and inorganics by hand-auger. Sample results indicated lack of impact from the former AST.

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## SECTION 6

### CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

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The FTA is approximately 5 acres in size and is located approximately 1000 feet northeast of the (former) airport hangar (Building 25). The site is bounded to the north and east by State Highway 40. The site is bounded to the south and west by the airfield, and can be accessed from the airport road via the entrance into the airfield facilities. The land at the FTA (as well as the majority of the land in the BRAC portion of Fort Pickett) is currently undeveloped.

Based on the results of the RI/FS, the property is being transferred without deed restrictions. However, the site is zoned for future industrial/commercial reuse. The site is to be transferred for private use through the Fort Pickett LRA.

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## SECTION 7

### SUMMARY OF SITE RISKS

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#### 7.1 OVERVIEW AND OBJECTIVES

The RI/FS report included both ecological and human health risk assessments to address the potential current and future risks posed to human health and the environment associated with the FTA. The risk assessment included estimates of the risk posed to human health for both residential and industrial exposure-based scenarios (Figure 2 and 3). The human health risk assessment (HHRA) evaluated risk for the residential adult and child, construction worker, and commercial worker. The HHRA

was based on exposure to surface soil, subsurface soil, total soil (combined surface and subsurface soil), groundwater, and air. The ecological risk assessment (ERA) was based on exposure to surface soil.

#### 7.2 BASELINE HUMAN HEALTH RISK ASSESSMENT

The baseline human health risk assessment (BHHRA) was conducted to evaluate potential human health cancer risks and noncancer health effects for specific human population groups to the chemicals of potential concern (COPC) for the FTA. The BHHRA included an evaluation of potential post removal exposure from impacts to soil and groundwater concentrations of potential contaminants on human health, both noncancer health effects and cancer risk. Future residents, future commercial/industrial workers, future construction workers, and current trespassers were evaluated. In general, very conservative (i.e., health protective) assumptions were used to calculate the exposures and risks to site COPCs.

Human health risks were based on a conservative estimate of the potential carcinogenic risk or potential to cause other health effects not related to cancer. Risk to ecological receptors was based on the potential for adverse effects to animals that may inhabit or traverse the Site. Risks to human and ecological receptors were evaluated as part of the risk assessment. Three factors were considered: (1) nature and extent of contaminants at the Site, (2) the pathways through which human and ecological receptors are or may be exposed to those contaminants at the Site, and (3) potential toxic effects of those contaminants.

Cancer risks are expressed as numbers reflecting the increased chance that a person will develop cancer, if he/she is directly exposed (e.g., through involvement in some activity at the Site) to the contaminants found in environmental media (soil and groundwater) at the Site over a period of time. For example, EPA's acceptable risk range for Superfund sites is  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ , meaning there is one additional chance in ten thousand ( $1 \times 10^{-4}$ ) to one additional chance in one million ( $1 \times 10^{-6}$ ) that a person will develop cancer if exposed to contaminated media at a Superfund site. The risk associated with developing other health effects is expressed as a hazard index (HI) which is the ratio of the existing level of exposure to contaminants at a site to an acceptable level of exposure. Below a hazard index of 1, adverse effects are not expected.

Noncarcinogenic chemicals typically cause adverse effects by disrupting the function of a specific body system or organ. For example, one chemical may cause kidney failure while others may impact the liver, skin or respiratory tract. The effects of these chemicals attacking various organs are independent and their associated HI values are not additive unless they attack the same target organ.

For this reason, when the total HI for a receptor exceeds 1.0, the risk is often divided among the various organs that

are affected by the COCs. A hazard index is also used to evaluate ecological risks.

The results of the FTA BHHRA showed that very few chemicals had significant health risks. The chemicals listed below contributed the majority of health risks to the total risk for the appropriate scenarios:

- Iron – Child resident through soil exposure (HQ of 1.4).
- Arsenic – Age-adjusted resident (1.4E-05), and commercial/industrial worker through soil exposure (3.2E-06).
- Chloroform – Adult resident through soil exposure (5.5E-06).

Comparisons of background levels of arsenic and iron to the site levels did not show statistical differences. Therefore, the elevated health risks from soil exposure associated with these two metals were reflective of background levels. The elevated chloroform risk through inhalation was likely over-estimated to a large degree based on recent scientific evidence that the inhalation slope factor for chloroform currently used by EPA (EPA, 2001d) is greatly over-estimated.

In conclusion, based on the results of this BHHRA, chemicals in soils and groundwater at the FTA post removal do not pose an unacceptable health risk to human populations, and therefore, further investigations and/or remediation efforts are not necessary.

### 7.3 BASELINE ECOLOGICAL RISK ASSESSMENT

The objective of the ecological risk assessment was to characterize the potential risks posed by chemical contamination to ecological receptors at the FTA in order to make appropriate risk management decisions.

Eighteen (18) organic compounds and 18 inorganic chemicals were detected in the surface soils of EBS-103 and were evaluated using the Ecological Risk Assessment process. Of the 18 organic compounds evaluated, exposure point concentrations (EPCs) for these chemicals did not exceed the lowest available ecological screening level value. However, the potential risk associated with exposure to bis(2-ethylhexyl)phthalate, carbon disulfide, and DRO could not be quantitatively evaluated because ecological benchmarks for these substances in soil were not available. Bis(2-ethylhexyl)phthalate and carbon disulfide were detected in low frequency in the surface soil samples. These compounds were also detected in rinse blanks and are considered common laboratory contaminants. DRO was compared to typical DEQ action levels for petroleum compounds. The EPCs for 11 of the 18 detected metals (aluminum, beryllium, chromium, iron, lead, manganese,

mercury, nickel, selenium, vanadium, and zinc) were found to exceed ecological benchmarks.

Four (4) organic chemicals and 12 metals were detected in the single sediment sample collected at EBS-103. Of the 16 detected chemicals, 7 substances did not have ecological benchmarks or probable effect concentration (PECs) available: DRO, barium, calcium, magnesium, potassium, and vanadium. Of the 9 chemicals with benchmark data available, the maximum concentration of the chemicals were below the most conservative ecological benchmark.

Six (6) organic chemicals and 17 inorganic chemicals were detected in the four groundwater monitoring wells located upgradient of Tommeheton Creek. A comparison of the detected concentrations with various water quality criteria by the Level 1 Ecological Risk Assessment process. The results indicated that 1 organic chemical (carbon disulfide) and 4 metals (aluminum, barium, iron, and manganese) exceeded these criteria in some wells. The significance of the potential impact to Tommeheton Creek is currently unknown. The groundwater monitoring wells included in this analysis are located at least 300 to 400 feet from the Creek.

Overall, this ecological risk assessment determined that several metals in the surface soil occur at concentrations that exceed ecological benchmarks. However, based on supplemental information to the risk assessment, including a statistical comparison of site and Fort Pickett Background, the interim removal action, and a comparison of reference soils and ecological benchmarks, there does not appear to be significantly elevated concentrations of these naturally-occurring inorganics to warrant further risk assessment or investigation.

### 7.4 RISK ASSESSMENT CONCLUSIONS

In conclusion, the risk evaluation presented in this Decision Document supports that there is not an unacceptable risk at the site based on future unlimited use and unrestricted exposure, and as such, supports the conclusion that no further remedial action is necessary to protect public health or welfare or the environment.

## SECTION 8 DOCUMENTATION OF SIGNIFICANT CHANGES

The selected remedy is the same one identified as the recommended alternative in the proposed plan.

# LEGEND

- ⊕ MW-1 EXISTING MONITOR WELL
- ⊙ SB-101S SHALLOW BORING/MONITOR WELL
- ⊙ SB-101D DEEP (BEDROCK) BORING/MONITOR WELL
- ⊙ SB-110 SOIL BORING

NORTH



STREAM

SB-112

SB-111B

SB-111A

DITCH

TREE LINE  
BOUNDARY

FORMER BUILDING  
CONCRETE PAD

ESTIMATED DIRECTION  
OF GROUNDWATER FLOW

FORMER  
STAINED AREA

SB-105

SB-102S

SB-102D

SB-106

SB-101S  
SB-101D

SB-104

MW-3

MW-2

SB-109

MW-1

SB-110

SB-103

SB-108

BURN PIT

SB-107

SCALE (Feet)

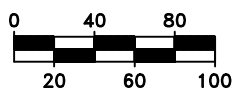


FIGURE	1
DATE	6/24/02
REVISION	1
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FILE	Site.DWG

SAMPLE LOCATION MAP

BRAC CLEANUP TEAM  
FORT PICKETT, VIRGINIA

**FIGURE 2**

**Human Health Site Conceptual Model for Future Use**

**EBS 103 Fort Pickett**

**Blackstone, Virginia**

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway		
Future Resident	Soil	Soil	Surface and Subsurface soil	Child	1 - 6 yrs	Ingestion	On-Site	Quantitative	Child resident incidentally ingests soil		
		Air	Air	Adult	ED, 30yrs	Dermal Contact	On-Site	Quantitative	Child resident touches soil		
						Inhalation	On-Site	Quantitative	Child resident inhales VOCs or dust		
						Ingestion	On-Site	Quantitative	Adult resident incidentally ingests soil		
		Air	Air	Child	1 - 6 yrs	Dermal Contact	On-Site	Quantitative	Adult resident touches soil		
						Inhalation	On-Site	Quantitative	Adult resident inhales VOCs or dust		
	Groundwater	Groundwater	Tap water	Child	1 - 6 yrs	Ingestion	On-Site	Quantitative	Child resident drinks water from tap		
		Air	Vapors from tap	Adult	ED, 30yrs	Dermal Contact	On-Site	Quantitative	Child resident dermally exposed from tap while bathing		
						Inhalation	On-Site	Quantitative	Child resident inhales VOCs from indoor water use		
						Ingestion	On-Site	Quantitative	Adult resident drinks water from tap		
		Air	Vapors from tap			Dermal Contact	On-Site	Quantitative	Adult resident dermally exposed from tap while showering		
						Inhalation	On-Site	Quantitative	Adult resident inhales VOCs while showering		
Future Commercial/ industrial Worker	Soil	Soil	Surface and Subsurface soil	Adult Worker	ED, 25yrs	Ingestion	On-Site	Quantitative	Commercial worker incidentally injects soil		
		Air	Air	Adult Worker	ED, 25yrs	Dermal Contact	On-Site	Quantitative	Commercial worker touches soil		
						Inhalation	On-Site	Quantitative	Commercial worker inhales VOCs or dust		
	Groundwater	Groundwater (Shallow Aquifer)	Tap water			Adult Worker	ED, 25yrs	Ingestion	On-Site	Quantitative	Commercial worker ingests drinking water from tap
	Future Construction Worker	Soil	Soil	Surface and Subsurface soil	Adult Worker	ED, 25yrs	Ingestion	On-Site	Quantitative	Construction worker incidentally injects soil	
			Air	Air	Adult Worker	ED, 25yrs	Dermal Contact	On-Site	Quantitative	Construction worker touches soil	
Inhalation							On-Site	Quantitative	Construction worker inhales VOCs or dust		

**FIGURE 3**  
**Site Conceptual Model,**  
**Ecological Exposure Pathways of Concern,**  
**Site EBS 103**

Source and Transport of Chemical Release	Habitat Type/Name	Exposure Medium	Exposure Scenario Description	Assessment Endpoints	Endangered Threatened Species Flag (Y or N)	Exposure Routes	Measurement Endpoints
Soil	Open field, scrub/shrub, and old growth forest	Soil	Direct exposure to plants	Survival and growth of plant community	NA	Direct contact with soils, uptake from soils	Screening benchmarks for soil flora
			Direct exposure to soil invertebrates	Survival, reproduction, and growth of soil invertebrate community.	NA	Ingestion and direct contact with soils.	Screening benchmark for soil fauna. (Earthworms, Microorganisms/Microbial Processes)
			Direct exposure to small mammals	Survival, reproduction, and growth of small mammal community.	NA	Ingestion and direct contact with soils.	Screening benchmark for dietary exposure.
			Direct exposure to birds	Survival, reproduction, and growth of avian community.	NA	Ingestion and direct contact with soils.	Screening benchmark for dietary exposure.
			Indirect exposure to herbivorous small mammals through plant uptake and consumption	Survival, reproduction, and growth of small mammal community.	NA	Ingestion of plants and grasses	Screening benchmark for dietary exposure.
			Indirect exposure to insectivorous and carnivorous mammals through trophic transfer	Survival, reproduction, and growth of insectivorous and carnivorous mammals.	NA	Ingestion of worms, insects, and small mammals.	Screening benchmark for dietary exposure.
			Indirect exposure to insectivorous and carnivorous birds through trophic transfer	Survival, reproduction, and growth of insectivorous and carnivorous birds.	NA	Ingestion of worms, insects, and small mammals.	Screening benchmark for dietary exposure.
	Creek	Sediment	Direct exposure to aquatic plants	Survival and growth of plant community	NA	Direct contact with sediments, uptake from sediments.	Screening benchmarks for soil flora
			Direct exposure to benthic invertebrates	Survival, reproduction, and growth of benthic invertebrates	NA	Direct contact with sediments.	Screening benchmarks for sediment toxicity
		Surface water	Direct exposure to aquatic plants	Survival and growth of plant community	NA	Direct contact with surface water, uptake from surface water.	Screening benchmarks for aquatic toxicity
			Direct exposure to aquatic fauna	Survival, reproduction, and growth of aquatic fauna	NA	Direct contact with surface water	Screening benchmarks for aquatic toxicity

NA - No formal threatened or endangered species survey has been performed for the EBS 103 site.

**TABLE 1**  
**EBS-103 SOIL ANALYTICAL SUMMARY TABLE**

ANALYTE	SB101 S-0-0.5	SB101 S-2-4	SB101 S-14-16	SB102 S-0-0.5	SB102 S-2-4	SB102 S-14-16	SB103- 0-0.5	SB103 2-4	SB103 14-16	SB104- 0-0.5	SB104-2-4	SB104- 18-20	SB105- 0-0.5	SB105- 2-4	SB105- 14-16	SB106- 0-0.5
<b>VOCs (ug/kg)</b>																
Acetone	11 U	13 U	12 U	12 U	12 U	14 U	12 UJ	13 U	12 U	12 U	13 U	14 U	12 UJ	11 U	13 U	11 U
Carbon Disulfide	5 U	6 U	6 U	3 J	6 U	81 U	7 UJ	11 U	25 U	6 U	6 U	63 U	10 UJ	29 U	10 U	6 U
Methylene chloride	5 B	8 B	6 B	6 B	8 B	13 B	5 B	6 B	5 B	14 U	16 U	26 U	6 B	7 B	6 B	17 B
Trichloroethene	5 U	6 U	6 U	6 U	6 U	7 U	6 UJ	6 U	6 U	6 U	6 U	7 U	6 UJ	6 U	6 U	6 U
o-xylene	5 U	4 J	6 U	6 U	6 U	7 U	6 UJ	6 U	6 U	6 U	6 U	7 U	6 UJ	6 U	6 U	6 U
m,p-xylene	5 U	6 U	6 U	6 U	6 U	7 U	6 UJ	6 U	6 U	1 J	6 U	7 U	6 UJ	6 U	6 U	6 U
<b>Pesticides (ug/kg)</b>																
4,4'-DDD	1.8 UJ	NA	NA	2 UJ	NA	NA	2.1 UJ	NA	NA	2 UJ	NA	NA	2 UJ	NA	NA	1.9 U
4,4'-DDE	1.8 UJ	NA	NA	2 UJ	NA	NA	2.1 UJ	NA	NA	2 UJ	NA	NA	2 UJ	NA	NA	1.9 U
<b>SVOCs (ug/kg)</b>																
di-n-Butylphthalate	17 U	20 U	19 U	19 U	18 UJ	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
bis(2-Ethylhexyl)phthalate	34 U	29 U	19 U	19 U	18 U	23 U	51 U	20 U	32 U	19 U	20 U	22 U	20 U	18 U	20 U	44
Benzo[a]anthracene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Benzo[a]pyrene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Benzo[b]fluoranthene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Benzo[g,h,i]perylene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 UJ	20 UJ	22 UJ	19 U	18 U	20 U	18 UJ
Benzo[k]fluoranthene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Chrysene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Fluoranthene	17 U	43 U	19 U	19 U	18 UJ	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Indeno[1,2,3-cd]pyrene	17 U	20 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 UJ	20 UJ	22 UJ	19 U	18 U	20 U	18 UJ
Phenanthrene	17 U	355 U	19 U	19 U	18 UJ	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
Pyrene	17 U	45 U	19 U	19 U	18 U	23 U	20 U	20 U	20 U	19 U	20 U	22 U	19 U	18 U	20 U	18 U
<b>Diesel Range Organics (mg/kg)</b>																
DRO	37.3 U	1531.5	2 U	2 U	1.9 U	2.4 U	2.1 U	2.1 U	2.1 U	76.7 U	2.1 U	2.3 U	2 U	1.9 U	2.1 U	18
<b>Metals (mg/kg)</b>																
Aluminum	25800	13900	13800	31900	28100	11000	26000	18000	9710	17800	26100	17000	31000	22200	12200	8990
Arsenic	1.6	4	2	10	7.5	4.9	4.3	4.2	1.3	4.2 J	8.2 J	1.5 J	5.9	5.3	1.3	2.1 J
Barium	99.4	4.9	17.6	24	21.7	21.7	18	11	12.8	18	23.5	46.8	20.3	18.1	11.2	14.8
Beryllium	1.3	0.72 U	0.72	0.68 U	0.66 U	0.73 U	0.52 U	0.53 U	0.52	0.61 U	0.69 U	1	0.48 U	0.6 U	0.6	0.49 U
Cadmium	0.6 U	0.72 U	0.58 U	0.68 U	0.66 U	0.73 U	0.52 U	0.53 U	0.46 U	0.61 U	0.69 U	0.55 U	0.48 U	0.6 U	0.59 U	0.49 U
Calcium	362	119 U	96.9 U	113 U	110 U	122 U	86.2 U	88.5 U	76.3 U	221	114 U	92 U	79.4 U	100 U	98.9 U	81.1 U
Chromium	32.8	8.6	4.7	46.6	39.6	4.9	19.7	21.6	4.9	20.1	37.8	3.4	35.9	28.2	2.6	8.6
Cobalt	5	1.2 U	1.3	1.1 U	1.1 U	1.2 U	0.86 U	0.88 U	0.76 U	1 U	1.1 U	1.1	1.2	1 U	0.99 U	0.81 U
Copper	9.8	2.4 B	2.2 B	11.4	10.4	2.6 B	7.7	4.2 B	2.7 U	5.3	9.2	2.3 B	9.6	6.6	0.99 U	2.6
Iron	14800	19800	16600	34100	28900	12400	24500	23300	7090	16100	34800	8170	24200	20600	5910	6320
Lead	16.1	10.2	25.9	12.9	11.2	22.4	13.3	13.9	21.8	8.2	13.5	36.8	9.2	9.1	26.5	5.3
Magnesium	4060	205	674	465	426	350	366	188	668	342	419	1130	415	314	721	220
Manganese	288	4.5	62.6	11.9	13	9.8	12.9	7.8	75	15.2	14.5	97.8	13	9.3	62.5	12.1
Mercury	0.03 U	0.04 U	0.04 U	0.05	0.04	0.04 U	0.07	0.04 U	0.04 U	0.05	0.22	0.04 U	0.07	0.04	0.04 U	0.03 U
Nickel	16.5	1.2 U	1.7	7.2	6.6	1.3	4.9	1.8	1.6	3.8	4.5	3	6.9	5.4	0.99 U	2.2
Potassium	3730	376	1150	524	501	973	442	245	1200	357	489	2020	450	379	1150	191
Selenium	1 U	1.2 U	0.97 U	1.4	1.1 U	1.2 U	0.86 U	0.88 U	0.76 U	1 U	1.1 U	0.92 U	0.79 U	1 U	0.99 U	0.81 U
Vanadium	24.8	41.5	12.2	75.7	62.6	33	32.2	58.7	9.3	32	62.7	9.2 B	55.7	43.2	8.3 B	14.5
Zinc	51.2	5.6	24.9	14.6	12.9	11.5	11.4	7.1	17.9	9.1	12	31	12.5	10.7	18.4	6

UG/KG refers to micrograms/kilogram.

MG/KG refers to milligrams/kilogram.

VOC refers to volatile organic compounds.

SVOC refers to semi-volatile organic compounds.

PCBs were not detected in samples.

GRO was not detected in samples.

J indicates estimated at a value less than the reporting limit, but greater than zero.

U indicates that compound was analyzed but not detected.

B indicates that compound was detected in the blank.

**TABLE 1**  
**EBS-103 SOIL ANALYTICAL SUMMARY TABLE**

ANALYTE	SB106-2-4	SB106-14-16	SB107-0-0.5	SB107-2-4	SB107-14-16	SB108-0-0.5	SB108-2-4	SB108-14-16	SB109-0-0.5	SB109-2-4	SB109-14-16	SB110-0-0.5	SB110-2-4	SB110-14-16	SB111-A-0-0.5	SB111-B-0-0.5
<b>VOCs (ug/kg)</b>																
Acetone	61 J	13 U	11 U	13 U	14 U	12 U	11 UJ	13 UJ	10 UJ	13 UJ	15 UJ	11 UJ	13 UJ	13 UJ	11 U	11 U
Carbon Disulfide	6 U	6 U	6 U	7 U	7 U	6 U	3 J	6 U	5 UJ	7 UJ	2 J	5 UJ	7 U	6 UJ	6 U	6 U
Methylene chloride	14 B	18 B	6 B	8 J	9 B	12 B	11 B	6 B	11 B	21 U	15 B	13 B	15 B	19 B	14 B	5 B
Trichloroethene	6 U	6 U	6 U	7 U	7 U	6 U	6 UJ	6 U	5 UJ	7 UJ	8 UJ	5 UJ	7 U	6 UJ	6	6 U
o-xylene	6 U	6 U	6 U	7 U	7 U	6 U	6 UJ	6 U	5 UJ	7 UJ	8 UJ	5 UJ	7 U	6 UJ	6 U	6 U
m,p-xylene	6 U	6 U	6 U	7 U	7 U	6 U	6 UJ	6 U	5 UJ	7 UJ	8 UJ	5 UJ	7 U	6 UJ	6 U	6 U
<b>Pesticides (ug/kg)</b>																
4,4'-DDD	NA	NA	1.9 UJ	NA	NA	2 UJ	NA	NA	1.7 UJ	NA	NA	1.8 UJ	NA	NA	2.3 J	1.9 U
4,4'-DDE	NA	NA	1.9 UJ	NA	NA	2 UJ	NA	NA	1.7 UJ	NA	NA	1.8 UJ	NA	NA	1.7 J	0.61 J
<b>SVOCs (ug/kg)</b>																
di-n-Butylphthalate	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	20	29	25 U	17 UJ	21 U	22	18 U	18 U
bis(2-Ethylhexyl)phthalate	51	20 U	21 U	44 U	22 U	19 U	20 U	21 U	20	42	25 U	90 UJ	21 U	20 U	47 J	18 U
Benzo[a]anthracene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	47	18 U
Benzo[a]pyrene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	44	18 U
Benzo[b]fluoranthene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	55	18 U
Benzo[g,h,i]perylene	18 UJ	20 U	18 U	21 U	22 U	19 U	20 UJ	21 UJ	16 U	21 U	25 U	17 UJ	21 U	20 U	22	18 U
Benzo[k]fluoranthene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	23	18 U
Chrysene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	41	18 U
Fluoranthene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	98	18 U
Indeno[1,2,3-cd]pyrene	18 UJ	20 U	18 U	21 U	22 U	19 U	20 UJ	21 UJ	16 U	21 U	25 U	17 UJ	21 U	20 U	19	18 U
Phenanthrene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	62	18 U
Pyrene	18 U	20 U	18 U	21 U	22 U	19 U	20 U	21 U	16 U	21 U	25 U	17 UJ	21 U	20 U	124	18 U
<b>Diesel Range Organics (mg/l)</b>																
DRO	3.9	2.1 U	1.9 U	2.2 U	2.3 U	2 U	2.1 U	2.1 U	75	23	2.6 U	1400	2.2 U	2.1 U	32	12
<b>Metals (mg/kg)</b>																
Aluminum	31900	7880	17700	38000	16000	29300	14300	6240	23300	31500	44400	16800	14800	11000	5130	8580
Arsenic	6.6 J	1.7 J	3	5.5	1.2 U	4.6	1.5	1.9	2.1	8.8	13.4	2.4	2.5	3	1 U	1.4
Barium	23.3	10.8	29	23.1	13.7	24.9	8.6	334	84.6	13.1	22.6	39.8	8.7	9.8	13.8	17.8
Beryllium	0.59 U	0.68 U	0.49 U	0.74 U	0.71 U	0.67 U	0.61 U	0.65 U	0.95	0.65 U	5.7	0.49 U	0.58 U	0.66 U	0.61 U	0.65 U
Cadmium	0.59 U	0.68 U	0.49 U	0.74 U	0.71 U	0.67 U	0.61 U	0.65 U	0.53 U	0.84	2.2	0.49 U	0.58 U	0.66 U	0.61 U	0.65 U
Calcium	98.8 U	114 U	82.4 U	123 U	119 U	167	101 U	109 U	636	108 U	146 U	435	96.7 U	109 U	195	378
Chromium	34.1	2.3	14.8	34.8	68.8	20.6	5.8	1.4	32.8	172	367	22.1	7.6	3.2	6	8.9
Cobalt	1.2	1.1 U	1.2	1.2 U	1.2 U	1.2	1 U	5.7	4.4	1.1 U	2.7	2.1	0.97 U	1.1 U	1 U	1.1 U
Copper	9.5	1.2	3.7 B	11.3	9.4	5.1 B	1.9	1.6	10.4	12.8	96.8	7.7	2.1	1.7	3	4
Iron	25700	3770	11900	35700	26700	17300	5310	7170	16000	61100	169000	13700	7010	19300	4390	5830
Lead	12	37	7.5	16.6	41	10.1	8	128	18.7	29	82.2	18.1	10.1	15.5	10.4	14.6
Magnesium	467	619	483	492	1580	549	286	523	3510	450	1060	1650	153	122	142	299
Manganese	13.9	81.7	24.4	21.6	67.9	27	13.4	1830	276	8.7	159	137	4.3	7.2	12.2	53.2
Mercury	0.05	0.04 U	0.03 U	0.07	0.04 U	0.04 U	0.04 U	0.04 U	0.03 U	0.04 U	0.05 U	0.03 U	0.04 U	0.04 U	0.04 U	0.04 U
Nickel	6.1	1.1 U	3.9	6	14	4.8	1.1	1.1 U	14.1	6.4	35.6	7.9	1.1	1.1 U	1.4	2.4
Potassium	476	959	445	485	1160	687	579	927	3620	319	234	1840	470	732	170	296
Selenium	0.99 U	1.1 U	0.82 U	1.2 U	1.2 U	1.1 U	1 U	1.1 U	0.88 U	1.1 U	1.5 U	0.81 U	0.97 U	1.1 U	1 U	1.1 U
Vanadium	57.2	10.1	27.7	75.2	54.4	37	11.7	10.1	28.4	173	252	27	18.6	12.6	10	14.2
Zinc	12.9	15.4	11.9	15.2	19.4	16.9	13.9	29.5	60.8	13.3	68.3	35.8	6.8	9.4	21.5	22.4

UG/KG refers to micrograms/kilogram  
MG/KG refers to milligrams/kilogram  
VOC refers to volatile organic compounds  
SVOC refers to semi-volatile organic compounds  
PCBs were not detected in samples.  
GRO was not detected in samples.  
J indicates estimated at a value less than the reporting limit  
U indicates that compound was analyzed  
B indicates that compound was detected

**TABLE 2  
ORGANIC GROUNDWATER ANALYTICAL SUMMARY**

ANALYTE	MW-1	MW-2	MW-3	MW-101S	MW-101D	MW-102S	MW-102D	MW-103	MW-104	MW-105	MW-106	MW-107	MCL	VAGWQS
<b>VOCs (ug/L)</b>														
Chloroform	1 U	1 U	1 U	0.6 J	1 U	1 UJ	1 U	1 U	2.9 B	0.2 B	1.1 B	0.5 B	80	NCA
Carbon Disulfide	0.5 J	1 U	1 U	3	0.5 J	4.4 J	5.8	2.5	2	5.6	0.5 J	4	NCA	NCA
Benzene	1 U	1 U	1 U	0.3 J	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	5	NCA
Ethylbenzene	1 U	1 U	1 U	0.7 J	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	700	NCA
Methyl tert butyl ether	1 UJ	1 UJ	4.2 J	36.1 J	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NCA	NCA
m,p-xylene	1 U	1 U	1 U	1.4	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	10,000	NCA
o-xylene	1 U	1 U	1 U	1.4	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	10,000	NCA
<b>Pesticides (ug/L)</b>														
Chlordane-alpha	0.01 U	NA	NA	NA	NA	NA	NA	<b>0.035</b>	<b>0.039</b>	NA	0.01 U	<b>0.045</b>	2.00	0.01
4,4'-DDD	0.01 U	NA	NA	NA	NA	NA	NA	0.069	0.075	NA	0.01 U	0.065	NCA	NCA
<b>SVOCs (ug/L)</b>														
bis(2-Ethylhexyl)phthalate	1.1 U	0.6 B	0.7 B	0.7 B	0.9 B	1.3 B	1.9 B	1.0 J	1.3	1.4 B	1 U	1.2 J	NCA	NCA
di-n-Butylphthalate	11.4 U	4.9 J	10.4 U	10.0 U	7.8 J	10.5 U	3.7 J	10.5 U	3.2 J	10.4 U	10.2 U	11.8 U	NCA	NCA
2-Methylnaphthalene	0.6 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.6 U	0.5 U	0.5 U	0.6	NCA	NCA
Fluorene	0.6 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.7	NCA	NCA
Phenanthrene	0.6 U	0.5 U	0.5 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U	1.4	0.6	0.5 U	4.4	NCA	NCA
Phenol	2.3 U	2.2 U	2.1 U	2.0 U	2.1 U	0.7 J	2.2 U	2.1 U	2.2 U	2.1 U	2 U	2.4 U	NCA	NCA
<b>Diesel Range Organics (mg/L)</b>														
DRO	0.1 U	0.1 U	<b>1.2</b>	<b>2.4</b>	0.1 U	0.1 U	0.1 U	0.2 B	0.3	0.1 U	0.2 B	0.3 B	NCA	1
<b>PCBs (ug/L)</b>														
Aroclor 1254	0.56 U	0.53 U	0.54 U	0.36 J	0.15 J	0.54 U	0.54 UJ	NA	NA	NA	NA	NA	0.5	NCA

UG/L refers to micrograms/liter.

VOCs refers to volatile organic compounds.

SVOCs refers to semi-volatile organic compounds.

GRO was not detected in samples.

J indicates estimated at a value less than the reporting limit.

B indicates that compound was detected in the blank.

Bold indicates exceedance of MCL or VAGWQS.

MCL refers to USEPA Drinking Water Regulations.

VAGWQS refers to Virginia Groundwater Quality Standards.

Bold font indicates exceedance of VAGWQS.

NA indicates not analyzed.

NCA indicates no criteria available.

**TABLE 3**  
**INORGANIC GROUNDWATER ANALYTICAL SUMMARY**

ANALYTE	MW-1	MW-2	MW-3	MW-101S	MW-101D	MW-101D (FILTERED)	MW-102S	MW-102S (FILTERED)	MCL	VAGWQS
<b>Metals (ug/L)</b>										
Aluminum	200 U	200 U	200 U	200 U	200 U	200 U	399	200 U	NCA	NCA
Barium	58.9	36.3	32.7	51.2	41.9	16.1	75.5	335	2,000	1,000
Calcium	500 U	500 U	568	5,150	2,890	1,430	1,000	1,600	NCA	NCA
Chromium	10.4	5 U	5.9	14.4	5 U	5 U	5 U	5 U	100	50
Cobalt	5 U	5 U	5 U	5.5	5 U	5 U	8.7	8.6	NCA	NCA
Copper	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1300*	1,000
Iron	131	100 U	100 U	<b>1,180</b>	232	100 U	<b>805</b>	<b>659</b>	NCA	300
Lead	3.3	3.7	3 U	3 U	3 U	3 U	9.2	3 U	15*	50
Magnesium	250 U	250 U	250 U	564	754	421	447	566	NCA	NCA
Manganese	17.6	14.2	5 U	<b>59.9</b>	19.5	5.6	<b>160</b>	<b>161</b>	NCA	50
Nickel	9.2	5 U	6	19.2	5 U	5 U	5 U	5 U	100	NCA
Potassium	1,290	1,530	2,530	3,760	6,180	7,460	2,020	4,240	NCA	NCA
Sodium	1,000 U	1,530	2,530	3,760	6,180	7,460	2,020	4,240	NCA	25,000
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NCA	NCA
Zinc	6.7	5.6	8	28.6	10.2	5 U	17.3	<b>128</b>	NCA	50

ANALYTE	MW-102D	MW-102D (FILTERED)	MW-103	MW-104	MW-104 (FILTERED)	MW-105	MW-106	MW-107	MCL	VAGWQS
<b>Metals (ug/L)</b>										
Aluminum	397	200 U	403	10,900	200 U	321	200 U	588	NCA	NCA
Barium	56.4	320	54.9	124	82.2	58.7	71.4	86	2,000	1,000
Calcium	17,500	12,600	604	1,530	1,650	1,560	1,220	1,920	NCA	NCA
Chromium	9.6	5 U	5.5	46	5 U	5	5 U	16.3	100	50
Cobalt	5 U	5 U	5 U	7.3	6.3	5 U	5 U	9.6	NCA	NCA
Copper	5.2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1300*	1,000
Iron	<b>791</b>	158	<b>1,060</b>	<b>9,270</b>	<b>740</b>	<b>1,270</b>	100 U	<b>1,720</b>	NCA	300
Lead	3.2	3 U	3 U	25.1	3 U	3.1	3.2	3 U	15*	50
Magnesium	3,230	3,000	305	1,740	527	462	327	703	NCA	NCA
Manganese	<b>262</b>	<b>162</b>	30.9	<b>235</b>	<b>113</b>	<b>77.4</b>	13.1	<b>283</b>	NCA	50
Nickel	14.5	9.3	6.9	33.8	5.4	5.6	5 U	18	100	NCA
Potassium	3,570	2,520	1,540	4,730	2,360	2,440	1,950	1,590	NCA	NCA
Sodium	13,800	16,900	1,240	2,350	2,490	1,630	1,030	2,230	NCA	25,000
Vanadium	5 U	5 U	5 U	10.4	5 U	5 U	5 U	5 U	NCA	NCA
Zinc	18.6	<b>134</b>	17	<b>53.4</b>	18.2	18.9	17.8	31.8	NCA	50

UG/L refers to micrograms/liter.  
VOCs refers to volatile organic compounds.  
SVOCs refers to semi-volatile organic compounds.  
J indicates estimated at a value less than the reporting limit.  
B indicates that compound was detected in the blank.  
U indicates that compound was analyzed but not detected.  
Bold indicates exceedance of MCL or VAGWQS.  
MCL refers to USEPA Drinking Water Regulations.  
VAGWQS refers to Virginia Groundwater Quality Standards.  
NA indicates not analyzed.  
NCA indicates no criteria available.

# **APPENDIX A**

## **RESPONSIVENESS SUMMARY**

**FORT PICKETT ARMY GARRISON**  
***EBS-103 SITE***  
***(FORMER FIRE TRAINING AREA)***  
***OPERABLE UNIT 1***  
**RESPONSIVENESS SUMMARY**

---

**SEPTEMBER 2002**

---

The Weston Remedial Investigation/Feasibility Study (RI/FS) report, and the proposed plan for the Fire Training Area at Fort Pickett, Virginia were made available to the public on August 20, 2002. They can be found at the Fort Pickett information Repository located at the BRAC Environmental Office, 2193 Military Road, Pickett Park, Fort Pickett Virginia. The notice of availability was published in the Blackstone Courier Record on 15 August 2002. A public comment period was held from August 20 to September 20, 2002. In addition, a public meeting was held on August 21, 2002 to present the proposed plan to a broader community audience beyond those that had already been involved at the site. There were no public attendees at this meeting, nor comments from the public during the comment period.

The Army also presented the findings of the Former Fire Training Area RI/FS report and the preferred alternative at its 16 July 2002 Restoration Advisory Board (RAB) meeting.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

September 30, 2002

Francis Gilmore  
BRAC Environmental Coordinator  
2193 Military Road  
Pickett Park  
Blackstone, VA 23824

RE: Decision Document for the Former Fire Training Area site (OU-1)  
Fort Pickett, Blackstone, Virginia

Dear Mr. Gilmore:

The purpose of this letter is to respond to your request for EPA concurrence regarding the above referenced decision document. This decision document presents a determination that no further action is necessary to protect public health or welfare and the environment at the Former Fire Training Area site (OU-1) at Fort Pickett, Virginia.

Based on the review of the referenced decision document, EPA finds that the information contained in the decision document is sufficient to support the recommendation for no further action at the Former Fire Training Area site identified in the decision document.

EPA reserves all rights and authorities relating to information not contained or referenced in these reports whether or not such information was known when these reports were issued or discovered after such issuance. This letter should accompany the subject reports in the Fort Pickett BRAC Administrative Record.

If you have any questions regarding this matter, please do not hesitate to contact Don McLaughlin of my office at 215-814-5323.

Sincerely,

A handwritten signature in black ink, which appears to read "Abraham Ferdas", is positioned above the printed name.

Abraham Ferdas  
Director, Hazardous Site Cleanup Division  
EPA Region III

cc: Mark Leeper (VADEQ)

F:\User\DMCLAUGH\Date\Backup\All Site Files\PICKETT\EB5-193 decision document ABE concur ltr.wpd



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# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

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Robert G. Burnley  
Director

(804) 698-4000  
1-800-592-5482

September 30, 2002

Mr. Abraham Ferdas, Division Director  
Hazardous Site Cleanup Division (3HS00)  
U. S. Environmental Protection Agency, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

RE: Decision Document for Environmental Baseline Survey (EBS) -103 Parcel in the  
Excess Property at Fort Pickett, Virginia

Dear Mr. Ferdas:

The Virginia Department of Environmental Quality staff has reviewed the referenced  
Decision Document for EBS-103 at Fort Pickett, Virginia. We concur with the selected  
remedial alternative as outlined in the Decision Document dated September 2002.

Should you have any questions concerning this letter, please contact Mr. Mark Leeper at  
804.698.4308.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Weld".

Robert J. Weld  
Director, Office of Remediation Programs

CC: Arden Roberts; FORSCOM  
Francis Gilmore; Fort Pickett  
Don McLaughlin; USEPA Region III  
Karen J. Sismour; VDEQ DWPC  
James Golden; VDEQ PRO  
Durwood H. Willis; VDEQ ORP



**PHASE II R/FS REPORT ADDENDUM (FINAL)  
EBS-79  
FORT PICKETT, VIRGINIA**



**July  
2004**



**PHASE II R/FS REPORT ADDENDUM (FINAL)  
EBS-79  
FORT PICKETT, VIRGINIA**



**July  
2004**

**FINAL**

**PHASE II RI/FS REPORT ADDENDUM**  
**EBS-79**  
**FORT PICKETT, VIRGINIA**



**Prepared for:**  
Department of the Army  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, VA 23510-1096



**Prepared by:**  
EA Engineering, Science, and Technology, Inc.  
15 Loveton Circle  
Sparks, MD 21152  
(410) 771-4950

**July 2004**

**FINAL**

**Phase II RI / FS**  
**Report Addendum**  
**EBS-79**  
**Fort Pickett, Virginia**

*Prepared for*

Department of the Army  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, VA 23510-1096

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July 2004

61547.05

FINAL  
Phase II RI / FS Report Addendum  
EBS-79  
Fort Pickett, Virginia

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---

George B. Knight, P.G.  
Project Geologist

Date

---

Vincent A. Williams  
Project Manager

Date

July 2004

## EXECUTIVE SUMMARY

EA Engineering, Science, and Technology (EA) has revised the *Phase II RI/FS Report Addendum* (EA October 2002) to the *Draft Phase II Remedial Investigation Report, EBS-79, Fort Pickett, Virginia* (EA June 2001) for the Norfolk District-U.S. Army Corps of Engineers (USACE) under USACE Contract No. DACA65-01-D-0023, Task Order No. 0003. EA completed a Phase I and Phase II Remedial Investigation (RI) of EBS-79 in 2000 and 2001, respectively. The Phase I/II RI characterized the horizontal and vertical extent of constituents of potential concern (COPC) in affected site media and assessed potential risks to human health and ecological receptors. Based on the results of the Phase II RI, Weston Solutions, Inc. (Weston) conducted an Interim Removal Action (IRA) to reduce potential ecological risks associated with soils at EBS-79 (Weston July 2002). The Phase II RI/FS Addendum (EA October 2002) reviewed the Phase II RI conclusions, summarized the IRA performed by Weston, reevaluated screening-level human health and ecological risks, and presented a Feasibility Study (FS). This revised Phase II Addendum incorporates the Responses to Comments received by EA electronically from the Base Realignment and Closure (BRAC) Environmental Office on 6 May 2003 and includes a revised human health risk assessment for groundwater that excludes data from MW-1 and MW-2.

The study area of EBS-79 encompasses approximately one acre and was formerly a fire station and a storage area for transformers, polychlorinated biphenyl (PCB) oils, and flammable materials. An empty wooden building (Building 493) and a fenced yard currently exist onsite. A drainage ditch is present on the south side of the site. A former underground storage tank (UST) site is located west of EBS-79.

The Phase I RI field investigation (EA July 2000) included surface and subsurface soil sampling, surface water, sediment, and groundwater sampling activities. Analyses included U.S. Environmental Protection Agency (EPA) target compound list and target analyte list (TCL/TAL) organic and inorganic compounds, polycyclic aromatic hydrocarbons (PAHs), and PCBs.

Based on data gaps identified during the Phase I RI, the Phase II RI field investigation (EA June 2001) included additional surface and subsurface soil, surface water, sediment, and groundwater sampling activities. Analyses again included EPA TCL/TAL organic and inorganic compounds, PAHs, and PCBs.

The Step 3 ecological risk assessment (ERA) prepared for the Phase II RI concluded that robins are at risk from exposure to aluminum, DDD, DDE, and DDT (EA June 2001). Risks to soil invertebrates were only found for chromium. The no observed adverse effect level (NOAEL) hazard quotients (HQs) for the meadow vole, short-tailed shrew, and eastern cottontail were below 1.0 for COPCs with the exception of aluminum.

Based on the results of the ERA, the BRAC environmental office contracted Weston to conduct an IRA that included the excavation of “hot spots” in shallow soil that contained elevated levels of organic compounds. These “hot spots” represent locations of surface soil that presented

potential ecological risks. In November 2001, 940 tons of soil were excavated and removed from six areas of concern (AOC) as part of the IRA.

The IRA successfully resulted in the removal of Phase I and Phase II RI (EA June 2001) soil sampling locations containing previously identified organic COPCs (EA June 2001), which presented risks to ecological receptors. A screening-level ecological risk assessment (ERA) performed on the remaining surface soil samples as part of the Phase II RI/FS Addendum (EA October 2002) identified a significant reduction of ecological risks at the site for organic COPCs. The only remaining identified ecological risks in soils were related to metals at the site. The metal concentrations remaining after the IRA are similar to the pre-IRA data, and a refined Step 3 ERA performed on these Pre-IRA data (EA June 2001) determined that the metals concentrations were not found to represent population-level risks. Based on this, it is reasonable to assume that a Step 3 ERA performed on the post-IRA soil data would also conclude that no significant population-level risks exist, and therefore, no further remedial action is warranted at EBS-79.

The human health risk assessment presented in the Phase II RI (EA June 2001) indicated groundwater risks above the U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  for carcinogens and U.S. EPA's target hazard index (HI) of 1.0 for non-carcinogens; benzene was the primary risk driver. Benzene risks also exceeded the Virginia Department of Environmental Quality (VDEQ) goal of  $10^{-4}$ . Benzene concentrations in groundwater samples collected from two wells (MW-1 and MW-2) were higher than other site wells. These wells are located hydraulically downgradient from the former UST site, BCT-22. The Fort Pickett BRAC Cleanup Team determined that the elevated levels of BTEX from MW-2 and MW-1 could be attributed to BCT-22.

The revised human health groundwater risk assessment, which excluded data from wells MW-1 and MW-2, reevaluated groundwater concentrations for potential human health risk. Based on a comparison to U.S. EPA Region III screening values (RBCs), only a few metals and two pesticides are found at potentially elevated levels. The assessment of risks demonstrated potential concern only for construction worker's dermal exposure to unfiltered groundwater.

The construction worker scenario is conservative with its approach to groundwater exposure, assuming that workers would contact groundwater for 8 hours per day, 150 days per year. While construction workers may contact groundwater at the site while digging at depth, such workers would not contact groundwater continuously on a daily basis. The use of these conservative parameters biases the risk high. There were no unacceptable risks for the residential scenario.

Based on the findings of the human health and ecological risk assessments, the existing constituent concentrations in soil and groundwater at the site do not pose a significant risk to human health (with the exception of future construction workers) and the environment. Therefore, following the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 procedures, no alternatives were chosen for a Feasibility Study. Although No Further Action is recommended to address the environmental concerns at Site EBS-79, EA does recommend that any future construction worker wear appropriate personal protective equipment (PPE) such as rubber boots and gloves if and when they come in contact with groundwater at EBS-79.

## CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY .....	ES-1
LIST OF FIGURES .....	Contents-4
LIST OF TABLES .....	Contents-4
LIST OF ACRONYMS AND ABBREVIATIONS.....	Contents-6
1. PURPOSE.....	1-1
1.1 Introduction.....	1-2
2. PHASE I/II REMEDIAL INVESTIGATION .....	2-1
2.1 Site History .....	2-1
2.2 Hydrogeology .....	2-1
2.3 Field Investigation .....	2-2
2.4 COPC Occurrence.....	2-2
2.4.1 COPCs in Surface Soil.....	2-2
2.4.2 COPCs in Subsurface Soil .....	2-5
2.4.3 COPCs in Sediment .....	2-6
2.4.4 COPCs in Surface Water .....	2-7
2.4.5 COPCs in Groundwater .....	2-9
2.5 Phase II RI Human Health Risk Assessment.....	2-10
2.6 Phase II RI Ecological Risk Assessment .....	2-11
3. INTERIM REMOVAL ACTION .....	3-1
3.1 Introduction.....	3-1
3.2 IRA Remedial Goals .....	3-2
3.3 Inside Building 493.....	3-2
3.4 Outside Building 493 .....	3-4
3.5 Utility Pole .....	3-4
3.6 SB-13 and SB-14 .....	3-5
3.7 SB-16 and SB-17 .....	3-6
3.8 SS-122 .....	3-7
3.9 Remaining COPCs .....	3-8
4. REVISED HUMAN HEALTH RISK SCREENING FOR SOIL .....	4-1

4.1	Introduction.....	4-1
4.2	Data Quality Evaluation.....	4-2
4.3	Human Health Risk-Based Screening.....	4-3
4.4	Human Health COPCs Selected.....	4-4
4.5	Comparison to Background Soil Data .....	4-4
4.5.1	Aluminum .....	4-5
4.5.2	Arsenic .....	4-5
4.5.3	Chromium .....	4-5
4.5.4	Manganese .....	4-6
4.5.5	Nickel.....	4-6
4.5.6	Thallium.....	4-6
4.5.7	Vanadium.....	4-6
4.5.8	Residual Risk .....	4-7
4.5	Post IRA Human Health Summary and Conclusions .....	4-7
5.	REVISED HUMAN HEALTH RISK ASSESSMENT FOR GROUNDWATER .....	5-1
5.1	Groundwater Introduction.....	5-1
5.1.1	Data Quality Evaluation.....	5-2
5.1.2	Exposure Pathways of Concern .....	5-3
5.1.3	Human Health Risk-Based Screening.....	5-3
5.1.4	Human Health COPCs Selected.....	5-4
5.2	Exposure Assessment.....	5-4
5.3	Toxicity Assessment .....	5-4
5.4	Risk Results .....	5-5
5.4.1	Residential Risk .....	5-6
5.4.2	Construction Worker Risk .....	5-6
5.5	Uncertainty Assessment.....	5-7
5.5.1	Manganese .....	5-7
5.5.2	Arsenic .....	5-8
5.5.3	Cadmium.....	5-9
5.5.4	Thallium.....	5-9
5.5.5	Construction Worker Remaining Risk.....	5-9
5.6	Groundwater Human Health Summary and Conclusions.....	5-10
6.	REVISED ECOLOGICAL RISK SCREENING.....	6-1

6.1	Introduction.....	6-1
6.2	COPC Screen .....	6-1
6.3	Post-IRA Risk Characterization.....	6-2
6.3.1	Post-IRA Risk for Terrestrial Plants .....	6-3
6.3.2	Post-IRA Risk for Soil Invertebrates .....	6-4
6.3.3	Post-IRA Screening Level Terrestrial Food-Web Risk .....	6-4
6.4	Post-IRA Ecological Risk Summary .....	6-6
7.	FEASIBILITY STUDY .....	7-1
8.	SUMMARY AND RECOMMENDATIONS.....	8-1
8.1	Summary .....	8-1
8.1.1	RI Field Investigation .....	8-1
8.1.2	COPC Occurrence.....	8-1
8.1.3	RI Human Health Risk Assessment.....	8-4
8.1.4	Ecological Risk Assessment .....	8-4
8.1.5	Interim Removal Action .....	8-6
8.1.6	Post-IRA Human Health Risk Assessment.....	8-6
8.1.7	Post-IRA Screening Level Ecological Risk Assessment.....	8-7
8.1.8	Feasibility Study .....	8-8
8.2	Recommendations.....	8-8

## REFERENCES

APPENDIX A: EPA AND VDEQ PHASE II RI/FS ADDENDUM COMMENTS AND  
RESPONSE TO COMMENTS

APPENDIX B: HUMAN HEALTH GROUNDWATER RISK ASSESSMENT TABLES

APPENDIX C: GROUNDWATER BACKGROUND TABLES, WESTON 2003

**LIST OF FIGURES**

<u>Number</u>	<u>Title</u>
1-1	EBS-79 study area and BRAC property
1-2	Groundwater Flow
2-1	EBS-79 surface features
3-1	Excavation and sample location map
3-2	Remaining COPCs in soils (EA and Weston data)

**LIST OF TABLES**

<u>Number</u>	<u>Title</u>
2-1	Phase I/II RI surface soil analyte detections and COPCs
2-2	Phase I/II RI subsurface soil analyte detections and COPCs
3-1	Summary of remedial goals for EBS-79
3-2	Inside Building 493 sample results
3-3	Building 493 outside analytical results
3-4	Utility pole analytical results
3-5	SB-13/14 analytical results
3-6	SB-16/17 analytical results
3-7	SS-122 analytical results
3-8	Surface soil analyte detections and COPCs, final results (EA and Weston)
3-9	Subsurface soil analyte detections and COPCs, final results (EA and Weston)
4-1	Samples included in revised soil HHRA

- 4-2.1 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, total soil - residential
- 4-2.2 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, total soil - industrial
- 4-2.3 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, surface soil - residential
- 4-2.4 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, surface soil - industrial
- 4-2.5 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, subsurface soil - residential
- 4-2.6 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, subsurface soil - industrial
- 4-3 Summary of Phase II RI human health risk across all media for addendum COPCs
- 5-1 Selection of exposure pathways, Fort Pickett EBS-79. Groundwater analysis only
- 5-2 Occurrence, distribution and selection of chemicals of potential concern EBS79-Ft. Pickett, groundwater – tap water
- 5-3 Medium-specific exposure point concentration summary EBS79-Ft. Pickett, groundwater – tap water
- 5-4.1 Values used for resident adult daily total groundwater intake equations EBS79-Ft. Pickett
- 5-4.2 Values used for resident child daily total groundwater intake equations EBS79-Ft. Pickett
- 5-4.3 Values used for construction worker daily total groundwater intake equations EBS79-Ft. Pickett
- 5-5.1 Non-cancer toxicity data – oral/dermal EBS79-Ft. Pickett
- 5-5.2 Non-cancer toxicity data – inhalation EBS79-Ft. Pickett
- 5-5.3 Chemical-specific parameters EBS79-Ft. Pickett
- 5-6.1 Cancer toxicity data – oral/dermal EBS79-Ft. Pickett
- 5-6.2 Cancer toxicity data – inhalation EBS79-Ft. Pickett

- 5-7.1 Summary of noncancer risks for resident adults at Fort Pickett – average exposure (AE) scenario, summary of noncancer risks across all exposure pathways
- 5-7.2 Summary of noncancer risks for resident adults at Fort Pickett – reasonable maximum exposure (RME) scenario, summary of noncancer risks across all exposure pathways
- 5-7.3 Summary of noncancer risks for resident children at Fort Pickett – average exposure (AE) scenario, summary of noncancer risks across all exposure pathways
- 5-7.4 Summary of noncancer risks for resident children at Fort Pickett – reasonable maximum exposure (RME) scenario, summary of noncancer risks across all exposure pathways
- 5-7.5 Summary of noncancer risks for construction workers at Fort Pickett – average exposure (AE) scenario, summary of noncancer risks across all exposure pathways
- 5-7.6 Summary of noncancer risks for construction workers at Fort Pickett – Reasonable maximum exposure (RME) scenario, summary of noncancer risks across all exposure pathways
- 5-8.1 Summary of cancer risks for resident adults and children at Fort Pickett – average exposure (AE) scenario, summary of cancer risks across all exposure pathways
- 5-8.2 Summary of cancer risks for resident adults and children at Fort Pickett – reasonable maximum exposure (RME) scenario, summary of cancer risks across all exposure pathways
- 5-8.3 Summary of cancer risks for construction workers at Fort Pickett – average exposure (AE) scenario, summary of cancer risks across all exposure pathways
- 5-8.4 Summary of cancer risks for construction workers at Fort Pickett – reasonable maximum exposure (RME) scenario, summary of cancer risks across all exposure pathways
- 5-9.1 Summary of receptor risks and hazards for COPCs – reasonable maximum exposure - Fort Pickett EBS-79
- 5-9.2 Summary of receptor risks and hazards for COPCs – reasonable maximum exposure - Fort Pickett EBS-79
- 5-10.1 Risk assessment summary – reasonable maximum exposure – Fort Pickett, EBS-79

5-10.2	Risk assessment summary – reasonable maximum exposure – Fort Pickett, EBS-79
5-11	Background comparison – Fort Pickett EBS-79
6-1	Summary of ecological risk soil screening values
6-2	Post-IRA surface soil ecological COPCs for Ft. Pickett, EBS-79
6-3	Comparison of Pre- and Post-IRA ecological COPCs
6-4	Screening-level ecological quotients for terrestrial plants for COPCs, Post-IRA
6-5	Screening-level ecological quotients for soil invertebrates for COPCs, Post-IRA
6-6	Post-IRA terrestrial hazard quotient summary
6-7	Post-IRA screening level food web model for the American robin
6-8	Post-IRA screening level food web model for the American kestrel
6-9	Post-IRA screening level food web model for the short-tailed shrew
6-10	Post-IRA screening level food web model for the meadow vole
6-11	Post-IRA screening level food web model for the Eastern cottontail
6-12	Post-IRA screening level food web model for the red fox

## LIST OF ACRONYMS AND ABBREVIATIONS

95% UCLM	95 Percent Upper Confidence Level on the Mean
AE	Average Exposure
AOC	Area of Concern
AUF	Area Use Factor
BAF	Bioaccumulation Factor
BRAC	Base Realignment and Closure
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CERCLA	Comprehensive Environmental Response, Compensation Liability Act
COC	Contaminants of Concern
COPC	Constituents of Potential Concern
DDD	Dichloro-diphenyl-dichloroethane
DDE	Dichloro-diphenyl-dichloroethylene
DDT	Dichloro-diphenyl-trichloroethane
EA	EA Engineering, Science, and Technology, Inc.
EPA	U.S. Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FS	Feasibility Study
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IRA	Interim Removal Action
LOAEL	Lowest Observed Adverse Effect Levels
MCL	Maximum Contaminant Level
NOAEL	No Observed Adverse Effect Level
PA/SI	Preliminary Assessment/Site Investigation
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
RAGS	Risk Assessment Guidance for Superfund
RBC	Risk-Based Concentration
RI	Remedial Investigation

---

RME	Reasonable Maximum Exposure
ROC	Receptor of Concern
SARA	Superfund Amendments and Reauthorization Act
SMDP	Scientific/Management Decision Point
SQL	Sample Quantitation Level
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
THQ	Target Hazard Quotient
TCL	Target Compound List
TR	Target Cancer Risk
TRV	Toxicity Reference Value
UCL	Upper Control Limit
UF	Uptake Factor
USACE	U.S. Army Corps of Engineers
UST	Underground Storage Tank
VDEQ	Virginia Department of Environmental Quality
VOC	Volatile Organic Compounds
Weston	Weston Solutions, Inc.

## 1. PURPOSE

EA Engineering, Science, and Technology (EA) has revised this addendum to the *Draft Phase II Remedial Investigation Report, EBS-79, Fort Pickett, Virginia* (EA June 2001) for the Norfolk District-U.S. Army Corps of Engineers (USACE) under USACE Contract No. DACA65-01-D-0023, Task Order No. 0003.

EA prepared the draft Phase II RI (EA June 2001) and submitted the document for review to the USACE (Norfolk District), the Base Realignment and Closure (BRAC) environmental office, U.S. Army Forscom, U.S. Environmental Protection Agency (EPA) – Region III, and the Virginia Department of Environmental Quality (VDEQ). While the draft Phase II RI was in review, the BRAC environmental office contracted Weston Solutions, Inc. (Weston) to conduct an Interim Removal Action (IRA) to reduce potential ecological risks associated with soils at EBS-79. IRA activities are described in the *Final Interim Removal Action Report for EBS-79* (Weston July 2002). Prior to finalizing the Phase II RI report, the EPA requested that post-IRA data (produced by Weston, July 2002) be combined with the pre-IRA (presented in the draft RI, EA June 2001) and a revised screening level ecological and human health risk assessment for soil be prepared. An addendum to the Phase II RI report (*Phase II RI/FS Report Addendum EBS-79*, EA October 2002) was prepared that presents the revised risk assessments.

On 6 May 2003, EA received comments to the Phase II RI/FS Addendum via email from the BRAC Environmental Office. This revised Phase II RI/FS Addendum incorporates the responses to these comments. A copy of the response to comments is attached in Appendix A.

Section 2 of this revised Phase II RI/FS Addendum summarizes the Phase I/II RI data including the distribution and probable sources of constituents of potential concern (COPCs) within site medium and revisits the RI human health and ecological risk conclusions. COPCs identified during the Phase I/II RI are organized by sampled media and further discussed by analytical group.

Section 3 provides a summary of IRA activities performed by Weston and restates the analytical results from post-excavation confirmatory samples. A sample location figure and analytical result tables contained in the IRA report (Weston July 2002) are included in this section.

Utilizing the RI sampling data still applicable (not excavated as part of the IRA) and adding the appropriate Weston confirmatory sample results, a screening level human health risk assessment

for soil and a screening ecological risk assessment were performed and are discussed in Chapters 4 and 6, respectively.

A revised groundwater human health risk assessment is contained in Chapter 5. This assessment reevaluates risks associated with groundwater excluding data from two monitoring wells (MW-1 and MW-2), which can be attributed to the adjacent site BCT-22 (see Response to Comments, Appendix A).

A Feasibility Study (FS) exploring the remedial options at EBS-79 is presented in Chapter 7, and Chapter 8 provides a summary of this addendum as well as recommendations.

## **1.1 INTRODUCTION**

A Phase I and Phase II Remedial Investigation (RI) of EBS-79 was completed by EA during 2000 and 2001, respectively. The RI (EA June 2001) characterized the horizontal and vertical extent of COPCs in affected site media and assessed potential risks to human health and ecological receptors.

The Phase I RI field investigation included surface and subsurface soil sampling, surface water, sediment, and groundwater sampling activities. Analyses included U.S. Environmental Protection Agency (EPA) target compound list and target analyte list (TCL/TAL) organic and inorganic compounds, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyl (PCBs). Based on data gaps identified during the Phase I RI, the Phase II RI field investigation (EA June 2001) included additional surface and subsurface soil, surface water, sediment, and groundwater sampling activities. Analyses again included EPA TCL/TAL organic and inorganic compounds, PAHs, and PCBs.

Analyte concentrations detected during the RI were compared to EPA residential Risk-Based Concentrations (RBCs), Maximum Contaminant Levels (MCLs), and ecological screening criteria resulting in the identification of COPCs.

The RI (EA June 2001) identified: 15 human health COPCs and 48 ecological COPCs in surface soil samples; 9 human health COPCs in subsurface soil samples; 5 human health and 40 ecological COPCs in sediment samples; 13 human health COPCs and 11 ecological COPCs in surface water samples; and 14 human health COPCs in groundwater samples.

The RI also identified three main contaminant sources that impacted media at EBS-79 (EA June 2001):

- The upgradient former UST site (BCT-22)
- Probable past pesticide applications inside Building 493 (and outside at SS-105 and SS-122)
- Limited petroleum surface spills around the site

The human health risk assessment presented in the Phase II RI (EA June 2001) identified groundwater related risks above U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  for carcinogens and U.S. EPA's target hazard index (HI) of 1.0 for non-carcinogens; benzene was the primary risk driver. Benzene risks also exceeded the Virginia Department of Environmental Protection goal of  $10^{-6}$  for an individual COPC. Benzene concentrations in groundwater samples collected from two wells (MW-1 and MW-2) were higher than other site wells with the samples collected from MW-2 containing benzene concentrations two orders of magnitude higher than any other site sample. MW-2 is located across the street (Bakers Row) from EBS-79 and is hydraulically downgradient from the former UST site, BCT-22 (Figure 1-1 and Figure 1-2). The location of existing monitoring wells MW-1 and MW-2 are shown on these two figures as well as former wells MW-1 through MW-7 (mainly located on site BCT-22). The former wells were previously abandoned and are therefore no longer assessable.

In the Phase II RI Step 3 ecological risk assessment (EA June 2002), the identified receptors of concern (ROCs) for soils were terrestrial plants, soil invertebrates, mammals (meadow vole, short-tailed shrew, Eastern cottontail, and red fox), and birds (American robin and American kestrel). Risks to terrestrial plants from exposure to COPCs in surface soil were acceptable. Acceptable food-web risk was found for the American kestrel and red fox, as No Adverse Effects Level (NOAEL) Hazard Quotients (HQs) were less than 1.0 for these receptors. No adverse effects to robins from exposure to chromium, lead, zinc, and total PAH in surface soil were expected.

Robins are at risk from exposure to aluminum, dichloro-diphenyl-dichloroethane (DDD), dichloro-diphenyl-dichloroethylene (DDE), and dichloro-diphenyl-trichloroethane (DDT) in soil. Risks to soil invertebrates were only found for chromium. NOAEL HQs for the meadow vole, short-tailed shrew, and eastern cottontail were below 1.0 for COPCs with the exception of aluminum.

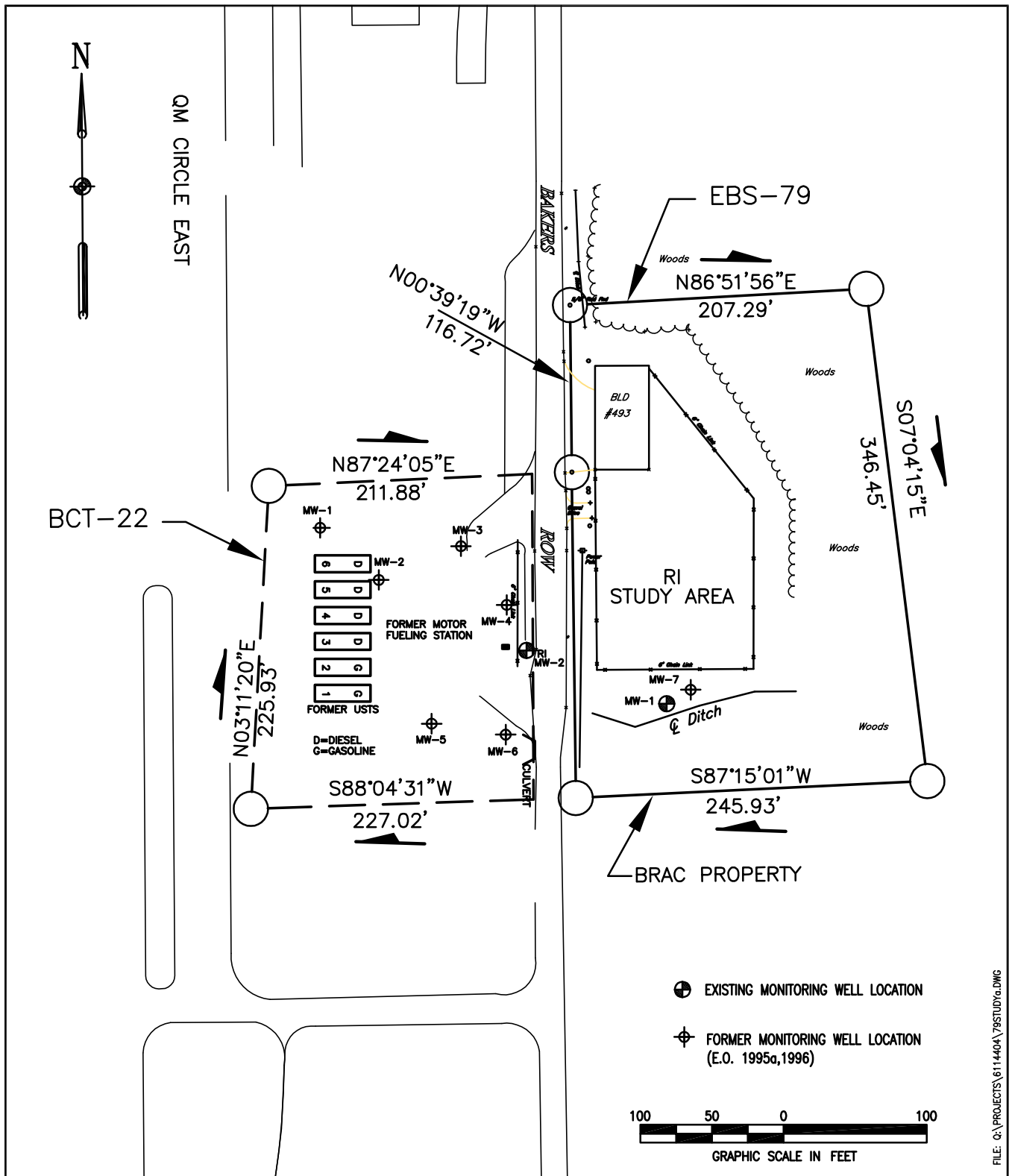
In conclusion to the Phase II RI (EA June 2002), EA recommended the excavation of soil at EBS-79 to address locations of surface soils that presented potential ecological risks including:

- Elevated Aroclor 1260 concentrations in surface soil within 10 ft of a utility pole
- Surface soils that contain pesticides inside Building 493 and outside (SS-105)
- Visibly stained and PAH impacted soils at locations SB-16 and SB-17
- Soils with elevated benzene, toluene, ethylbenzene, and xylene (BTEX) and PAHs at SB-13 and SB-14
- Soils containing pesticides at SB-122.

Although there were no human health risks associated with EBS-79 onsite soils (EA June 2001), the BRAC environmental office contracted Weston to excavate “hot spots” of shallow soil that contained elevated levels of organic compounds as part of an IRA. The IRA addressed locations of surface and subsurface soil that presented potential ecological risks as recommended in the RI (EA June 2002). In November 2001, Weston conducted the IRA at EBS-79.

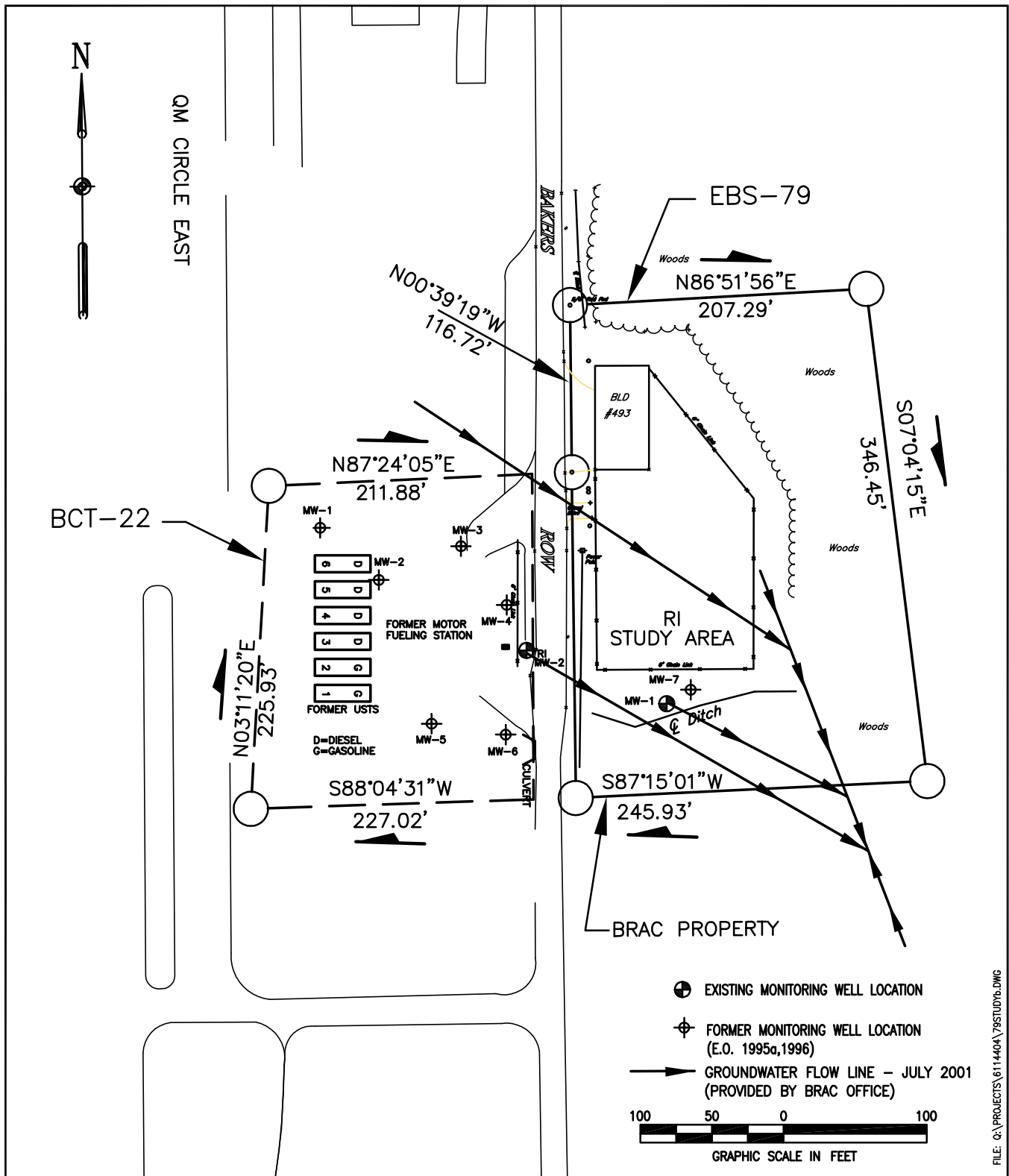
The Phase II RI/FS addendum (EA, October 2002) concluded that the IRA had removed areas of ecological risks associated with site soils and that risks associated with human health are confined to the site groundwater with benzene being the primary human health risk driver. Benzene concentrations in the groundwater samples collected from monitoring well MW-2 (hydraulically down-gradient from the former UST site, BCT-22) were two magnitudes higher than the next highest concentration. EA recommended that the VOC plume identified in MW-2 and to some extent MW-1 is addressed as part of the ongoing evaluations of the former UST site under the VDEQ’s Voluntary Remediation Program.

The Fort Pickett BRAC Cleanup Team determined that the elevated levels of BTEX from MW-2 and MW-1 could be attributed to BCT-22 and that MW-1 and MW-2 data will be included in a risk assessment being performed at the Former Fuel Station (BCT-22). Therefore, this addendum presents a revised analysis of groundwater human health risks excluding MW-1 and MW-2 in Chapter 5.



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<b>EA</b> ® EA ENGINEERING, SCIENCE, AND TECHNOLOGY			EBS-79 RI/FS FT. PICKETT, VIRGINIA			EBS-79 STUDY AREA AND BRAC PROPERTY	
PROJECT MGR VAW	DESIGNED BY SMW	DRAWN BY JBS	CHECKED BY TJP	SCALE AS SHOWN	DATE 4-25-00	PROJECT NO 61144.04	FIGURE 1-1



FILE: Q:\PROJECTS\6114404\79STUDY.DWG

<b>EA</b> ® EA ENGINEERING, SCIENCE, AND TECHNOLOGY			EBS-79 RI/FS FT. PICKETT, VIRGINIA			GROUNDWATER FLOW	
PROJECT MGR VAW	DESIGNED BY SMW	DRAWN BY JBS	CHECKED BY TJP	SCALE AS SHOWN	DATE 4-25-00	PROJECT NO 61144.04	FIGURE 1-2

## **2. PHASE I/II REMEDIAL INVESTIGATION**

### **2.1 SITE HISTORY**

The project site, EBS-79 (Building 493 and Former Storage Compound), was formerly a fire station and a storage area for transformers, PCB oils, and flammable materials. The site was identified as a BRAC parcel by Woodward-Clyde (1997), Roy F. Weston, Inc. (WESTON 1998b), and the BCT due to previous site use. The area delineated for the BRAC property extends nearly three acres, which includes a former UST site on the west side of Bakers Row (Figure 1-1). The study area for EBS-79 encompassed approximately one acre on the east side of Bakers Row, which included Building 493 and the adjacent storage yard (Figure 2-1). Tanker trucks that accessed the UST site also had parked in the storage yard of EBS-79. There were 16 containers of various sizes that contained petroleum liquids and water within the storage area outside Building 493. A shallow drainage ditch that intermittently contains surface water is located on the south side of the site.

### **2.2 HYDROGEOLOGY**

Groundwater was found in the overburden at EBS-79 within the five monitoring wells installed as part of the RI (EA June 2001). During the RI, the measured water levels in MW-1 had varied from 382.61 to 390.49 MSL, or about an 8-ft variation, while the variation in the other wells was less than 3 ft. The RI concluded the varying water level in MW-1 might be due to local, temporary perched groundwater conditions.

Disregarding the apparent perched water level in MW-1, the RI determined the groundwater gradient at the site to be 0.04 and sloping towards the southeast (EA June 2001). This gradient decreased to the east (0.01) and followed a more easterly direction. Given an approximate hydraulic conductivity of 0.003 ft/min (EA June 2001), the horizontal groundwater flow velocity calculated in the RI was 0.9 ft per day or approximately 300 ft/year. East of the site where the gradient was approximately 0.01, the flow rate reduced to 80 ft/year.

Groundwater monitoring wells MW-1 and MW-2, although they are hydraulically cross-gradient from EBS-79, are down-gradient from the former UST site located to the west of Bakers Row. Dissolved compounds and petroleum sheen observed in these two wells during the RI are likely the result of impacts migrating from the former UST site.

## **2.3 FIELD INVESTIGATION**

The Phase I RI field investigation occurred in October and November 1999. It included surface and subsurface soil, surface water, sediment, and groundwater sampling activities. Analysis included EPA TCL/TAL organic and inorganic compounds, PAHs, and PCBs. Additionally, liquid samples were collected from the onsite liquid containers and analyzed for disposal parameters.

Based on the data gaps identified during the Phase I RI, a Phase II RI was conducted at EBS-79 in December 2000 and January 2001. The Phase II RI included additional surface and subsurface soil, surface water, sediment, and groundwater sampling activities. Analyses again included EPA TCL/TAL organic and inorganic compounds, PAHs, and PCBs.

## **2.4 COPC OCCURRENCE**

Analyte concentrations determined during the RI were compared to EPA residential RBCs, MCLs, and ecological screening criteria resulting in the identification of COPCs (EA June 2001). RBCs based on a hazard index of 0.1 were used. Table 2-1 and Table 2-2 summarize surface soil and subsurface soil analyte detections and COPCs.

The RI identified three main contaminant sources that impacted media at EBS-79 (EA June 2001): the upgradient former UST site, probable past pesticide applications inside Building 493 (and outside at SS-105 and SS-122), and limited petroleum surface spills around the site. Most COPCs (VOC, SVOC, PAH, and lead) detected in the groundwater within wells MW-1 and MW-2 and surface water and sediment in the intermittent drainage ditch are likely the result of contaminant migration from the upgradient UST site. Pesticides, SVOCs, and PAH COPCs in surface soil inside and outside Building 493 are likely associated with previous pesticide applications. Limited petroleum releases in the location of borings SB-16, SB-17, SB-13, and SB-14 probably contributed to VOC, SVOC, and PAH COPCs in soils at these locations.

### **2.4.1 COPCs in Surface Soil**

#### **VOCs**

No human health VOC COPCs were identified in surface soil samples collected during the Phase I or Phase II RI.

Ecological VOC surface soil COPCs identified in the Phase I RI included ethylbenzene, toluene, and xylenes, which were detected in SB-13 at concentrations that exceeded ecological criteria. Acetone (detected across the site) and carbon disulfide (detected in SB-13) were also considered ecological COPCs in the Phase I RI due to the lack of available ecotoxicity screening values.

Methylene chloride was detected in the Phase II RI sample SS-118 at a concentration that exceeded the ecotoxicity screening criteria and considered an ecological COPCs. However, SS-118 was collected from a storm water inlet point located upgradient from EBS-79 and concentrations reported in SS-118 are considered indicative of upgradient conditions and not representative of onsite impacts.

### **Non-PAH SVOCs**

The Phase I RI identified P-nitroaniline as a human health COPC in surface soils at sampling locations SB-3 (inside Building 493) and SB-13 because P-nitroaniline does not have a residential RBC. The Phase II RI did not identify additional non-PAH SVOC COPCs in surface soils.

Pentachlorophenol exceeded the ecotoxicity screening benchmark in the Phase I RI surface soil sample locations SB-3 and SB-4 (both located within Building 493), and was considered a COPC for ecological receptors. Dibenzofuran, detected in the Phase I RI sample locations SB-4 (inside Building 493) and SB-13, was identified as an ecological COPC in surface soil due to lack of ecological benchmarks.

### **PAHs**

Benzo[a]pyrene and dibenz[a,h]anthracene concentrations in surface soil which exceeded human health criteria were reported in the Phase I RI sample locations SB-2 (inside Building 493) and SB-13, respectively. Therefore, these PAHs were identified as COPCs for human receptors. The Phase II RI also identified benzo[a]pyrene (in SS-118) as a COPC for human receptors.

Benzo[a]pyrene and dibenz[a,h]anthracene concentrations also exceeded ecological criteria in the Phase I sample locations SB-2 and SB13. Additionally, 2-Methylnaphthalene, 1,2-benzphenanthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, acenaphthene, acenaphthylene, benzo[g,h,i]perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and/or pyrene exceeded the ecotoxicity screening criteria in the Phase I surface soil samples collected from SB-2, SB-4,

SB-6 (each located within Building 493), SB-13, and/or SB-16. These PAHs were identified as COPCs in surface soil for ecological receptors at EBS-79 during the Phase I RI.

Ecological COPCs identified in the Phase II RI (in addition to the ecological COPCs identified in the Phase I) include: chrysene (SS-118), benzo[a]anthracene (SS-118), and benzo[b]fluoranthene (SS-118). These PAHs were also considered COPCs for ecological receptors. However, sample SS-118 was collected from a storm water inlet grate located upgradient of EBS-79. As stated earlier, concentrations reported in this sample was considered to represent up-gradient conditions and not indicative of on-site impacts

### **Pesticides**

Aldrin and DDT were detected in several samples collected from within Building 493 during the Phase I RI at concentrations that exceeded the residential RBCs and, therefore, were identified as COPCs in surface soil for human receptors. The Phase II RI identified, in addition to DDT, four pesticides as human health COPCs; alpha-BHC (in samples within Building 493 and at location SS-122), DDE, beta-BHC, and heptachlor (each in sample SS-122).

The Phase I RI also identified ecological COPCs in the surface soil samples from within Building 493 and at sample location SS-122. These pesticides included DDD, aldrin, and endrin aldehyde (all in Building 493). The human health COPCs identified in the Phase II RI (DDT, alpha-BHC, DDE, beta-BHC, and heptachlor) were also identified as ecological COPCs in the same sample locations. Additionally, DDE was identified as an ecological COPC in samples inside Building 392.

### **PCBs**

Aroclor 1260 was the only PCB COPC identified in surface soils collected during the RI. The Phase I RI sample SB-18-0.5, collected from beneath the power pole, contained aroclor 1260 concentrations that exceeded both human health and ecotoxicity screening criteria. Therefore, Aroclor 1260 was identified as a COPC in surface soil for ecological and human receptors.

### **Metals**

Eight metals (aluminum, arsenic, barium, cadmium, chromium, iron, manganese, and thallium) were identified in Phase I as human health COPCs for exceeding their respective residential soil

RBC. Five of these metals (aluminum, arsenic, chromium, iron, and manganese) were again identified in Phase II as human health COPCs as well as vanadium.

The Phase I RI identified seven metals (antimony, beryllium, lead, mercury, nickel, vanadium, and zinc) as ecological COPCs in addition to the eight human health COPCs (aluminum, arsenic, barium, cadmium, chromium, iron, manganese, and thallium) for exceeded their respective ecotoxicity screening criteria. Phase II again identified these metals as ecological COPCs in addition to copper and selenium.

For calcium, magnesium, potassium, and sodium, although screening criteria were not available, these metals were not considered COPCs in surface soil as well as other sampled media due to their status as essential nutrients. Iron was considered an essential nutrient in the ecological assessment. This status was discussed further in Chapters 6 and 7 of the Phase II RI (EA June 2001).

Metal COPCs, unlike organic COPCs, were identified in surface soil samples across EBS-79 with no clear “hot spot” of source areas.

## **2.4.2 COPCs in Subsurface Soil**

No VOC, non-PAH SVOC, pesticide, or PCB COPCs were identified in subsurface soil samples collected during either the Phase I or Phase II RI.

### **PAHs**

One PAH COPC was identified in the RI. Benzo[a]pyrene was identified as a PAH COPC in the Phase I RI for exceeding the residential RBC. Concentrations of benzo[a]pyrene in exceedance of the RBC were only reported in the subsurface soil sample collected from SB-17.

### **Metals**

Seven TAL metals were identified in the Phase I RI as human health COPCs (aluminum, arsenic, chromium, iron, manganese, thallium, and vanadium) for exceeding their respective residential soil RBCs in all or some of the subsurface soil samples. The Phase II RI again identified six of the Phase I COPCs as Phase II COPCs (aluminum, arsenic, chromium, iron, manganese, and vanadium). In addition, nickel was also identified as a COPC for human health receptors in the Phase II for exceeded its residential soil RBC.

### **2.4.3 COPCs in Sediment**

Sediment samples collected during the Phase I and Phase II RI did not contain analytes (with the exception for metals) at concentrations that exceeded their associated RBCs. Therefore, only metal COPCs were identified for human receptors at EBS-79.

#### **VOCs**

Ethylbenzene, m&p-xylenes, and o-xylene were reported in the Phase I sediment sample collected from SS19 at concentrations that exceeded ecotoxicity screening criteria but not the RBC and were, therefore, considered COPCs in sediment for ecological receptors. Additionally, acetone, benzene, and/or toluene were detected in at least one of the sediment samples and were also identified as ecological COPCs due to the lack of applicable ecotoxicity benchmarks. Additional VOC COPCs were not identified in the Phase II RI.

#### **Non-PAH SVOCs**

Non-PAH SVOC COPCs for ecological receptors were identified in the Phase I RI, but not the Phase II RI. N-nitrosodiphenylamine was detected in the Phase I sediment sample SS-19 at a concentration that exceeded the ecological benchmark, and therefore was identified as a COPC. 3,4-Methylphenol, carbazole, and dibenzofuran were also identified as COPCs due to the lack of ecotoxicity benchmarks.

#### **PAHs**

In the Phase I sediment sample location SS19, the concentrations of acenaphthene, 2-methylnaphthalene, fluorene, naphthalene, phenanthrene, and pyrene exceeded the ecotoxicity screening criteria. Pyrene concentrations also exceeded the ecological benchmark in SS21. Therefore, these compounds are COPCs in sediment for ecological receptors.

The second sediment sample collected from location SS-19 (during the Phase II RI) again contained concentrations of 2-methylnaphthalene, fluorene, naphthalene, and pyrene at concentrations that exceeded the ecological screening criteria. Sediment sample SS-22 also contained concentrations of 2-methylnaphthalene above the ecological screening criteria. These analytes were again considered COPCs for ecological receptors in Phase II.

## **Pesticides**

Concentrations of DDD, DDE, DDT, alpha-chlordane, gamma-chlordane, and heptachlor epoxide exceeded ecological benchmarks in the sediment samples SS-19 and SS-21 collected during the Phase I RI and were, therefore, identified as COPCs. Ecological benchmarks were not available for endosulfan I and endosulfan sulfate and thus were also identified as COPCs in Phase I.

Sediment samples collected during Phase II again identified DDD and gamma-chlordane as ecological COPCs however, beta-BHC, delta-BHC, and dieldrin were also identified in Phase II as ecological COPCs. Endosulfan II was also identified as a COPC due to the lack of ecological criteria.

## **PCBs**

PCB ecological COPCs were only identified in the Phase I RI. Aroclor 1254 and aroclor 1260 were detected in the sediment sample SS-19 at concentrations that exceeded ecological screening criteria.

## **Metals**

Within sediment samples collected during the Phase I RI, five metals (aluminum, arsenic, iron, manganese, and thallium) were identified as COPCs for human receptors. In Phase II, four of the same metal COPCs identified in the Phase I were again identified as COPCs (aluminum, arsenic, iron, and manganese) for human receptors.

Seven metals (aluminum, beryllium, lead, manganese, mercury, thallium, and vanadium) were ecological COPCs in Phase I. Phase II again identified aluminum and manganese as ecological COPCs in addition to arsenic and iron.

### **2.4.4 COPCs in Surface Water**

## **VOCs**

The VOCs benzene, ethylbenzene, and toluene were identified as COPCs in the Phase I RI for human receptors. Benzene concentrations exceeded the tap water RBC in each of the three

surface water samples (SW-1, SW-2, and SW-3). Ethylbenzene and toluene concentrations exceeded the RBCs in SW-1. Phase II did not identify additional COPCs for human receptors.

Surface water samples results did not exceed the ecotoxicity screening criteria in Phase I or Phase II.

### **Non-PAH SVOCs**

Dibenzofuran concentrations in SW-3 exceeded the tap water RBC (1/10<sup>th</sup> value) and therefore, was considered a human health COPC for surface water in the Phase I RI. Non-PAH SVOCs were not detected in the Phase II surface water samples.

2-Methylphenol, 3,4-methylphenol, and dibenzofuran were identified as ecological COPCs in Phase I due to the lack of ecotoxicity benchmarks.

### **PAHs**

The Phase I RI identified 2-methylnaphthalene and naphthalene as COPCs for human receptors due to their concentrations exceeded the tap water RBCs in surface water sample SW-1. Phase II did not identify PAH COPCs for human receptors.

Ecological COPCs were only identified in Phase I. Anthracene in SW-1 exceeded the ecotoxicity benchmark and was identified as an ecological COPC in Phase I. Acenaphthylene and pyrene were also identified as ecological COPCs in Phase I due to lack of ecotoxicity benchmarks.

### **Pesticides and PCBs**

No pesticide or PCB COPCs in surface water samples were identified in the Phase I or Phase II RI for human or ecological receptors.

### **Metals**

The Phase I RI reported concentrations of six metals (aluminum, antimony, arsenic, iron, lead, and manganese) that exceeded the tap water RBCs and were, therefore, COPCs in surface waters for human receptors. These exceedances mostly occurred in SW-3. Phase II also reported

aluminum, antimony, iron, lead, and manganese (in addition to chromium) concentrations that exceeded the tap water RBCs in one or more surface water samples.

Aluminum and lead exceeded the ecotoxicity screening criteria in both Phase I and Phase II surface water samples. Phase II also identified selenium, chromium and zinc as COPCs in surface water for ecological receptors.

## **2.4.5 COPCs in Groundwater**

### **VOCs**

Phase I identified the VOCs benzene, ethylbenzene, m&p-xylenes, and toluene as COPCs in groundwater for human receptors. Ethylbenzene, m&p-xylenes, and toluene concentrations exceeded the tap water (or 1/10<sup>th</sup>) RBC and MCL in MW-2. Benzene exceeded both the RBC and MCL in wells MW-1 and MW-2 during Phase I. A light petroleum sheen was detected in MW-2 and intermittently in MW-1.

The Phase II RI only identified VOC COPCS in MW-2. Concentrations of benzene, ethylbenzene, and toluene again exceeded both the tap water RBCs and MCLs in the groundwater sample collected from MW-2 and were, therefore considered COPCs. Also in MW-2, m & p xylenes and o-xylene had reported concentrations that exceeded the RBCs, but not the MCL goals. Xylenes were also again considered COPCs in groundwater.

### **Non-PAH SVOCs**

The Phase I RI reported a carbazole concentration in MW-2 that exceeded the RBC and, therefore, was identified as a COPC in groundwater.

No non-PAH SVOCs reported concentrations above the RBCs or MCLs in Phase II groundwater samples.

### **PAHs**

2-Methylnaphthlene and naphthalene concentrations in MW-2 exceeded the tap water RBCs during the Phase I RI. The reported concentration of naphthalene in MW-1 also exceeded the RBC (1/10<sup>th</sup> value) in Phase I. Therefore, naphthalene and 2-methylnaphthalene were identified as COPCs in groundwater.

Concentrations of 2-methylnaphthene and naphthalene above the RBCs were again reported in the groundwater sample collected from MW-2 during the Phase II RI.

## **Pesticides**

Phase I detected concentrations of aldrin in MW-2, and heptachlor and heptachlor epoxide in MW-5 that exceeded the tap water RBCs and, therefore, were identified as COPCs in groundwater.

The groundwater samples collected during Phase II did not contain elevated levels of pesticides, therefore, Phase II did not identify pesticide COPCs in groundwater.

## **PCBs**

PCB COPCs were not identified in the RI.

## **Metals**

Concentrations of arsenic, cadmium, iron, manganese, and thallium exceeded the RBCs in the groundwater samples collected during Phase I. However, arsenic concentrations were not appreciably higher than the concentrations found in the associated blanks. Therefore, in the Phase I RI, only cadmium, iron, manganese, and thallium were identified as COPCs in groundwater. The Phase II RI also identified iron and manganese as human health COPCs.

## **2.5 PHASE II RI HUMAN HEALTH RISK ASSESSMENT**

A human health risk assessment was conducted in the Phase II RI (EA June 2001) to assess potential non-carcinogenic effects and cancer risks from current and future site exposure. This assessment is discussed in detail in Section 7 of the Phase II RI (EA June 2001). Potential future residents (adult and child), construction workers, commercial workers and trespassers (adult and adolescent). Non-carcinogenic risks exceeded the EPA threshold of 1.0 (target-organ specific) for potential future resident adults and children and for potential future construction workers. Total soil (surface soil and subsurface soil combined), surface soil, groundwater, surface water and sediment were media of concern.

Risks for resident adults and children and construction workers were driven entirely by the ingestion of groundwater pathway; benzene was the primary risk driver. Breakdown by target

organ for all COPCs indicated that all of these potential risks were not of concern with the exception of the groundwater pathways. All other media pathways were below the acceptable non-carcinogen target organ threshold for all receptors.

A petroleum sheen was observed in MW-2 during the Phase I RI. Since MW-2 is located across the street from EBS-79 and down gradient from the former UST site, it may not be appropriate to include the groundwater sample collected from MW-2 in the human health risk assessment. An evaluation of the groundwater data without the MW-2 sample indicated that groundwater risks were within the acceptable risk range.

The estimated risks were within the target risk range for all other media for potential future resident (combined adult and child) scenario. The adult trespassers, adolescent trespassers, construction workers, and commercial workers scenarios were within or below the target risk range for all other media.

Potential carcinogenic risks for the ingestion of total soil for the adult and child residents and for ingestion of surface soil for the adult and adolescent trespassers were within the  $10^{-6}$  to  $10^{-4}$  target risk range. Arsenic in soil was the only chemical above  $10^{-6}$ . Arsenic concentrations in soil at the site appear to represent regional background conditions and, therefore, are not expected to be site-related. Potential risks for the construction and commercial workers associated with soil were within the target risk range.

Potential carcinogenic risks were calculated below or within the target risk range for surface water for all receptors. Benzene was the only chemical with risks above  $10^{-6}$ . Potential carcinogenic risks were calculated below the target risk range for sediment for all receptors.

## **2.6 PHASE II RI ECOLOGICAL RISK ASSESSMENT**

An ecological risk assessment was also performed in the Phase II RI for surface soil, sediment, and surface water associated with EBS-79 and is discussed in detail in Section 8 of the Phase II RI (EA June 2001). The results of the Step 1 and 2 ERA indicated that there were several COPCs identified with the potential to cause unacceptable risks to ecological receptors at the site, which supported a decision to conduct a more realistic exposure and risk characterization for the site (Step 3), consistent with EPA guidance (EPA 1997c). Refinements included in the Step 3 ERA included the use of bioaccumulation and bioconcentration factors, more realistic ROC exposure assumptions, dietary composition, adjustment of dry weight concentrations to wet weight concentrations, and area use factors of the ROCs.

The Step 2 ERA identified a number of media/COPC/ROC combinations for which acceptable risks were found at EBS-79. The Step 3 ERA focused on those media/COPC/ROC combinations for which potential risk was identified as a result of the Step 2 ERA and for which appropriate toxicity values were available in the toxicological literature. The absence of appropriate toxicity values for some media/COPC/ROC combinations means that it is not possible to dismiss potential risk for that particular combination. However, the toxicology scientific literature focuses on those chemicals and metals that have been found to present the greatest amount of risk to ecological receptors. Consequently, the finding of acceptable risk for those media/COPC/ROC combinations for which toxicological data are available would imply that risks from those unquantified combinations were less likely to pose unacceptable risks.

Standard ERA practice (EPA 1997c) places ecological risk into the context of assessment and measurement endpoints, where assessment endpoints are those characteristics of an environment that need to be protected and measurement endpoints provide distinct measures of this degree of protection. The results of the Step 3 ERA are discussed below for surface soil at EBS-79, and surface water and sediment from the ditch at the site.

## **Surface Soil**

Based on the initial screen in the Step 1 and 2 ERA, approximately 50 metals and organic chemicals were identified as COPCs in surface soil at EBS-79. Identification of a metal or chemical as a COPC does not necessarily imply risk for ecological receptors, rather it is designed to conservatively identify constituents that have the potential for unacceptable risk to receptors. The conservative Step 1 and 2 ERA had little effect in reducing the numbers of COPCs in surface soil, or in identifying potential risk drivers from amongst all of the COPCs.

In the Step 3 ERA, the identified ROCs for soils were terrestrial plants, soil invertebrates, mammals (meadow vole, short-tailed shrew, Eastern cottontail, and red fox), and birds (American robin and American kestrel). The risks for terrestrial plants were defined relative to concentrations of COPCs in surface soil based on toxicity endpoints such as plant growth. The only COPCs with potential risk to plant populations at EBS-79 were aluminum, chromium, vanadium, and zinc. The toxicity values used to establish risks for aluminum, chromium, and vanadium were of low confidence. Due to the low confidence in toxicity reference values used for these metals and the absence of obvious site impacts on terrestrial vegetation, risks to terrestrial plants from exposure to COPCs in surface soil at EBS-79 were acceptable. Zinc showed a small level of risk to plants ( $EQ_{\text{mean}} = 1.4$ ), and the toxicity data used to establish this

was of moderate quality. Because vegetation did not show obvious damage and the small magnitude of the zinc EQ, risks to vegetation from this metal appear to be acceptable.

Risks for soil invertebrates were also characterized relative to constituent concentrations in soil compared to chronic endpoints such as reproduction or cocoon production of earthworms. Risks to soil invertebrates were only found for chromium based on this assessment, ( $EQ_{\text{mean}}$  of 49). The toxicological endpoints used to characterize this risk was of low confidence because the wrong form of chromium was tested (Cr III instead of Cr IV).

Acceptable food-web risk was found for the American kestrel and red fox as NOAEL HQs were all less than 1.0 for these receptors.

Risks for the American robin were calculated based on the 95 UCLM concentrations due to the relatively small habitat range of this bird. Based on the refined food web, NOAEL HQs for chromium, lead, zinc, and total PAH ranged from 1.5 to 3.1; however, LOAEL HQs for these same chemicals were less than 1.0. Consequently, adverse effects to robins from exposure to these chemicals in surface soil at EBS-79 were not expected. NOAEL risks to the robin from exposure to aluminum, DDD, DDE, and DDT were equal to or greater than 10 and LOAEL risks were all greater than 1.0. Consequently robins appeared to be at risk from these contaminants.

NOAEL HQs for the meadow vole were below 1.0 for all chemicals with the exception of aluminum (43) and LOAEL risks exceeded 1.0. This indicated that risks for the meadow vole from exposure to aluminum were moderately high.

Risks for the short-tailed shrew were calculated based on the 95 UCLM concentrations due to the relatively small habitat range of this carnivorous small mammal. Based on the refined food web, NOAEL HQs for thallium and vanadium were 2.1 and 4.3 respectively; however, LOAEL HQs for these same chemicals were less than 1.0. Consequently, adverse effects to the short-tailed shrew from exposure to these chemicals in surface soil at EBS-79 were not expected. The NOAEL HQ for aluminum exceeded 100 (303), and the LOAEL HQ exceeded 1.0, indicating potential risk to the shrew from aluminum.

The Eastern cottontail was found to have acceptable risk from all COPC with the exception of aluminum, where the NOAEL HQ was greater than 1.0, but LOAEL HQ was acceptable. Consequently, the cottontail is at minimal risk from this metal.

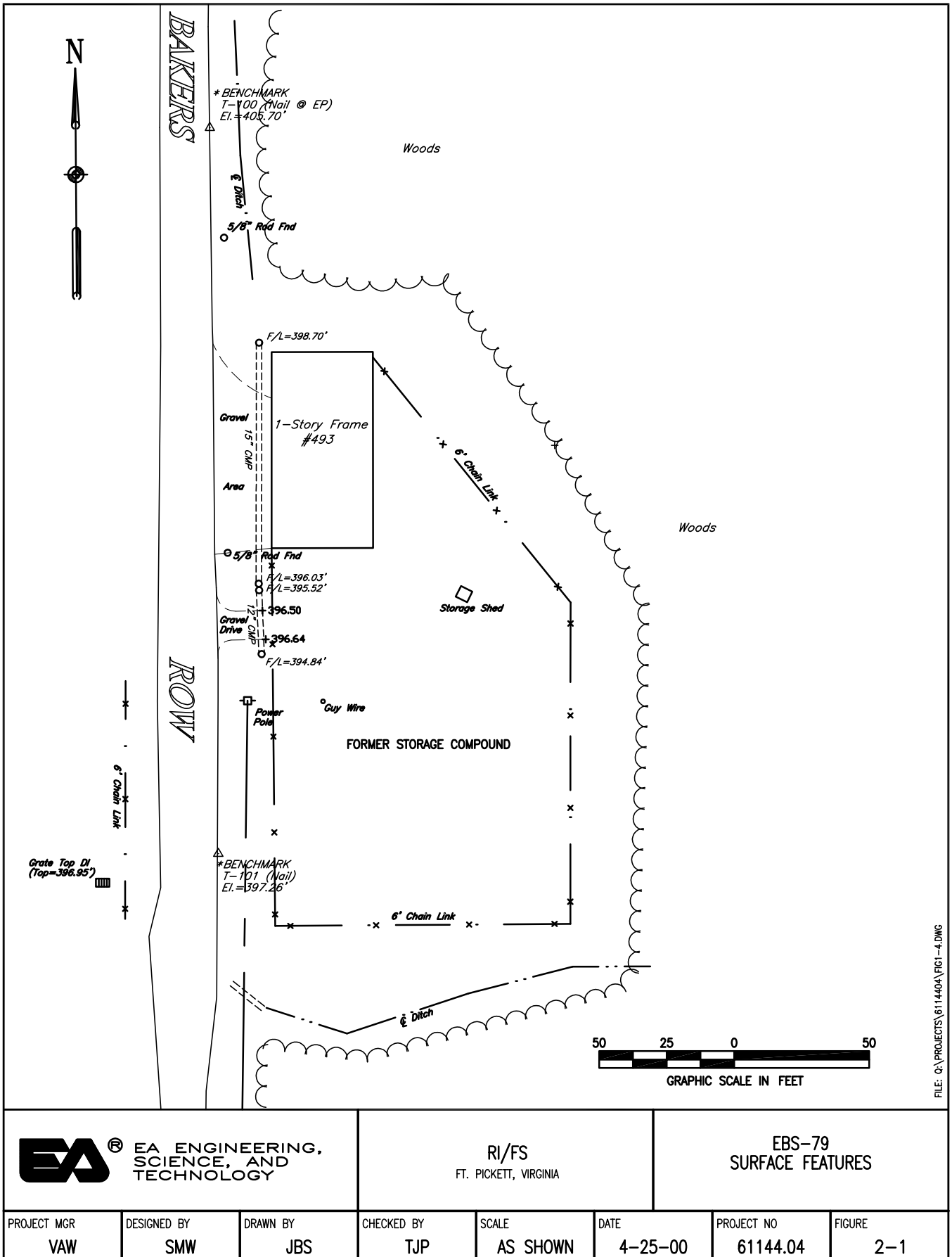
## Surface Water

Eleven ecological COPCs were identified in surface water. Most of the identified COPC metals were not considered during the Step 3 ERA because it is appropriate to use dissolved metals rather than total metals for ecological risk. Only dissolved aluminum and lead were addressed. The endpoints used to characterize risk to aquatic receptors were chronic representative of long-term exposure to these concentrations, and because aquatic receptors are mobile, the mean surface water concentration represents the most appropriate exposure point. Based on this assessment, acceptable risk for aquatic receptors was found for lead, endrin, endrin ketone, anthracene, and dibenzofuran. The  $EQ_{\text{mean}}$  for aluminum was 2.4, however the toxicity data used to derive this was based on the protection of fish not expected to be found in this ditch.

## Sediment

Twenty-seven COPCs were identified in sediment in the ditch at EBS-79. Ecological receptors identified that may be exposed to these COPCs in sediment included benthic invertebrates, mallard ducks, belted kingfishers, and raccoons. The  $EQ_{\text{mean}}$  for aluminum, manganese, mercury, silver, total PAH, alpha chlordane, Aroclor 1254 and 1260, DDT, dieldrin, and heptachlor epoxide were below 1.0, indicating acceptable risk to benthic invertebrates from these COPCs. The  $EQ_{\text{mean}}$  for lead, delta HCH, DDD, DDE, gamma chlordane, and N-nitrosodiphenylamine ranged from 1.0 to 3.1 indicating that risks to benthic invertebrates from these metals were minimal, and that populations of these organisms were not at risk from these metals. Finally ethylbenzene, m & p-xylene, and o-xylene had  $EQ_{\text{mean}}$  of 125, 220, and 83 respectively; however, the toxicity data used to assess these risks were based on Washington State marine sediment standards. Application of these very conservative toxicity values to freshwater sediments in Virginia were tenuous at best.

Acceptable risks were found for the mallard duck and raccoon for all COPCs. The only COPCs with NOAEL HQ greater than 1.0 for the belted kingfisher were total PAH (58) and DDD (2.1). These risks are being driven by consumption of fish by the belted kingfisher. Fish are not expected to be found in the ditch at EBS-79 and, therefore, risks to the belted kingfisher are acceptable.



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RI/FS  
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EBS-79  
SURFACE FEATURES

PROJECT MGR VAW	DESIGNED BY SMW	DRAWN BY JBS	CHECKED BY TJP	SCALE AS SHOWN	DATE 4-25-00	PROJECT NO 61144.04	FIGURE 2-1
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TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:	SB1-0.5	SB2-0.5	SB3-0.5	SB4-0.5	SB5-0.5	SB6-0.5	SB7-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB13-0.5	DUP-2	SB14-0.5	SB15-0.5					
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
	10/7/99	10/4/99	10/5/99	10/4/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/5/99					
		REMOVED	REMOVED	REMOVED	REMOVED	REMOVED	REMOVED							REMOVED	REMOVED	REMOVED						
Reporting Limit																						
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20																		
Volatiles - (ug/kg)																						
2-Butanone	N		47000000	7900	10.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330R	ND	ND				
Acetone	N		7800000	2500	1.92	25	140J	ND	67B	48J	170J	26	ND	25	ND	27B	15B	84J	ND	26B	110	
Bromodichloromethane	C	450000	10000	1.1	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4J	ND	ND	ND	ND	ND	
Bromomethane	N		110000	41	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	99R	ND	ND	ND	ND	
Carbon disulfide	N		7800000	19000	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10J	ND	ND	ND	ND	ND	
Chlorobenzene	N	100	1600000	800	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150UL	ND	ND	ND	ND	
Chloroform	C	300	100000	0.89	0.6	ND	3B	ND	ND	ND	ND	ND	ND	ND	ND	4J	ND	ND	ND	ND	ND	
Chloromethane	C		49000	10	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	99R	ND	ND	ND	ND	
Ethylbenzene	N	100	7800000	15000	0.5	ND	ND	ND	5J	ND	ND	ND	ND	ND	ND	700	1000L	ND	ND	ND	ND	
m & p Xylenes	N	100	160000000		1	ND	ND	ND	19J	ND	ND	ND	ND	ND	ND	2500	3800L	ND	ND	ND	ND	
Methylene Chloride	C	300	85000	19	2	4B	7B	ND	6B	ND	ND	3B	ND	3B	3B	ND	3B	3B	11B	330UL	3B	3B
o-Xylene	N	100	160000000	230000	0.8	ND	ND	ND	21J	ND	ND	ND	ND	ND	ND	ND	4600	6200L	ND	ND	ND	ND
Styrene (monomer)	N	100	16000000	57000	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160UL	ND	ND	ND	ND	
Toluene	N	100	16000000	8800	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180J	160	ND	ND	ND	ND	
Semi-Volatiles - (ug/kg)																						
1,2,4-Trichlorobenzene	N	100	780000	7500	150	ND	ND	ND	230U	ND	150U	ND	ND	ND	ND	ND	2000U	ND	ND	ND	ND	
1,2-Dichlorobenzene	N	100	7000000	9300	110	ND	ND	ND	170U	ND	110U	ND	ND	ND	ND	ND	1500U	ND	ND	ND	ND	
1,4-Dichlorobenzene	C	100	27000	7.1	150	ND	ND	ND	220U	ND	150U	ND	ND	ND	ND	ND	2000U	ND	ND	ND	ND	
2,4,5-Trichlorophenol	N	100	7800000		107	ND	ND	ND	200U	ND	130U	ND	ND	ND	ND	ND	1700U	ND	ND	ND	ND	
2,4,6-Trichlorophenol	C	100	58000		100	ND	ND	ND	240U	ND	150U	ND	ND	ND	ND	ND	2100U	ND	ND	ND	ND	
2,4-Dichlorophenol	N	100	230000	1200	140	ND	ND	ND	210U	ND	140U	ND	ND	ND	ND	ND	1800U	ND	ND	ND	ND	
2,4-Dimethylphenol	N	100	1600000	6700	130	160U	130U	130U	400U	130U	260U	130U	140U	140U	140U	140U	3500U	170UJ	160U	140U	140U	
2,4-Dinitrophenol	N	100	160000		103	800U	640U	640U	1900U	650U	1300U	630U	670U	670U	670U	650U	680U	700U	17000U	830UJ	790U	670U
2-Chlorophenol	N	100	390000		1020	ND	ND	ND	200U	ND	130U	ND	ND	ND	ND	ND	1700U	ND	ND	ND	ND	
2-Methyl-4,6-Dinitrophenol	N		7800		130	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1700U	ND	ND	ND	ND	
2-Methylphenol	N	100	3900000		100	ND	ND	ND	240U	ND	150U	ND	ND	ND	ND	ND	2100U	ND	ND	ND	ND	
4-Methylphenol	N	100	390000		112	200U	160U	160U	490U	170U	320U	160U	170U	170U	170U	170U	180U	4300U	210U	200U	170U	
4-Nitrophenol	N	100	630000	1700	100	ND	ND	ND	160U	ND	ND	ND	ND	ND	ND	ND	1400U	ND	ND	ND	ND	
Bis(2-chloroethyl) ether	C		580	0.044	130	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1700U	ND	ND	ND	ND	
Bis(2-ethylhexyl) phthalate	C	30000	46000	2900000	110	ND	ND	100	390	110	ND	110	110	ND	50J	76	38J	110	ND	110	180	66J
Di-n-butyl phthalate	N	200000	7800000	5000000	1200	ND	ND	ND	ND	45J	ND	ND	ND	ND	ND	ND	ND	97	ND	ND	ND	ND
Dibenzofuran	N		310000	7700	150	ND	ND	ND	960	ND	ND	ND	ND	ND	ND	ND	1900J	2700J	ND	ND	ND	ND
Hexachlorobenzene	C	1000000	400	52	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600U	ND	ND	ND	ND	
n-Nitrosodi-n-propylamine	C		91	0.047	110	110U	ND	ND	260U	ND	170U	ND	ND	92U	92U	ND	93U	95U	2300U	110U	110U	92U
n-Nitrosodiphenylamine	C	20000	130000	760	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	820	ND	ND	ND	ND	
p-Nitroaniline	C		110000		102	ND	ND	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	C	3000	5300		1080	ND	ND	1100	4000NJ	ND	ND	ND	ND	ND	ND	ND	8300U	ND	ND	ND	ND	
Phenol	N	100	47000000	130000	130	ND	ND	ND	200U	ND	130U	ND	ND	ND	ND	ND	1800U	ND	ND	ND	ND	
PAHs - (ug/kg)																						
2-Methylnaphthalene	N	100	1600000	22000	1.35	13	42J	ND	3600J	38J	ND	2.5	ND	ND	ND	ND	2.5J	68000D	67000	ND	59	
Acenaphthene	N	100	4700000	100000	0.488	ND	ND	ND	700UJ	ND	12	ND	ND	ND	ND	ND	1100	1300	ND	4		
Acenaphthylene	N	100	1600000		0.5	ND	ND	ND	700UJ	ND	ND	ND	18	ND	ND	ND	600	550	ND	1.9		
Anthracene	N	100	23000000	470000	0.252	ND	ND	5.1	700UJ	6.2	33	ND	ND	ND	ND	ND	39	220U	ND	2.2		
Benz[a]anthracene	C	100	870	1500	0.349	3.6	ND	9.1	700UJ	ND	67	ND	ND	ND	ND	ND	ND	220U	ND	8		
Benzo[a]pyrene	C	100	87	370	0.789	3.2	270J	ND	700UJ	9.3	ND	ND	ND	ND	ND	ND	ND	220U	ND	8.4		
Benzo[b]fluoranthene	C	100	870	4500	0.488	11	440J	ND	700UJ	8.7	ND	2.5	ND	ND	ND	ND	2.9	ND	220U	ND	21	


TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:	SB1-0.5	SB2-0.5	SB3-0.5	SB4-0.5	SB5-0.5	SB6-0.5	SB7-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB13-0.5	DUP-2	SB14-0.5	SB15-0.5					
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
	10/7/99	10/4/99	10/5/99	10/4/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/5/99					
		REMOVED	REMOVED	REMOVED	REMOVED	REMOVED	REMOVED							REMOVED	REMOVED	REMOVED						
Reporting Limit																						
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20																		
Benzo[g,h,i]perylene	N	100	2300000		0.552	5.7J	46J	ND	700UJ	7.3	ND	ND	ND	ND	ND	ND	370	ND	8.7			
Benzo[k]fluoranthene	C	100	8700	45000	0.676	3.6	130J	ND	700UJ	ND	ND	ND	ND	ND	ND	ND	220U	ND	9.8			
Chrysene	C	100	87000	150000	0.225	7.9	2100J	ND	700UJ	6	ND	5.3	ND	ND	ND	2.3	ND	220U	ND	15		
Dibenz[a,h]anthracene	C	100	87	1400	0.364	ND	ND	ND	700UJ	ND	ND	ND	ND	ND	ND	ND	320	ND	2.4			
Fluoranthene	N	100	3100000	6300000	0.376	4.7	57J	5.5	880J	4.4	ND	3.4	ND	ND	ND	2.6	42	220U	ND	16		
Fluorene	N	100	3100000	140000	0.488	ND	ND	ND	1400J	ND	ND	ND	ND	ND	ND	ND	800	910	ND	3.6		
Indeno[1,2,3-cd]pyrene	C	100	870	13000	0.376	4J	ND	ND	700UJ	ND	ND	ND	ND	ND	ND	ND	240	ND	8.8			
Naphthalene	N	100	1600000	150	0.488	18	11J	ND	700UJ	10	ND	2.6	ND	2.7	ND	2.7	20000	19000	ND	9.7		
Phenanthrene	N	100	1600000		0.376	7.8	1100J	4.8	12000J	15	210	3	ND	ND	ND	2.6	400	380	ND	14		
Pyrene	N	100	2300000	680000	0.338	9.2J	ND	3.4	1500J	5.1	ND	2.8	ND	ND	ND	2.6	72	220U	ND	20		
PCBs - (ug/kg)																						
Aroclor 1016	N	100	5500	4200	0.526	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1221	C	100	320		1.86	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1232	C	100	320		12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1242	C	100	320		10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1248	C	100	320		1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1254	C	100	320	1100	0.808	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1260	C	100	320		0.768	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Pesticides - (ug/kg)																						
4,4'-DDD	C	100	2700	11000	0.041	1J	39J	460J	460J	280J	9J	5.6J	ND	ND	ND	ND	3.3J	ND	ND	ND		
4,4'-DDE	C	100	1900	35000	0.037	1.5	ND	940	60J	46J	2J	17	ND	ND	ND	ND	ND	ND	ND	3.4J		
4,4'-DDT	C	100	1900	1200	0.046	ND	330J	8800J	2100J	2700	5.7J	230J	ND	ND	ND	ND	3.6	ND	ND	5.6J		
Aldrin	C	100	38	7.7	0.052	ND	ND	ND	120J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Alpha-BHC	C	100	100	0.89	0.041	ND	1.3J	ND	4.1J	ND	ND	ND	ND	ND	ND	ND	0.79J	ND	ND	ND		
Alpha-chlordane	C	100	1800		0.25	ND	ND	ND	16J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Beta-bhc	C	100	350	3.1	0.036	ND	ND	ND	3.8J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3J		
Delta-bhc	C	100	100		0.032	ND	ND	ND	2.7J	ND	ND	ND	ND	ND	ND	ND	ND	8.8J	ND	ND		
Dieldrin	C	100	40	2.2	0.056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan I	N	25000	470000		0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1J	5.9J	ND	ND		
Endosulfan II	N	25000	470000		0.036	ND	57J	ND	130J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan sulfate	N	25000	470000		0.032	ND	ND	ND	1700J	ND	ND	3.4J	ND	ND	ND	ND	3.3J	ND	ND	ND		
Endrin	N	30	23000	5400	0.034	ND	18J	20J	28J	9.2J	2.2J	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endrin aldehyde	N	30	23000		0.043	ND	47J	ND	230J	ND	0.98J	1.7J	ND	ND	ND	ND	ND	1.8J	ND	1.6		
Endrin ketone	N	100	23000		0.027	ND	84J	1.7J	6.5J	ND	2.6J	ND	ND	ND	ND	ND	1.2J	ND	ND	ND		
Gamma-BHC	C	100	490	4.3	0.077	ND	ND	ND	47J	ND	ND	ND	ND	ND	ND	ND	0.98J	0.96J	ND	ND		
Gamma-chlordane	C	100	1800		0.05	ND	11J	ND	ND	ND	ND	0.66	ND	ND	ND	ND	ND	ND	ND	ND		
Heptachlor	C	100	140	840	0.056	ND	ND	ND	7.9J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Heptachlor epoxide	C	100	70	25	0.17	ND	10J	ND	47J	ND	ND	ND	ND	ND	ND	ND	5.4J	8.1J	ND	ND		
Methoxychlor	N	100	390000	310000	0.052	ND	ND	ND	10J	ND	ND	ND	ND	ND	ND	ND	4.7J	ND	ND	ND		
Toxaphene	C		580	630	133	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Metals - (mg/kg)																						
Aluminum, Total	N	1	78000		12.9	6580	8440	8430	64.3U	5930	6800	8000	5320	5790	6440	6300	4950	8450	13800	10200	10300	8640
Antimony, Total	N	0.48	31	13	0.2	0.55L	0.89L	0.82L	0.95L	0.83L	0.77L	0.93L	0.51L	0.66L	0.53L	0.51L	0.56L	0.8L	0.83L	0.65L	0.72L	0.91L
Arsenic, Total	C	10	0.43	0.026	0.08799	1.3	0.64	0.71B	0.83	1.6	0.66B	2.5	0.78	0.56B	0.57	0.76	0.35L	2.9	2.1	0.91B	1.1	4.7
Barium, Total	N	440	5500	2100	0.117	41.7	40.4	46.3	47.7	47.5	624	44.6	16.7	17.6	13.6	14.6	13.1	34.9	26.1	26	24.6	36
Beryllium, Total	N	0.02	160	1200	0.01	0.41J	0.56	0.55	0.55	0.5	0.52	0.49	0.33	0.37J	0.34	0.45	0.23L	0.24L	0.49	0.48J	0.34	0.38J
Cadmium, Total	N	2.5	39	27	0.02	0.04B	0.03B	6.2	0.13B	0.11B	0.03B	0.13B	0.03B	ND	0.02B	0.07B	0.12B	0.02B	0.04B	0.05B	0.65	ND

TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name: Depth (ft): Sample Date: Status:	SB1-0.5	SB2-0.5	SB3-0.5	SB4-0.5	SB5-0.5	SB6-0.5	SB7-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB13-0.5	DUP-2	SB14-0.5	SB15-0.5					
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
	10/7/99	10/4/99	10/5/99	10/4/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/5/99					
		REMOVED	REMOVED	REMOVED	REMOVED	REMOVED	REMOVED							REMOVED	REMOVED	REMOVED						
Reporting Limit																						
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20																		
Calcium, Total					101	657	949	702	1220	3540	1910	1930	1290	1240	1930	2020	1630	1160	191	168	660	405
Chromium, Total	N	0.0075	230		0.04	13.1	21.5	18	27.6	21.2	15.6	19.7	11.2	9.1	15.4	10.3	8.4	16.4	17.9	9.6	20.1	13.3
Cobalt, Total	N	20	1600		0.23	2.6	5.2	4.4	5.4	3.2	3.2	3.9	3.3	3.5	4	3.1	3.8	4.3	2L	2.3	2.7	3.5
Copper, Total	N	15	3100	11000	0.074	6.7J	4.5	6.3	6.4	8.6	6.5	6.2	3.3	4.7J	3	2.5	2.3	6.8	7	5.6J	6.8	7.7J
Iron, Total	N		23000		0.79	9240	12000J	12200	11900J	10500	10700	13400	10200	10700	11500J	10800	11800J	13500J	20200	13400	18800J	14300
Lead, Total	N	0.01	400		0.08799	45.5	18.4	21.6	50.4	67.5	8.3	21.8	14.1	10.9	11.5	13.2	9.3	25.8	29	24	22.2	108
Magnesium, Total					1.4	670J	3320	2630	3460	2890	2840	3330	2630	2580J	3410	2690	2310	3200	1650	1540J	1290	2350J
Manganese, Total	N	100	1600	950	0.047	260	326	286	349	263	281	358	288	310	355	317	305	349	187	176	159	337
Mercury, Total	N	2.2	23		0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	N	2	1600		0.06	3.3	11.3	8.6	12.5	8.3	10.8	9.4	5.8	5.1	7.5	6.3	4.9	8	3.7	2.4	4.6	5.1
Potassium, Total					2.78	608	3710L	3430	3840L	3310	3400	4380	2350	3040	3470L	2300	2550L	3980L	2690	2460	1600L	3270
Selenium, Total	N	1	390	19	0.13	0.38B	0.36B	ND	0.25B	0.17B	0.2B	ND	0.26B	0.27B	ND	ND	0.25B	ND	0.26B	0.44B	0.36B	0.43B
Silver, Total	N	2	390	31	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total					10	101B	197B	171B	231B	230	144B	248	112B	116B	123B	105B	120B	124B	112B	100B	102B	106B
Thallium, Total	N	0.001	5.5	3.6	0.097	0.15	0.47	0.55	0.49	0.63	0.41	0.57	0.42	0.43	0.37B	0.4	0.33B	0.53B	0.51	0.5	0.36	0.57
Vanadium, Total	N	0.5	550	5100	0.16	15.5	16.1	19	18.2	14.3	14.6	15.2	12.5	11.7	13.5	11.7	9.4	18.9	29.3	18.8	26.4	17.3
Zinc, Total	N	10	23000	14000	0.23	62.3J	57	51	71.6	83.4	199	47.9	50.2	47.9J	50	49.6	41.9	53.9	49.2	42.7J	55.9	53.5J
Metals - (mg/kg)																						
Cyanide	N	5000	1600	150	0.2	0.26R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganic - (pH)																						
Corrosivity as ph																	7.4					

 LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

 DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

 DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

\*\*: RESULTS FROM SAMPLES COLLECTED 6/8/01

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITIATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SB16-0.5	SB17-0.5	SS18-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS105-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5	SS111-0.5	SS112-0.5	SS113-0.5
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	10/6/99	10/6/99	10/4/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00
	REMOVED	REMOVED	REMOVED					REMOVED							REMOVED	REMOVED	REMOVED
Reporting Limit																	
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20													
Volatiles - (ug/kg)																	
2-Butanone	N		47000000	7900	10.7	ND	ND		ND	ND	ND						ND
Acetone	N		7800000	2500	1.92	61B	30B		ND	ND	ND						ND
Bromodichloromethane	C	450000	10000	1.1	0.7	ND	ND		ND	ND	ND						ND
Bromomethane	N		110000	41	0.6	ND	ND		ND	ND	ND						ND
Carbon disulfide	N		7800000	19000	0.4	ND	ND		ND	ND	ND						ND
Chlorobenzene	N	100	1600000	800	0.9	ND	ND		ND	ND	ND						ND
Chloroform	C	300	100000	0.89	0.6	ND	ND		ND	ND	ND						ND
Chloromethane	C		49000	10	0.6	ND	ND		ND	ND	ND						ND
Ethylbenzene	N	100	7800000	15000	0.5	2J	ND		ND	ND	ND						ND
m & p Xylenes	N	100	160000000		1	7J	ND		ND	ND	ND						ND
Methylene Chloride	C	300	85000	19	2	4B	4B		88.6B	99.8B	68.1B						31.1B
o-Xylene	N	100	160000000	230000	0.8	5J	ND		ND	ND	ND						ND
Styrene (monomer)	N	100	16000000	57000	1	ND	ND		ND	ND	ND						ND
Toluene	N	100	16000000	8800	0.7	ND	ND		4.42	ND	ND						ND
Semi-Volatiles - (ug/kg)																	
1,2,4-Trichlorobenzene	N	100	780000	7500	150	2100U	ND			ND					337U	680U	
1,2-Dichlorobenzene	N	100	7000000	9300	110	1500U	ND			ND					371U	748U	
1,4-Dichlorobenzene	C	100	27000	7.1	150	2100U	ND			ND					307U	619U	
2,4,5-Trichlorophenol	N	100	7800000		107	1900U	ND			ND					674U	1360U	
2,4,6-Trichlorophenol	C	100	58000		100	2200U	ND			ND					640U	1290U	
2,4-Dichlorophenol	N	100	230000	1200	140	1900U	ND			ND					438U	884U	
2,4-Dimethylphenol	N	100	1600000	6700	130	3700U	160U			150U					1410U	2860U	
2,4-Dinitrophenol	N	100	160000		103	18000U	780U			ND					876U	1770U	
2-Chlorophenol	N	100	390000		1020	1800U	ND			ND					505U	1020U	
2-Methyl-4,6-Dinitrophenol	N		7800		130	1800U	ND			ND					1410U	2860U	
2-Methylphenol	N	100	3900000		100	2200U	ND			ND					573U	1160U	
4-Methylphenol	N	100	390000		112	4600U	200U			ND					707U	1430U	
4-Nitrophenol	N	100	630000	1700	100	1500U	ND			118U					1110U	2240U	
Bis(2-chloroethyl) ether	C		580	0.044	130	1800U	ND			ND					ND	680U	
Bis(2-ethylhexyl) phthalate	C	30000	46000	2900000	110	ND	ND			127					431B	ND	
Di-n-butyl phthalate	N	200000	7800000	5000000	1200	ND	ND			364					957B	891B	
Dibenzofuran	N		310000	7700	150					ND					ND	ND	
Hexachlorobenzene	C	1000000	400	52	120	1700U	ND			ND					ND	619U	
n-Nitrosodi-n-propylamine	C		91	0.047	110	2500U	110U			ND					337U	680U	
n-Nitrosodiphenylamine	C	20000	130000	760	110	ND	ND			ND							
p-Nitroaniline	C		110000		102	ND	ND			ND					ND	ND	
Pentachlorophenol	C	3000	5300		1080	8900U	ND			ND					ND	ND	
Phenol	N	100	47000000	130000	130	1900U	ND			ND					276U	558U	
PAHs - (ug/kg)																	
2-Methylnaphthalene	N	100	1600000	22000	1.35	1800U	ND		ND	4.52J	ND				ND	ND	ND
Acenaphthene	N	100	4700000	100000	0.488	180U	ND		ND	ND	ND				ND	ND	ND
Acenaphthylene	N	100	1600000		0.5	180U	21J		ND	ND	ND				ND	ND	ND
Anthracene	N	100	23000000	470000	0.252	180U	ND		ND	ND	ND				ND	ND	ND
Benz[a]anthracene	C	100	870	1500	0.349	180U	ND		2.83J	ND	ND				ND	ND	ND
Benzo[a]pyrene	C	100	87	370	0.789	180U	ND		ND	ND	ND				ND	ND	ND
Benzo[b]fluoranthene	C	100	870	4500	0.488	180U	32J		ND	ND	ND				40.4L	ND	ND


TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:	SB16-0.5	SB17-0.5	SS18-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS105-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5	SS111-0.5	SS112-0.5	SS113-0.5				
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				
	10/6/99	10/6/99	10/4/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00				
	REMOVED	REMOVED	REMOVED					REMOVED							REMOVED	REMOVED	REMOVED				
Reporting Limit																					
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20																	
Benzo[g,h,i]perylene	N	100	2300000		0.552	180U	ND		ND	ND	ND						37L	ND	ND		
Benzo[k]fluoranthene	C	100	8700	45000	0.676	180U	ND		ND	ND	ND						ND	ND	ND		
Chrysene	C	100	87000	150000	0.225	1100	76J		5.25J	6.78J	ND						ND	ND	ND		
Dibenz[a,h]anthracene	C	100	87	1400	0.364	180U	ND		ND	ND	ND						ND	ND	ND		
Fluoranthene	N	100	3100000	6300000	0.376	180U	26J		10.9J	12.8J	3.93J						ND	ND	ND		
Fluorene	N	100	3100000	140000	0.488	180U	ND		ND	1.13J	ND						ND	ND	ND		
Indeno[1,2,3-cd]pyrene	C	100	870	13000	0.376	180U	ND		5.25J	4.14J	1.43J						ND	ND	ND		
Naphthalene	N	100	1600000	150	0.488	180U	ND		ND	2.64J	ND						ND	ND	ND		
Phenanthrene	N	100	1600000		0.376	180U	ND		12.5J	15.8J	6.78J						37B	146.3L	7.44B		
Pyrene	N	100	2300000	680000	0.338	180U	36J		6.47J	7.53J	2.14J						ND	ND	ND		
PCBs - (ug/kg)																					
Aroclor 1016	N	100	5500	4200	0.526	ND	ND	ND			ND						0.526R	0.53R			
Aroclor 1221	C	100	320		1.86	ND	ND	ND			ND						1.86R	1.88R			
Aroclor 1232	C	100	320		12	ND	ND	ND			ND						3.03R	3.06R			
Aroclor 1242	C	100	320		10	ND	ND	ND			ND						3.84R	3.88R			
Aroclor 1248	C	100	320		1.4	ND	ND	ND			ND						1.4R	1.41R			
Aroclor 1254	C	100	320	1100	0.808	ND	ND	ND			ND						0.808R	0.816R			
Aroclor 1260	C	100	320		0.768	ND	ND	1200			ND						0.768R	0.775R			
Pesticides - (ug/kg)																					
4,4'-DDD	C	100	2700	11000	0.041	4.2J	1.6J	ND			0.525	ND	5.8J	6.5J	3.1J	2.9J	1.5J	0.044R	0.042R	87J	1200J
4,4'-DDE	C	100	1900	35000	0.037	ND	ND	ND			ND	1.4J	31J	4.4J	1.9J	1.4J	1.6J	0.039R	0.037R	120J	67J
4,4'-DDT	C	100	1900	1200	0.046	ND	ND	ND			2.98	0.054R	280J	0.055R	5.2J	2.8J	1.8J	0.049R	0.046R	2510J	5300J
Aldrin	C	100	38	7.7	0.052	ND	ND	ND			ND	ND	ND	ND	ND	ND	0.71J	0.056R	0.053R	ND	ND
Alpha-BHC	C	100	100	0.89	0.041	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.044R	0.042R	ND	150J
Alpha-chlordane	C	100	1800		0.25	ND	ND	ND			ND	0.62J	1.2J	2.3J	ND	ND	ND	1.3J	0.37R	ND	11.2J
Beta-bhc	C	100	350	3.1	0.036	2.1J	ND	ND			ND	ND	2.5J	ND	ND	ND	4.1J	3.4J	0.037R	ND	19J
Delta-bhc	C	100	100		0.032	ND	ND	ND			ND	3.4J	ND	ND	3.7J	3.2J	2.9J	0.034R	4.2J	ND	25J
Dieldrin	C	100	40	2.2	0.056	ND	ND	ND			ND	ND	0.9J	1.2J	ND	ND	ND	0.061R	0.058R	ND	35J
Endosulfan I	N	25000	470000		0.05	ND	ND	ND			ND	ND	0.56J	ND	ND	ND	ND	0.054R	0.051R	ND	8.1J
Endosulfan II	N	25000	470000		0.036	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.039R	0.037R	ND	ND
Endosulfan sulfate	N	25000	470000		0.032	ND	ND	ND			ND	ND	0.81J	ND	ND	ND	0.45J	0.034R	0.033R	ND	62J
Endrin	N	30	23000	5400	0.034	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.037R	0.035R	ND	ND
Endrin aldehyde	N	30	23000		0.043	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.046R	0.044R	ND	ND
Endrin ketone	N	100	23000		0.027	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.029R	0.028R	ND	ND
Gamma-BHC	C	100	490	4.3	0.077	ND	ND	ND			ND	0.76J	ND	0.59J	0.58J	0.56J	ND	0.47J	0.079R	15J	35J
Gamma-chlordane	C	100	1800		0.05	2.4J	ND	ND			ND	0.83J	1.7J	0.77J	1.3J	ND	1J	0.054R	0.051R	ND	6.8J
Heptachlor	C	100	140	840	0.056	ND	ND	ND			ND	ND	3.3J	ND	ND	ND	ND	0.061R	0.058R	ND	ND
Heptachlor epoxide	C	100	70	25	0.17	1.7J	ND	ND			ND	ND	ND	2.5J	ND	ND	4.2J	2.7J	0.17R	ND	15J
Methoxychlor	N	100	390000	310000	0.052	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	0.056R	0.053R	90J	91J
Toxaphene	C		580	630	133	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	3.17R	3.02R	ND	ND
Metals - (mg/kg)																					
Aluminum, Total	N	1	78000		12.9	6320	13600				14300										
Antimony, Total	N	0.48	31	13	0.2	0.73L	0.92L				0.636UL										
Arsenic, Total	C	10	0.43	0.026	0.08799	0.7	1.9				1.5										
Barium, Total	N	440	5500	2100	0.117	17	34.4				23.6										
Beryllium, Total	N	0.02	160	1200	0.01	0.43	0.54				1.02										
Cadmium, Total	N	2.5	39	27	0.02	ND	ND				0.384										

TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SB16-0.5	SB17-0.5	SS18-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS105-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5	SS111-0.5	SS112-0.5	SS113-0.5
Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:	10/6/99	10/6/99	10/4/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00
Status:	REMOVED	REMOVED	REMOVED					REMOVED							REMOVED	REMOVED	REMOVED

Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Reporting Limit																
Calcium, Total					101	206	231				1060										
Chromium, Total	N	0.0075	230		0.04	25.8	23.8				22.6										
Cobalt, Total	N	20	1600		0.23	1.3L	2.6				2.75										
Copper, Total	N	15	3100	11000	0.074	9.3	9.6				10.8										
Iron, Total	N		23000		0.79	25500	18500				21000										
Lead, Total	N	0.01	400		0.08799	26.6	43.2				19.4										
Magnesium, Total					1.4	362	1610				2410										
Manganese, Total	N	100	1600	950	0.047	103L	210L				300K										
Mercury, Total	N	2.2	23		0.018	ND	0.07				ND										
Nickel, Total	N	2	1600		0.06	3.8	5.5				10.8										
Potassium, Total					2.78	343	2070				2490										
Selenium, Total	N	1	390	19	0.13	0.41B	0.52B				ND										
Silver, Total	N	2	390	31	0.18	ND	ND				ND										
Sodium, Total					10	199B	116B				155B										
Thallium, Total	N	0.001	5.5	3.6	0.097	0.13	0.34				1.06UL										
Vanadium, Total	N	0.5	550	5100	0.16	28	32.3				29										
Zinc, Total	N	10	23000	14000	0.23	18.3	41.6				52.5										
Metals - (mg/kg)																					
Cyanide	N	5000	1600	150	0.2	0.24R	0.26R														
Inorganic - (pH)																					
Corrosivity as ph																					

 LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR  
DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

 DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR  
NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

 DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIc FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

\*\*: RESULTS FROM SAMPLES COLLECTED 6/8/01

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SS-DUP2	SS114-0.5	SS115-0.5	SS116-0.5	SS117-0.5	SS-118	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS122-0.5	SS123-0.5	SS124-0.5	SS125-0.5					
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
	12/19/00	12/19/00	12/19/00	12/20/00	12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00					
	REMOVED	REMOVED	REMOVED	REMOVED							REMOVED								
Reporting Limit																			
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20															
Volatiles - (ug/kg)																			
2-Butanone	N		47000000	7900	10.7		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acetone	N		7800000	2500	1.92		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	C	450000	10000	1.1	0.7		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	N		110000	41	0.6		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	N		7800000	19000	0.4		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	N	100	1600000	800	0.9		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	C	300	100000	0.89	0.6		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	C		49000	10	0.6		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	N	100	7800000	15000	0.5		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
m & p Xylenes	N	100	160000000		1		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene Chloride	C	300	85000	19	2		8.52B		18.6B	13.5B	767	ND	16.1B	9.53B	16.1B	17.9B	16.2B	11.3B	8.15B
o-Xylene	N	100	160000000	230000	0.8		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene (monomer)	N	100	16000000	57000	1		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.79
Toluene	N	100	16000000	8800	0.7		ND		2.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatiles - (ug/kg)																			
1,2,4-Trichlorobenzene	N	100	780000	7500	150					363U	640U	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	N	100	7000000	9300	110					399U	704U	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	C	100	27000	7.1	150					330U	582U	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	N	100	7800000		107					726UJ	1280U	ND	ND	ND	ND	ND	ND	107U	ND
2,4,6-Trichlorophenol	C	100	58000		100					690UJ	1220U	ND	ND	ND	ND	ND	ND	102U	ND
2,4-Dichlorophenol	N	100	230000	1200	140					472U	832U	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	N	100	1600000	6700	130					1530U	2690U	166U	190U	167U	192U	193U	225U	185U	
2,4-Dinitrophenol	N	100	160000		103					944UJ	1660U	103U	117U	103U	119U	119U	139U	114U	
2-Chlorophenol	N	100	390000		1020					545U	960U	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-Dinitrophenol	N		7800		130					1530UJ	2690U	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	N	100	3900000		100					617U	1090U	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	N	100	390000		112					763U	1340U	ND	ND	ND	ND	ND	ND	112U	ND
4-Nitrophenol	N	100	630000	1700	100					1200UJ	2110U	130U	149U	131U	151U	151U	177U	145U	
Bis(2-chloroethyl) ether	C		580	0.044	130					ND	640U	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	C	30000	46000	2900000	110					770B	ND	143B	111B	85.3B	104B	118B	119B	77.8B	
Di-n-butyl phthalate	N	200000	7800000	5000000	1200					ND	ND	158B	166B	150B	208B	408B	230B	392B	
Dibenzofuran	N		310000	7700	150					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	C	1000000	400	52	120					ND	582U	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine	C		91	0.047	110					363U	640U	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine	C	20000	130000	760	110					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Nitroaniline	C		110000		102					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	C	3000	5300		1080					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	N	100	47000000	130000	130					298U	525U	ND	ND	ND	ND	ND	ND	ND	ND
PAHs - (ug/kg)																			
2-Methylnaphthalene	N	100	1600000	22000	1.35	3.74	ND		135U	ND	3050	326	26.6	40.5	31.7	27.7	27.5	26.9	8.74
Acenaphthene	N	100	4700000	100000	0.488	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	N	100	1600000		0.5	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	N	100	23000000	470000	0.252	ND	3.38		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benz[a]anthracene	C	100	870	1500	0.349	ND	ND		ND	ND	272J	ND	ND	ND	ND	ND	ND	ND	10.5
Benzo[a]pyrene	C	100	87	370	0.789	ND	ND		ND	ND	120K	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	C	100	870	4500	0.488	4.15	ND		ND	ND	171K	ND	ND	ND	ND	ND	ND	ND	ND


TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:						SS-DUP2	SS114-0.5	SS115-0.5	SS116-0.5	SS117-0.5	SS-118	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS122-0.5	SS123-0.5	SS124-0.5	SS125-0.5
Depth (ft):						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:						12/19/00	12/19/00	12/19/00	12/20/00	12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00
Status:						REMOVED	REMOVED	REMOVED	REMOVED							REMOVED			
Reporting Limit																			
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20															
Benzo[g,h,i]perylene	N	100	2300000		0.552	ND	ND		ND	ND	109K	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	C	100	8700	45000	0.676	2.08	ND		ND	ND	54.5K	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	C	100	87000	150000	0.225	2.91	ND		ND	2.69	704J	ND	ND	ND	ND	ND	ND	ND	4.37
Dibenz[a,h]anthracene	C	100	87	1400	0.364	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	N	100	3100000	6300000	0.376	ND	ND		ND	ND	ND	ND	6.35J	18	ND	ND	22.9	ND	ND
Fluorene	N	100	3100000	140000	0.488	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	C	100	870	13000	0.376	ND	ND		ND	ND	43.6K	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	N	100	1600000	150	0.488	3.74	ND		ND	ND	ND	ND	14.7	ND	ND	ND	22.9	21.5	6.99
Phenanthrene	N	100	1600000		0.376	9.96B	3.01B		ND	5.38B	ND	ND	10.3B	27B	ND	18.5B	22.9B	ND	8.3B
Pyrene	N	100	2300000	680000	0.338	ND	ND		ND	ND	5740J	813	10.3J	18	ND	ND	18.4	ND	ND
PCBs - (ug/kg)																			
Aroclor 1016	N	100	5500	4200	0.526			**			ND	**	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	C	100	320		1.86			**			ND	**	ND	ND	ND	255U	ND	ND	ND
Aroclor 1232	C	100	320		12			**			ND	**	ND	ND	ND	416U	ND	ND	ND
Aroclor 1242	C	100	320		10			**			ND	**	ND	ND	ND	526U	ND	ND	ND
Aroclor 1248	C	100	320		1.4			**			ND	**	ND	ND	ND	191U	ND	ND	ND
Aroclor 1254	C	100	320	1100	0.808			**			ND	**	ND	ND	ND	111U	ND	ND	ND
Aroclor 1260	C	100	320		0.768			**			ND	**	ND	ND	5.85	105U	48.2	29.1	ND
Pesticides - (ug/kg)																			
4,4'-DDD	C	100	2700	11000	0.041			2.4J			57.7J	0.07R	1.63J	ND	ND	ND	ND	ND	ND
4,4'-DDE	C	100	1900	35000	0.037			0.64J			ND	ND	ND	0.585J	ND	5520J	ND	ND	ND
4,4'-DDT	C	100	1900	1200	0.046			2.5J			0.443R	0.078R	0.048R	0.055R	ND	14400J	6.58J	1.82J	2.03J
Aldrin	C	100	38	7.7	0.052			ND			ND	0.865J	ND	ND	0.172J	ND	ND	ND	ND
Alpha-BHC	C	100	100	0.89	0.041			0.8J			40.2	0.07R	ND	ND	ND	685J	ND	ND	ND
Alpha-chlordane	C	100	1800		0.25			ND			ND	0.406R	ND	1.17J	ND	ND	ND	ND	ND
Beta-bhc	C	100	350	3.1	0.036			ND			ND	0.061R	ND	ND	ND	3270J	ND	ND	0.628J
Delta-bhc	C	100	100		0.032			4.2J			ND	0.054R	3.64J	3.15J	ND	ND	ND	5.02J	ND
Dieldrin	C	100	40	2.2	0.056			ND			ND	6.63J	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	N	25000	470000		0.05			ND			ND	0.426J	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	N	25000	470000		0.036			0.37J			ND	0.061R	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	N	25000	470000		0.032			ND			ND	0.054R	ND	ND	ND	ND	ND	ND	ND
Endrin	N	30	23000	5400	0.034			1.9J			ND	0.057R	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	N	30	23000		0.043			2J			ND	0.074R	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	N	100	23000		0.027			ND			ND	0.046R	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	C	100	490	4.3	0.077			ND			ND	0.131R	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane	C	100	1800		0.05			0.25J			ND	10.1J	0.606J	ND	1.03J	ND	2.39J	0.522J	ND
Heptachlor	C	100	140	840	0.056			ND			ND	0.097R	ND	ND	ND	6020J	ND	ND	ND
Heptachlor epoxide	C	100	70	25	0.17			ND			ND	2.13L	1.98J	ND	3.59J	ND	0.364J	ND	ND
Methoxychlor	N	100	390000	310000	0.052			5.2J			ND	5.1J	ND	ND	ND	ND	ND	ND	ND
Toxaphene	C		580	630	133			ND			ND	4.98R	ND	ND	ND	ND	ND	ND	ND
Metals - (mg/kg)																			
Aluminum, Total	N	1	78000		12.9						22800	28900K	7910K	18100K	6700K	19100K	16200K	24200K	11900K
Antimony, Total	N	0.48	31	13	0.2						1.94UL	1.21B	0.63UL	1.71B	1.31B	0.741UL	0.986B	1.17B	0.712UL
Arsenic, Total	C	10	0.43	0.026	0.08799						2.88U	2.24	1.12	4.12	0.933U	4.35	2.83	4.47	2.44
Barium, Total	N	440	5500	2100	0.117						110	60.8	24.5	69	25.4	66.7	53	99.8	65.4
Beryllium, Total	N	0.02	160	1200	0.01						1.16	0.947	0.448	0.823	0.363	0.71	0.73	1.14	0.642
Cadmium, Total	N	2.5	39	27	0.02						1.17	0.297	0.119	0.521	0.112	0.344	0.22	0.636	0.279

TABLE 2-1 PHASE I/II RI SURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SS-DUP2	SS114-0.5	SS115-0.5	SS116-0.5	SS117-0.5	SS-118	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS122-0.5	SS123-0.5	SS124-0.5	SS125-0.5
Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:	12/19/00	12/19/00	12/19/00	12/20/00	12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00
Status:	REMOVED	REMOVED	REMOVED	REMOVED							REMOVED			

Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Reporting Limit														
Calcium, Total					101						4740	1420	527	1620	361	1690	1060	2370	1200
Chromium, Total	N	0.0075	230		0.04						30.8	51.1J	11.8J	23.3J	8.33J	21.2J	19.4J	27.5J	14.2J
Cobalt, Total	N	20	1600		0.23						8.43	3.57	2.66	6.01	2.19	4.19	3.71	11.3	3.21
Copper, Total	N	15	3100	11000	0.074						26.2	17.2	5.8	13.1	4.34	11.4	9.69	14.8	7.49
Iron, Total	N		23000		0.79						14900	26600K	6650K	18200K	5070K	16300K	15100K	23500K	10700K
Lead, Total	N	0.01	400		0.08799						149J	71.8J	42.8J	94.8J	29.9J	81.2J	76.6J	112J	56.4J
Magnesium, Total					1.4						2060	1900	748	1710	648	1590	1400	2110	792
Manganese, Total	N	100	1600	950	0.047						224J	127	128	856	100	601	232	1290	936
Mercury, Total	N	2.2	23		0.018						0.396	0.096	0.041	0.181	0.023	0.195	0.137	0.201	0.093
Nickel, Total	N	2	1600		0.06						11.5	9.88	3.48	8.35	2.9	7.32	6.37	9.91	4.77
Potassium, Total					2.78						1960	2080	753	1700	683	1400	1230	1900	636
Selenium, Total	N	1	390	19	0.13						2.37U	1.23U	ND	ND	ND	1.05K	ND	1.05U	ND
Silver, Total	N	2	390	31	0.18						ND	0.737	ND	1.06	0.485	0.649	0.642	0.753	ND
Sodium, Total					10						ND	216B	151B	180B	117B	140B	94.2B	218B	78.9B
Thallium, Total	N	0.001	5.5	3.6	0.097						3.6UL	1.86UL	1.17UL	1.36UL	1.17UL	1.37UL	1.32UL	1.59UL	1.32UL
Vanadium, Total	N	0.5	550	5100	0.16						45.3	62.1	12.5	32.5	9.74	31.9	27.5	41.7	20.2
Zinc, Total	N	10	23000	14000	0.23						200	62.1J	39.7J	127J	31.8J	92.5J	73.3J	131J	66.8J
Metals - (mg/kg)																			
Cyanide	N	5000	1600	150	0.2														
Inorganic - (pH)																			
Corrosivity as ph																			

 LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR  
DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

 DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR  
NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

 DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIc FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

\*\*: RESULTS FROM SAMPLES COLLECTED 6/8/01

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 2-2 PHASE I/II RI SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SB1-4	SB2-11	SB2-16	SB3-8	SB3-16	SB4-8	SB4-16	SB5-12	SB5-16	SB6-10	SB6-16	SB7-8	SB7-16	SB8-6	SB8-12	SB9-8	SB9-16	SB9-25	SB10-6
Depth (ft):	4	11	16	8	16	8	16	12	16	10	16	8	16	6	12	8	16	25	6
Sample Date:	10/7/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99
Status:																			


Analyte	N/C	SOIL RBC	SSL- DAF20	Reporting Limit																			
Volatiles - (ug/kg)																							
Acetone	N	7800000	2500	11.9	41	40B	56B	18	18	43B	53B	22	22	ND	38	21	17	37J	ND	28B	97B	22	11
Benzene	C	12000	1.8	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	N	7800000	19000	0.4	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	N	7800000	15000	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m & p Xylenes	N	160000000		1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	C	85000	19	2	ND	4B	4B	ND	4B	4B	4B	4B	4B	ND	4B	4B	4B	ND	ND	4B	4B	3B	4B
o-Xylene	N	160000000	230000	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	N	16000000	8800	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatiles - (ug/kg)																							
2,4-Dimethylphenol	N	1600000	6700	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	N	1600000	22000	69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	43J	ND
Bis(2-ethylhexyl) phthalate	C	46000	2900000	28.6	ND	72	190	49J	110	56J	54J	ND	ND	220J	78	160	73	68	110	ND	ND	ND	ND
Di-n-butyl phthalate	N	7800000	5000000	51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	N	310000	7700	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	N	63000000	450000	197	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38J	ND
n-Nitrosodi-n-propylamine	C	91	0.047	100	110U	110U	110U	110U	110U	110U	110U	110U	110U	100U	110U	110U	110U	110U	110U	110U	110U	95U	110U
PAHs - (ug/kg)																							
2-Methyl-4,6-Dinitrophenol	N	7800		1400																			
2-Methylnaphthalene	N	1600000	22000	1.9	ND	ND	ND	ND	ND	29J	ND	ND	ND	12	ND	4	ND	ND	ND	ND	ND		ND
Acenaphthene	N	4700000	100000	1.9	32	ND	ND	ND	ND	5.6	ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND		ND
Acenaphthylene	N	1600000		1.9	8.8	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	2.9	ND	ND	ND		ND
Anthracene	N	230000000	470000	1.9	19	ND	ND	ND	ND	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND		ND
Benz[a]anthracene	C	870	1500	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	ND	ND	ND	ND	ND	ND	ND		ND
Benzo[a]pyrene	C	87	370	1.9	4.7	ND	ND	ND	ND	ND	ND	ND	ND	58	ND	ND	ND	ND	ND	ND	ND		ND
Benzo[b]fluoranthene	C	870	4500	1.9	4.3	2.2J	4	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	ND		ND
Benzo[g,h,i]perylene	N	2300000		1.9	ND	ND	3.5J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
Benzo[k]fluoranthene	C	8700	45000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.8	ND	ND	ND	ND	ND	ND	ND		ND
Bis(2-chloroethyl) ether	C	580	0.044	1400																			
Bis(2-ethylhexyl) phthalate	C	46000	2900000	1200																			
Chrysene	C	87000	150000	1.9	ND	ND	30J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
Dibenz[a,h]anthracene	C	87	1400	1.9	ND	ND	2.9J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
Fluoranthene	N	3100000	6300000	1.9	6.1	ND	9.4	ND	ND	3	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND		ND
Fluorene	N	3100000	140000	1.9	36	ND	ND	ND	ND	9.8J	ND	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND		ND
Hexachlorobenzene	C	400	52	1300																			
Indeno[1,2,3-cd]pyrene	C	870	13000	1.9	ND	ND	3J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
n-Nitrosodi-n-propylamine	C	91	0.047	100																			
Naphthalene	N	1600000	150	1.9	26	ND	ND	ND	ND	2.3	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND	ND		ND
Pentachlorophenol	C	5300		360																			
Phenanthrene	N	1600000		1.9	140	ND	21	ND	ND	56J	12	ND	ND	120	ND	ND	ND	ND	ND	ND	ND		ND
Pyrene	N	2300000	680000	1.9	19	ND	ND	ND	ND	4.8	ND	ND	ND	31	ND	ND	ND	ND	ND	ND	ND		ND
Pesticides - (ug/kg)																							
4,4'-DDD	C	2700	11000	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74J	ND	1.4J	ND	ND	ND	1.5J	ND	43	ND
4,4'-DDE	C	1900	35000	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.48J	ND	1.1	ND	ND	ND	ND	ND	1.4J	ND
4,4'-DDT	C	1900	1200	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3J	ND	31J	ND	ND	ND	ND	ND	12J	ND
Alpha-chlordane	C	1800		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	N	470000		0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND


TABLE 2-2 PHASE I/II RI SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:	SB1-4	SB2-11	SB2-16	SB3-8	SB3-16	SB4-8	SB4-16	SB5-12	SB5-16	SB6-10	SB6-16	SB7-8	SB7-16	SB8-6	SB8-12	SB9-8	SB9-16	SB9-25	SB10-6
Depth (ft):	4	11	16	8	16	8	16	12	16	10	16	8	16	6	12	8	16	25	6
Sample Date:	10/7/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99
Status:																			

Analyte	N/C	SOIL RBC	SSL- DAF20	Reporting Limit																				
Endrin ketone	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane	C	1800		0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	C	70	25	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals - (mg/kg)																								
Aluminum, Total	N	78000		3.6	8770	9200	11700	16400	8750	10900	8240	19100	10700	15400	11700	15000	25800	13500	11900	9990	18400	5920	9720	
Antimony, Total	N	31	13	0.23	0.51L	ND	0.83L	2.2L	0.48L	0.76L	ND	1L	0.49L	0.8L	0.47L	1L	2.6L	0.68L	0.54L	1L	1.6L	0.6L	0.64L	
Arsenic, Total	C	0.43	0.026	0.097	1.9	0.79	0.64	1.3	0.82B	0.77	0.46L	0.97	0.74B	1.5	0.7B	1.5	0.79B	0.86B	0.39B	0.8	1	1.1B	1.4	
Barium, Total	N	5500	2100	0.92	48.3	22.2	46.8	18.7	39.8	28	28.6	67.2	39.4	23.7	40.3	25.3	148	28	47.4	15.9	156	27.2	32.9	
Beryllium, Total	N	160	1200	0.011	0.51J	0.21L	0.61	0.93	0.44	0.38	0.32L	0.83	0.55	0.48	0.5	0.43	1.3	0.8	1	0.4	1	0.32J	0.72	
Cadmium, Total	N	39	27	0.02	ND	0.07B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium, Total				163	567	ND	35B	31.8	26.2	74.1B	ND	28.4	27	27.5	11.7	169	33.6	93	13.2	51.1B	26.3B	1330	200	
Chromium, Total	N	230		0.046	16.8	8.2	12.9	62	4.4	35	2.9	28.7	3.7	30.8	4.7	32.8	46.5	10.7	8.5	36.4	53.4	13.1	11.5	
Cobalt, Total	N	1600		0.26	4.2	4.7	6.8	3.3	1.7L	2.6	1.8	4.4	1.8L	1.8L	12.2	1.9L	14.1	1.4L	3.2	2.5	8.3	2.2	3.7	
Copper, Total	N	3100	11000	0.077	9.5J	1.4L	1.4L	25.8	1.1L	5.9	0.83L	4.9	ND	9.6	6.4	8.6	5	3.6	3.5	10.7	3.9	7J	6.4	
Iron, Total	N	23000		0.92	13800	9360J	15300J	57600	9170	20300J	6780J	20400	9100	23200	11600	28100	33500	15000	10200	28500J	20100J	10600	14900	
Lead, Total	N	400		0.097	33.6	26.8	18.9	22	8.1	19	12.2	19	6.5	28.1	19.8	21.2	22	13.8	13.3	15.5	5.7	20	27.2	
Magnesium, Total				11.1	686J	881	2420	525	1520	563	1180	3720	1850	1320	1530	945	6860	1860	2710	763	8800	1640J	1700	
Manganese, Total	N	1600	950	0.28	496	201	385	103	151	122	152	189	197	108	356	155	771	190	435	91.7	478	132	317	
Mercury, Total	N	23		0.05	ND	ND	ND	0.07	ND	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND	ND	ND	
Nickel, Total	N	1600		0.069	3.3	2.9	5.9	10.7	2L	5.7	2.1	7.9	2.1L	3.5	11.3	5.7	22	2.6	3.7	5.8	21.6	4.4	3.2	
Potassium, Total				23.5	710	1060L	3230L	577	1690	535L	1560L	4410	2460	1580	2310	831	10500	2660	3140	932L	8680L	1540	2060	
Selenium, Total	N	390	19	0.14	0.65B	0.37B	0.55B	ND	ND	0.37B	ND	0.31B	ND	0.28B	ND	0.44B	0.34B	ND	ND	0.28B	0.27B	0.45B	ND	
Silver, Total	N	390	31	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium, Total				10.6	110B	112B	118B	90.5B	122B	106B	98.8B	106B	99.8B	103B	103B	105B	127B	104B	106B	114B	141B	106B	116B	
Thallium, Total	N	5.5	3.6	0.11	ND	0.25	0.61	ND	0.54	0.2	0.36	0.95	0.55	0.49	0.68	0.31	2.4	0.47	0.87	0.28B	1.3	0.29	0.58	
Vanadium, Total	N	550	5100	0.18	19.3	14.4	16.7	77.2	16.9	35.1	8.7	34.8	10.8	35.8	15.2	39.4	41.1	20.9	15.2	41	35.3	15.7	22.2	
Zinc, Total	N	23000	14000	0.25	43.3J	21.8	51.1	22.5	37.2	13.3	27.4	40.8	46.2	29.5	37.3	20.2	123	34.6	58.1	16	73.5	33.2J	33.9	
Metals - (mg/kg)																								
Cyanide	N	1600	150	0.23	0.28R	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27L	ND	ND	ND	ND	ND	ND	ND	ND	ND

SHADED COLUMNS INDICATE SAMPLE LOCATIONS REMOVED DURING IRA

 LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

 DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

 DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 2-2 PHASE I/II RI SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCS

Sample Name:	SB10-12	SB11-4	SB11-10	SB-12-6	SB12-8	SB13-6	SB13-12	SB14-4	SB14-13	SB15-8	SB15-16	SB16-8	SB16-12	SB17-4	SB17-12	SB101-8	SB102-8	SB103-8
Depth (ft):	12	4	10	6	8	6	12	4	13	8	16	8	12	4	12	8	8	8
Sample Date:	10/5/99	10/4/99	10/4/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/6/99	10/6/99	10/6/99	10/6/99	12/8/00	12/8/00	12/8/00
Status:						REMOVED		REMOVED						REMOVED				


Analyte	N/C	SOIL RBC	SSL- DAF20	Reporting Limit																		
<b>Volatiles - (ug/kg)</b>																						
Acetone	N	7800000	2500	11.9	18	82B	200	120	79B	26	14	26B	63B	29	60	180J	34B	210J	40B	ND	ND	ND
Benzene	C	12000	1.8	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30	ND	ND	ND	ND
Carbon disulfide	N	7800000	19000	0.4	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	N	7800000	15000	0.5	ND	ND	ND	58	ND	ND	13	290	ND	ND	ND	110J	ND	110J	8	ND	ND	ND
m & p Xylenes	N	160000000		1	ND	ND	4	42	ND	ND	75	1300	ND	ND	ND	800J	ND	500J	45	ND	ND	ND
Methylene Chloride	C	85000	19	2	4B	3B	4B	4B	4B	4B	4B	4B	4B	4B	5B	2B	4B	ND	4B	98.9B	143	92.5B
o-Xylene	N	160000000	230000	0.9	ND	ND	ND	7	ND	ND	69	890	ND	ND	ND	650J	ND	230J	24	ND	ND	ND
Toluene	N	16000000	8800	0.8	ND	ND	ND	9	ND	ND	ND	ND	ND	ND	ND	100J	ND	220	ND	2.86	ND	ND
<b>Semi-Volatiles - (ug/kg)</b>																						
2,4-Dimethylphenol	N	1600000	6700	140	ND	2100	ND	ND	ND	ND	ND	ND	ND	ND	ND							ND
2-Methylnaphthalene	N	1600000	22000	69	ND	320	ND	ND	ND	ND	ND		160	ND	ND							
Bis(2-ethylhexyl) phthalate	C	46000	2900000	28.6	70	210	46J	90	ND	ND	91	88	56J	ND	ND							167
Di-n-butyl phthalate	N	7800000	5000000	51	ND	55	ND	ND	ND	ND	ND	ND	ND	ND	ND							548
Dibenzofuran	N	310000	7700	100	ND	ND	ND	ND	ND	ND	ND	640J	ND	ND	ND							ND
Diethyl phthalate	N	63000000	450000	197	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND							ND
n-Nitrosodi-n-propylamine	C	91	0.047	100	110U	99U	110U	100U	110U	98U	100U	110U	110U	120U	110U							ND
<b>PAHs - (ug/kg)</b>																						
2-Methyl-4,6-Dinitrophenol	N	7800		1400												1400U	ND	ND	ND			
2-Methylnaphthalene	N	1600000	22000	1.9	ND	ND	15J	10J	ND	2.6	16	17000	100J	ND	ND	1800	ND	ND	420	ND	ND	ND
Acenaphthene	N	4700000	100000	1.9	ND	ND	ND	ND	ND	ND	2.2	180J	2.3	ND	ND	ND	ND	470	6.3J	ND	ND	ND
Acenaphthylene	N	1600000		1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	N	23000000	470000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benz[a]anthracene	C	870	1500	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	770	16J	ND	ND	ND
Benzo[a]pyrene	C	87	370	1.9	ND	ND	ND	ND	ND	ND	ND	110UJ	ND	ND	ND	200U	ND	810	6.2J	ND	ND	ND
Benzo[b]fluoranthene	C	870	4500	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	700	12J	ND	ND	ND
Benzo[g,h,i]perylene	N	2300000		1.9	ND	ND	ND	ND	ND	ND	ND	120J	ND	ND	ND	ND	ND	ND	4.6J	ND	ND	ND
Benzo[k]fluoranthene	C	8700	45000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7J	ND	ND	ND
Bis(2-chloroethyl) ether	C	580	0.044	1400												1400U	ND	730U	ND			
Bis(2-ethylhexyl) phthalate	C	46000	2900000	1200												ND	47J	ND	ND			
Chrysene	C	87000	150000	1.9	ND	3.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	710	ND	3300	58J	ND	ND	ND
Dibenz[a,h]anthracene	C	87	1400	1.9	ND	ND	ND	ND	ND	ND	ND	110UJ	ND	ND	ND	200U	ND	200U	ND	ND	ND	ND
Fluoranthene	N	3100000	6300000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	910	ND	360	9.1J	ND	ND	ND
Fluorene	N	3100000	140000	1.9	ND	5.7J	ND	ND	ND	ND	ND	130J	2.1	ND	ND	250	ND	580	9.2J	ND	ND	ND
Hexachlorobenzene	C	400	52	1300												1300U	ND	690U	ND			
Indeno[1,2,3-cd]pyrene	C	870	13000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine	C	91	0.047	100												1900U	110U	1000U	100U			
Naphthalene	N	1600000	150	1.9	ND	ND	61J	33J	ND	ND	3	5000J	28J	ND	ND	1100	ND	12000	160J	ND	ND	ND
Pentachlorophenol	C	5300		360												6900U	ND	ND	ND			
Phenanthrene	N	1600000		1.9	ND	5.4	ND	1.9	ND	ND	ND	ND	ND	ND	ND	2200	3.6J	2200	41J	8.63J	7.9J	7.68J
Pyrene	N	2300000	680000	1.9	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	2700J	ND	750J	3.7J	ND	ND	ND
<b>Pesticides - (ug/kg)</b>																						
4,4'-DDD	C	2700	11000	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.96J	ND	ND	ND			ND
4,4'-DDE	C	1900	35000	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3J	ND	ND	ND			ND
4,4'-DDT	C	1900	1200	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND
Alpha-chlordane	C	1800		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND			ND
Endosulfan II	N	470000		0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	52J	ND	480	48J			ND
Endrin aldehyde	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36J	ND	ND	ND			ND


TABLE 2-2 PHASE I/II RI SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCS


Sample Name:	SB10-12	SB11-4	SB11-10	SB-12-6	SB12-8	SB13-6	SB13-12	SB14-4	SB14-13	SB15-8	SB15-16	SB16-8	SB16-12	SB17-4	SB17-12	SB101-8	SB102-8	SB103-8
Depth (ft):	12	4	10	6	8	6	12	4	13	8	16	8	12	4	12	8	8	8
Sample Date:	10/5/99	10/4/99	10/4/99	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/6/99	10/6/99	10/6/99	10/6/99	12/8/00	12/8/00	12/8/00
Status:						REMOVED		REMOVED						REMOVED				

Analyte	N/C	SOIL RBC	SSL- DAF20	Reporting Limit																	
Endrin ketone	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28J	ND	ND	ND		ND
Gamma-chlordane	C	1800		0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14J	ND	ND	ND		ND
Heptachlor epoxide	C	70	25	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.8J	ND	ND	ND		ND
Metals - (mg/kg)																					
Aluminum, Total	N	78000		3.6	9710	5550	6950	9050	9840	9860	10300	7740	8270	19600	27300	12900	16500	8970	5090		65600
Antimony, Total	N	31	13	0.23	0.26R	0.57L	0.58L	0.76L	0.88L	0.55L	0.57L	0.31L	0.5L	1.8L	2.5L	ND	ND	0.51L	ND		ND
Arsenic, Total	C	0.43	0.026	0.097	1.3	0.53	0.72	1.1	1.2	0.31B	0.33B	0.53	0.46L	1.2B	1.2B	0.35L	0.38L	0.64	ND		1.62
Barium, Total	N	5500	2100	0.92	53.2	30.1	47.2	39.8	29.1	44.6	29.3	19.2	53.9	143	133	14.5	40.7	18.3	32.8		279
Beryllium, Total	N	160	1200	0.011	1	0.36	0.53	0.32	0.48	0.66J	0.77	0.47	0.68	1.8J	2.2J	0.39	0.82	0.49	0.3		6.11
Cadmium, Total	N	39	27	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		0.799
Calcium, Total				163	37.1	613	125	1270	ND	ND	23.7	159	159	ND	ND	7.7	10.4	21.1	6.9		ND
Chromium, Total	N	230		0.046	1.9	17.2	10.7	23.8	33.6	4.3	24.9	5.9	9.1	25.2	53	4.5	3.1	8	1.5		147
Cobalt, Total	N	1600		0.26	14.4	3.9	2.6	4.3	2.8	2.9	6.7	1.4	3.1	11.6	22.9	1.7L	8.4	0.95L	63.3		32.6
Copper, Total	N	3100	11000	0.077	5.1	5.5	6.2	6.3	10.3	12.2J	7.7	3.8	7.8	25J	28.6J	11.4	15.5	13.1	7.4		116
Iron, Total	N	23000		0.92	14500	11700J	12700J	14300J	21000J	7940	9810	9710J	10000J	35400	43600	5270	10800	15400	6200		116000
Lead, Total	N	400		0.097	8.7	14.1	14.2	17.2	26.6	16.3	8.6	21.4	10.1	45.6	23.5	16.8	32.3	25.2	47.9		7.14
Magnesium, Total				11.1	1100	927	1120	2340	1510	1530J	2090	1150	1440	5220J	738J	377	1010	987	319		2110
Manganese, Total	N	1600	950	0.28	2040	184	161	311	113	206	199	92.2	149	619	1020	43.7L	178L	89.8L	601L		720K
Mercury, Total	N	23		0.05	ND	ND	ND	0.08	ND	ND	ND	ND	0.56	ND	ND	ND	ND	ND	ND		ND
Nickel, Total	N	1600		0.069	4	3.9	2.9	6.5	5.6	4.4	6.7	3	4.4	11.2	12	6	7.4	2.5L	5.7		198
Potassium, Total				23.5	1240	996L	1420L	2850L	1730L	2480	2950	1670L	2050L	6990	10200	406	875	1410	489		411
Selenium, Total	N	390	19	0.14	0.92B	0.44B	0.27B	0.37B	0.35B	0.2B	ND	0.24B	ND	1.3B	0.85B	0.41B	0.28B	0.36B	0.37B		ND
Silver, Total	N	390	31	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2		ND
Sodium, Total				10.6	103B	103B	110B	143B	117B	94.2B	106B	119B	106B	134B	142B	253B	130B	954	98.1B		502
Thallium, Total	N	5.5	3.6	0.11	0.84	0.21	0.64	0.42B	0.38B	0.38	0.23	0.29	0.62	2	3.1	ND	0.33	0.17	0.2		3.26UL
Vanadium, Total	N	550	5100	0.18	14.1	17.1	14.8	20.7	38.7	11.5	20.7	14.6	11	65.8	77.6	4.3	6.9	18.3	3.3		172
Zinc, Total	N	23000	14000	0.25	23.7	20.8	23	37.7	25.3	36.6J	46.1	30.7	38.1	96.8J	146J	9.3	21.7	28.3	10.4		71
Metals - (mg/kg)																					
Cyanide	N	1600	150	0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23R	0.28R	0.24R	0.24R		

SHADED COLUMNS INDICATE SAMPLE LOCATIONS REMOVED DURING IRA

 LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR  
DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

 DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR  
NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOW!

 DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

### 3. INTERIM REMOVAL ACTION

#### 3.1 INTRODUCTION

The IRA conducted by Weston occurred in November 2001 and included the excavation of 940 tons of soil from six areas of concern (AOC) corresponding to the areas recommended in the Draft Phase II RI (EA, June 2001). **Figure 3-1 (Weston, July 2002)** illustrates the areas of excavation and the location of confirmatory samples. The six AOCs were identified as:

- Inside Building 493
- Outside Building 493
- Utility Pole
- SB-13 and SB-14
- SB-16 and SB-17
- SS-122

Following each phase of excavation, post excavation soil confirmatory samples were collected and submitted for laboratory analysis. The confirmatory samples were collected every 400 square feet of the exposed excavation base and every 20 ft along the side-walls of each excavation at approximately mid-depth, except where the excavation was 3 ft deep, or less. In shallow excavations, less than 3 ft deep, confirmatory soil samples were only collected from the base of the excavation.

The samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260B, semi-volatile organic compounds (SVOCs) by EPA Method 8270C, pesticides by EPA Method 8081A, polychlorinated biphenyl (PCBs) by EPA Method 8082, target analyte list (TAL) metals by EPA Methods 6010A and 7000, and/or cyanide by EPA Method 335.

Excavations continued until the confirmatory samples indicated concentrations were below the IRA remedial goals, with the exception of metals, at which time the excavations were backfilled to grade with clean fill. The excavation within Building 493 was then finished with a concrete slab. Exterior excavations were raked smooth, seeded with grass, and topped with a coat of straw.

### 3.2 IRA REMEDIAL GOALS

Weston utilized human health and ecological risk based calculations and published site inorganic background concentrations to establish IRA remedial goals. Details regarding the human health and ecological risk-based remedial goal calculations are contained in Chapter 4 of the IRA Report (Weston, July 2002). **Table 3-1** (Weston, July 2002) presents a summary of the human health and ecological remedial goals presented in the IRA report along with a comparison with Fort Pickett background inorganic concentrations. The selected remedial goal is the lowest of the risk-based calculated goals, except when the calculated risk-based goal is less than the maximum background concentration. In such a case, the remedial goal selected defaulted to the maximum background value.

Human health remedial goals were developed for compounds that presented a total risk in a medium greater than  $1E-06$  for carcinogens or a hazard index of 1 for non-carcinogens as determined in the Draft RI (EA, June 2001). Remediation goals were based on a specified target cancer risk (TR) for carcinogenic chemicals or target hazard quotient (THQ) for non-carcinogens. The TR and THQ reflect the acceptable level of risk for the site; chemical-specific medium concentrations at or below which present acceptable risk to human health.

Ecological remedial goals were based on the screening level analysis performed in the Phase II RI (EA, June 2002), which indicated a potential risk to wildlife from exposure to the pesticides, PAHs, and inorganics. Consequently, goals were developed that were expected to eliminate the risk to flora and fauna potentially inhabiting this site. Methods, model parameters, and assumptions used to develop remedial goals for avian vermivores like the American Robin, and small carnivorous mammals, like the short-tail shrew, were presented in the IRA Report (Weston, July 2002). In addition to the development of remedial goals for small mammals and birds potentially using the site, the toxicity of contaminated soils to soil invertebrates and plants was also considered in the development of goals, where available.

### 3.3 INSIDE BUILDING 493

The Draft RI (EA, June 2001) identified one non-PAH SVOC (P-nitroaniline), two PAHs (benzo[a]pyrene and dibenz[a,h]anthracene) and three pesticides (aldrin, DDT, and alpha-BHC) as COPCs for human receptors in the surface soil samples collected within Building 493. The RI also identified two non-PAH SVOCs (pentachlorophenol and dibenzofuran), 13 PAHs (2-methylnaphthalene, 1,2-benzphenanthracene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, indeno[1,2,3-cd]pyrene, acenaphthene, acenaphthylene, fluoranthene,

fluorene, naphthalene, phenanthrene and pyrene) and four pesticides (aldrin, DDD, DDE, and endrin aldehyde) as ecological COPCs in the surface soil samples collected within Building 493. The RI recommended the remediation of organic COPCs (via excavation) in surface soils within this building.

The IRA included the excavation and removal of approximately 415 tons of soil from within Building 493 during three separate mobilizations. Table 3-2 (Weston, July 2002) summarizes confirmatory soil sample results from each phase of excavation. During the initial excavation, 300 tons of soils were removed from within the building. The excavation extended to a depth of 1.5-ft bgs throughout the inside of the building. Eight confirmatory soil samples (493-IN-1 through 8) were collected from the base of this excavation and analyzed. The results indicated that concentrations of DDD (140 ug/kg), DDE (21.7 ug/kg), and DDT (552 ug/kg) exceeded the remedial goal of 20 ug/kg in sample 493-IN-2. Pesticide concentrations also exceeded the 20 ug/kg remedial goal in samples 493-IN-3 (DDD at 81.8 ug/kg and DDT at 345 ug/kg), 493-IN-4 (DDE at 30.2 ug/kg and DDT at 247 ug/kg), and 493-IN-1 (DDT at 67.5 ug/kg).

Weston, therefore, re-mobilized to the site and extended the depth of the excavation by 1 ft in the location of samples 493-IN-1, 2, 3, and 4 (the northern half of the building). The additional excavation removed 100 tons of soil. Four soil confirmatory samples (493-IN-1A, 2A, 3A, and 4A) were then collected and analyzed. Pesticide analytical results from each sample location were below the remedial goal of 20 ug/kg except for sample 493-IN-1A (79.6 ug/kg for DDT).

The third mobilization resulted in the excavation of an additional 15 tons of soil from the area surrounding the location of sample 493-IN-1A. This excavation removed soils an additional 6 in to a total depth of approximately 3 ft. One soil confirmatory sample (493-IN-1C) was collected and analyzed with the results reporting pesticide concentrations below the remedial goal.

Concentrations of iron (232,000 mg/kg in 493-IN-3A) and magnesium (5,070 mg/kg in 493-IN-6) exceeded their respective remedial goals in the final confirmatory samples and, therefore, remain in the soils inside Building 493. However, with the organic remedial goals met, the area inside Building 493 was backfilled with crush and run fill material and covered with a concrete pad.

IRA activities effectively removed VOC, SVOC, and pesticide impacted soils associated with RI samples SB2-0.5, SB3-0.5, SB4-0.5, SB5-0.5, SB6-0.5, SB7-0.5, SS111-0.5, and SS112-0.5 (EA June 2001). Table 2-1 and Table 2-2 summarizes the RI surface and subsurface soil analyte

detections and COPCs. Columns representing the sample locations excavated during the IRA are identified on these tables.

### **3.4 OUTSIDE BUILDING 493**

The pesticide DDT was identified in the Phase II RI surface soil sample SS-105 as a COPC for human and ecological receptors (EA, June 2001). The RI recommended the excavation of surface soils at SS-105 to remove the ecological risk associated with DDT.

Approximately 16 tons of soil was excavated during the IRA from an area 10-ft square in the location of the RI sample SS-105. The excavation extended to a depth of approximately 2 ft. Two soil confirmatory samples were collected from the base of this excavation and analyzed for VOCs, SVOCs, pesticides, PCBs, and TAL Metals. **Table 3-3** (Weston, July 2001) summarizes the results of these confirmatory samples. The results indicated that additional excavation was not necessary, as all analytes, with the exception of calcium (1,160 mg/kg in sample Base 1), were not detected above their respective reporting limits and/or at concentrations below their respective remediation goal. The remediation goal for calcium was 588 mg/kg. With remedial goals met, removal activities ceased and the excavation was subsequently backfilled.

Pesticide impacted soils associated with the RI sample SS105-0.5 (EA June 2001) were remediated as part of IRA activities at this AOC (Table 2-1).

### **3.5 UTILITY POLE**

Aroclor 1260 was identified as a COPC for human and ecological receptors in the Draft Phase II RI (EA, June 2001). The RI surface soil sample SB-18-0.5, collected from beneath a utility pole contained elevated concentrations of this PCB, therefore the RI recommended the excavation of surface soils surrounding the utility pole.

Weston excavated 15.66 tons of soil from this AOC, which comprised of an area approximately 10-ft square and 2-ft deep. The excavation was centered on the utility pole located at the southwest corner of Building 493. Three soil samples were collected from the base of the excavation and submitted for PCBs analysis. **Table 3-4** (Weston, July 2001) summarizes the analytical results. These results reported PCB concentrations below the remedial goals, therefore additional excavations were not necessary and the excavation was backfilled to grade.

PCB impacted soils as identified in the RI samples SS18-0.5 and SS115-0.5 (EA, June 2001) were adequately remediated as part of IRA activities at this AOC.

### 3.6 SB-13 AND SB-14

The RI identified three human health COPCs (excluding metals) in surface soil collected at SB-13. These COPCs are p-nitroaniline (non-PAH SVOC), benzo[a]pyrene, and dibenz[a,h]anthracene (PAHs). Surface soils at SB-13 also contained 12 ecological COPCs including; 5 VOCs (acetone, carbon disulfide, ethylbenzene, toluene and xylenes), one non-PAH SVOC (dibenzofuran), and 6 PAHs (2-methylnaphthalene, acenaphthene, acenaphthylene, fluorene, naphthalene, phenanthrene). The RI recommendations included the excavation of soils associated with soil boring SB-13.

IRA activities, therefore, included the excavation of 310 tons of soil from this AOC during two separate mobilizations. In the first mobilization, an area approximately 40-ft long by 15-ft wide was excavated to a depth of approximately 8 ft (approximately 202 tons of soil). Ten post excavation soil confirmatory samples were collected and analyzed. Of these, three were base samples and seven were sidewall samples. [Table 3-5](#) summarizes the analytical results for each phase of confirmatory sampling.

The analytical results for the sidewall samples SW-2, SW-3, and SW-4 reported inorganic concentrations for aluminum, arsenic, beryllium, chromium, copper, iron, nickel, and/or vanadium that exceeded Fort Pickett Background concentration and, therefore, the remedial goal.

Weston, therefore, re-mobilized to the site and excavated an additional 108 tons of soil from sidewall locations corresponding to sample locations SW-2, SW-3, and SW-4 and collected three additional post excavation soil samples (SW-2A, SW-3A, and SW-4A). Inorganic exceedances that were detected in samples SW-2 and SW-4 were not present in the two subsequent confirmatory samples (SW-2A and SW-4A) collected from the additional excavations in these locations. However, the inorganics beryllium (4.2 mg/kg), chromium (120 mg/kg), copper (121 mg/kg), iron (195,000 mg/kg), nickel (63.7 mg/kg), vanadium (306 mg/kg), and zinc (131 mg/kg) were reported in the confirmatory sample SW-3A at concentrations that exceeded the associated remedial goals. The remedial goals for these inorganic were 3.6 mg/kg (beryllium), 73.5 mg/kg (chromium), 27.3 mg/kg (copper), 74,000 mg/kg (iron), 23 mg/kg (nickel), 110 mg/kg (vanadium), and 95.1 mg/kg (zinc).

Weston noted that these exceedences, with the exception of iron, were within EPA Region III Risk Based Concentrations (RBCs) for residential soils and ceased excavation activities at AOC

SB-13 and SB-14. Table 3-8 and Table 3-9 summarizes soil concentrations remaining following the IRA in comparison to residential soil standards (a hazard index of 0.1 for non-carcinogens).

IRA activities at this AOC effectively removed VOC and SVOC impacted soils associated with RI samples SB13-0.5, SB13-6, SB14-0.5, SB14-4, SS113-0.5, and SS114-0.5 (EA June 2001).

### **3.7 SB-16 AND SB-17**

Subsurface soils collected from the RI boring SB-17 contained a PAH COPC (benzo[a]pyrene) for human receptors. The RI (EA, June 2001) also identified another PAH (crysene) as an ecological COPC, which was detected in surface soils at SB-16. The RI recommended the excavation of soils at SB-16 and SB-17.

IRA activities at this AOC included the excavation of 170 tons of soil during two separate mobilizations. The initial excavation effort removed 145 tons of soil from an area approximately 20-ft long by 15-ft wide and extending to a depth of 8 ft. Eight soil samples were collected following excavation activities; two were base samples and six were sidewall samples.

Table 2-6 summarized the analytical results for each round of confirmatory samples. Analytical results from the first round of confirmatory samples indicated that soils from sidewall sampling locations SW-1, SW-2, SW-3, and SW-6 contained concentrations of aluminum, arsenic, beryllium, chromium, copper, iron, magnesium, mercury, nickel, potassium, vanadium, and zinc that exceeded remedial goals.

Weston re-mobilized to the site, excavated an additional 25 tons of soil from sidewall locations SW-1 and SW-2, and collected two additional post-excavation confirmatory samples (SW-1A and SW-2A). The analysis of these two samples reported concentrations of chromium, copper, iron, nickel, potassium, vanadium, and zinc that exceeded the remediation goals.

The inorganic exceedances remaining in the soils at this AOC following the IRA include aluminum, chromium, copper, iron, magnesium, nickel, potassium, vanadium, and zinc. Aluminum concentrations exceed the remediation goal of 58,000 mg/kg in SW-6 (60,600 mg/kg). Chromium concentrations exceed the remediation goal of 73.5 mg/kg in SW-1A (147 mg/kg), SW-2A (163 mg/kg), SW-3 (108 mg/kg), and SW-6 (149 mg/kg). Copper concentrations at (62.7 mg/kg in SW-1A, 98.2 in SW-2A, 41.6 mg/kg in SW-3, and 105 mg/kg in SW-6) exceed the remediation goal of 27.3 mg/kg. Iron concentrations in SW-1A, SW-2A, and SW-6 (111,000 mg/kg, 128,000 mg/kg, and 124,000 mg/kg, respectively) exceed the

remediation goal of 74,000 mg/kg. Magnesium concentrations in SW-3 (11,800 mg/kg) exceed the remediation goal of 5,030 mg/kg. Nickel concentrations exceed the remediation goal of 23 mg/kg in SW-1A (48.4 mg/kg), SW-2A (125 mg/kg), SW-3 (39.6 mg/kg), and SW-6 (73.7 mg/kg). Potassium concentrations at (11,800 mg/kg in SW-3) exceed the remediation goal of 6,330 mg/kg. Vanadium concentrations in SW-1A, SW-2A, and SW-6 (177 mg/kg, 182 mg/kg, and 138 mg/kg, respectively) exceed the remediation goal of 110 mg/kg. Zinc concentrations (127 mg/kg) exceed the remediation goal of 95.1 mg/kg in SW-3.

Weston compared these inorganic exceedences to the EPA Region III RBCs for residential soils. Magnesium and potassium are considered essential nutrients and do not have associated EPA Region III RBC's. Weston concluded that all remaining inorganic exceedences, with the exception of iron, were below the EPA Region III RBC and therefore, additional excavations were not warranted. Table 3-8 and Table 3-9 summarizes soil concentrations remaining following the IRA in comparison to residential soil standards (a hazard index of 0.1 for non-carcinogens).

VOC and SVOC impacted soils associated with the RI samples SB16-0.5, SB17-0.5, SB17-4, and SS116-0.5 (EA June 2001) were addressed as part of IRA activities at this AOC.

### **3.8 SS-122**

The pesticides DDT, DDE, alpha-BHC, beta BHC, and heptachlor were identified as COPCs for human and ecological receptors in the Draft Phase II RI (EA, June 2001). The highest concentration at EBS-79 of all these pesticides was reported in the surface soil sample collected at SS-122. The RI, therefore, recommended that these soils be excavated.

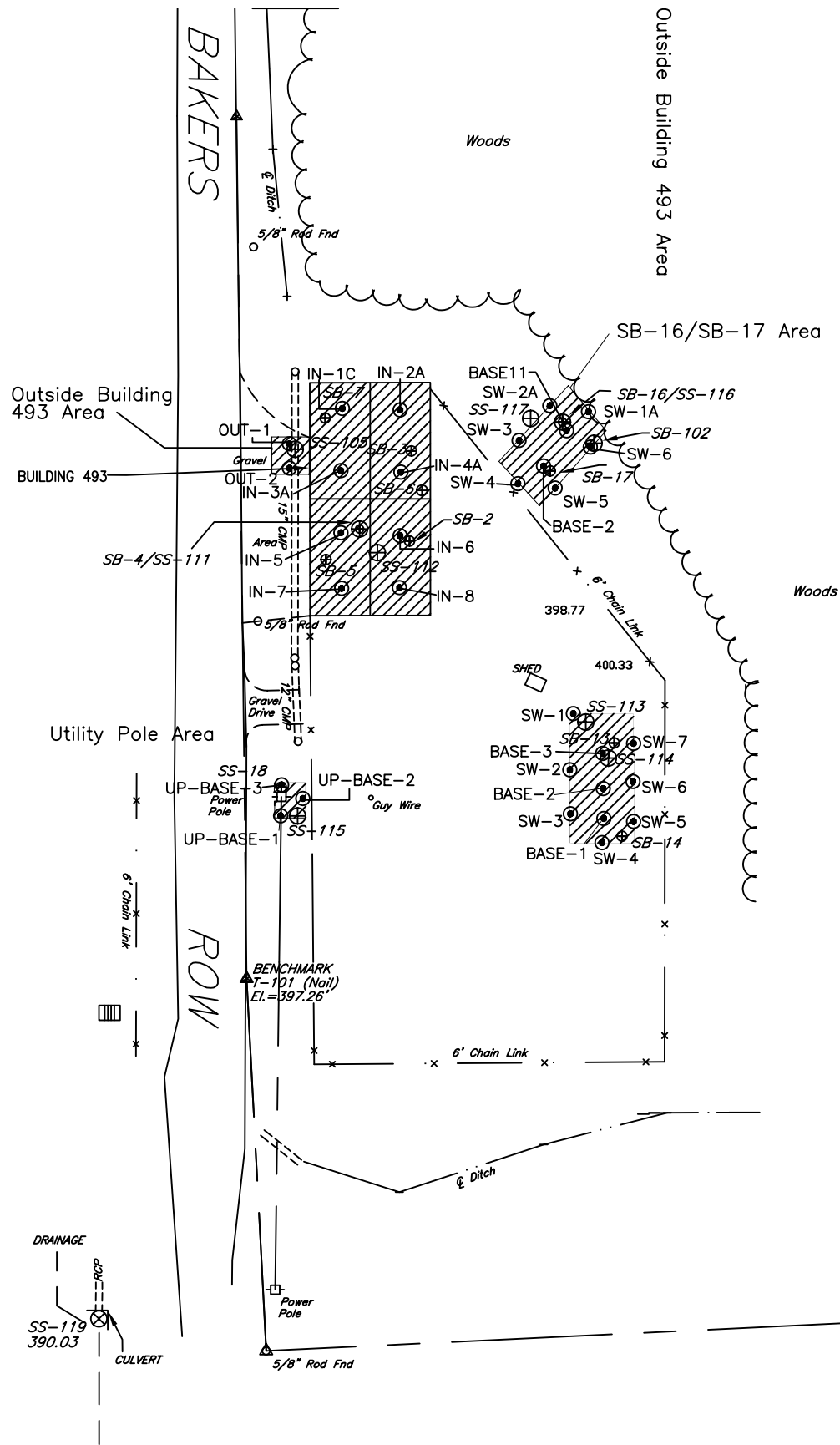
IRA activities at this AOC included the excavation of 14 tons of soil from an area approximately 10-ft wide by 10-ft long and to a depth of 3 ft centered on the location of RI sample SS-122 (EA June 2001). Two confirmatory soil samples (SS122-1 and SS122-2) were collected from the base of the excavation and analyzed for pesticides. Analytical results (summarized on [Table 3-7](#)) indicate that additional excavation was not necessary, as pesticides were not detected above their respective reporting limits.

Pesticide impacted soils associated with the RI sample SS-122 (EA June 2001) were effectively remediated as part of IRA activities at this AOC.

### 3.9 REMAINING COPCs

Excavation activities at the six AOCs performed by Weston in November 2001 as part of the IRA effectively removed COPCs, particularly organic COPCs, at EBS-79 that potentially posed ecological risk. [Table 2-1](#) and [Table 2-2](#) summarizes the RI surface and subsurface soil analytical results (EA June 2001), respectively, and identifies which samples were effectively removed during the IRA. [Table 3-8](#) and [Table 3-9](#) presents the surface and subsurface soil samples that remain following the IRA including the confirmatory sample results provided by Weston.

As shown on these tables, VOC, SVOC, PAH, PCB, and pesticide COPCs identified in the RI (EA June 2001) are no longer identified as COPCs (with the exception of acetone). Metal COPCs, however, do remain at EBS-79 following the IRA. PAH COPCs also remain in the RI surface soil samples SS-118 and SS-119, which were collected from upgradient drainage inlet points. [Figure 3-2](#) illustrates the remaining COPCs in site soils based on a comparison to residential soil RBCs (hazard index of 0.1).



UTILITY POLE ANALYTE	RI (ug/kg)	IRA (ug/kg)
Aroclor 1260	1200	ND

OUTSIDE BLDG. 493 ANALYTE	RI (ug/kg)	IRA (ug/kg)
4,4 DDT	1200	ND

SS-122 ANALYTE	RI (ug/kg)	IRA (ug/kg)
4,4 DDT	14400 J	ND
Alpha-BHC	650 J	ND
Beta-BHC	3270 J	ND
Heptachlor	6020 J	ND

SB-13/14 ANALYTE	SB 13 RI (ug/kg)	SB 14 RI (ug/kg)	SB 13/14 IRA (ug/kg)
---------------------	------------------------	------------------------	----------------------------

Ethylbenzene	1000 L	290 D	ND
M & P Xylenes	3800 L	1300 D	ND
O-Xylene	6200 L	890 D	ND
Dibenzofuran	2700 J	649 J	ND
N-Nitrosodiphenylamine	820	ND	ND
2-Methylnaphthalene	68000 D	17000	ND
Acenaphthylene (pyrene)	600	180 J	ND
Benzo[G,H,I]Perylene(pyrene)	370	120 J	ND
Fluorene	910	130 J	ND
Napthalene	20000	5000 J	ND

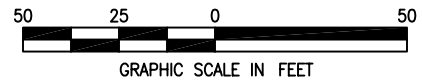
INSIDE BUILDING 493 ANALYTE	RI (ug/kg)	IRA (ug/kg)
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Bis(2-ethylhexyl) phthalate	390 D	ND
Dibenzofuran	960 D	ND
Pentachlorophenol	4000 NJ	ND
2-Methylnaphthalene	3600 D	134 J
Fluoranthene	880 J	ND
Fluorene	1400 J	ND
Phenanthrene	12000 J	302
Pyrene	1500 J	ND
4,4' DDD	460 J	ND
4,4' DDE	940	ND
4,4' DDT	8800 J	9.2
Endosulfan Sulfate	1700 J	ND
Endrin Ketone	230 J	ND

SB-16/17 ANALYTE	SB 16 RI (ug/kg)	SB 17 RI (ug/kg)	SB 16/17 IRA (ug/kg)
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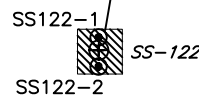
M & P Xylenes	800 J	500 J	ND
O-Xylene	650 J	230	ND
2-Methylnaphthalene	1800	14000	ND
Chrysene	710	3300	ND
Fluoranthene	910	360	ND
Fluorene	250	580	ND
Napthalene	1100	12000	ND
Phenanthrene (pyrene)	2200	2200	ND
Pyrene	2700 J	750 J	ND
Endosulfan II	52 J	480	ND

- LEGEND**
- MONITORING WELL GROUND ELEVATION (FT. MSL)
  - SOIL BORING/ SURFACE SOIL (PHASE I RI)
  - SOIL BORING/ SURFACE SOIL (PHASE II RI)
  - ND NOT DETECTED
  - IRA SOIL SAMPLE LOCATION
  - AREA OF EXCAVATION



NOTE: Base Map from EA Engineering, Science, and Technology, Inc.

SS-122 Area



(STREAM CHANNEL-APPROXIMATE LOCATION)

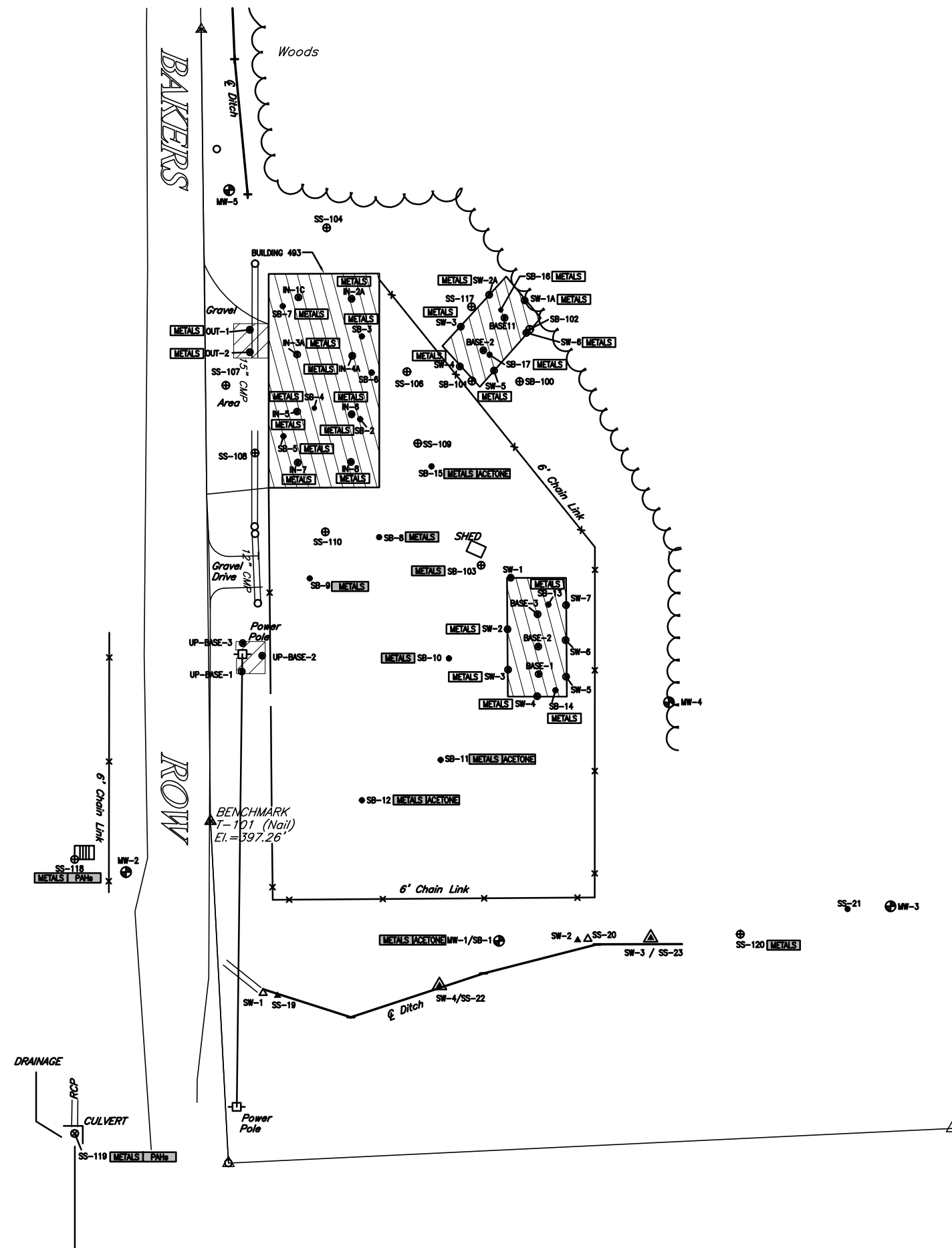
FLOODPLAIN



FIGURE	3-1
DATE	5/20/02
REVISION	1
DRAWN BY	EJM
FILE	FIG5-1.DWG

EXCAVATION AND SAMPLE  
LOCATION MAP

BRAC CLEANUP TEAM  
FORT PICKETT, VIRGINIA



**LEGEND**

⊕ MONITORING WELL

● SOIL BORING/ SURFACE SOIL (PHASE I)

⊕ SOIL BORING/ SURFACE SOIL (PHASE II)

△ OR ▲ SEDIMENT SAMPLE

▲ SURFACE WATER SAMPLE

● IRI SOIL SAMPLE LOCATION  
(PROVIDED BY WESTON)

[|||||] AREA OF EXCAVATION  
(PROVIDED BY WESTON)


[METALS] SAMPLE RESULTS CONTAIN METAL CONCENTRATIONS  
THAT EXCEED ECOLOGICAL AND RBC CRITERIA IN  
SURFACE SOILS

[ACETONE] SAMPLE RESULTS CONTAIN ACETONE CONCENTRATIONS  
THAT EXCEED ECOLOGICAL AND RBC CRITERIA IN  
SURFACE SOILS

[METALS] SAMPLE RESULTS CONTAIN METAL CONCENTRATIONS  
THAT EXCEED RBC CRITERIA IN SUBSURFACE SOILS

**FIGURE 3-2**  
**PHASE II RI REPORT ADDENDUM, EBS-79**  
**FORT PICKETT, VA**

REMAINING COPCS IN SOILS (EA AND WESTON DATA)



**EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY**

Loveton Center  
 15 Loveton Circle  
 Sparks, Maryland 21152  
 (410) 771-4950

DATE	—
DESIGNED BY	SMW
DRAWN BY	TLR/JMP
CHECKED BY	TJP
PROJECT MANAGER	VAV
PROJECT NUMBER	61144.04
SCALE	1"=20'
FILE NAME	FIGURE-2-2
DRAWING NUMBER	2-2
SHEET NUMBER	— OF —

TABLE 3-1  
Summary of Remedial Goals for EBS-79  
Fort Pickett, Blackstone, VA

Analyte	Fort Pickett Background All depths	Fort Pickett Background 0-0.5' bgs	Lowest Human Health RG	Lowest Ecological RG	Proposed RG
	Maximum	Maximum	Minimum	Minimum	
<b>Volatiles (mg/kg)</b>					
Acetone			---	38.4	38.4
Carbon disulfide			---	5.23	5.2
Ethylbenzene			---	54.6	54.6
m & p Xylenes			---	4.36	4.4
Methylene Chloride			---	22.5	22.5
o-Xylene			---	4.36	4.4
Toluene			---	53.9	53.9
<b>Semi-Volatiles (mg/kg)</b>					
Dibenzofuran			---	5.23	5.2
P-Nitroaniline (aniline)			---	---	---
<b>PAHs (mg/kg)</b>					
Benzo[a]pyrene			0.21	---	0.2
Dibenz[a,h]anthracene			0.20	---	0.2
<b>PCBs (mg/kg)</b>					
Aroclor 1260			0.47	0.1	0.1
<b>Pesticides (mg/kg)</b>					
4,4'-DDD			---	0.02	0.02
4,4'-DDE			145	0.02	0.02
4,4'-DDT			23.8	0.02	0.02
Aldrin			3.19	0.27	0.27
Alpha-BHC			0.42	3.06	0.42
Beta-BHC			3.47	1.53	1.53
Endosulfan sulfate			---	0.58	0.58
Endrin aldehyde			---	0.05	0.05
Heptachlor			0.39	3.29	0.39
<b>Metals (mg/kg)</b>					
Aluminum	58000	25100	6861	25.9	58000
Antimony	---	---	---	2.2	2.22
Arsenic	6.00	3.50	0.62	---	6.00
Barium	209	111	647	104.6	209
Cadmium	---	---	1.03	0.5	1.03
Chromium	73.5	20.5	3.09	0.4	73.5
Copper	27.3	10.4	---	60.8	27.3
Lead	104	22.9	---	50.7	104
Manganese	1270	325	154	500.0	1270
Nickel	23.0	13.9	142	---	23.0
Selenium	2.00	0.97	---	0.7	2.00
Vanadium	110	35.3	22.8	2.0	110
Zinc	95.1	43.8	---	19.8	95.1

Table obtained from the *Interim Removal Action Report for EBS-79* ( Weston, July 2002)

Note: All units in mg/kg.

bgs = below ground surface.

--- = Not available.

mg/kg = milligram/kilogram.

**TABLE 3-2**  
**INSIDE BUILDING 493 SAMPLE RESULTS**

ANALYTE	493-IN-1*	493-IN-1A*	493-IN-1C	493-IN-2*	493-IN-2A	493-IN-3*	493-IN-3A	493-IN-4*	493-IN-4A	493-IN-5	493-IN-6	493-IN-7	493-IN-8	493-IN-9	REMEDIAL GOAL **
<b>Pesticides (ug/kg)</b>															
4,4'-DDD	ND	ND	ND	<b>140</b>	ND	<b>81.8</b>	ND	ND	ND	ND	ND	ND	ND	ND	20
4,4'-DDE	ND	2.3 J	ND	<b>21.7</b>	ND	9.6	ND	<b>30.2</b>	ND	ND	ND	ND	ND	ND	20
4,4'-DDT (a)	<b>67.5</b>	<b>79.6</b>	ND	<b>552</b>	6.3 J	<b>345</b>	5.3	<b>247</b>	3.2 J	9.2	9.2	ND	ND	76.1	20
<b>SVOCs (ug/kg)</b>															
2-Methylnaphthalene	128 J			ND U		134 J		ND		ND	ND	ND	ND	491	NC
Phenanthrene	179 J			ND U		ND U		302		ND	ND	ND	ND	322	NC
<b>Inorganics (mg/kg)</b>															
Aluminum	38300	21600 UL		32600	29700 L	37000	19500 L	28500	14100 L	39900	37900	34600	27400	36000	58000
Arsenic	1.5 K	1.6 K		1.6 K	2.1 K	1.7 K	2.2 K	1.2 K	2.2 K	1.1 K	1.8 K	1.5 K	1.3 K	1.4 K	6
Barium	63.3	38.5		51.2	42.7	58.1	37.1	57.6	31.6	47.8	61.7	48	28.2	61.4	209
Beryllium	1.2 K	0.83 K		1.2 K	1.1 K	1.3 K	0.73 K	1.1 K	0.69 K	0.96 K	1.2 K	1.2 K	0.9 K	1.2 K	3.6
Calcium	164 J	173 J		159 J	108 J	194 J	146 J	375 J	114 J	223 J	136 J	159 J	86.6 J	229 J	588
Chromium	50.3	46.4		44	59.1	54.6	454	40.3	45.7	32.3	51.5	32.3	23.3	50.6	73.5
Cobalt	5.2 J	4.1 J		4.8 J	3.9 J	5.2 J	6.5 J	3.7 J	2.7 J	4 J	4.5 J	3.8 J	3.2 J	5 J	35
Copper	13.6 J	12.9		10.7 J	20.5	14.3 J	13.4	10.5 J	14.1	7.8 J	11.4 J	8.6 J	5.3 J	12.7 J	27.3
Iron	23000	21800		19000	31300	25100	<b>232000</b>	19400	23300	14800	22600	20100	14700	22600	74000
Lead	22.3 J	18 L		21 J	2 L	21.3 J	24.1 L	22.3 J	14.1 L	21.1 J	21.6 J	21.3 J	18.5 J	23.2 J	104
Magnesium	4470	1850 L		4140	2640 L	4710	873 L	3920	642 L	3210	<b>5070</b>	3730	1740	4900	5030
Manganese	283	235		251	185	289	221	238	118	192	270	252	163	286	1270
Mercury	0.16 J	<.077 UJ		0.14 J	<.075 UJ	<.074 UJ	<.076 UJ	<.068 UJ	<.072 UJ	0.1 J	0.096 J	<.075 UJ	<.072 UJ	0.12	0.17
Nickel	22 J	15.4 K		18.8 J	18.2 K	<b>23.2</b> J	12.9 K	16 J	9.9 K	15.8 J	21.3 J	16.6 J	10 J	21.4 J	23.0
Potassium	4760 J	1760 K		4370 J	2790 K	4940 J	612 K	4210 J	467 K	3680 J	5170 J	4420 J	2060 J	5340 J	6330
Sodium	283 J	188 J		322 J	139 J	285 J	112 J	315 J	104 J	325 J	292 J	294 J	240 J	307 J	NC
Thallium	1 K	<.59 U		0.95 K	<.57 U	0.91 K	<.1 U	0.59 K	<.1 U	0.67 K	0.76 K	0.79 K	<.056 U	1 K	NC
Vanadium	45.1	42.9		36	55	48.1	42.3	37	39.9	28	44.6	38.8	27	42.9	110
Zinc	61 J	33 K		59.6 J	56.6 K	61.9 J	23.2 K	59 J	19.1 K	44.5 J	58.2 J	64.5 J	40.9 J	68.9 J	95.1
<b>PCBs (ug/kg) - Not Detected</b>															
<b>VOCs (ug/kg) - Not Detected</b>															

Table obtained from the *Interim Removal Action Report for EBS-79* (Weston, July 2002)

UG/KG refers to micrograms/kilogram

MG/KG refers to milligrams/kilogram

VOC refers to volatile organic compounds

SVOC refers to semi-volatile organic compounds

PCBs refers to polychlorinated biphenyls

J indicates estimated at a value less than the reporting limit, but greater than zero

K indicates analyte present. Reported value may be biased higher

U indicates analyte not detected above the level of the associated value

UJ indicates analyte not detected. Quantitation limit may be inaccurate or imprecise

NC indicates Not Calculated.

ND or < indicates that compound was analyzed but not detected

B indicates that compound was detected in the blank

Bold indicates that result exceeded Remedial Goal

\* indicates that result was superseded by additional sampling

\*\* Fort Pickett Background concentration for Inorganics

**TABLE 3-3**  
**BUILDING 493 OUTSIDE ANALYTICAL RESULTS**

ANALYTE	493-OUT-BASE-1		493-OUT-BASE-2		REMEDIAL GOAL **
Inorganics (mg/kg)					
Aluminum	38900		25500		58000
Arsenic	4.7	K	4.4	K	6
Barium	25.1	K	39.1	K	209
Beryllium	0.88		0.86		3.6
Calcium	1160	J	319	J	588
Chromium	29.2		40.6		73.5
Cobalt	1.4	K	4.9	K	35
Copper	7.3	J	13.4	J	27.3
Iron	28600		23300		74000
Lead	25.5	J	15.4	J	104
Magnesium	925		823		5030
Manganese	59.2	K	89.2	K	1270
Nickel	6	J	16.9	J	23.0
Potassium	889	J	632	J	6330
Sodium	186	J	165	J	NC
Vanadium	41.3		37.4		110
Zinc	20.3		30.6	J	95.1
SVOCs (ug/kg) - Not Detected					NA
PCBs (ug/kg) - Not Detected					NA
VOCs (ug/kg) - Not Detected					NA
Pesticides (ug/kg) - Not Detected					NA

Table obtained from the *Interim Removal Action Report for EBS-79* (Weston, July 200

UG/KG refers to micrograms/kilogram.

MG/KG refers to milligrams/kilogram.

VOC refers to volatile organic compounds.

SVOC refers to semi-volatile organic compounds.

PCBs refers to polychlorinated biphenyls.

B indicates that compound was detected in the blank.

Bold indicates that compound exceeded Remedial Goal.

ND or < indicates that compound was analyzed but not detected.

NA not applicable.

J indicates estimated at a value less than the reporting limit, but greater than zero.

K indicates analyte present. Reported value may be biased high.

\*\* Fort Pickett Background concentration for Inorganics.

**TABLE 3-4**  
**UTILITY POLE ANALYTICAL RESULTS**

<b>ANALYTE</b>	<b>UP-BASE-1</b>	<b>UP-BASE-2</b>	<b>UP-BASE-3</b>
<b>PCBs (ug/kg)</b>			
Aroclor 1016	ND	ND	ND
Aroclor 1221	ND	ND	ND
Aroclor 1232	ND	ND	ND
Aroclor 1242	ND	ND	ND
Aroclor 1248	ND	ND	ND
Aroclor 1254	ND	ND	ND
Aroclor 1260	ND	ND	ND

Table obtained from the *Interim Removal Action Report for EBS-79* (Weston, J  
 UG/KG refers to micrograms/kilogram.  
 PCBs refers to polychlorinated biphenyls.  
 ND indicates that compound was analyzed but not detected.

**TABLE 3-5**  
**SB-13/14 ANALYTICAL RESULTS**

ANALYTE	SB-1314- BASE-1	SB-1314- BASE-2	SB-1314- BASE-3	SB-1314- BASE-4	SB-1314- SW-1	SB-1314- SW-2*	SB-1314- SW-2A	SB-1314- SW-3*	SB-1314- SW-3A	SB-1314- SW 4*	SB-1314-SW 4A	SB-1314- SW-5	SB-1314- SW-6	SB-1314- SW-7	REMEDIAL GOAL **
<b>VOCs (ug/kg)</b>															
<b>Inorganics (mg/kg)</b>															
Aluminum	12600	22600	19900	18300	28700	<b>73700</b>	17500 L	<b>72400</b>	46700 L	<b>76600</b>	13700 L	22600	30500	23600	58000
Arsenic	<1.2 U	1.7 K	<1.2 U	<1.2 U	1.5 K	5.6 K	<1.3 U	<b>6</b> K	2.7 K	4.9 K	<1.2 U	2 K	2.4 K	2.2 K	6
Barium	16.9	42.8	23.6	23.6	39.5	76.2	19.2	98.5	73.5	105	10.9	25.7	63.4	32.8	209
Beryllium	0.68 K	0.79 K	<0.59 U	<0.59 U	0.73 K	1.7 K	0.66 K	2.8 K	<b>4.2</b> K	2.3 K	0.79 K	1.1 K	0.85 K	0.93 K	3.6
Chromium	2.8	2.9	2.1	2	5.1	<b>149</b>	5.5 K	<b>144</b>	<b>120</b>	<b>150</b>	6.2 K	6.9	14.4	5.5	73.5
Cobalt	1.3 K	3.5 K	0.72 K	0.72 K	15 K	8.1 K	1.5 J	8.2 K	18.4 J	10.2 K	<0.62 U	1.2 K	2.4 K	2.2 K	35
Copper	4.7 J	12.8 J	4.9 J	4.7 J	10.5 J	<b>95.6</b> J	8.8	<b>103</b> J	<b>121</b>	<b>99.2</b> J	6	8.6 J	16 J	10.3 J	27.3
Iron	4320	9130	4510	4100	5860	<b>108000</b>	7120	<b>120000</b>	<b>195000</b>	<b>117000</b>	8160	11700	20800	13800	74000
Lead	6 J	14.8 J	10 J	9.3 J	78.6 J	12.4 J	13.7 L	36.8 J	12.9 L	5.9 J	8.7 L	17 J	27 J	45.7 J	104
Magnesium	380	1240	479	492	836	2020	409 L	1610	983 L	1590	312 L	1210	2210	2160	5030
Manganese	38 K	188 K	71.2 K	76.9 K	370 K	212 K	43.4	190 K	1230	192 K	20 K	124 K	152 K	228 K	1270
Nickel	4.5 J	8.6 J	5.9 J	5.6 J	10.1 J	<b>85.1</b> J	5.2 K	<b>102</b> J	<b>63.7</b>	<b>103</b> J	4.5 K	6 J	8.6 J	5.8 J	23
Potassium	407 J	1900 J	790 J	821 J	1140 J	162 J	497 K	184 J	<79 U	<81 UJ	409 K	1760 J	2900 J	3090 J	6330
Sodium	112 J	128 J	114 J	134 J	116 J	165 J	108 J	182 J	124 J	156 J	112 J	113 J	138 J	138 J	NC
Thallium	<0.62 U	<0.59 U	<0.59 U	<0.59 U	<0.58 U	2.3 K	<0.64 U	1.1 K	<1.6 U	1.9 K	<0.90 U	<0.61 U	<0.65 U	<0.58 U	NC
Vanadium	4.7 K	9.8 K	3.6 K	2.8 K	8.7 K	106	6.6	<b>132</b>	<b>306</b>	<b>130</b>	8.6	14.6	30	17.4 K	110
Zinc	14.6 J	42.4 J	18.9 J	19.3 J	25.2 J	42.6 J	19.5 K	63.2 J	<b>131</b> K	49.7 J	13 K	39.6 J	64.6	53.5 J	95.1
<b>Pesticides (ug/kg) Not Detected</b>															NA
<b>PCBs (ug/kg) Not Detected</b>															NA
<b>SVOCs (ug/kg) Not Detected</b>															NA

Table obtained from the *Interim Removal Action Report for EBS-79* (Weston, July 2002)

UG/KG refers to micrograms/kilogram.

MG/KG refers to milligrams/kilogram.

VOC refers to volatile organic compounds.

SVOC refers to semi-volatile organic compounds.

PCBs refers to polychlorinated biphenyls.

J indicates estimated at a value less than the reporting limit, but greater than zero.

K indicates analyte present. Reported value may be biased high.

NC indicates Not Calculated.

ND or < indicates that compound was analyzed but not detected.

U indicates analyte not detected above the level of the associated value.

B indicates that compound was detected in the blank.

Bold indicates that the result exceeded Remedial Goal.

\*indicates that result was superceded by additional sampling.

\*\* Fort Pickett Background concentration for Inorganics

**TABLE 3-6**  
**SB-16/17 ANALYTICAL RESULTS**

ANALYTE	SB1617 SW-1	SB1617 SW-1A	SB1617 SW-2	SB1617 SW-2A	SB1617 SW 3	SB1617 SW-4	SB1617 SW-5	SB1617 SW-6	SB1617 BASE 1	SB1617 BASE 2	REMEDIAL GOAL **
<b>Inorganics (mg/kg)</b>											
Aluminum	<b>75900</b>	50900 L	<b>75400</b>	59400 L	46800	38400	19200	<b>60600</b>	26500	13700	58000
Arsenic	<b>6.5</b> K	2.6 K	3.4 K	3.2 K	2.3 K	1.7 K	1.8 K	3.7 K	1.5 K	<1.1 U	6
Barium	105	43	65.1	81.7	88.4	49	18.2 K	51.3	30.9	18.2 K	209
Beryllium	<b>3.9</b> K	2.1 K	2.8 K	2.3 K	2 K	1 K	0.78 K	3.3 K	0.89 K	<0.57 UL	3.6
Chromium	<b>246</b>	<b>147</b>	<b>148</b>	<b>163</b>	<b>108</b>	55	10.3 K	<b>149</b>	11.3 K	3.3 K	73.5
Cobalt	8.9 J	7.4 J	6.2 J	4 J	7.4 J	5.8 J	1.7 J	9.9 J	1.8 J	1.3 J	35
Copper	<b>107</b> J	<b>62.7</b>	<b>94.3</b> J	<b>98.2</b>	<b>41.6</b> J	26.7 J	21.4 J	<b>105</b> J	17.2 J	15.2 J	27.3
Iron	<b>139000</b>	<b>111000</b>	<b>112000</b>	<b>128000</b>	49300	25900	17600	<b>124000</b>	18200	6360	74000
Lead	25.2 J	62.8	37.7 J	41.1	68.9 J	62.9 J	38.9 J	25.4 J	19.6 J	13.3 J	104
Magnesium	1100	1140 L	1880	788 L	<b>11800</b>	4530	1580	1610	897	798	5030
Manganese	356	295	170	174	668	356	125	430	96	84.3	1270
Mercury	<0.090 UJ	<0.092 UJ	<b>0.33</b> J	<0.095 UJ	<0.080 UJ	<0.076 UJ	<0.068 UJ	<0.092 UJ	0.091 J	0.16 J	0.17
Nickel	<b>151</b> J	<b>48.4</b> K	<b>88.3</b> J	<b>125</b>	<b>39.6</b> J	<b>31.3</b> J	6.8 J	<b>73.7</b> J	9.6 J	4.7 J	23.0
Potassium	387 J	182 K	450 J	274 K	<b>11800</b> J	5280 J	1880 J	269 J	710 J	1040 J	6330
Sodium	242 J	136 J	321 J	141 J	317 J	262 J	245 J	296 J	252 J	268 J	NC
Thallium	1.7 K	<1.8 U	1.9 K	<1.5 UJ	2 K	0.58 K	<0.56 UJ	1.2 K	<0.61 U	<0.57 J	NC
Vanadium	<b>182</b>	<b>177</b>	<b>128</b>	<b>182</b>	98.6	41	19.2 K	<b>138</b>	16.8 K	7.5	110
Zinc	64.9 J	79.3 K	44.9 J	51.9 K	<b>127</b> J	83.7 J	41.6 J	51.7 J	21.5 J	19.7 J	95.1
<b>SVOCs (ug/kg) - Not Detected</b>											NA
<b>Pesticides (ug/kg) - Not detected</b>											NA
<b>PCBs (ug/kg) - Not Detected</b>											NA

Table obtained from the *Interim Removal Action Report for EBS-79* (Weston, July 2002)

UG/KG refers to micrograms/kilogram.

MG/KG refers to milligrams/kilogram

VOC refers to volatile organic compounds.

SVOC refers to semi-volatile organic compounds.

PCBs refers to polychlorinated biphenyls.

J indicates estimated at a value less than the reporting limit, but greater than zero.

K Analyte present. Reported value may be biased high

NC indicates Not Calculated.

ND indicates that compound was analyzed but not detected.

NS indicates that the sample was not analyzed for that compound.

U Not detected above the level of the associated value.

UL Not detected. Quantitation limit is probably higher.

B indicates that compound was detected in the blank.

Bold indicates that result exceeded Remedial Goal.

\*\* Fort Pickett Background concentration for Inorganics.

**TABLE 3-7**  
**SS-122 ANALYTICAL RESULTS**

ANALYTE	SS-122-1		SS-122-2	
Pesticides (ug/kg)				
Aldrin	ND	UL	ND	UL
alpha-BHC	ND	U	ND	U
beta-BHC	ND	U	ND	U
delta-BHC	ND	U	ND	UL
gamma-BHC (Lindane)	ND	U	ND	U
alpha-Chlordane	ND	U	ND	R
gamma-Chlordane	ND	U	ND	UL
Dieldrin	ND	U	ND	U
4,4'-DDD	ND	U	ND	U
4,4'-DDE	ND	U	ND	U
4,4'-DDT	ND	U	ND	U
Endrin	ND	U	ND	U
Endosulfan sulfate	ND	U	ND	U
Endrin aldehyde	ND	U	ND	U
Endrin ketone	ND	U	ND	U
Endosulfan-I	ND	U	ND	U
Endosulfan-II	ND	U	ND	U
Heptachlor	ND	U	ND	U
Heptachlor epoxide	ND	U	ND	U
Methoxychlor	ND	U	ND	U
Toxaphene	ND	U	ND	U

Table obtained from the *Interim Removal Action Report for EBS-79* (W  
UG/KG refers to micrograms/kilogram.  
ND indicates that compound was analyzed but not detected.

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name:	SB1-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB15-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	10/7/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00
Reporting Limit																		
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20														
Volatiles - (ug/kg)																		
2-Butanone	N		47000000	7900	10.7	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Acetone	N		7800000	2500	1.96	25	ND	25	ND	ND	27B	15B	110	ND	ND	ND		
Bromomethane	N		110000	41	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Chlorobenzene	N	100	1600000	800	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Chloromethane	C		49000	10	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Ethylbenzene	N	100	7800000	15000	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND				
m & p Xylenes	N	100	160000000		1	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Methylene Chloride	C	300	85000	19	2	4B	ND	3B	3B	ND	3B	3B	3B	88.6B	99.8B	68.1B		
o-Xylene	N	100	160000000	230000	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Styrene (monomer)	N	100	16000000	57000	1	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Toluene	N	100	16000000	8800	0.7	ND	ND	ND	ND	ND	ND	ND	4.42	ND	ND			
Semi-Volatiles - (ug/kg)																		
1,2,4-Trichlorobenzene	N	100	780000	7500	35.7	ND	ND	ND	ND	ND	ND	ND			ND			
1,2-Dichlorobenzene	N	100	7000000	9300	39.3	ND	ND	ND	ND	ND	ND	ND			ND			
1,4-Dichlorobenzene	C	100	27000	7.1	32.5	ND	ND	ND	ND	ND	ND	ND			ND			
2,4,5-Trichlorophenol	N	100	7800000		107	ND	ND	ND	ND	ND	ND	ND			ND			
2,4,6-Trichlorophenol	C	100	58000		100	ND	ND	ND	ND	ND	ND	ND			ND			
2,4-Dichlorophenol	N	100	230000	1200	46.4	ND	ND	ND	ND	ND	ND	ND			ND			
2,4-Dimethylphenol	N	100	1600000	6700	140	160U	140U	140U	140U	140U	140U	140U			150U			
2,4-Dinitrophenol	N	100	160000		103	800U	670U	670U	670U	650U	680U	700U	670U		ND			
2-Chlorophenol	N	100	390000		53.6	ND	ND	ND	ND	ND	ND	ND	ND		ND			
2-Methyl-4,6-Dinitrophenol	N		7800		150	ND	ND	ND	ND	ND	ND	ND	ND		ND			
2-Methylphenol	N	100	3900000		100	ND	ND	ND	ND	ND	ND	ND	ND		ND			
4-Methylphenol	N	100	390000		112	200U	170U	170U	170U	170U	170U	180U	170U		ND			
4-Nitrophenol	N	100	630000	1700	118	ND	ND	ND	ND	ND	ND	ND	ND		118U			
Bis(2-chloroethyl) ether	C		580	0.044	35.7	ND	ND	ND	ND	ND	ND	ND	ND		ND			
Bis(2-ethylhexyl) phthalate	C	30000	46000	2900000	18.6	ND	110	ND	50J	76	38J	110	66J		127			
Di-n-butyl phthalate	N	200000	7800000	5000000	46.4	ND	ND	ND	ND	ND	ND	ND	ND		364			
Dibenzofuran	N		310000	7700	39.3	ND	ND	ND	ND	ND	ND	ND	ND		ND			
Hexachlorobenzene	C	1000000	400	52	32.5	ND	ND	ND	ND	ND	ND	ND	ND		ND			
n-Nitrosodi-n-propylamine	C		91	0.047	110	110U	ND	92U	92U	ND	93U	95U	92U		ND			
n-Nitrosodiphenylamine	C	20000	130000	760	21.8	ND	ND	ND	ND	ND	ND	ND	ND		ND			
Phenol	N	100	47000000	130000	29.3	ND	ND	ND	ND	ND	ND	ND	ND		ND			
PAHs - (ug/kg)																		
2-Methylnaphthalene	N	100	1600000	22000	1.38	13	ND	ND	ND	ND	ND	2.5J	59	ND	4.52J	ND		
Acenaphthene	N	100	4700000	100000	0.499	ND	ND	ND	ND	ND	ND	ND	4	ND	ND	ND		
Acenaphthylene	N	100	1600000		0.511	ND	18	ND	ND	ND	ND	ND	1.9	ND	ND	ND		
Anthracene	N	100	23000000	470000	0.257	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND		
Benz[a]anthracene	C	100	870	1500	0.357	3.6	ND	ND	ND	ND	ND	ND	8	2.83J	ND	ND		
Benzo[a]pyrene	C	100	87	370	0.807	3.2	ND	ND	ND	ND	ND	ND	8.4	ND	ND	ND		
Benzo[b]fluoranthene	C	100	870	4500	0.499	11	ND	ND	ND	ND	ND	2.9	21	ND	ND	ND		
Benzo[g,h,i]perylene	N	100	2300000		0.565	5.7J	ND	ND	ND	ND	ND	ND	8.7	ND	ND	ND		
Benzo[k]fluoranthene	C	100	8700	45000	0.691	3.6	ND	ND	ND	ND	ND	ND	9.8	ND	ND	ND		
Chrysene	C	100	87000	150000	0.23	7.9	ND	ND	ND	ND	ND	2.3	15	5.25J	6.78J	ND		
Dibenz[a,h]anthracene	C	100	87	1400	0.373	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND		
Fluoranthene	N	100	3100000	6300000	0.384	4.7	ND	ND	ND	ND	ND	2.6	16	10.9J	12.8J	3.93J		

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name:	SB1-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB15-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5
	Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Sample Date:	10/7/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00
	Status:																	
Reporting Limit																		
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20														
Fluorene	N	100	3100000	140000	0.499	ND	ND	2.1	ND	ND	ND	ND	3.6	ND	1.13J	ND		
Indeno[1,2,3-cd]pyrene	C	100	870	13000	0.384	4J	ND	ND	ND	ND	ND	ND	8.8	5.25J	4.14J	1.43J		
Naphthalene	N	100	1600000	150	0.499	18	ND	2.7	ND	ND	ND	2.7	9.7	ND	2.64J	ND		
Phenanthrene	N	100	1600000		0.384	7.8	ND	ND	ND	ND	ND	2.6	14	12.5J	15.8J	6.78J		
Pyrene	N	100	2300000	680000	0.346	9.2J	ND	ND	ND	ND	ND	2.6	20	6.47J	7.53J	2.14J		
PCBs - (ug/kg)																		
Aroclor 1016	N	100	5500	4200	0.612	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1221	C	100	320		2.17	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1232	C	100	320		13	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1242	C	100	320		11	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1248	C	100	320		1.63	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1254	C	100	320	1100	0.942	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Aroclor 1260	C	100	320		0.895	ND	ND	ND	ND	ND	ND	ND	ND			ND		
Pesticides - (ug/kg)																		
4,4'-DDD	C	100	2700	11000	0.042	1J	ND	ND	ND	ND	ND	ND	ND		0.525	ND	6.5J	3.1J
4,4'-DDE	C	100	1900	35000	0.037	1.5	ND	ND	ND	ND	ND	ND	3.4J		ND	1.4J	4.4J	1.9J
4,4'-DDT	C	100	1900	1200	0.046	ND	ND	ND	ND	ND	ND	3.6	5.6J		2.98	0.054R	0.055R	5.2J
Aldrin	C	100	38	7.7	0.053	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Alpha-BHC	C	100	100	0.89	0.042	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Alpha-chlordane	C	100	1800		0.25	ND	ND	ND	ND	ND	ND	ND	ND		ND	0.62J	2.3J	ND
Beta-bhc	C	100	350	3.1	0.037	ND	ND	ND	ND	ND	ND	ND	2.3J		ND	ND	ND	ND
Delta-bhc	C	100	100		0.033	ND	ND	ND	ND	ND	ND	ND	ND		ND	3.4J	ND	3.7J
Dieldrin	C	100	40	2.2	0.058	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	1.2J	ND
Endosulfan I	N	25000	470000		0.051	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Endosulfan II	N	25000	470000		0.037	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Endosulfan sulfate	N	25000	470000		0.033	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Endrin	N	30	23000	5400	0.035	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Endrin aldehyde	N	30	23000		0.044	ND	ND	ND	ND	ND	ND	ND	1.6		ND	ND	ND	ND
Endrin ketone	N	100	23000		0.028	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Gamma-BHC	C	100	490	4.3	0.079	ND	ND	ND	ND	ND	ND	ND	ND		ND	0.76J	0.59J	0.58J
Gamma-chlordane	C	100	1800		0.051	ND	ND	ND	ND	ND	ND	ND	ND		ND	0.83J	0.77J	1.3J
Heptachlor	C	100	140	840	0.058	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Heptachlor epoxide	C	100	70	25	0.17	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	2.5J	ND
Methoxychlor	N	100	390000	310000	0.053	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Toxaphene	C		580	630	15	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND
Metals - (mg/kg)																		
Aluminum, Total	N	1	78000		12.9	6580	5320	5790	6440	6300	4950	8450	8640			14300		
Antimony, Total	N	0.48	31	13	0.21	0.55L	0.51L	0.66L	0.53L	0.51L	0.56L	0.8L	0.91L		0.636UL			
Arsenic, Total	C	10	0.43	0.026	0.094	1.3	0.78	0.56B	0.57	0.76	0.35L	2.9	4.7			1.5		
Barium, Total	N	440	5500	2100	0.117	41.7	16.7	17.6	13.6	14.6	13.1	34.9	36			23.6		
Beryllium, Total	N	0.02	160	1200	0.01	0.41J	0.33	0.37J	0.34	0.45	0.23L	0.24L	0.38J			1.02		
Cadmium, Total	N	2.5	39	27	0.02	0.04B	0.03B	ND	0.02B	0.07B	0.12B	0.02B	ND			0.384		
Calcium, Total					101	657	1290	1240	1930	2020	1630	1160	405			1060		
Chromium, Total	N	0.0075	230		0.043	13.1	11.2	9.1	15.4	10.3	8.4	16.4	13.3			22.6		
Cobalt, Total	N	20	1600		0.25	2.6	3.3	3.5	4	3.1	3.8	4.3	3.5			2.75		
Copper, Total	N	15	3100	11000	0.074	6.7J	3.3	4.7J	3	2.5	2.3	6.8	7.7J			10.8		
Iron, Total	N		23000		0.84	9240	10200	10700	11500J	10800	11800J	13500J	14300			21000		
Lead, Total	N	0.01	400		0.094	45.5	14.1	10.9	11.5	13.2	9.3	25.8	108			19.4		

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name:	SB1-0.5	SB8-0.5	DUP-1	SB9-0.5	SB10-0.5	SB11-0.5	SB12-0.5	SB15-0.5	SB101-0.5	SB102-0.5	SB103-0.5	SS104-0.5	SS106-0.5	SS107-0.5	SS108-0.5	SS-DUP1	SS109-0.5	SS110-0.5
Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:	10/7/99	10/5/99	10/5/99	10/4/99	10/5/99	10/4/99	10/4/99	10/5/99	12/8/00	12/8/00	12/8/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00	12/19/00
Status:																		

Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Reporting Limit																	
Magnesium, Total					1.4	670J	2630	2580J	3410	2690	2310	3200	2350J			2410						
Manganese, Total	N	100	1600	950	0.047	260	288	310	355	317	305	349	337			300K						
Mercury, Total	N	2.2	23		0.018	ND	ND	ND	ND	ND	ND	ND	ND			ND						
Nickel, Total	N	2	1600		0.064	3.3	5.8	5.1	7.5	6.3	4.9	8	5.1			10.8						
Potassium, Total					2.78	608	2350	3040	3470L	2300	2550L	3980L	3270			2490						
Selenium, Total	N	1	390	19	0.13	0.38B	0.26B	0.27B	ND	ND	0.25B	ND	0.43B			ND						
Silver, Total	N	2	390	31	0.2	ND	ND	ND	ND	ND	ND	ND	ND			ND						
Sodium, Total					10.3	101B	112B	116B	123B	105B	120B	124B	106B			155B						
Thallium, Total	N	0.001	5.5	3.6	0.1	0.15	0.42	0.43	0.37B	0.4	0.33B	0.53B	0.57			1.06UL						
Vanadium, Total	N	0.5	550	5100	0.17	15.5	12.5	11.7	13.5	11.7	9.4	18.9	17.3			29						
Zinc, Total	N	10	23000	14000	0.24	62.3J	50.2	47.9J	50	49.6	41.9	53.9	53.5J			52.5						
Metals - (mg/kg)																						
Cyanide	N	5000	1600	150	0.22	0.26R	ND	ND	ND	ND	ND	ND	ND									
Inorganic - (pH)																						
Corrosivity as ph												7.4										

DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRITERION, OR DETECTED RESULT HAS NO ECOLOGICAL CRITERION.

DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\*: SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name:	SS117-0.5	SS118-0.5	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS123-0.5	SS124-0.5	SS125-0.5
Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:	12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00
Status:									

Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Reporting Limit										
Volatiles - (ug/kg)															
2-Butanone	N		47000000	7900	10.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	N		7800000	2500	1.96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	N		110000	41	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	N	100	1600000	800	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	C		49000	10	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	N	100	7800000	15000	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m & p Xylenes	N	100	160000000		1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	C	300	85000	19	2	13.5B	767	ND	16.1B	9.53B	16.1B	16.2B	11.3B	8.15B	
o-Xylene	N	100	160000000	230000	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene (monomer)	N	100	16000000	57000	1	ND	ND	ND	ND	ND	ND	ND	ND	3.79	
Toluene	N	100	16000000	8800	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatiles - (ug/kg)															
1,2,4-Trichlorobenzene	N	100	780000	7500	35.7		363U	640U	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	N	100	7000000	9300	39.3		399U	704U	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	C	100	27000	7.1	32.5		330U	582U	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	N	100	7800000		107		726UJ	1280U	ND	ND	ND	ND	107U	ND	ND
2,4,6-Trichlorophenol	C	100	58000		100		690UJ	1220U	ND	ND	ND	ND	102U	ND	ND
2,4-Dichlorophenol	N	100	230000	1200	46.4		472U	832U	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	N	100	1600000	6700	140		1530U	2690U	166U	190U	167U	193U	225U	185U	
2,4-Dinitrophenol	N	100	160000		103		944UJ	1660U	103U	117U	103U	119U	139U	114U	
2-Chlorophenol	N	100	390000		53.6		545U	960U	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-Dinitrophenol	N		7800		150		1530UJ	2690U	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	N	100	3900000		100		617U	1090U	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	N	100	390000		112		763U	1340U	ND	ND	ND	ND	112U	ND	ND
4-Nitrophenol	N	100	630000	1700	118		1200UJ	2110U	130U	149U	131U	151U	177U	145U	
Bis(2-chloroethyl) ether	C		580	0.044	35.7		ND	640U	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	C	30000	46000	2900000	18.6		770B	ND	143B	111B	85.3B	118B	119B	77.8B	
Di-n-butyl phthalate	N	200000	7800000	5000000	46.4		ND	ND	158B	166B	150B	408B	230B	392B	
Dibenzofuran	N		310000	7700	39.3		ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	C	1000000	400	52	32.5		ND	582U	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine	C		91	0.047	110		363U	640U	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine	C	20000	130000	760	21.8		ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	N	100	47000000	130000	29.3		298U	525U	ND	ND	ND	ND	ND	ND	ND
PAHs - (ug/kg)															
2-Methylnaphthalene	N	100	1600000	22000	1.38	ND	3050	326	26.6	40.5	31.7	27.5	26.9	8.74	
Acenaphthene	N	100	4700000	100000	0.499	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	N	100	1600000		0.511	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	N	100	23000000	470000	0.257	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benz[a]anthracene	C	100	870	1500	0.357	ND	272J	ND	ND	ND	ND	ND	ND	ND	10.5
Benzo[a]pyrene	C	100	87	370	0.807	ND	120K	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	C	100	870	4500	0.499	ND	171K	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	N	100	2300000		0.565	ND	109K	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	C	100	8700	45000	0.691	ND	54.5K	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	C	100	87000	150000	0.23	2.69	704J	ND	ND	ND	ND	ND	ND	4.37	
Dibenz[a,h]anthracene	C	100	87	1400	0.373	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	N	100	3100000	6300000	0.384	ND	ND	ND	6.35J	18	ND	22.9	ND	ND	ND

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name: Depth (ft): Sample Date: Status:														
						SS117-0.5	SS118-0.5	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS123-0.5	SS124-0.5	SS125-0.5
						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
						12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00
Reporting Limit														
Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Limit									
Fluorene	N	100	3100000	140000	0.499	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	C	100	870	13000	0.384	ND	43.6K	ND	ND	ND	ND	ND	ND	ND
Naphthalene	N	100	1600000	150	0.499	ND	ND	ND	14.7	ND	ND	22.9	21.5	6.99
Phenanthrene	N	100	1600000		0.384	5.38B	ND	ND	10.3B	27B	ND	22.9B	ND	8.3B
Pyrene	N	100	2300000	680000	0.346	ND	5740J	813	10.3J	18	ND	18.4	ND	ND
PCBs - (ug/kg)														
Aroclor 1016	N	100	5500	4200	0.612		ND	0.995R	ND	ND	ND	ND	ND	ND
Aroclor 1221	C	100	320		2.17		ND	3.52R	ND	ND	ND	ND	ND	ND
Aroclor 1232	C	100	320		13		ND	5.74R	ND	ND	ND	ND	ND	ND
Aroclor 1242	C	100	320		11		ND	7.27R	ND	ND	ND	ND	ND	ND
Aroclor 1248	C	100	320		1.63		ND	2.64R	ND	ND	ND	ND	ND	ND
Aroclor 1254	C	100	320	1100	0.942		ND	1.53R	ND	ND	ND	ND	ND	ND
Aroclor 1260	C	100	320		0.895		ND	1.45R	ND	ND	5.85	48.2	29.1	ND
Pesticides - (ug/kg)														
4,4'-DDD	C	100	2700	11000	0.042		57.7J	0.07R	1.63J	ND	ND	ND	ND	ND
4,4'-DDE	C	100	1900	35000	0.037		ND	ND	ND	0.585J	ND	ND	ND	ND
4,4'-DDT	C	100	1900	1200	0.046		0.443R	0.078R	0.048R	0.055R	ND	6.58J	1.82J	2.03J
Aldrin	C	100	38	7.7	0.053		ND	0.865J	ND	ND	0.172J	ND	ND	ND
Alpha-BHC	C	100	100	0.89	0.042		40.2	0.07R	ND	ND	ND	ND	ND	ND
Alpha-chlordane	C	100	1800		0.25		ND	0.406R	ND	1.17J	ND	ND	ND	ND
Beta-bhc	C	100	350	3.1	0.037		ND	0.061R	ND	ND	ND	ND	ND	0.628J
Delta-bhc	C	100	100		0.033		ND	0.054R	3.64J	3.15J	ND	ND	5.02J	ND
Dieldrin	C	100	40	2.2	0.058		ND	6.63J	ND	ND	ND	ND	ND	ND
Endosulfan I	N	25000	470000		0.051		ND	0.426J	ND	ND	ND	ND	ND	ND
Endosulfan II	N	25000	470000		0.037		ND	0.061R	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	N	25000	470000		0.033		ND	0.054R	ND	ND	ND	ND	ND	ND
Endrin	N	30	23000	5400	0.035		ND	0.057R	ND	ND	ND	ND	ND	ND
Endrin aldehyde	N	30	23000		0.044		ND	0.074R	ND	ND	ND	ND	ND	ND
Endrin ketone	N	100	23000		0.028		ND	0.046R	ND	ND	ND	ND	ND	ND
Gamma-BHC	C	100	490	4.3	0.079		ND	0.131R	ND	ND	ND	ND	ND	ND
Gamma-chlordane	C	100	1800		0.051		ND	10.1J	0.606J	ND	1.03J	2.39J	0.522J	ND
Heptachlor	C	100	140	840	0.058		ND	0.097R	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	C	100	70	25	0.17		ND	2.13L	1.98J	ND	3.59J	0.364J	ND	ND
Methoxychlor	N	100	390000	310000	0.053		ND	5.1J	ND	ND	ND	ND	ND	ND
Toxaphene	C		580	630	15		ND	4.98R	ND	ND	ND	ND	ND	ND
Metals - (mg/kg)														
Aluminum, Total	N	1	78000		12.9		22800	28900K	7910K	18100K	6700K	16200K	24200K	11900K
Antimony, Total	N	0.48	31	13	0.21		1.94UL	1.21B	0.63UL	1.71B	1.31B	0.986B	1.17B	0.712UL
Arsenic, Total	C	10	0.43	0.026	0.094		2.88U	2.24	1.12	4.12	0.933U	2.83	4.47	2.44
Barium, Total	N	440	5500	2100	0.117		110	60.8	24.5	69	25.4	53	99.8	65.4
Beryllium, Total	N	0.02	160	1200	0.01		1.16	0.947	0.448	0.823	0.363	0.73	1.14	0.642
Cadmium, Total	N	2.5	39	27	0.02		1.17	0.297	0.119	0.521	0.112	0.22	0.636	0.279
Calcium, Total					101		4740	1420	527	1620	361	1060	2370	1200
Chromium, Total	N	0.0075	230		0.043		30.8	51.1J	11.8J	23.3J	8.33J	19.4J	27.5J	14.2J
Cobalt, Total	N	20	1600		0.25		8.43	3.57	2.66	6.01	2.19	3.71	11.3	3.21
Copper, Total	N	15	3100	11000	0.074		26.2	17.2	5.8	13.1	4.34	9.69	14.8	7.49
Iron, Total	N		23000		0.84		14900	26600K	6650K	18200K	5070K	15100K	23500K	10700K
Lead, Total	N	0.01	400		0.094		149J	71.8J	42.8J	94.8J	29.9J	76.6J	112J	56.4J

TABLE 3-8 SURFACE SOIL ANALYTE DETECTIONS AND COPCS, FINAL RESULTS (EA and Weston)

Sample Name:	SS117-0.5	SS118-0.5	SS119-0.5	SS120-0.5	SS121-0.5	SS-DUP4	SS123-0.5	SS124-0.5	SS125-0.5
Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date:	12/20/00	1/9/01	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00	12/20/00
Status:									

Analyte	N/C	SOIL ECO	SOIL RBC	SSL-DAF20	Reporting Limit									
Magnesium, Total					1.4		2060	1900	748	1710	648	1400	2110	792
Manganese, Total	N	100	1600	950	0.047		224J	127	128	856	100	232	1290	936
Mercury, Total	N	2.2	23		0.018		0.396	0.096	0.041	0.181	0.023	0.137	0.201	0.093
Nickel, Total	N	2	1600		0.064		11.5	9.88	3.48	8.35	2.9	6.37	9.91	4.77
Potassium, Total					2.78		1960	2080	753	1700	683	1230	1900	636
Selenium, Total	N	1	390	19	0.13		2.37U	1.23U	ND	ND	ND	ND	1.05U	ND
Silver, Total	N	2	390	31	0.2		ND	0.737	ND	1.06	0.485	0.642	0.753	ND
Sodium, Total					10.3		ND	216B	151B	180B	117B	94.2B	218B	78.9B
Thallium, Total	N	0.001	5.5	3.6	0.1		3.6UL	1.86UL	1.17UL	1.36UL	1.17UL	1.32UL	1.59UL	1.32UL
Vanadium, Total	N	0.5	550	5100	0.17		45.3	62.1	12.5	32.5	9.74	27.5	41.7	20.2
Zinc, Total	N	10	23000	14000	0.24		200	62.1J	39.7J	127J	31.8J	73.3J	131J	66.8J
Metals - (mg/kg)														
Cyanide	N	5000	1600	150	0.22									
Inorganic - (pH)														
Corrosivity as ph														

- DOTTED: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FU
- LIGHT SHADE: RESULT VALUE EXCEEDS ECOLOGICAL BENCHMARK CRI  
DETECTED RESULT HAS NO ECOLOGICAL CRITERION.
- DOTTED SHADE: RESULT VALUE EXCEEDS BOTH CRITERIA.  
ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SA  
C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.  
\*: SURROGATE RBC OF SIMILAR COMPOUND USED  
BLANK CELL = NOT ANALYZED  
ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA  
B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY OI  
J = ESTIMATED VALUE  
U = UNDETECTED  
D = ANALYSIS AT SECONDARY DILUTION  
K = REPORTED VALUE MAY BE BIASED HIGH  
L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER  
UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IMP  
UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.  
R = REJECTED RESULT

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	SB-1-4	493-IN-1C	493-IN-2A	493-IN-3A	493-IN-4A	493-IN-5	493-IN-6	493-IN-7	493-IN-8	493-IN-9	SB-2-11	SB-2-16	SB-3-8	SB-3-16	SB-4-8	SB-4-16	493-OUT BASE-1	493-OUT BASE-2	SB-5-12	SB-5-16
Depth (ft):	4					2	2	2	2	2	11	16	8	16	8	16	2	2	12	16
Sample Date:	10/7/99	12/5/01	11/29/01	11/29/01	11/29/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	11/10/01	11/10/01	10/5/99	10/5/99
Sampler	EA	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	Weston	Weston	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit
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Volatile Organic Compounds (VOCs) - (ug/kg)																								
2-Butanone	N	47000000	7900	11	ND					7.5B	9.6B	11.8B	9.6B	12.6B	ND	ND	ND	ND	ND	12.1B	8.8B	ND	ND	
Acetone	N	7800000	2500	11.9	41					47.5B	62.5B	32B	12.2B	80.1B	40B	56B	18	18	43B	53B	75.8B	57.4B	22	22
Carbon disulfide	N	7800000	19000	0.4	6					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	N	7800000	15000	0.5	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
m & p Xylenes	N	160000000		1	ND										ND	ND	ND	ND	ND	ND			ND	ND
Methylene Chloride	C	85000	19	11	ND					20.5B	18.6B	10B	10.8B	9.2B	4B	4B	ND	4B	4B	4B	7.6B	5.1B	4B	4B
o-Xylene	N	160000000	230000	0.9	ND										ND	ND	ND	ND	ND	ND			ND	ND
Toluene	N	16000000	8800	0.8	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	N	160000	170000	16						ND	ND	ND	ND	ND						ND	ND			

Semi-Volatile Organic Compounds (SVOCs) - (ug/kg)																								
2,4-Dimethylphenol	N	1600000	6700	140	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo[a]pyrene	C	87	370	180						190U	200U	190U	180U	190U						220U	180U			
Bis(2-ethylhexyl) phthalate	C	46000	2900000	180	ND					ND	ND	ND	ND	ND	72	190	49J	110	56J	54J	ND	ND	ND	ND
Di-n-butyl phthalate	N	7800000	5000000	180	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibenz[a,h]anthracene	C	87	1400	180						190U	200U	190U	180U	190U						220U	180U			
Diethyl phthalate	N	63000000	450000	180	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
n-Nitrosodi-n-propylamine	C	91	0.047	100	110U					190U	200U	190U	180U	190U	110U	110U	110U	110U	110U	110U	220U	180U	110U	110U
Phenanthrene	N	1600000		180						ND	ND	ND	ND	322							ND	ND		

Polycyclic Aromatic Compounds (PAHs) - (ug/kg)																							
2-Methyl-4,6-Dinitrophenol	N	7800		1400																			
2-Methylnaphthalene	N	1600000	22000	1.9	ND				ND	ND	ND	ND	491	ND	ND	ND	ND	29J	ND	ND	ND	ND	ND
Acenaphthene	N	4700000	100000	1.9	32									ND	ND	ND	ND	5.6	ND			ND	ND
Acenaphthylene	N	1600000		1.9	8.8									ND	ND	ND	ND	ND	ND			ND	ND
Anthracene	N	23000000	470000	1.9	19									ND	ND	ND	ND	ND	ND			ND	ND
Benz[a]anthracene	C	870	1500	1.9	ND									ND	ND	ND	ND	ND	ND			ND	ND
Benzo[a]pyrene	C	87	370	1.9	4.7									ND	ND	ND	ND	ND	ND			ND	ND
Benzo[b]fluoranthene	C	870	4500	1.9	4.3									2.2J	4	ND	ND	ND	ND			ND	ND
Benzo[g,h,i]perylene	N	2300000		1.9	ND									ND	3.5J	ND	ND	ND	ND			ND	ND
Benzo[k]fluoranthene	C	8700	45000	1.9	ND									ND	ND	ND	ND	ND	ND			ND	ND
Bis(2-chloroethyl) ether	C	580	0.044	1400																			
Bis(2-ethylhexyl) phthalate	C	46000	2900000	1200																			
Chrysene	C	87000	150000	1.9	ND									ND	30J	ND	ND	ND	ND			ND	ND
Dibenz[a,h]anthracene	C	87	1400	1.9	ND									ND	2.9J	ND	ND	ND	ND			ND	ND
Fluoranthene	N	3100000	6300000	1.9	6.1									ND	9.4	ND	ND	3	ND			ND	ND
Fluorene	N	3100000	140000	1.9	36									ND	ND	ND	ND	9.8J	ND			ND	ND
Hexachlorobenzene	C	400	52	1300																			
Indeno[1,2,3-cd]pyrene	C	870	13000	1.9	ND									ND	3J	ND	ND	ND	ND			ND	ND
n-Nitrosodi-n-propylamine	C	91	0.047	100																			
Naphthalene	N	1600000	150	1.9	26									ND	ND	ND	ND	2.3	ND			ND	ND
Pentachlorophenol	C	5300		360																			
Phenanthrene	N	1600000		1.9	140									ND	21	ND	ND	56J	12			ND	ND
Pyrene	N	2300000	680000	1.9	19									ND	ND	ND	ND	4.8	ND			ND	ND

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	SB-1-4	493-IN-1C	493-IN-2A	493-IN-3A	493-IN-4A	493-IN-5	493-IN-6	493-IN-7	493-IN-8	493-IN-9	SB-2-11	SB-2-16	SB-3-8	SB-3-16	SB-4-8	SB-4-16	493-OUT BASE-1	493-OUT BASE-2	SB-5-12	SB-5-16
Depth (ft):	4					2	2	2	2	2	11	16	8	16	8	16	2	2	12	16
Sample Date:	10/7/99	12/5/01	11/29/01	11/29/01	11/29/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	11/10/01	11/10/01	10/5/99	10/5/99
Sampler	EA	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	Weston	Weston	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																				
PCBs - (ug/kg)																								
Aroclor 1016	N	5500	4200	11	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1221	C	320		11	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1232	C	320		11	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1242	C	320		10	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1248	C	320		11	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1254	C	320	1100	10	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Aroclor 1260	C	320		18	ND					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Pesticides - (ug/kg)																								
4,4'-DDD	C	2700	11000	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4,4'-DDE	C	1900	35000	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
4,4'-DDT	C	1900	1200	0.549	ND	ND	6.3J	5.3	3.2J	9.2	9.2	ND	ND	76.1	ND	ND	ND	ND	ND	ND	ND	ND		
Aldrin	C	38	7.7	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Alpha-BHC	C	100	0.89	0.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Alpha-chlordane	C	1800		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Beta-bhc	C	350	3.1	0.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Delta-bhc	C	100		0.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Dieldrin	C	40	2.2	0.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endosulfan II	N	470000		0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endrin aldehyde	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Endrin ketone	N	23000		0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Gamma-BHC	C	490	4.3	0.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Gamma-chlordane	C	1800		0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Heptachlor	C	140	840	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Heptachlor epoxide	C	70	25	0.549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Toxaphene	C	580	630	11	ND	ND	ND	ND	ND	ND	ND	ND	960U	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Metals - (mg/kg)																								
Aluminum, Total	N	78000		110	8770		29700L	19500L	14100L	39900	37900	34600	27400	36000	9200	11700	16400	8750	10900	8240	38900	25500	19100	10700
Antimony, Total	N	31	13	0.23	0.51L		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.83L	2.2L	0.48L	0.76L	ND	ND	ND	1L	0.49L
Arsenic, Total	C	0.43	0.026	0.097	1.9		2.1K	2.2K	2.2K	1.1K	1.8K	1.5K	1.3K	1.4K	0.79	0.64	1.3	0.82B	0.77	0.46L	4.7K	4.4K	0.97	0.74B
Barium, Total	N	5500	2100	0.56	48.3		42.7	37.1	31.6	47.8	61.7	48	28.2	61.4	22.2	46.8	18.7	39.8	28	28.6	25.1	39.1	67.2	39.4
Beryllium, Total	N	160	1200	0.011	0.51J		1.1K	0.73K	0.69K	0.96K	1.2K	1.2K	0.9K	1.2K	0.21L	0.61	0.93	0.44	0.38	0.32L	0.88K	0.86K	0.83	0.55
Cadmium, Total	N	39	27	0.02	ND		ND	ND	ND	ND	ND	ND	ND	ND	0.07B	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total				163	567		108J	146J	114J	223J	136J	159J	86.6J	229J	ND	35B	31.8	26.2	74.1B	ND	1160J	319J	28.4	27
Chromium, Total	N	230		0.046	16.8		59.1	45.4	45.7	32.3	51.5	32.3	23.3	50.6	8.2	12.9	62	4.4	35	2.9	29.2	40.6	28.7	3.7
Cobalt, Total	N	1600		0.26	4.2		3.9J	6.5J	2.7J	4J	4.5J	3.8J	3.2J	5J	4.7	6.8	3.3	1.7L	2.6	1.8	1.4K	4.9K	4.4	1.8L
Copper, Total	N	3100	11000	0.077	9.5J		20.5	13.4	14.1	7.8J	11.4J	8.6J	5.3J	12.7J	1.4L	1.4L	25.8	1.1L	5.9	0.83L	7.3J	13.4J	4.9	ND
Iron, Total	N	23000		0.92	13800		31300	23200	23300	14800	22600	20100	14700	22600	9360J	15300J	57600	9170	20300J	6780J	28600	23300	20400	9100
Lead, Total	N	400		0.097	33.6		20.2L	24.1L	14.1L	21.1J	21.6J	21.3J	18.5J	23.2J	26.8	18.9	22	8.1	19	12.2	25.5J	15.4J	19	6.5
Magnesium, Total				11.1	686J		2640L	873L	642L	3210	5070	3730	1740	4900	881	2420	525	1520	563	1180	925	823	3720	1850
Manganese, Total	N	1600	950	0.28	496		185	221	118	192	270	252	163	286	201	385	103	151	122	152	59.2K	89.2K	189	197
Mercury, Total	N	23		0.05	ND		ND	ND	ND	0.1J	0.096J	ND	ND	0.12	ND	ND	0.07	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	N	1600		0.069	3.3		18.2K	12.9K	9.9K	15.8J	21.3J	16.6J	10J	21.4J	2.9	5.9	10.7	2L	5.7	2.1	6J	16.9J	7.9	2.1L
Potassium, Total				23.5	710		2790K	612K	467K	3680J	5170J	4420J	2060J	5340J	1060L	3230L	577	1690	535L	1560L	889J	632J	4410	2460
Selenium, Total	N	390	19	0.14	0.65B		ND	ND	ND	ND	ND	ND	ND	ND	0.37B	0.55B	ND	ND	0.37B	ND	ND	ND	0.31B	ND
Silver, Total	N	390	31	0.18	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total				10.6	110B		139J	112J	104J	325J	292J	294J	240J	307J	112B	118B	90.5B	122B	106B	98.8B	186J	165J	106B	99.8B

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	SB-1-4	493-IN-1C	493-IN-2A	493-IN-3A	493-IN-4A	493-IN-5	493-IN-6	493-IN-7	493-IN-8	493-IN-9	SB-2-11	SB-2-16	SB-3-8	SB-3-16	SB-4-8	SB-4-16	493-OUT BASE-1	493-OUT BASE-2	SB-5-12	SB-5-16
Depth (ft):	4					2	2	2	2	2	11	16	8	16	8	16	2	2	12	16
Sample Date:	10/7/99	12/5/01	11/29/01	11/29/01	11/29/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	10/4/99	10/4/99	10/5/99	10/5/99	10/4/99	10/4/99	11/10/01	11/10/01	10/5/99	10/5/99
Sampler	EA	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	Weston	Weston	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																				
Thallium, Total	N	5.5	3.6	0.11	ND		ND	ND	ND	0.67K	0.76K	0.79K	ND	1K	0.25	0.61	ND	0.54	0.2	0.36	ND	ND	0.95	0.55
Vanadium, Total	N	550	5100	0.18	19.3		55	42.3	39.9	28	44.6	38.8	27	42.9	14.4	16.7	77.2	16.9	35.1	8.7	41.3	37.4	34.8	10.8
Zinc, Total	N	23000	14000	0.25	43.3J		56.6K	23.2K	19.1K	44.5J	58.2J	64.5J	40.9J	68.9J	21.8	51.1	22.5	37.2	13.3	27.4	20.3J	30.6J	40.8	46.2
Cyanide	N	1600	150	0.23	0.28R					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SHADE: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION FOR NON-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION. FULL VALUE RBC SHOWN.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX SAMPLES.

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY OR FIELD BLANK

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANITATION LIMIT MAY BE INACCURATE OR IMPRECISE

UL = NOT DETECTED. QUANITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	UP-BASE-1	UP-BASE-2	UP-BASE-3	SB-6-10	SB-6-16	SB-7-8	SB-7-16	SB-8-6	SB-8-12	SB-9-8	SB-9-16	SB-9-25	SB-10-6	SB-10-12	SB-11-4	SB-11-10	SB-12-6	SB-12-8	SB-13-12	SB-1314-SW2A	SB-1314-SW3A
Depth (ft):	2	2	2	10	16	8	16	6	12	8	16	25	6	12	4	10	6	8	12		
Sample Date:	11/10/01	11/10/01	11/10/01	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/4/99	10/4/99	10/5/99	11/29/01	11/29/01
Sampler	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	Weston	Weston

AnalyteN/C SOIL RBC SSL-DAF20 Reporting Limit

Volatile Organic Compounds (VOCs) - (ug/kg)																									
2-Butanone	N	47000000	7900	11				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.1	
Acetone	N	7800000	2500	11.9				ND	38	21	17	37J	ND	28B	97B	22	11	18	82B	200	120	79B	14	39.3B	101B
Carbon disulfide	N	7800000	19000	0.4				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	ND	ND	ND	ND	
Ethylbenzene	N	7800000	15000	0.5				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	58	ND	13	ND	ND	
m & p Xylenes	N	160000000		1				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	42	ND	75			
Methylene Chloride	C	85000	19	11				ND	4B	4B	4B	ND	ND	4B	4B	3B	4B	4B	3B	4B	4B	4B	4B	9.4B	11.7B
o-Xylene	N	160000000	230000	0.9				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7	ND	69			
Toluene	N	16000000	8800	0.8				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9	ND	ND	ND	ND	
Total Xylenes	N	160000	170000	16																			ND	ND	

Semi-Volatile Organic Compounds (SVOCs) - (ug/kg)																								
2,4-Dimethylphenol	N	1600000	6700	140				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2100	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	C	87	370	180																			210U	260U
Bis(2-ethylhexyl) phthalate	C	46000	2900000	180			220J	78	160	73	68	110	ND	ND	ND	ND	70	210	46J	90	ND	91	ND	ND
Di-n-butyl phthalate	N	7800000	5000000	180			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	55	ND	ND	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	C	87	1400	180																			210U	260U
Diethyl phthalate	N	63000000	450000	180			ND	ND	ND	ND	ND	ND	ND	ND	38J	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine	C	91	0.047	100			100U	110U	110U	110U	110U	110U	110U	110U	95U	110U	110U	99U	110U	100U	110U	100U	210U	260U
Phenanthrene	N	1600000		180																			ND	ND

Polycyclic Aromatic Compounds (PAHs) - (ug/kg)																								
2-Methyl-4,6-Dinitrophenol	N	7800		1400																				
2-Methylnaphthalene	N	1600000	22000	1.9			12	ND	4	ND	ND	ND	ND	ND	43J	ND	ND	320	15J	10J	ND	16	ND	ND
Acenaphthene	N	4700000	100000	1.9			4.4	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	2.2		
Acenaphthylene	N	1600000		1.9			2	ND	ND	ND	2.9	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Anthracene	N	23000000	470000	1.9			16	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Benz[a]anthracene	C	870	1500	1.9			21	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Benzo[a]pyrene	C	87	370	1.9			58	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Benzo[b]fluoranthene	C	870	4500	1.9			12	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Benzo[g,h,i]perylene	N	2300000		1.9			ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Benzo[k]fluoranthene	C	8700	45000	1.9			4.8	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Bis(2-chloroethyl) ether	C	580	0.044	1400																				
Bis(2-ethylhexyl) phthalate	C	46000	2900000	1200																				
Chrysene	C	87000	150000	1.9			ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	3.7	ND	ND	ND	ND		
Dibenz[a,h]anthracene	C	87	1400	1.9			ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Fluoranthene	N	3100000	6300000	1.9			5.3	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
Fluorene	N	3100000	140000	1.9			6.1	ND	ND	ND	ND	ND	ND	ND		ND	ND	5.7J	ND	ND	ND	ND		
Hexachlorobenzene	C	400	52	1300																				
Indeno[1,2,3-cd]pyrene	C	870	13000	1.9			ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		
n-Nitrosodi-n-propylamine	C	91	0.047	100																				
Naphthalene	N	1600000	150	1.9			2.7	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	61J	33J	ND	3		
Pentachlorophenol	C	5300		360																				
Phenanthrene	N	1600000		1.9			120	ND	ND	ND	ND	ND	ND	ND		ND	ND	5.4	ND	1.9	ND	ND		
Pyrene	N	2300000	680000	1.9			31	ND	ND	ND	ND	ND	ND	ND		ND	ND	2.7	ND	ND	ND	ND		

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	UP-BASE-1	UP-BASE-2	UP-BASE-3	SB-6-10	SB-6-16	SB-7-8	SB-7-16	SB-8-6	SB-8-12	SB-9-8	SB-9-16	SB-9-25	SB-10-6	SB-10-12	SB-11-4	SB-11-10	SB-12-6	SB-12-8	SB-13-12	SB-1314-SW2A	SB-1314-SW3A
Depth (ft):	2	2	2	10	16	8	16	6	12	8	16	25	6	12	4	10	6	8	12		
Sample Date:	11/10/01	11/10/01	11/10/01	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/4/99	10/4/99	10/5/99	11/29/01	11/29/01
Sampler	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	Weston	Weston

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																					
PCBs - (ug/kg)																									
Aroclor 1016	N	5500	4200	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1221	C	320		11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1232	C	320		11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1242	C	320		10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1248	C	320		11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1254	C	320	1100	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aroclor 1260	C	320		18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Pesticides - (ug/kg)																									
4,4'-DDD	C	2700	11000	0.46				0.74J	ND	1.4J	ND	ND	ND	1.5J	ND	43	ND	ND	ND	ND	ND	ND	ND	ND	
4,4'-DDE	C	1900	35000	0.43				0.48J	ND	1.1	ND	ND	ND	ND	ND	1.4J	ND	ND	ND	ND	ND	ND	ND	ND	
4,4'-DDT	C	1900	1200	0.549				4.3J	ND	31J	ND	ND	ND	ND	ND	12J	ND	ND	ND	ND	ND	ND	ND	ND	
Aldrin	C	38	7.7	0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Alpha-BHC	C	100	0.89	0.41				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Alpha-chlordane	C	1800		0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Beta-bhc	C	350	3.1	0.53				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Delta-bhc	C	100		0.53				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dieldrin	C	40	2.2	0.47				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Endosulfan II	N	470000		0.39				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Endrin aldehyde	N	23000		0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Endrin ketone	N	23000		0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Gamma-BHC	C	490	4.3	0.49				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Gamma-chlordane	C	1800		0.38				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Heptachlor	C	140	840	0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Heptachlor epoxide	C	70	25	0.549				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toxaphene	C	580	630	11				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Metals - (mg/kg)																									
Aluminum, Total	N	78000		110				15400	11700	15000	25800	13500	11900	9990	18400	5920	9720	9710	5550	6950	9050	9840	10300	17500L	46700L
Antimony, Total	N	31	13	0.23				0.8L	0.47L	1L	2.6L	0.68L	0.54L	1L	1.6L	0.6L	0.64L	0.26R	0.57L	0.58L	0.76L	0.88L	0.57L	ND	ND
Arsenic, Total	C	0.43	0.026	0.097				1.5	0.7B	1.5	0.79B	0.86B	0.39B	0.8	1	1.1B	1.4	1.3	0.53	0.72	1.1	1.2	0.33B	ND	2.7K
Barium, Total	N	5500	2100	0.56				23.7	40.3	25.3	148	28	47.4	15.9	156	27.2	32.9	53.2	30.1	47.2	39.8	29.1	29.3	19.2	73.5
Beryllium, Total	N	160	1200	0.011				0.48	0.5	0.43	1.3	0.8	1	0.4	1	0.32J	0.72	1	0.36	0.53	0.32	0.48	0.77	0.66K	4.2K
Cadmium, Total	N	39	27	0.02				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium, Total				163				27.5	11.7	169	33.6	93	13.2	51.1B	26.3B	1330	200	37.1	613	125	1270	ND	23.7	ND	ND
Chromium, Total	N	230		0.046				30.8	4.7	32.8	46.5	10.7	8.5	36.4	53.4	13.1	11.5	1.9	17.2	10.7	23.8	33.6	24.9	5.5K	120
Cobalt, Total	N	1600		0.26				1.8L	12.2	1.9L	14.1	1.4L	3.2	2.5	8.3	2.2	3.7	14.4	3.9	2.6	4.3	2.8	6.7	1.5J	18.4J
Copper, Total	N	3100	11000	0.077				9.6	6.4	8.6	5	3.6	3.5	10.7	3.9	7J	6.4	5.1	5.5	6.2	6.3	10.3	7.7	8.8	121
Iron, Total	N	23000		0.92				23200	11600	28100	33500	15000	10200	28500J	20100J	10600	14900	14500	11700J	12700J	14300J	21000J	9810	7120	195000
Lead, Total	N	400		0.097				28.1	19.8	21.2	22	13.8	13.3	15.5	5.7	20	27.2	8.7	14.1	14.2	17.2	26.6	8.6	13.7L	12.9L
Magnesium, Total				11.1				1320	1530	945	6860	1860	2710	763	8800	1640J	1700	1100	927	1120	2340	1510	2090	409L	983L
Manganese, Total	N	1600	950	0.28				108	356	155	771	190	435	91.7	478	132	317	2040	184	161	311	113	199	43.4	1230
Mercury, Total	N	23		0.05				ND	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08	ND	ND	ND	ND
Nickel, Total	N	1600		0.069				3.5	11.3	5.7	22	2.6	3.7	5.8	21.6	4.4	3.2	4	3.9	2.9	6.5	5.6	6.7	5.2K	63.7
Potassium, Total				23.5				1580	2310	831	10500	2660	3140	932L	8680L	1540	2060	1240	996L	1420L	2850L	1730L	2950	497K	ND
Selenium, Total	N	390	19	0.14				0.28B	ND	0.44B	0.34B	ND	ND	0.28B	0.27B	0.45B	ND	0.92B	0.44B	0.27B	0.37B	0.35B	ND	ND	ND
Silver, Total	N	390	31	0.18				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total				10.6				103B	103B	105B	127B	104B	106B	114B	141B	106B	116B	103B	103B	110B	143B	117B	106B	108J	124J

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	UP-BASE-1	UP-BASE-2	UP-BASE-3	SB-6-10	SB-6-16	SB-7-8	SB-7-16	SB-8-6	SB-8-12	SB-9-8	SB-9-16	SB-9-25	SB-10-6	SB-10-12	SB-11-4	SB-11-10	SB-12-6	SB-12-8	SB-13-12	SB-1314-SW2A	SB-1314-SW3A
Depth (ft):	2	2	2	10	16	8	16	6	12	8	16	25	6	12	4	10	6	8	12		
Sample Date:	11/10/01	11/10/01	11/10/01	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/5/99	10/5/99	10/5/99	10/4/99	10/4/99	10/4/99	10/4/99	10/5/99	11/29/01	11/29/01
Sampler	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	Weston	Weston

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																					
Thallium, Total	N	5.5	3.6	0.11				0.49	0.68	0.31	2.4	0.47	0.87	0.28B	1.3	0.29	0.58	0.84	0.21	0.64	0.42B	0.38B	0.23	ND	ND
Vanadium, Total	N	550	5100	0.18				35.8	15.2	39.4	41.1	20.9	15.2	41	35.3	15.7	22.2	14.1	17.1	14.8	20.7	38.7	20.7	6.6	306
Zinc, Total	N	23000	14000	0.25				29.5	37.3	20.2	123	34.6	58.1	16	73.5	33.2J	33.9	23.7	20.8	23	37.7	25.3	46.1	19.5K	131K
Cyanide	N	1600	150	0.23				ND	0.27L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

SHADE: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IN

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	SB-1314-SW4A	SB-14-13	SB-15-8	SB-15-16	SB-16-8	SB-16-12	SB-1617-SW-1A	SB-1617-SW-2A	SB1617-SW-3	SB1617-SW-4	SB1617-SW-5	SB1617-SW-6	SB-17-12	SB101-8	SB102-8	SB103-8	SS-122-1	SS-122-2
Depth (ft):		13	8	16	8	12			8	8	8	8	12	8	8	8	3	3
Sample Date:	11/29/01	10/4/99	10/5/99	10/5/99	10/6/99	10/6/99	11/29/01	11/29/01	11/9/01	11/9/01	11/9/01	11/9/01	10/6/99	12/8/00	12/8/00	12/8/00	11/8/01	11/8/01
Sampler	Weston	EA	EA	EA	EA	EA	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																		
Volatile Organic Compounds (VOCs) - (ug/kg)																						
2-Butanone	N	47000000	7900	11	ND	ND	ND	ND	ND	ND			17.7B	14.6B	14.1B	18.2B	ND	ND	ND	ND		
Acetone	N	7800000	2500	11.9	29.5B	63B	29	60	180J	34B			110B	93.6B	91.8B	110B	40B	ND	ND	ND		
Carbon disulfide	N	7800000	19000	0.4	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND		
Ethylbenzene	N	7800000	15000	0.5	10.3	ND	ND	ND	110J	ND			ND	ND	ND	ND	8	ND	ND	ND		
m & p Xylenes	N	160000000		1		ND	ND	ND	800J	ND							45	ND	ND	ND		
Methylene Chloride	C	85000	19	11	8.9B	4B	4B	5B	2B	4B			10.1B	8.3B	8.5B	17B	4B	98.9B	143	92.5B		
o-Xylene	N	160000000	230000	0.9		ND	ND	ND	650J	ND							24	ND	ND	ND		
Toluene	N	16000000	8800	0.8	ND	ND	ND	ND	100J	ND			ND	ND	ND	ND	ND	2.86	ND	ND		
Total Xylenes	N	160000	170000	16	106								ND	ND	ND	ND						
Semi-Volatile Organic Compounds (SVOCs) - (ug/kg)																						
2,4-Dimethylphenol	N	1600000	6700	140	ND	ND	ND	ND					ND	ND	ND	ND				ND		
Benzo[a]pyrene	C	87	370	180	210U								200U	190U	190U	240U						
Bis(2-ethylhexyl) phthalate	C	46000	2900000	180	ND	56J	ND	ND					ND	ND	ND	ND				167		
Di-n-butyl phthalate	N	7800000	5000000	180	ND	ND	ND	ND					ND	ND	ND	ND				548		
Dibenz[a,h]anthracene	C	87	1400	180	210U								200U	190U	190U	240U						
Diethyl phthalate	N	63000000	450000	180	ND	ND	ND	ND					ND	ND	ND	ND				ND		
n-Nitrosodi-n-propylamine	C	91	0.047	100	210U	110U	120U	110U					200U	190U	190U	240U				ND		
Phenanthrene	N	1600000		180	ND								ND	ND	ND	ND						
Polycyclic Aromatic Compounds (PAHs) - (ug/kg)																						
2-Methyl-4,6-Dinitrophenol	N	7800		1400					1400U	ND							ND					
2-Methylnaphthalene	N	1600000	22000	1.9	ND	160	ND	ND	2500K	ND			ND	ND	ND	ND	420	ND	ND	ND		
Acenaphthene	N	4700000	100000	1.9		2.3	ND	ND	ND	ND							6.3J	ND	ND	ND		
Acenaphthylene	N	1600000		1.9		ND	ND	ND	ND	ND							ND	ND	ND	ND		
Anthracene	N	23000000	470000	1.9		ND	ND	ND	ND	ND							ND	ND	ND	ND		
Benz[a]anthracene	C	870	1500	1.9		ND	ND	ND	ND	ND							16J	ND	ND	ND		
Benzo[a]pyrene	C	87	370	1.9		ND	ND	ND	200U	ND							6.2J	ND	ND	ND		
Benzo[b]fluoranthene	C	870	4500	1.9		ND	ND	ND	ND	ND							12J	ND	ND	ND		
Benzo[g,h,i]perylene	N	2300000		1.9		ND	ND	ND	ND	ND							4.6J	ND	ND	ND		
Benzo[k]fluoranthene	C	8700	45000	1.9		ND	ND	ND	ND	ND							1.7J	ND	ND	ND		
Bis(2-chloroethyl) ether	C	580	0.044	1400					1400U	ND							ND					
Bis(2-ethylhexyl) phthalate	C	46000	2900000	1200					ND	47J							ND					
Chrysene	C	87000	150000	1.9		ND	ND	ND	710	ND							58J	ND	ND	ND		
Dibenz[a,h]anthracene	C	87	1400	1.9		ND	ND	ND	200U	ND							ND	ND	ND	ND		
Fluoranthene	N	3100000	6300000	1.9		ND	ND	ND	910	ND							9.1J	ND	ND	ND		
Fluorene	N	3100000	140000	1.9		2.1	ND	ND	250	ND							9.2J	ND	ND	ND		
Hexachlorobenzene	C	400	52	1300					1300U	ND							ND					
Indeno[1,2,3-cd]pyrene	C	870	13000	1.9		ND	ND	ND	ND	ND							ND	ND	ND	ND		
n-Nitrosodi-n-propylamine	C	91	0.047	100					1900U	110U							100U					
Naphthalene	N	1600000	150	1.9		28J	ND	ND	1100	ND							160J	ND	ND	ND		
Pentachlorophenol	C	5300		360					6900U	ND							ND					
Phenanthrene	N	1600000		1.9		ND	ND	ND	2200	3.6J							41J	8.63J	7.9J	7.68J		
Pyrene	N	2300000	680000	1.9		ND	ND	ND	2700J	ND							3.7J	ND	ND	ND		

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name:	SB-1314-SW4A	SB-14-13	SB-15-8	SB-15-16	SB-16-8	SB-16-12	SB-1617-SW-1A	SB-1617-SW-2A	SB1617-SW-3	SB1617-SW-4	SB1617-SW-5	SB1617-SW-6	SB-17-12	SB101-8	SB102-8	SB103-8	SS-122-1	SS-122-2
Depth (ft):		13	8	16	8	12			8	8	8	8	12	8	8	8	3	3
Sample Date:	11/29/01	10/4/99	10/5/99	10/5/99	10/6/99	10/6/99	11/29/01	11/29/01	11/9/01	11/9/01	11/9/01	11/9/01	10/6/99	12/8/00	12/8/00	12/8/00	11/8/01	11/8/01
Sampler	Weston	EA	EA	EA	EA	EA	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																	
PCBs - (ug/kg)																					
Aroclor 1016	N	5500	4200	11	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1221	C	320		11	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1232	C	320		11	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1242	C	320		10	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1248	C	320		11	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1254	C	320	1100	10	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Aroclor 1260	C	320		18	ND	ND	ND	ND	ND	ND			ND	ND	ND	24R	ND		ND		
Pesticides - (ug/kg)																					
4,4'-DDD	C	2700	11000	0.46	ND	ND	ND	ND	0.96J	ND			ND	ND	ND	ND	ND		ND	ND	ND
4,4'-DDE	C	1900	35000	0.43	ND	ND	ND	ND	2.3J	ND			ND	ND	ND	ND	ND		ND	ND	ND
4,4'-DDT	C	1900	1200	0.549	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	ND	ND
Aldrin	C	38	7.7	0.549	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710UL	ND
Alpha-BHC	C	100	0.89	0.41	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710U	ND
Alpha-chlordane	C	1800		0.549	ND	ND	ND	ND	2.2	ND			ND	ND	ND	ND	ND		ND	ND	17R
Beta-bhc	C	350	3.1	0.53	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710U	ND
Delta-bhc	C	100		0.53	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710U	ND
Dieldrin	C	40	2.2	0.47	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	1400U	ND
Endosulfan II	N	470000		0.39	ND	ND	ND	ND	52J	ND			ND	ND	ND	ND	48J		ND	ND	ND
Endrin aldehyde	N	23000		0.549	ND	ND	ND	ND	36J	ND			ND	ND	ND	ND	ND		ND	ND	ND
Endrin ketone	N	23000		0.549	ND	ND	ND	ND	28J	ND			ND	ND	ND	ND	ND		ND	ND	ND
Gamma-BHC	C	490	4.3	0.49	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710U	ND
Gamma-chlordane	C	1800		0.38	ND	ND	ND	ND	14J	ND			ND	ND	ND	ND	ND		ND	ND	ND
Heptachlor	C	140	840	0.549	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	710U	ND
Heptachlor epoxide	C	70	25	0.549	ND	ND	ND	ND	6.8J	ND			ND	ND	ND	ND	ND		ND	710U	ND
Toxaphene	C	580	630	11	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND		ND	71000U	1700U
Metals - (mg/kg)																					
Aluminum, Total	N	78000		110	13700L	8270	19600	27300	12900	16500	50900L	59400L	46800	38400	19200	60600	5090		65600		
Antimony, Total	N	31	13	0.23	ND	0.5L	1.8L	2.5L	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		
Arsenic, Total	C	0.43	0.026	0.097	ND	0.46L	1.2B	1.2B	0.35L	0.38L	2.6K	3.2K	2.3K	1.7K	1.8K	3.7K	ND		1.62		
Barium, Total	N	5500	2100	0.56	10.9	53.9	143	133	14.5	40.7	43	81.7	88.4	49	18.2K	51.3	32.8		279		
Beryllium, Total	N	160	1200	0.011	0.79K	0.68	1.8J	2.2J	0.39	0.82	2.1K	2.3K	2K	1K	0.78K	3.3K	0.3		6.11		
Cadmium, Total	N	39	27	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		0.799		
Calcium, Total				163	ND	159	ND	ND	7.7	10.4	ND	ND	71.2J	ND	ND	ND	6.9		ND		
Chromium, Total	N	230		0.046	6.2K	9.1	25.2	53	4.5	3.1	147	163	108	55	10.3K	149	1.5		147		
Cobalt, Total	N	1600		0.26	ND	3.1	11.6	22.9	1.7L	8.4	7.4J	4J	7.4J	5.8J	1.7J	9.9J	63.3		32.6		
Copper, Total	N	3100	11000	0.077	6	7.8	25J	28.6J	11.4	15.5	62.7	98.2	41.6J	26.7J	21.4J	105J	7.4		116		
Iron, Total	N	23000		0.92	8160	10000J	35400	43600	5270	10800	111000	128000	49300	25900	17600	124000	6200		116000		
Lead, Total	N	400		0.097	8.7L	10.1	45.6	23.5	16.8	32.3	62.8	41.1	68.9J	62.9J	38.9J	25.4J	47.9		7.14		
Magnesium, Total				11.1	312L	1440	5220J	738J	377	1010	1140L	788L	11800	4530	1580	1610	319		2110		
Manganese, Total	N	1600	950	0.28	20K	149	619	1020	43.7L	178L	295	174	668	356	125	430	601L		720K		
Mercury, Total	N	23		0.05	ND	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		
Nickel, Total	N	1600		0.069	4.5K	4.4	11.2	12	6	7.4	48.4K	125	39.6J	31.3J	6.8J	73.7J	5.7		198		
Potassium, Total				23.5	409K	2050L	6990	10200	406	875	182K	274K	11800J	5280J	1880J	269J	489		411		
Selenium, Total	N	390	19	0.14	ND	ND	1.3B	0.85B	0.41B	0.28B	ND	ND	ND	ND	ND	ND	0.37B		ND		
Silver, Total	N	390	31	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2		ND		
Sodium, Total				10.6	112J	106B	134B	142B	253B	130B	136J	141J	317J	262J	245J	296J	98.1B		502		

TABLE 3-9 SUBSURFACE SOIL ANALYTE DETECTIONS AND COPCs, FINAL RESULTS (EA and Weston)

Sample Name: Depth (ft): Sample Date: Sampler	SB-1314-SW4A	SB-14-13	SB-15-8	SB-15-16	SB-16-8	SB-16-12	SB-1617-SW-1A	SB-1617-SW-2A	SB1617-SW-3	SB1617-SW-4	SB1617-SW-5	SB1617-SW-6	SB-17-12	SB101-8	SB102-8	SB103-8	SS-122-1	SS-122-2
		13	8	16	8	12			8	8	8	8	12	8	8	8	3	3
		11/29/01	10/4/99	10/5/99	10/5/99	10/6/99	11/29/01	11/29/01	11/9/01	11/9/01	11/9/01	11/9/01	10/6/99	12/8/00	12/8/00	12/8/00	11/8/01	11/8/01
		Weston	EA	EA	EA	EA	Weston	Weston	Weston	Weston	Weston	Weston	EA	EA	EA	EA	EA	EA

Analyte	N/C	SOIL RBC	SSL-DAF20	Reporting Limit																
Thallium, Total	N	5.5	3.6	0.11	ND	0.62	2	3.1	ND	0.33	ND	ND	2K	0.58K	ND	1.2K	0.2			3.26UL
Vanadium, Total	N	550	5100	0.18	8.6	11	65.8	77.6	4.3	6.9	177	182	98.6	41	19.2K	138	3.3		172	
Zinc, Total	N	23000	14000	0.25	13K	38.1	96.8J	146J	9.3	21.7	79.3K	51.9K	127J	83.7J	41.6J	51.7J	10.4		71	
Cyanide	N	1600	150	0.23	ND	ND	ND	ND	0.23R	0.28R			ND	ND	ND	ND	0.24R			

SHADE: RESULT VALUE EXCEEDS RBC CRITERION (10% RBC CRITERION-CARCINOGENS), OR DETECTED RESULT HAS NO RBC CRITERION.

ITLAIC FONT: RESULT VALUE EXCEEDS DAF20 SSLs FOR SOIL MATRIX

C/N: CARCINOGENIC OR NONCARCINOGENIC ANALYTE.

\* : SURROGATE RBC OF SIMILAR COMPOUND USED

BLANK CELL = NOT ANALYZED

ND = NOT DETECTED AND REPORTING LIMIT EXCEEDS NO CRITERIA

B = NOT DETECTED SUBSTANTIALLY ABOVE LEVEL IN LABORATORY

J = ESTIMATED VALUE

U = UNDETECTED

D = ANALYSIS AT SECONDARY DILUTION

K = REPORTED VALUE MAY BE BIASED HIGH

L = VALUE/QUANTITATIVE LIMIT MAY BE HIGHER

UJ = NOT DETECTED. QUANTITATION LIMIT MAY BE INACCURATE OR IN

UL = NOT DETECTED. QUANTITATION LIMIT IS PROBABLY HIGHER.

R = REJECTED RESULT

## **4. REVISED HUMAN HEALTH RISK SCREENING FOR SOIL**

### **4.1 INTRODUCTION**

A human health risk assessment (HHRA) was performed as part of the Phase II RI to determine whether there is potential human health risk from exposure to environmental media at EBS-79 (EA June 2001). The Phase II RI HHRA is detailed in Chapter 7 of the Phase II RI report (EA June 2001) and discusses the methodologies and assumptions of the risk calculations. The RI HHRA for EBS-79 was conducted in accordance with U.S. EPA Risk Assessment Guidance for Superfund (RAGS) Part A (EPA 1989) and with Region III technical guidance for risk assessment manuals (EPA 1993a and 1995a). In addition, the HHRA was reviewed and commented on by U.S. EPA Region III.

The HHRA evaluated all site media and presented an assessment of potential risk to hypothetical current and future users of the site. The HHRA consisted of a hazard evaluation (screening assessment), exposure assessment, toxicity assessment and risk characterization. The screening assessment was performed to determine chemicals of potential concern (COPCs) for further evaluation in the HHRA. The exposure assessment evaluated potential exposure scenarios and developed quantitative estimates of potential human exposure under conservative human use assumptions (e.g., adult residents at the site will ingest 100 mg/kg soil 350 days per year). The toxicity assessment evaluated the relative toxicity of each COPC. The risk characterization synthesized the results of the screening, exposure and toxicity assessments to provide a quantitative estimate of potential risk.

The results of the HHRA indicated no site-related risks above U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  for carcinogens and U.S. EPA's target hazard index (HI) of 1.0 for non-carcinogens for all site media with the exception of groundwater. Chapter 5 of this Addendum addresses the human health assessment of groundwater at EBS-79. When evaluating individual COPCs, potential carcinogenic risk results were calculated above  $10^{-6}$  for several PAH and pesticide COPCs.

Based on the presence of the new confirmation samples from the IRA, the HHRA is revisited here in a post remediation evaluation to ensure the protection of human health at the site. Data collected during the Phase I RI, Phase II RI (EA 2001) and the IRA (Weston 2002) are included in this post remediation evaluation. Phase I RI and Phase II RI soil samples from areas that were removed are not included in this post remediation assessment because they do not reflect current site conditions.

The HHRA post remediation evaluation follows identical protocol presented in the Phase II RI HHRA (RAGS, U.S. EPA Region III guidance). The Phase II RI HHRA for EBS-79 was conducted in accordance with U.S. EPA Risk Assessment Guidance for Superfund (RAGS) Part A (EPA 1989) and with Region III technical guidance for risk assessment manuals (EPA 1993a and 1995a).

The IRA was limited to EBS-79 soil, therefore, the post remediation evaluation focuses on EBS-79 surface and subsurface soil. Based on the findings of the Phase II HHRA that there were no unacceptable risks to human health in site soil, the post remediation evaluation is comprised of a data quality evaluation and a screening assessment.

## 4.2 DATA QUALITY EVALUATION

Remaining data that was collected during the Phase I RI, Phase II RI (EA 2001) and new data collected during the IRA (Weston 2002) are included in this post remediation evaluation. Detailed discussions regarding the sampling events and data management procedures associated with the RI are provided in the Phase II RI (EA June 2001) and regarding the IRA are provided in the IRA Report (Weston July 2002). A list of the samples included in the soil screening scenario is provided in [Table 4-1](#).

Inclusion or exclusion of data on the basis of analytical qualifiers was performed in accordance with U.S. EPA guidance (EPA 1989). In the Phase II RI (EA June 2001), Section 4.4 discusses data reduction for EBS-79 in detail; however, highlights relating to human health risk assessment are presented here:

- Analytical results bearing the U qualifier (indicating that the analyte was not detected at the given sample quantitation level [SQL]) are retained in the data set and considered non-detects. Where warranted for statistical purposes, each COPC was assigned a numerical value of one-half its SQL;
- Analytical results bearing the J qualifier (indicating that the reported value was estimated because the analyte was detected at a concentration below the SQL or for other reasons) are retained at the measured concentration.

If duplicate samples were taken or duplicate analyses were conducted on a single sample, the following guidelines are employed to select the appropriate sample measurement:

- If both samples/analyses showed that the analyte was present, the average of the analyses is used as the concentration.
- If only one sample/analysis indicated that the analyte was present, it is retained for analysis and combined with 1/2 the detection limit to calculate the average.
- If both samples/analyses were non detect, the average of the 1/2 of the detection limits are retained for analysis, if appropriate.

Common laboratory contaminants, including acetone, 2-butanone, methylene chloride, chloroform, toluene, phthalate esters, and uncommon laboratory contaminants are considered to be COPCs unless it is evident that their presence is not related to site-specific activities but is due to laboratory contamination.

Samples from the RI (EA June 2001) that were taken in areas of the removal actions (Weston July 2001) are disregarded in this post remediation evaluation. As these areas are no longer at the site, they do not reflect current site conditions and are not relevant to the estimation of potential future human exposure at the site.

#### **4.3 HUMAN HEALTH RISK-BASED SCREENING**

Risk-based screening is conducted concentrations to determine chemicals warranting further investigation at a site. This post-IRA evaluation presents conservative screening by comparing maximum detected chemical concentrations to U.S. EPA recommended risk-based screening values (RBCs). Any analyte in any medium for which the maximum measured concentration exceeds the RBC is retained for further investigation and is considered a COPC.

RBCs that are used in the selection of COPCs are medium specific and are discussed below. For soil, the most recent U.S. EPA Region III residential soil RBCs (EPA 2002a) are used for residential screening (resident adult, resident child, adult trespasser, and adolescent trespasser); for industrial screening (construction worker and commercial worker) the industrial soil RBCs are used. Per Region III guidance (EPA 1993a), one-tenth of the RBC for non-carcinogens is used to account for potential additivity of toxic effects (corresponds to a hazard index of 0.1).

An analyte is eliminated from the list of COPCs if it is an essential nutrient of low toxicity, and if its reported maximum concentration is unlikely to be associated with adverse health impacts.

COPCs excluded from further consideration on this basis include calcium, magnesium, potassium, and sodium. While iron is also considered an essential nutrient, further analysis is done before excluding from further consideration. The maximum detected value of iron does not exceed the RBC by more than a factor of 10. As a result, iron is not considered a COPC.

#### 4.4 HUMAN HEALTH COPCS SELECTED

Human health COPCs are presented in [Tables 4-2.1 through 4-2.6](#). Soil data is divided into two databases based on depth per the Phase II RI HHRA. Total soil (combined surface and subsurface soil) and surface soil are each evaluated as separate media as some receptors are likely to only contact surface soil (i.e., trespassers) while others may contact both surface and subsurface soil (i.e., construction workers, future residents). Both total and surface soil are screened against residential and industrial soil RBCs.

Total (combined surface and subsurface) soil COPCs ([Table 4-2.1](#)), based on residential soil RBC screening, are aluminum, arsenic, chromium, manganese, nickel, thallium, and vanadium. The only total soil COPC ([Table 4-2.2](#)) based on industrial soil RBCs is arsenic.

Surface soil COPCs ([Table 4-2.3](#)) based on residential soil RBC screening, include aluminum, arsenic, chromium, and manganese. The only surface soil COPC ([Table 4-2.4](#)) based on industrial soil RBCs is arsenic.

Subsurface soil screening is presented for residential and industrial RBCs in [Tables 4-2.5 and 4-2.6](#); subsurface soils are evaluated to assess the potential for exposure via inhalation to VOCs only (EA 1999). None of the VOCs exceeded RBCs for either scenario; therefore, there are no volatile COPCs with respect to the inhalation route in subsurface soil.

#### 4.5 COMPARISON TO BACKGROUND SOIL DATA

A background soil survey was conducted at Fort Pickett in November 1999 (WESTON 1999). This survey established background concentration ranges for inorganics, PAHs, pesticides, and PCBs. For the purposes of this assessment, only inorganic COPCs in soil are compared to the results of the background study. Maximum detected concentrations in background soil are presented in [Table 4.2.1](#) for inorganic compounds.

Several inorganic compounds are present in soil at EBS-79 following the IRA above screening concentrations (RBCs). Based on residential soil RBC screening, aluminum, arsenic, chromium,

manganese, nickel, thallium, and vanadium are COPCs in total soil (Table 4-2.1). The only total soil COPC (Table 4-2.2) based on industrial soil RBCs is arsenic.

#### 4.5.1 Aluminum

Detected aluminum background concentrations ranged from 1,770 to 58,000 mg/kg, with an average of 2,040 mg/kg. The maximum detected site-related aluminum concentration was 24,200 mg/kg (in surface soil and in total soil), which was less than the maximum detected background concentration. Therefore, it is reasonable to assume that risk attributed to aluminum is due to background and is not related to previous activities at EBS-79 for both surface and total soil.

#### 4.5.2 Arsenic

Detected arsenic background concentrations ranged from 0.91 to 6.0 mg/kg, with an average of 2.71 mg/kg. The maximum detected site-related arsenic concentration was 4.7 mg/kg in total soil and is 4.5 mg/kg in surface soil, which are both less than the maximum detected background concentration. Therefore, it is reasonable to assume that risk attributed to arsenic is due to background and is not related to previous activities at EBS-79 for both surface and total soil.

#### 4.5.3 Chromium

Detected chromium background concentrations were based on total chromium as were the site data. Background chromium concentrations ranged from 1.4 to 73.5 mg/kg, with an average of 17.9 mg/kg. The maximum detected site-related chromium concentration was 163 mg/kg in total soil (and was 27.5 mg/kg in surface soil), which is greater than the maximum detected background concentration. Chromium in subsurface soil (total soil) is present in concentrations greater than background. However, the maximum detected chromium surface soil concentration is less than the maximum detected background concentration.

The risk-based screening value for chromium is based on hexavalent chromium, a much more carcinogenic and toxic form of chromium than the more common trivalent chromium. Based on lack of speciation data for chromium at the site, it was conservatively assumed that all chromium is in the hexavalent form. As trivalent chromium is the most common form of the element and use of hexavalent chromium at the site is not documented, it could be assumed that trivalent chromium is the dominant form.

Screening against the residential soil RBC value for trivalent chromium is 1,200 mg/kg based on an HI of 0.1, chromium would not be a COPC in soil at the site. The maximum detected concentration in total soil (163 mg/kg) and in surface soil (27.5 mg/kg) are both less than this RBC.

#### **4.5.4 Manganese**

Detected manganese background concentrations ranged from 2.5 to 1,270 mg/kg, with an average of 217 mg/kg. The maximum detected site-related manganese concentration was 1,290 mg/kg in total and surface soil, which is only slightly greater than the maximum detected background concentration. Therefore, it is reasonable to assume that risk attributed to manganese is due to background and is not related to previous activities at EBS-79 in both surface and total soil.

#### **4.5.5 Nickel**

Detected nickel background concentrations ranged from 1.1 to 23 mg/kg, with an average of 6.19 mg/kg. The maximum detected site-related nickel concentration was 198 mg/kg in total soil and was 10.8 mg/kg in surface soil. Nickel in subsurface soil (total soil) is present in concentrations greater than background. However, the maximum detected nickel surface soil concentration is less than the maximum detected background concentration. Therefore, it is reasonable to assume that surface soil risk attributed to nickel is due to background and is not related to previous activities at EBS-79.

#### **4.5.6 Thallium**

Thallium was not analyzed for in the background soil data set; therefore, a comparison of site data to background cannot be drawn for soil.

#### **4.5.7 Vanadium**

Detected vanadium background concentrations ranged from 1.1 to 110 mg/kg, with an average of 31.7 mg/kg. The maximum detected site-related vanadium concentration was 306 mg/kg (and was 41.7 mg/kg in surface soil). Vanadium in subsurface soil (total soil) is present in concentrations greater than background. However, the maximum detected vanadium surface soil concentration is less than the maximum detected background concentration. Therefore, it is

reasonable to assume that surface soil risk attributed to vanadium is due to background and is not related to previous activities at EBS-79.

#### **4.5.8 Residual Risk**

Based on the comparison to RBCs and background the only potential remaining COPCs in soil are nickel, thallium and vanadium in total soil. Table 4-3 presents a summary of the risk assessment results from the Phase II RI risk assessment (Tables 7-8.2 and 7-8.5 from the Phase II RI) for these remaining COPCs for the residential scenario, across all media (including groundwater, surface water, sediment and total soil). The residential scenario provides the most conservative representation for total soil potential risks, as this is the most sensitive receptor. There are no carcinogenic risks as none of the COPCs are carcinogenic. Non-carcinogenic risk is less than the threshold of 1.0 for each chemical and is not additive in that each COPC has a different target organ. Vanadium is the only COPC that is higher in the addendum (confirmation samples) than in the Phase II RI data set, and is higher by an order of 3. Multiplying the calculated residential risk for the adult and child residents, the non-carcinogenic risk is still less than the 1.0 threshold for each receptor. Therefore, there are no residual non-carcinogenic risks for total soil at EBS-79.

#### **4.6 POST IRA HUMAN HEALTH SUMMARY AND CONCLUSIONS**

Based on the results of the IRA, all current soil data relative to the site are evaluated for potential human health risk in the screening assessment. Based on a comparison to conservative U.S. EPA Region III (EPA 2002a) screening values (RBCs), only metals are found at potentially elevated levels as shown in Tables 3-2.1 to 3-2.4. Pesticides and PCBs, which had been COPCs in the RI (EA June 2001) are not present at the site in elevated concentrations after the IRA.

Based on a comparison to background soil concentrations, as discussed in Section 4.5 of this addendum, arsenic, chromium and manganese are present at the site within their background ranges. Nickel and vanadium are present in surface soil within their background ranges.

The Phase II RI HHRA selected the same inorganic COPCs as this screening assessment and evaluated their potential risk under conservative exposure assumptions. The Phase II HHRA then determined that there were no adverse risks associated with these metals at the site. Based upon the results of this screening level assessment and the Phase II HHRA, there are no concerns for human health soil exposure at EBS-79, therefore no further action is recommended.

**TABLE 4-1  
SAMPLES INCLUDED IN REVISED SOIL HHRA**

SAMPLE ID	SAMPLE MATRIX
EBS79-SB-1-0.5	Surface Soil
EBS79-SB-1-10	Subsurface Soil
EBS79-SB-1-4	Subsurface Soil
EBS79-SB-10-0.5	Surface Soil
EBS79-SB-10-12	Subsurface Soil
EBS79-SB-10-6	Subsurface Soil
EBS79-SB-11-0.5	Surface Soil
EBS79-SB-11-10	Subsurface Soil
EBS79-SB-11-4	Subsurface Soil
EBS79-SB-12-0.5	Surface Soil
EBS79-SB-12-6	Subsurface Soil
EBS79-SB-12-8	Subsurface Soil
EBS79-SB-13-12	Subsurface Soil
EBS79-SB-13-6	Subsurface Soil
EBS79-SB-14-13	Subsurface Soil
EBS79-SB-14-4	Subsurface Soil
EBS79-SB-15-0.5	Surface Soil
EBS79-SB-15-16	Subsurface Soil
EBS79-SB-15-8	Subsurface Soil
EBS79-SB-16-12	Subsurface Soil
EBS79-SB-16-8	Subsurface Soil
EBS79-SB-17-12	Subsurface Soil
EBS79-SB-17-4	Subsurface Soil
EBS79-SB-2-11	Subsurface Soil
EBS79-SB-2-16	Subsurface Soil
EBS79-SB-3-16	Subsurface Soil
EBS79-SB-3-8	Subsurface Soil
EBS79-SB-4-16	Subsurface Soil
EBS79-SB-4-8	Subsurface Soil
EBS79-SB-5-12	Subsurface Soil
EBS79-SB-5-16	Subsurface Soil
EBS79-SB-6-10	Subsurface Soil
EBS79-SB-6-16	Subsurface Soil
EBS79-SB-7-16	Subsurface Soil
EBS79-SB-7-8	Subsurface Soil
EBS79-SB-8-0.5	Surface Soil
EBS79-SB-8-12	Subsurface Soil
EBS79-SB-8-6	Subsurface Soil
EBS79-SB-9-0.5	Surface Soil
EBS79-SB-9-16	Subsurface Soil
EBS79-SB-9-25	Subsurface Soil
EBS79-SB-9-8	Subsurface Soil
SB101-0.5	Surface Soil
SB101-8	Subsurface Soil
SB102-0.5	Surface Soil
SB102-8	Subsurface Soil
SB103-0.5	Surface Soil
SB103-8	Subsurface Soil
SS104-0.5	Surface Soil
SS105-0.5	Surface Soil
SS106-0.5	Surface Soil
SS107-0.5	Surface Soil
SS-DUP1	Surface Soil

**TABLE 4-1  
SAMPLES INCLUDED IN REVISED SOIL HHRA**

SAMPLE ID	SAMPLE MATRIX
SS108-0.5	Surface Soil
SS109-0.5	Surface Soil
SS110-0.5	Surface Soil
SS117-0.5	Surface Soil
SS120-0.5	Surface Soil
SS-DUP4	Surface Soil
SS121-0.5	Surface Soil
SS123-0.5	Surface Soil
SS124-0.5	Surface Soil
SS125-0.5	Surface Soil
EBS79-493-1C	Subsurface Soil
493-IN-2A	Subsurface Soil
493-IN-3A	Subsurface Soil
493-IN-4A	Subsurface Soil
493-IN-5	Subsurface Soil
493-IN-6	Subsurface Soil
493-IN-7	Subsurface Soil
493-IN-8	Subsurface Soil
493-IN-9	Subsurface Soil
493-OUT-BASE-1	Subsurface Soil
493-OUT-BASE-2	Subsurface Soil
SB-1314-BASE-1	Subsurface Soil
SB-1314-BASE-2	Subsurface Soil
SB-1314-BASE-3	Subsurface Soil
SB-1314-BASE-4	Subsurface Soil
SB-1314-SW-1	Subsurface Soil
SB-1314-SW2A	Subsurface Soil
SB-1314-SW3A	Subsurface Soil
SB-1314-SW4A	Subsurface Soil
SB-1314-SW-5	Subsurface Soil
SB-1314-SW-6	Subsurface Soil
SB-1314-SW-7	Subsurface Soil
SB-1617-SW-1A	Subsurface Soil
SB-1617-SW-2A	Subsurface Soil
SB1617-BASE 1	Subsurface Soil
SB1617-BASE 2	Subsurface Soil
SB1617-SW-3	Subsurface Soil
SB1617-SW-4	Subsurface Soil
SB1617-SW-5	Subsurface Soil
SB1617-SW-6	Subsurface Soil
SS-122-1	Subsurface Soil
SS-122-2	Subsurface Soil
SS-122-3	Subsurface Soil
UP-BASE-1	Subsurface Soil
UP-BASE-2	Subsurface Soil
UP-BASE-3	Subsurface Soil

TABLE-4-2.1  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
TOTAL SOIL - RESIDENTIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Total Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Inorganics																	
7429-90-5	ALUMINUM	7910	K	65600		mg/kg	SB103-8	36/36	12.9 - 160	6.56E+04	5.84E+04	7.82E+03	N	N/A	N/A	Yes	ASL
7440-36-0	ANTIMONY	0.986	B	1.51	B/B	mg/kg	SS121-0.5	3/36	0.0777 - 1.96	1.51E+00	N/A	3.13E+00	N	N/A	N/A	No	BSL
7440-38-2	ARSENIC	1.1	K	4.7	K	mg/kg	493-OUT-BASE-1	29/36	0.0681 - 1.63	4.70E+00	6.00E+00	4.26E-01	C	N/A	N/A	Yes	ASL
7440-39-3	BARIUM	10.9		279		mg/kg	SB103-8	36/36	0.117 - 1.63	2.79E+02	2.09E+02	5.48E+02	N	N/A	N/A	No	BSL
7440-41-7	BERYLLIUM	0.448		6.11		mg/kg	SB103-8	33/36	0.0227 - 0.79	6.11E+00	4.40E+00	1.56E+01	N	N/A	N/A	No	BSL
7440-43-9	CADMIUM	0.119		0.799		mg/kg	SB103-8	7/36	0.0222 - 0.978	7.99E-01	N/A	3.91E+00	N	N/A	N/A	No	BSL
7440-70-2	CALCIUM	71.2	J	2370		mg/kg	SS124-0.5	18/36	0.506 - 163	2.37E+03	4.99E+02	N/A	N/A	N/A	N/A	No	NUT
7440-47-3	CHROMIUM	2		163		mg/kg	SB-1617-SW-2A	36/36	0.14 - 24	1.63E+02	7.35E+01	2.35E+01	N	N/A	N/A	Yes	ASL
7440-48-4	COBALT	0.72	K / K	32.6		mg/kg	SB103-8	35/36	0.0308 - 1.63	3.26E+01	5.00E+01	1.56E+02	N	N/A	N/A	No	BSL
7440-50-8	COPPER	4.7	J / J	121		mg/kg	SB-1314-SW3A	36/36	0.233 - 1.63	1.21E+02	2.73E+01	3.13E+02	N	N/A	N/A	No	BSL
7439-89-6	IRON	4100		195000		mg/kg	SB-1314-SW3A	36/36	4.13 - 240	1.95E+05	6.44E+04	N/A	N	N/A	N/A	No	NUT
7439-92-1	LEAD	6	J	112	J	mg/kg	SS124-0.5	36/36	0.303 - 0.978	1.12E+02	1.04E+02	4.00E+02		N/A	N/A	No	BSL
7439-95-4	MAGNESIUM	312	L	11800		mg/kg	SB1617-SW-3	36/36	1.4 - 600	1.18E+04	5.31E+03	N/A		N/A	N/A	No	NUT
7439-96-5	MANGANESE	20	K	1290		mg/kg	SS124-0.5	36/36	0.047 - 24	1.29E+03	1.27E+03	1.56E+02	N	N/A	N/A	Yes	ASL
7439-97-6	MERCURY	0.041		0.201		mg/kg	SS124-0.5	10/36	0.0102 - 0.079	2.01E-01	2.10E-01	7.82E-01	N	N/A	N/A	No	BSL
7440-02-0	NICKEL	3.48		198		mg/kg	SB103-8	36/36	0.233 - 3.2	1.98E+02	2.30E+01	1.56E+02	N	N/A	N/A	Yes	ASL
7440-09-7	POTASSIUM	182	K	11800	J	mg/kg	SB1617-SW-3	35/36	0.715 - 600	1.18E+04	6.46E+03	N/A		N/A	N/A	No	NUT
7440-22-4	SILVER	0.642		0.7725		mg/kg	SS121-0.5	3/36	0.0333 - 0.978	7.73E-01	N/A	3.91E+01	N	N/A	N/A	No	BSL
7440-23-5	SODIUM	78.9	B	502		mg/kg	SB103-8	36/36	56 - 326	5.02E+02	N/A	N/A		N/A	N/A	No	NUT
7440-28-0	THALLIUM	0.58	K	2	K	mg/kg	SB1617-SW-3	7/36	0.111 - 3.26	2.00E+00	N/A	5.48E-01	N	N/A	N/A	Yes	ASL
7440-62-2	VANADIUM	2.8	K	306		mg/kg	SB-1314-SW3A	36/36	0.257 - 7.9	3.06E+02	1.10E+02	5.48E+01	N	N/A	N/A	Yes	ASL
7440-66-6	ZINC	13	K	131	K / J	mg/kg	SB-1314-SW3A / SS124-0.5	36/36	0.98 - 16	1.31E+02	9.51E+01	2.35E+03	N	N/A	N/A	No	BSL
PAHs																	
91-57-6	2-METHYLNAPHTHALENE	0.00452	J	0.491		mg/kg	493-IN-9	7/36	0.00138 - 3.2	0.491	N/A	1.56E+02	N	N/A	N/A	No	BSL
56-55-3	BENZ[A]ANTHRACENE	0.00283	J	0.0105		mg/kg	SS125-0.5	2/36	0.000357 - 3.2	0.0105	N/A	8.75E-01	C	N/A	N/A	No	BSL
206-44-0	FLUORANTHENE	0.00393	J	0.0229		mg/kg	SS123-0.5	5/36	0.000384 - 3.2	0.0229	N/A	3.13E+02	N	N/A	N/A	No	BSL
86-73-7	FLUORENE	0.00113	J	0.00113	J	mg/kg	SB102-0.5	1/36	0.000499 - 3.2	0.00113	N/A	3.13E+02	N	N/A	N/A	No	BSL
193-39-5	INDENO[1,2,3-CD]PYRENE	0.00143	J	0.00525	J	mg/kg	SB101-0.5	3/36	0.000384 - 3.2	0.00525	N/A	8.75E-01	C	N/A	N/A	No	BSL
91-20-3	NAPHTHALENE	0.00264	J	0.0229		mg/kg	SS123-0.5	5/12	0.000499 - 0.0214	0.0229	N/A	1.56E+02	N	N/A	N/A	No	BSL
85-01-8	PHENANTHRENE	0.00678	J	0.322		mg/kg	493-IN-9	7/32	0.00397 - 3.2	0.322	N/A	1.56E+02	N	N/A	N/A	No	BSL
129-00-0	PYRENE	0.00214	J	0.0184		mg/kg	SS123-0.5	5/36	0.000346 - 3.2	0.0184	N/A	2.35E+02	N	N/A	N/A	No	BSL
PCBs																	
11096-82-5	AROCLOR 1260	0.0291		0.0482		mg/kg	SS123-0.5	2/33	0.000895 - 0.1	0.0482	N/A	3.19E-01	C	N/A	N/A	No	BSL

TABLE-4-2.1  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
TOTAL SOIL - RESIDENTIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Total Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Pesticides																	
72-54-8	4,4'-DDD	0.000525		0.0065	J	mg/kg	SS106-0.5	6/43	0.000041 - 1.4	0.0065	N/A	2.66E+00	C	N/A	N/A	No	BSL
72-55-9	4,4'-DDE	0.0014	J	0.031	J	mg/kg	SS105-0.5	5/43	0.000038 - 1.4	0.031	N/A	1.88E+00	C	N/A	N/A	No	BSL
50-29-3	4,4'-DDT	0.00182	J	0.28	J	mg/kg	SS105-0.5	13/40	0.000047 - 1.4	0.28	N/A	1.88E+00	C	N/A	N/A	No	BSL
5103-71-9	ALPHA-CHLORDANE	0.00062	J	0.0023	J	mg/kg	SS106-0.5	4/43	0.00025 - 0.71	0.0023	N/A	1.82E+00	C	N/A	N/A	No	BSL
319-85-7	BETA-BHC	0.000628	J	0.0034	J	mg/kg	SS109-0.5	3/44	0.000036 - 0.71	0.0034	N/A	3.55E-01	C	N/A	N/A	No	BSL
319-86-8	DELTA-BHC	0.00305	J/J	0.00502	J	mg/kg	SS124-0.5	6/44	0.000032 - 0.71	0.00502	N/A	3.55E-01	C	N/A	N/A	No	BSL
60-57-1	DIELDRIN	0.0009	J	0.0012	J	mg/kg	SS106-0.5	2/43	0.000056 - 1.4	0.0012	N/A	3.99E-02	C	N/A	N/A	No	BSL
959-98-8	ENDOSULFAN I	0.00056	J	0.00056	J	mg/kg	SS105-0.5	1/43	0.00005 - 1.4	0.00056	N/A	4.69E+01	N	N/A	N/A	No	BSL
1031-07-8	ENDOSULFAN SULFATE	0.00081	J	0.00081	J	mg/kg	SS105-0.5	1/43	0.000032 - 1.4	0.00081	N/A	4.69E+01	N	N/A	N/A	No	BSL
58-89-9	GAMMA-BHC	0.00047	J	0.00076	J	mg/kg	SS104-0.5	4/44	0.000077 - 0.71	0.00076	N/A	4.91E-01	C	N/A	N/A	No	BSL
5103-74-2	GAMMA-CHLORDANE	0.000522	J	0.00239	J	mg/kg	SS123-0.5	7/43	0.00005 - 0.71	0.00239	N/A	1.82E+00	C	N/A	N/A	No	BSL
76-44-8	HEPTACHLOR	0.0033	J	0.0033	J	mg/kg	SS105-0.5	1/43	0.000056 - 0.71	0.0033	N/A	1.42E-01	C	N/A	N/A	No	BSL
1024-57-3	HEPTACHLOR EPOXIDE	0.000364	J	0.0027	J	mg/kg	SS109-0.5	4/44	0.00017 - 0.71	0.0027	N/A	7.02E-02	C	N/A	N/A	No	BSL
Semivolatiles																	
218-01-9	1,2-BENZPHENANTHRACENE	0.00269		0.00678	J	mg/kg	SB102-0.5	4/36	0.00023 - 3.2	0.00678	N/A	8.75E+01	C	N/A	N/A	No	BSL
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	0.127		0.167		mg/kg	SB103-8	2/26	0.0186 - 3.2	0.167	N/A	4.56E+01	C	N/A	N/A	No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.364		0.548		mg/kg	SB103-8	2/26	0.0464 - 3.2	0.548	N/A	7.82E+02	N	N/A	N/A	No	BSL
Volatiles																	
78-93-3	2-BUTANONE	0.0171		0.0171		mg/kg	SB-1314-SW3A	1/15	0.00438 - 0.0165	0.0171	N/A	4.69E+03	N	N/A	N/A	No	BSL
100-41-4	ETHYLBENZENE	0.0103		0.0103		mg/kg	SB-1314-SW4A	1/36	0.00219 - 0.00823	0.0103	N/A	7.82E+02	N	N/A	N/A	No	BSL
75-09-2	METHYLENE CHLORIDE	0.143		0.143		mg/kg	SB102-8	1/1	0.00593 - 0.00593	0.143	N/A	8.52E+01	C	N/A	N/A	No	BSL
100-42-5	STYRENE (MONOMER)	0.00379		0.00379		mg/kg	SS125-0.5	1/36	0.00196 - 0.00823	0.00379	N/A	1.56E+03	N	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00286		0.00442		mg/kg	SB101-0.5	2/36	0.00184 - 0.00823	0.00442	N/A	1.56E+03	N	N/A	N/A	No	BSL
1330-20-7	TOTAL XYLENES	0.106		0.106		mg/kg	SB-1314-SW4A	1/24	0.016 - 0.023	0.106	N/A	1.56E+04	N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background value is maximum detected background value from the Background Soil Survey of Excess Property at Fort Pickett, VA (Weston 1999).

(4) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogens the value shown is equal to the Residential RBC.

(5) Rationale Codes

Selection Reason: Above Screening Toxicity and Background Levels (ASL)  
Deletion Reason: Essential Nutrient (NUT)  
Below Screening Toxicity Level (BSL)

Definitions: N/A = Not Applicable  
ND = No Data

COPC = Chemical of Potential Concern  
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
C = Carcinogenic  
N = Non-Carcinogenic  
Qualifiers: B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).  
J=Indicates an estimated value.  
K=Indicates an unknown bias.  
L=Indicates a low bias.

Surrogates used: Chromium IV for chromium; chlordane for alpha-chlordane and gamma-chlordane; beta-bhc for delta-bhc; and endosulfan for endosulfan I and endosulfan sulfate; and naphthalene for phenanthrene.

TABLE-4-2.2  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
TOTAL SOIL - INDUSTRIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Total Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection
Inorganics																
7429-90-5	ALUMINUM	7910	K	65600		mg/kg	SB103-8	36/36	12.9 - 160	6.56E+04	5.84E+04	2.04E+05	N	N/A	N/A	BSL
7440-36-0	ANTIMONY	0.986	B	1.51	B/B	mg/kg	SS121-0.5	3/36	0.0777 - 1.96	1.51E+00	N/A	8.18E+01	N	N/A	N/A	BSL
7440-38-2	ARSENIC	1.1	K	4.7	K	mg/kg	493-OUT-BASE-1	29/36	0.0681 - 1.63	4.70E+00	6.00E+00	3.82E+00	C	N/A	N/A	ASL
7440-39-3	BARIUM	10.9		279		mg/kg	SB103-8	36/36	0.117 - 1.63	2.79E+02	2.09E+02	1.43E+04	N	N/A	N/A	BSL
7440-41-7	BERYLLIUM	0.448		6.11		mg/kg	SB103-8	33/36	0.0227 - 0.79	6.11E+00	4.40E+00	4.09E+02	N	N/A	N/A	BSL
7440-43-9	CADMIUM	0.119		0.799		mg/kg	SB103-8	7/36	0.0222 - 0.978	7.99E-01	N/A	1.02E+02	N	N/A	N/A	BSL
7440-70-2	CALCIUM	71.2	J	2370		mg/kg	SS124-0.5	18/36	0.506 - 163	2.37E+03	4.99E+02	N/A	N	N/A	N/A	NUT
7440-47-3	CHROMIUM	2		163		mg/kg	SB-1617-SW-2A	36/36	0.14 - 24	1.63E+02	7.35E+01	6.13E+02	N	N/A	N/A	BSL
7440-48-4	COBALT	0.72	K / K	32.6		mg/kg	SB103-8	35/36	0.0308 - 1.63	3.26E+01	5.00E+01	4.09E+03	N	N/A	N/A	BSL
7440-50-8	COPPER	4.7	J / J	121		mg/kg	SB-1314-SW3A	36/36	0.233 - 1.63	1.21E+02	2.73E+01	8.18E+03	N	N/A	N/A	BSL
7439-89-6	IRON	4100		195000		mg/kg	SB-1314-SW3A	36/36	4.13 - 240	1.95E+05	6.44E+04	N/A	N	N/A	N/A	NUT
7439-92-1	LEAD	6	J	112	J	mg/kg	SS124-0.5	36/36	0.303 - 0.978	1.12E+02	1.04E+02	1.00E+03		N/A	N/A	BSL
7439-95-4	MAGNESIUM	312	L	11800		mg/kg	SB1617-SW-3	36/36	1.4 - 600	1.18E+04	5.31E+03	N/A		N/A	N/A	NUT
7439-96-5	MANGANESE	20	K	1290		mg/kg	SS124-0.5	36/36	0.047 - 24	1.29E+03	1.27E+03	4.09E+03	N	N/A	N/A	BSL
7439-97-6	MERCURY	0.041		0.201		mg/kg	SS124-0.5	10/36	0.0102 - 0.079	2.01E-01	2.10E-01	2.04E+01	N	N/A	N/A	BSL
7440-02-0	NICKEL	3.48		198		mg/kg	SB103-8	36/36	0.233 - 3.2	1.98E+02	2.30E+01	4.09E+03	N	N/A	N/A	BSL
7440-09-7	POTASSIUM	182	K	11800	J	mg/kg	SB1617-SW-3	35/36	0.715 - 600	1.18E+04	6.46E+03	N/A		N/A	N/A	NUT
7440-22-4	SILVER	0.642		0.7725		mg/kg	SS121-0.5	3/36	0.0333 - 0.978	7.73E-01	N/A	1.02E+03	N	N/A	N/A	BSL
7440-23-5	SODIUM	78.9	B	502		mg/kg	SB103-8	36/36	56 - 326	5.02E+02	N/A	N/A		N/A	N/A	NUT
7440-28-0	THALLIUM	0.58	K	2	K	mg/kg	SB1617-SW-3	7/36	0.111 - 3.26	2.00E+00	N/A	1.43E+01	N	N/A	N/A	BSL
7440-62-2	VANADIUM	2.8	K	306		mg/kg	SB-1314-SW3A	36/36	0.257 - 7.9	3.06E+02	1.10E+02	1.43E+03	N	N/A	N/A	BSL
7440-66-6	ZINC	13	K	131	K / J	mg/kg	SB-1314-SW3A / SS124-0.5	36/36	0.98 - 16	1.31E+02	9.51E+01	6.13E+04	N	N/A	N/A	BSL
PAHS																
91-57-6	2-METHYLNAPHTHALENE	0.00452	J	0.491		mg/kg	493-IN-9	7/36	0.00138 - 3.2	0.491	N/A	4.09E+03	N	N/A	N/A	BSL
56-55-3	BENZ[A]ANTHRACENE	0.00283	J	0.0105		mg/kg	SS125-0.5	2/36	0.000357 - 3.2	0.0105	N/A	7.84E+00	C	N/A	N/A	BSL
206-44-0	FLUORANTHENE	0.00393	J	0.0229		mg/kg	SS123-0.5	5/36	0.000384 - 3.2	0.0229	N/A	8.18E+03	N	N/A	N/A	BSL
86-73-7	FLUORENE	0.00113	J	0.00113	J	mg/kg	SB102-0.5	1/36	0.000499 - 3.2	0.00113	N/A	8.18E+03	N	N/A	N/A	BSL
193-39-5	INDENO[1,2,3-CD]PYRENE	0.00143	J	0.00525	J	mg/kg	SB101-0.5	3/36	0.000384 - 3.2	0.00525	N/A	7.84E+00	C	N/A	N/A	BSL
91-20-3	NAPHTHALENE	0.00264	J	0.0229		mg/kg	SS123-0.5	5/12	0.000499 - 0.0214	0.0229	N/A	4.09E+03	N	N/A	N/A	BSL
85-01-8	PHENANTHRENE	0.00678	J	0.322		mg/kg	493-IN-9	7/32	0.00397 - 3.2	0.322	N/A	4.09E+03	N	N/A	N/A	BSL
129-00-0	PYRENE	0.00214	J	0.0184		mg/kg	SS123-0.5	5/36	0.000346 - 3.2	0.0184	N/A	6.13E+03	N	N/A	N/A	BSL
PCBs																
11096-82-5	AROCLOR 1260	0.0291		0.0482		mg/kg	SS123-0.5	2/33	0.000895 - 0.1	0.0482	N/A	2.86E+00	C	N/A	N/A	BSL

TABLE-4-2.2  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
TOTAL SOIL - INDUSTRIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Total Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection
<i>Pesticides</i>																	
72-54-8	4,4'-DDD	0.000525		0.0065	J	mg/kg	SS106-0.5	6/43	0.000041 - 1.4	0.0065	N/A	2.38E+01	C	N/A	N/A	No	BSL
72-55-9	4,4'-DDE	0.0014	J	0.031	J	mg/kg	SS105-0.5	5/43	0.000038 - 1.4	0.031	N/A	1.68E+01	C	N/A	N/A	No	BSL
50-29-3	4,4'-DDT	0.00182	J	0.28	J	mg/kg	SS105-0.5	13/40	0.000047 - 1.4	0.28	N/A	1.68E+01	C	N/A	N/A	No	BSL
5103-71-9	ALPHA-CHLORDANE	0.00062	J	0.0023	J	mg/kg	SS106-0.5	4/43	0.00025 - 0.71	0.0023	N/A	1.64E+01	C	N/A	N/A	No	BSL
319-85-7	BETA-BHC	0.000628	J	0.0034	J	mg/kg	SS109-0.5	3/44	0.000036 - 0.71	0.0034	N/A	3.18E+00	C	N/A	N/A	No	BSL
319-86-8	DELTA-BHC	0.00305	J/J	0.00502	J	mg/kg	SS124-0.5	6/44	0.000032 - 0.71	0.00502	N/A	3.18E+00	C	N/A	N/A	No	BSL
60-57-1	DIELDRIN	0.0009	J	0.0012	J	mg/kg	SS106-0.5	2/43	0.000056 - 1.4	0.0012	N/A	3.58E-01	C	N/A	N/A	No	BSL
959-98-8	ENDOSULFAN I	0.00056	J	0.00056	J	mg/kg	SS105-0.5	1/43	0.00005 - 1.4	0.00056	N/A	1.23E+03	N	N/A	N/A	No	BSL
1031-07-8	ENDOSULFAN SULFATE	0.00081	J	0.00081	J	mg/kg	SS105-0.5	1/43	0.000032 - 1.4	0.00081	N/A	1.23E+03	N	N/A	N/A	No	BSL
58-89-9	GAMMA-BHC	0.00047	J	0.00076	J	mg/kg	SS104-0.5	4/44	0.000077 - 0.71	0.00076	N/A	4.40E+00	C	N/A	N/A	No	BSL
5103-74-2	GAMMA-CHLORDANE	0.000522	J	0.00239	J	mg/kg	SS123-0.5	7/43	0.00005 - 0.71	0.00239	N/A	1.64E+01	C	N/A	N/A	No	BSL
76-44-8	HEPTACHLOR	0.0033	J	0.0033	J	mg/kg	SS105-0.5	1/43	0.000056 - 0.71	0.0033	N/A	1.27E+00	C	N/A	N/A	No	BSL
1024-57-3	HEPTACHLOR EPOXIDE	0.000364	J	0.0027	J	mg/kg	SS109-0.5	4/44	0.00017 - 0.71	0.0027	N/A	6.29E-01	C	N/A	N/A	No	BSL
<i>Semivolatiles</i>																	
218-01-9	1,2-BENZPHENANTHRACENE	0.00269		0.00678	J	mg/kg	SB102-0.5	4/36	0.00023 - 3.2	0.00678	N/A	7.84E+02	C	N/A	N/A	No	BSL
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	0.127		0.167		mg/kg	SB103-8	2/26	0.0186 - 3.2	0.167	N/A	4.09E+02	C	N/A	N/A	No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.364		0.548		mg/kg	SB103-8	2/26	0.0464 - 3.2	0.548	N/A	2.04E+04	N	N/A	N/A	No	BSL
<i>Volatiles</i>																	
78-93-3	2-BUTANONE	0.0171		0.0171		mg/kg	SB-1314-SW3A	1/15	0.00438 - 0.0165	0.0171	N/A	1.23E+05	N	N/A	N/A	No	BSL
100-41-4	ETHYLBENZENE	0.0103		0.0103		mg/kg	SB-1314-SW4A	1/36	0.00219 - 0.00823	0.0103	N/A	2.04E+04	N	N/A	N/A	No	BSL
75-09-2	METHYLENE CHLORIDE	0.143		0.143		mg/kg	SB102-8	1/1	0.00593 - 0.00593	0.143	N/A	7.63E+02	C	N/A	N/A	No	BSL
100-42-5	STYRENE (MONOMER)	0.00379		0.00379		mg/kg	SS125-0.5	1/36	0.00196 - 0.00823	0.00379	N/A	4.09E+04	N	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00286		0.00442		mg/kg	SB101-0.5	2/36	0.00184 - 0.00823	0.00442	N/A	4.09E+04	N	N/A	N/A	No	BSL
1330-20-7	TOTAL XYLENES	0.106		0.106		mg/kg	SB-1314-SW4A	1/24	0.016 - 0.023	0.106	N/A	4.09E+05	N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background value is maximum detected background value from the Background Soil Survey of Excess Property at Fort Pickett, VA (Weston 1999).

(4) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogens the value shown is equal to the Residential RBC.

(5) Rationale Codes

Definitions:

N/A = Not Applicable

ND = No Data

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic

N = Non-Carcinogenic

B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).

J=Indicates an estimated value.

K=Indicates an unknown bias.

L=Indicates a low bias.

Surrogates used: Chromium IV for chromium; chlordane for alpha-chlordane and gamma-chlordane; beta-bhc for delta-bhc; and endosulfan for endosulfan I and endosulfan sulfate; and naphthalene for phenanthrene.

TABLE-4-2.3  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SURFACE SOIL - RESIDENTIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Surface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Inorganics																	
7429-90-5	ALUMINUM	7910	K	24200	K	mg/kg	SS124-0.5	6/6	12.9 - 21.2	2.42E+04	5.84E+04	7.82E+03	N	N/A	N/A	Yes	ASL
7440-36-0	ANTIMONY	0.986	B	1.51	B/B	mg/kg	SS121-0.5	3/6	0.63 - 0.856	1.51E+00	N/A	3.13E+00	N	N/A	N/A	No	BSL
7440-38-2	ARSENIC	1.12		4.47		mg/kg	SS124-0.5	5/6	0.53 - 1.27	4.47E+00	6.00E+00	4.26E-01	C	N/A	N/A	Yes	ASL
7440-39-3	BARIUM	23.6		99.8		mg/kg	SS124-0.5	6/6	0.117 - 0.53	9.98E+01	2.09E+02	5.48E+02	N	N/A	N/A	No	BSL
7440-41-7	BERYLLIUM	0.448		1.14		mg/kg	SS124-0.5	6/6	0.023 - 0.106	1.14E+00	4.40E+00	1.56E+01	N	N/A	N/A	No	BSL
7440-43-9	CADMIUM	0.119		0.636		mg/kg	SS124-0.5	6/6	0.093 - 0.318	6.36E-01	N/A	3.91E+00	N	N/A	N/A	No	BSL
7440-70-2	CALCIUM	527		2370		mg/kg	SS124-0.5	6/6	32.7 - 53	2.37E+03	4.99E+02	N/A	N/A	N/A	N/A	No	NUT
7440-47-3	CHROMIUM	11.8	J	27.5	J	mg/kg	SS124-0.5	6/6	0.14 - 0.53	2.75E+01	7.35E+01	2.35E+01	N	N/A	N/A	Yes	ASL
7440-48-4	COBALT	2.66		11.3		mg/kg	SS124-0.5	6/6	0.303 - 0.53	1.13E+01	5.00E+01	1.56E+02	N	N/A	N/A	No	BSL
7440-50-8	COPPER	5.8		14.8		mg/kg	SS124-0.5	6/6	0.233 - 0.53	1.48E+01	2.73E+01	3.13E+02	N	N/A	N/A	No	BSL
7439-89-6	IRON	6650	K	23500	K	mg/kg	SS124-0.5	6/6	4.13 - 10.6	2.35E+04	6.44E+04	N/A	N	N/A	N/A	No	NUT
7439-92-1	LEAD	19.4		112	J	mg/kg	SS124-0.5	6/6	0.303 - 0.412	1.12E+02	1.04E+02	4.00E+02		N/A	N/A	No	BSL
7439-95-4	MAGNESIUM	748		2410		mg/kg	SB103-0.5	6/6	1.4 - 26.5	2.41E+03	5.31E+03	N/A		N/A	N/A	No	NUT
7439-96-5	MANGANESE	128		1290		mg/kg	SS124-0.5	6/6	0.047 - 0.53	1.29E+03	1.27E+03	1.56E+02	N	N/A	N/A	Yes	ASL
7439-97-6	MERCURY	0.041		0.201		mg/kg	SS124-0.5	5/6	0.018 - 0.034	2.01E-01	2.10E-01	7.82E-01	N	N/A	N/A	No	BSL
7440-02-0	NICKEL	3.48		10.8		mg/kg	SB103-0.5	6/6	0.233 - 0.53	1.08E+01	2.30E+01	1.56E+02	N	N/A	N/A	No	BSL
7440-09-7	POTASSIUM	636		2490		mg/kg	SB103-0.5	6/6	2.78 - 26.5	2.49E+03	6.46E+03	N/A		N/A	N/A	No	NUT
7440-22-4	SILVER	0.642		0.7725		mg/kg	SS121-0.5	3/6	0.318 - 0.571	7.73E-01	N/A	3.91E+01	N	N/A	N/A	No	BSL
7440-23-5	SODIUM	78.9	B	218	B	mg/kg	SS124-0.5	6/6	58.3 - 106	2.18E+02	N/A	N/A		N/A	N/A	No	NUT
7440-62-2	VANADIUM	12.5		41.7		mg/kg	SS124-0.5	6/6	0.257 - 0.53	4.17E+01	1.10E+02	5.48E+01	N	N/A	N/A	No	BSL
7440-66-6	ZINC	39.7	J	131	J	mg/kg	SS124-0.5	6/6	0.98 - 1.59	1.31E+02	9.51E+01	2.35E+03	N	N/A	N/A	No	BSL
PAHs																	
91-57-6	2-METHYLNAPHTHALENE	0.00452	J	0.0361		mg/kg	SS121-0.5	6/9	0.00138 - 0.0444	0.0361	N/A	1.56E+02	N	N/A	N/A	No	BSL
56-55-3	BENZ[A]ANTHRACENE	0.00283	J	0.0105		mg/kg	SS125-0.5	2/9	0.000357 - 0.0113	0.0105	N/A	8.75E-01	C	N/A	N/A	No	BSL
206-44-0	FLUORANTHENE	0.00393	J	0.0229		mg/kg	SS123-0.5	5/9	0.000384 - 0.0121	0.0229	N/A	3.13E+02	N	N/A	N/A	No	BSL
86-73-7	FLUORENE	0.00113	J	0.00113	J	mg/kg	SB102-0.5	1/9	0.000499 - 0.0162	0.00113	N/A	3.13E+02	N	N/A	N/A	No	BSL
193-39-5	INDENO[1,2,3-CD]PYRENE	0.00143	J	0.00525	J	mg/kg	SB101-0.5	3/9	0.000384 - 0.0121	0.00525	N/A	8.75E-01	C	N/A	N/A	No	BSL
91-20-3	NAPHTHALENE	0.00264	J	0.0229		mg/kg	SS123-0.5	5/9	0.000499 - 0.0158	0.0229	N/A	1.56E+02	N	N/A	N/A	No	BSL
85-01-8	PHENANTHRENE	0.00678	J	0.0158	J	mg/kg	SB102-0.5	3/5	0.00397 - 0.0158	0.0158	N/A	1.56E+02	N	N/A	N/A	No	BSL
129-00-0	PYRENE	0.00214	J	0.0184		mg/kg	SS123-0.5	5/9	0.000346 - 0.0109	0.0184	N/A	2.35E+02	N	N/A	N/A	No	BSL
PCBs																	
11096-82-5	AROCLOR 1260	0.0291		0.0482		mg/kg	SS123-0.5	2/6	0.000895 - 0.0143	0.0482	N/A	3.19E-01	C	N/A	N/A	No	BSL

TABLE-4-2.3  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SURFACE SOIL - RESIDENTIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Surface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Pesticides																	
72-54-8	4,4'-DDD	0.000525		0.0065	J	mg/kg	SS106-0.5	6/11	0.000041 - 0.000357	0.0065	N/A	2.66E+00	C	N/A	N/A	No	BSL
72-55-9	4,4'-DDE	0.0014	J	0.031	J	mg/kg	SS105-0.5	5/11	0.000038 - 0.00361	0.031	N/A	1.88E+00	C	N/A	N/A	No	BSL
50-29-3	4,4'-DDT	0.00182	J	0.28	J	mg/kg	SS105-0.5	7/8	0.000047 - 0.00451	0.28	N/A	1.88E+00	C	N/A	N/A	No	BSL
5103-71-9	ALPHA-CHLORDANE	0.00062	J	0.0023	J	mg/kg	SS106-0.5	4/12	0.00025 - 0.000357	0.0023	N/A	1.82E+00	C	N/A	N/A	No	BSL
319-85-7	BETA-BHC	0.000628	J	0.0034	J	mg/kg	SS109-0.5	3/12	0.000036 - 0.000357	0.0034	N/A	3.55E-01	C	N/A	N/A	No	BSL
319-86-8	DELTA-BHC	0.00305	J/J	0.00502	J	mg/kg	SS124-0.5	6/12	0.000032 - 0.000357	0.00502	N/A	3.55E-01	C	N/A	N/A	No	BSL
60-57-1	DIELDRIN	0.0009	J	0.0012	J	mg/kg	SS106-0.5	2/11	0.000056 - 0.000357	0.0012	N/A	3.99E-02	C	N/A	N/A	No	BSL
959-98-8	ENDOSULFAN I	0.00056	J	0.00056	J	mg/kg	SS105-0.5	1/11	0.00005 - 0.000357	0.00056	N/A	4.69E+01	N	N/A	N/A	No	BSL
1031-07-8	ENDOSULFAN SULFATE	0.00081	J	0.00081	J	mg/kg	SS105-0.5	1/11	0.000032 - 0.000357	0.00081	N/A	4.69E+01	N	N/A	N/A	No	BSL
58-89-9	GAMMA-BHC	0.00047	J	0.00076	J	mg/kg	SS104-0.5	4/12	0.000077 - 0.000357	0.00076	N/A	4.91E-01	C	N/A	N/A	No	BSL
5103-74-2	GAMMA-CHLORDANE	0.000522	J	0.00239	J	mg/kg	SS123-0.5	7/11	0.00005 - 0.000357	0.00239	N/A	1.82E+00	C	N/A	N/A	No	BSL
76-44-8	HEPTACHLOR	0.0033	J	0.0033	J	mg/kg	SS105-0.5	1/11	0.000056 - 0.000357	0.0033	N/A	1.42E-01	C	N/A	N/A	No	BSL
1024-57-3	HEPTACHLOR EPOXIDE	0.000364	J	0.0027	J	mg/kg	SS109-0.5	4/12	0.00017 - 0.000357	0.0027	N/A	7.02E-02	C	N/A	N/A	No	BSL
Semivolatiles																	
218-01-9	1,2-BENZPHENANTHRACENE	0.00269		0.00678	J	mg/kg	SB102-0.5	4/9	0.00023 - 0.00727	0.00678	N/A	8.75E+01	C	N/A	N/A	No	BSL
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	0.127		0.127		mg/kg	SB103-0.5	1/1	0.0186 - 0.0186	0.127	N/A	4.56E+01	C	N/A	N/A	No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.364		0.364		mg/kg	SB103-0.5	1/1	0.0464 - 0.0464	0.364	N/A	7.82E+02	N	N/A	N/A	No	BSL
Volatiles																	
100-42-5	STYRENE (MONOMER)	0.00379		0.00379		mg/kg	SS125-0.5	1/9	0.00196 - 0.00606	0.00379	N/A	1.56E+03	N	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00442		0.00442		mg/kg	SB101-0.5	1/9	0.00184 - 0.00606	0.00442	N/A	1.56E+03	N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.  
(2) Maximum concentration used as screening value.  
(3) Background value is maximum detected background value from the Background Soil Survey of Excess Property at Fort Pickett, VA (Weston 1999).  
(4) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogens the value shown is equal to the Residential RBC.  
(5) Rationale Codes

Selection Reason: Above Screening Toxicity and Background Levels (ASL)  
Deletion Reason: Essential Nutrient (NUT)  
Below Screening Toxicity Level (BSL)

Definitions: N/A = Not Applicable  
ND = No Data  
  
COPC = Chemical of Potential Concern  
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
C = Carcinogenic  
N = Non-Carcinogenic  
  
Qualifiers: B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).  
J=Indicates an estimated value.  
K=Indicates an unknown bias.  
L=Indicates a low bias.

Surrogates used: Chromium IV for chromium; chlordane for alpha-chlordane and gamma-chlordane; beta-bhc for delta-bhc; and endosulfan for endosulfan I and endosulfan sulfate; and naphthalene for phenanthrene.

TABLE-4-2.4  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SURFACE SOIL - INDUSTRIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Surface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection
Inorganics																
7429-90-5	ALUMINUM	7910	K	24200	K	mg/kg	SS124-0.5	6/6	12.9 - 21.2	2.42E+04	5.84E+04	2.04E+05	N	N/A	N/A	BSL
7440-36-0	ANTIMONY	0.986	B	1.51	B/B	mg/kg	SS121-0.5	3/6	0.63 - 0.856	1.51E+00	N/A	8.18E+01	N	N/A	N/A	BSL
7440-38-2	ARSENIC	1.12		4.47		mg/kg	SS124-0.5	5/6	0.53 - 1.27	4.47E+00	6.00E+00	3.82E+00	C	N/A	N/A	ASL
7440-39-3	BARIUM	23.6		99.8		mg/kg	SS124-0.5	6/6	0.117 - 0.53	9.98E+01	2.09E+02	1.43E+04	N	N/A	N/A	BSL
7440-41-7	BERYLLIUM	0.448		1.14		mg/kg	SS124-0.5	6/6	0.023 - 0.106	1.14E+00	4.40E+00	4.09E+02	N	N/A	N/A	BSL
7440-43-9	CADMIUM	0.119		0.636		mg/kg	SS124-0.5	6/6	0.093 - 0.318	6.36E-01	N/A	1.02E+02	N	N/A	N/A	BSL
7440-70-2	CALCIUM	527		2370		mg/kg	SS124-0.5	6/6	32.7 - 53	2.37E+03	4.99E+02	N/A	N/A	N/A	No	NUT
7440-47-3	CHROMIUM	11.8	J	27.5	J	mg/kg	SS124-0.5	6/6	0.14 - 0.53	2.75E+01	7.35E+01	6.13E+02	N	N/A	N/A	BSL
7440-48-4	COBALT	2.66		11.3		mg/kg	SS124-0.5	6/6	0.303 - 0.53	1.13E+01	5.00E+01	4.09E+03	N	N/A	N/A	BSL
7440-50-8	COPPER	5.8		14.8		mg/kg	SS124-0.5	6/6	0.233 - 0.53	1.48E+01	2.73E+01	8.18E+03	N	N/A	N/A	BSL
7439-89-6	IRON	6650	K	23500	K	mg/kg	SS124-0.5	6/6	4.13 - 10.6	2.35E+04	6.44E+04	N/A	N	N/A	N/A	NUT
7439-92-1	LEAD	19.4		112	J	mg/kg	SS124-0.5	6/6	0.303 - 0.412	1.12E+02	1.04E+02	1.00E+03		N/A	N/A	BSL
7439-95-4	MAGNESIUM	748		2410		mg/kg	SB103-0.5	6/6	1.4 - 26.5	2.41E+03	5.31E+03	N/A		N/A	N/A	NUT
7439-96-5	MANGANESE	128		1290		mg/kg	SS124-0.5	6/6	0.047 - 0.53	1.29E+03	1.27E+03	4.09E+03	N	N/A	N/A	BSL
7439-97-6	MERCURY	0.041		0.201		mg/kg	SS124-0.5	5/6	0.018 - 0.034	2.01E-01	2.10E-01	2.04E+01	N	N/A	N/A	BSL
7440-02-0	NICKEL	3.48		10.8		mg/kg	SB103-0.5	6/6	0.233 - 0.53	1.08E+01	2.30E+01	4.09E+03	N	N/A	N/A	BSL
7440-09-7	POTASSIUM	636		2490		mg/kg	SB103-0.5	6/6	2.78 - 26.5	2.49E+03	6.46E+03	N/A		N/A	N/A	NUT
7440-22-4	SILVER	0.642		0.7725		mg/kg	SS121-0.5	3/6	0.318 - 0.571	7.73E-01	N/A	1.02E+03	N	N/A	N/A	BSL
7440-23-5	SODIUM	78.9	B	218	B	mg/kg	SS124-0.5	6/6	58.3 - 106	2.18E+02	N/A	N/A		N/A	N/A	NUT
7440-62-2	VANADIUM	12.5		41.7		mg/kg	SS124-0.5	6/6	0.257 - 0.53	4.17E+01	1.10E+02	1.43E+03	N	N/A	N/A	BSL
7440-66-6	ZINC	39.7	J	131	J	mg/kg	SS124-0.5	6/6	0.98 - 1.59	1.31E+02	9.51E+01	6.13E+04	N	N/A	N/A	BSL
PAHs																
91-57-6	2-METHYLNAPHTHALENE	0.00452	J	0.0361		mg/kg	SS121-0.5	6/9	0.00138 - 0.0444	0.0361	N/A	4.09E+03	N	N/A	N/A	BSL
56-55-3	BENZ[A]ANTHRACENE	0.00283	J	0.0105		mg/kg	SS125-0.5	2/9	0.000357 - 0.0113	0.0105	N/A	7.84E+00	C	N/A	N/A	BSL
206-44-0	FLUORANTHENE	0.00393	J	0.0229		mg/kg	SS123-0.5	5/9	0.000384 - 0.0121	0.0229	N/A	8.18E+03	N	N/A	N/A	BSL
86-73-7	FLUORENE	0.00113	J	0.00113	J	mg/kg	SB102-0.5	1/9	0.000499 - 0.0162	0.00113	N/A	8.18E+03	N	N/A	N/A	BSL
193-39-5	INDENO[1,2,3-CD]PYRENE	0.00143	J	0.00525	J	mg/kg	SB101-0.5	3/9	0.000384 - 0.0121	0.00525	N/A	7.84E+00	C	N/A	N/A	BSL
91-20-3	NAPHTHALENE	0.00264	J	0.0229		mg/kg	SS123-0.5	5/9	0.000499 - 0.0158	0.0229	N/A	4.09E+03	N	N/A	N/A	BSL
85-01-8	PHENANTHRENE	0.00678	J	0.0158	J	mg/kg	SB102-0.5	3/5	0.00397 - 0.0158	0.0158	N/A	4.09E+03	N	N/A	N/A	BSL
129-00-0	PYRENE	0.00214	J	0.0184		mg/kg	SS123-0.5	5/9	0.000346 - 0.0109	0.0184	N/A	6.13E+03	N	N/A	N/A	BSL
PCBs																
11096-82-5	AROCLOL 1260	0.0291		0.0482		mg/kg	SS123-0.5	2/6	0.000895 - 0.0143	0.0482	N/A	2.86E+00	C	N/A	N/A	BSL

TABLE-4-2.4  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SURFACE SOIL - INDUSTRIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Surface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Pesticides																	
72-54-8	4,4'-DDD	0.000525		0.0065	J	mg/kg	SS106-0.5	6/11	0.000041 - 0.000357	0.0065	N/A	2.38E+01	C	N/A	N/A	No	BSL
72-55-9	4,4'-DDE	0.0014	J	0.031	J	mg/kg	SS105-0.5	5/11	0.000038 - 0.00361	0.031	N/A	1.68E+01	C	N/A	N/A	No	BSL
50-29-3	4,4'-DDT	0.00182	J	0.28	J	mg/kg	SS105-0.5	7/8	0.000047 - 0.00451	0.28	N/A	1.68E+01	C	N/A	N/A	No	BSL
5103-71-9	ALPHA-CHLORDANE	0.00062	J	0.0023	J	mg/kg	SS106-0.5	4/12	0.00025 - 0.000357	0.0023	N/A	1.64E+01	C	N/A	N/A	No	BSL
319-85-7	BETA-BHC	0.000628	J	0.0034	J	mg/kg	SS109-0.5	3/12	0.000036 - 0.000357	0.0034	N/A	3.18E+00	C	N/A	N/A	No	BSL
319-86-8	DELTA-BHC	0.00305	J/J	0.00502	J	mg/kg	SS124-0.5	6/12	0.000032 - 0.000357	0.00502	N/A	3.18E+00	C	N/A	N/A	No	BSL
60-57-1	DIELDRIN	0.0009	J	0.0012	J	mg/kg	SS106-0.5	2/11	0.000056 - 0.000357	0.0012	N/A	3.58E-01	C	N/A	N/A	No	BSL
959-98-8	ENDOSULFAN I	0.00056	J	0.00056	J	mg/kg	SS105-0.5	1/11	0.00005 - 0.000357	0.00056	N/A	1.23E+03	N	N/A	N/A	No	BSL
1031-07-8	ENDOSULFAN SULFATE	0.00081	J	0.00081	J	mg/kg	SS105-0.5	1/11	0.000032 - 0.000357	0.00081	N/A	1.23E+03	N	N/A	N/A	No	BSL
58-89-9	GAMMA-BHC	0.00047	J	0.00076	J	mg/kg	SS104-0.5	4/12	0.000077 - 0.000357	0.00076	N/A	4.40E+00	C	N/A	N/A	No	BSL
5103-74-2	GAMMA-CHLORDANE	0.000522	J	0.00239	J	mg/kg	SS123-0.5	7/11	0.00005 - 0.000357	0.00239	N/A	1.64E+01	C	N/A	N/A	No	BSL
76-44-8	HEPTACHLOR	0.0033	J	0.0033	J	mg/kg	SS105-0.5	1/11	0.000056 - 0.000357	0.0033	N/A	1.27E+00	C	N/A	N/A	No	BSL
1024-57-3	HEPTACHLOR EPOXIDE	0.000364	J	0.0027	J	mg/kg	SS109-0.5	4/12	0.00017 - 0.000357	0.0027	N/A	6.29E-01	C	N/A	N/A	No	BSL
Semivolatiles																	
218-01-9	1,2-BENZPHENANTHRACENE	0.00269		0.00678	J	mg/kg	SB102-0.5	4/9	0.00023 - 0.00727	0.00678	N/A	7.84E+02	C	N/A	N/A	No	BSL
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	0.127		0.127		mg/kg	SB103-0.5	1/1	0.0186 - 0.0186	0.127	N/A	4.09E+02	C	N/A	N/A	No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.364		0.364		mg/kg	SB103-0.5	1/1	0.0464 - 0.0464	0.364	N/A	2.04E+04	N	N/A	N/A	No	BSL
Volatiles																	
100-42-5	STYRENE (MONOMER)	0.00379		0.00379		mg/kg	SS125-0.5	1/9	0.00196 - 0.00606	0.00379	N/A	4.09E+04	N	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00442		0.00442		mg/kg	SB101-0.5	1/9	0.00184 - 0.00606	0.00442	N/A	4.09E+04	N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background value is maximum detected background value from the Background Soil Survey of Excess Property at Fort Pickett, VA (Weston 1999).

(4) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogens the value shown is equal to the Residential RBC.

(5) Rationale Codes

Selection Reason: Above Screening Toxicity and Background Levels (ASL)  
Deletion Reason: Essential Nutrient (NUT)  
Below Screening Toxicity Level (BSL)

Definitions: N/A = Not Applicable  
ND = No Data

COPC = Chemical of Potential Concern  
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
C = Carcinogenic  
N = Non-Carcinogenic  
Qualifiers: B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).  
J=Indicates an estimated value.  
K=Indicates an unknown bias.  
L=Indicates a low bias.

Surrogates used: Chromium IV for chromium; chlordane for alpha-chlordane and gamma-chlordane; beta-bhc for delta-bhc; and endosulfan for endosulfan I and endosulfan sulfate; and naphthalene for phenanthrene.

TABLE-4-2.5  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SUBSURFACE SOIL - RESIDENTIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Subsurface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background Value	Screening <sup>(3)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(4)</sup> Contaminant Deletion or Selection
Volatiles																
78-93-3	2-BUTANONE	0.0171		0.0171		mg/kg	SB-1314-SW3A	1/6	0.0119 - 0.0165	0.0171	N/A	4.69E+03 N	N/A	N/A	No	BSL
100-41-4	ETHYLBENZENE	0.0103		0.0103		mg/kg	SB-1314-SW4A	1/27	0.0053 - 0.00823	0.0103	N/A	7.82E+02 N	N/A	N/A	No	BSL
75-09-2	METHYLENE CHLORIDE	0.143		0.143		mg/kg	SB102-8	1/1	0.00593 - 0.00593	0.143	N/A	8.52E+01 C	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00286		0.00286		mg/kg	SB101-8	1/27	0.0053 - 0.00823	0.00286	N/A	1.56E+03 N	N/A	N/A	No	BSL
1330-20-7	TOTAL XYLENES	0.106		0.106		mg/kg	SB-1314-SW4A	1/24	0.016 - 0.023	0.106	N/A	1.56E+04 N	N/A	N/A	No	BSL

- (1) Minimum/maximum detected concentration.  
(2) Maximum concentration used as screening value.  
(3) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogens the value shown is equal to the Residential RBC.  
(4) Rationale Codes

Definitions: N/A = Not Applicable  
ND = No Data  
  
COPC = Chemical of Potential Concern  
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
C = Carcinogenic  
N = Non-Carcinogenic  
  
Qualifiers: B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).  
J=Indicates an estimated value.  
K=Indicates an unknown bias.  
L=Indicates a low bias.

Selection Reason: Above Screening Toxicity and Background Levels (ASL)  
Deletion Reason: Essential Nutrient (NUT)  
Below Screening Toxicity Level (BSL)

TABLE-4-2.6  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
SUBSURFACE SOIL - INDUSTRIAL

Scenario Timeframe: Current/Future  
Medium: Soil  
Exposure Medium: Subsurface Soil  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background Value	Screening <sup>(3)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(4)</sup> Contaminant Deletion or Selection
Volatiles																
78-93-3	2-BUTANONE	0.0171		0.0171		mg/kg	SB-1314-SW3A	1/6	0.0119 - 0.0165	0.0171	N/A	1.23E+05 N	N/A	N/A	No	BSL
100-41-4	ETHYLBENZENE	0.0103		0.0103		mg/kg	SB-1314-SW4A	1/27	0.0053 - 0.00823	0.0103	N/A	2.04E+04 N	N/A	N/A	No	BSL
75-09-2	METHYLENE CHLORIDE	0.143		0.143		mg/kg	SB102-8	1/1	0.00593 - 0.00593	0.143	N/A	7.63E+02 C	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.00286		0.00286		mg/kg	SB101-8	1/27	0.0053 - 0.00823	0.00286	N/A	4.09E+04 N	N/A	N/A	No	BSL
1330-20-7	TOTAL XYLENES	0.106		0.106		mg/kg	SB-1314-SW4A	1/24	0.016 - 0.023	0.106	N/A	4.09E+05 N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Screening Toxicity Value - Taken from USEPA Region III Risk Based Criteria (RBCs) Table, USEPA, April 2002. For non-carcinogens, value shown is equal to 1/10 the Residential RBC. For carcinogen: the value shown is equal to the Residential RBC.

(4) Rationale Codes

Selection Reason:

Deletion Reason:

Above Screening Toxicity and Background Levels (ASL)

Essential Nutrient (NUT)

Below Screening Toxicity Level (BSL)

Definitions:

Qualifiers:

N/A = Not Applicable

ND = No Data

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic

N = Non-Carcinogenic

B=Indicates a value less than the reporting limit (RL) but greater than the method detection limit (MDL).

J=Indicates an estimated value.

K=Indicates an unknown bias.

L=Indicates a low bias.

**Table 4-3**  
**Summary of Phase II RI Human Health Risks Across all Media for Addendum COPCs**

CAS Number	Chemical	Units	Maximum Total Soil Concentration in Addendum <sup>(1)</sup>	Maximum Total Soil Concentration in Phase II RI <sup>(2)</sup>	Resident Adult Non-carcinogenic Risk	Resident Child Non-carcinogenic Risk	Target Organ	Residential (Lifetime adult and child) Carcinogenic Risk <sup>(3)</sup>	Exceedence of Acceptable Non-carcinogenic Threshold of 1.0	Exceedence of Acceptable Carcinogenic Risk Range of $10^{-4}$ to $10^{-6}$
<b><i>Inorganics</i></b>										
7440-02-0	NICKEL	mg/kg	198	198	7.39E-04	6.30E-03	Body Weight (IRIS 2003)	--	No	No, not a carcinogen
7440-62-2	THALLIUM	mg/kg	2	3.1	1.56E-02	1.55E-01	Central Nervous System (IRIS 2003)	--	No	No, not a carcinogen
7440-66-6	VANADIUM	mg/kg	306	172	1.82E-02	1.36E-01	Digestive System, Kidneys, Blood (HEAST 1997)	--	No	No, not a carcinogen

*Notes:*

- (1) The addendum data set excluded data removed in the IRA and included IRA confirmation samples.
- (2) The Phase II RI data set was performed before the IRA and includes data removed in the IRA.
- (3) Adult and child carcinogenic risks are added together to estimate lifetime residential cancer risk.

## **5. REVISED HUMAN HEALTH RISK ASSESSMENT FOR GROUNDWATER**

### **5.1 GROUNDWATER INTRODUCTION**

As discussed in Chapter 4, a human health risk assessment (HHRA) was performed to determine whether there is potential human health risk from exposure to environmental media at EBS-79 and is provided in Chapter 7 of the Phase II Remedial Investigation (RI) Report (EA 2001). The Phase II RI HHRA for EBS-79 was conducted in accordance with U.S. EPA Risk Assessment Guidance for Superfund (RAGS) Part A (U.S. EPA 1989) and with Region III technical guidance for risk assessment manuals (U.S. EPA 1993a and 1995a). In addition, the HHRA was reviewed and commented on by U.S. EPA Region III.

The Phase II RI HHRA evaluated all site media and presented an assessment of potential risk to hypothetical current and future users of the site. The HHRA consisted of a hazard evaluation (screening assessment), exposure assessment, toxicity assessment, and risk characterization. The screening assessment was performed to determine chemicals of potential concern (COPCs) for further evaluation in the HHRA. The exposure assessment evaluated potential exposure scenarios and developed quantitative estimates of potential human exposure under conservative human use assumptions (e.g., adult residents at the site will ingest 100 mg/kg of soil 350 days per year). The toxicity assessment evaluated the relative toxicity of each COPC. The risk characterization synthesized the results of the screening, exposure and toxicity assessments to provide a quantitative estimate of potential risk.

The Phase II groundwater results indicated site-related risks above U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  for carcinogens and U.S. EPA's target hazard index (HI) of 1.0 for non-carcinogens; benzene was the primary risk driver. Benzene risks also exceeded the VDEQ goal of  $10^{-4}$ . Benzene concentrations in groundwater samples collected from two wells (MW-1 and MW-2) were higher than other site wells with the samples collected from MW-2 containing benzene concentrations two orders of magnitude higher than any other site sample. MW-2 is located across the street (Bakers Row) from EBS-79 and is hydraulically downgradient from the former UST site (Figure 1-1 and Figure 1-2). The Fort Pickett BRAC Cleanup Team determined that the elevated levels of BTEX from MW-2 and MW-1 could be attributed to BCT-22 and that MW-1 and MW-2 data will be included in a risk assessment being performed at the Former Fuel Station (BCT-22).

This chapter presents a recalculation of risk for groundwater excluding data from the two wells MW-1 and MW-2, which were included in the previous assessment, to more accurately reflect potential risk associated with onsite sources at EBS-79.

### 5.1.1 Data Quality Evaluation

Data collected during the Phase I and Phase II Remedial Investigations are included in this evaluation. Detailed discussions regarding the sampling events and data management are provided in text of the Phase I RI Report (EA 2000) and Phase II RI Report (EA 2001).

Inclusion or exclusion of data on the basis of analytical qualifiers is performed in accordance with U.S. EPA guidance (U.S. EPA 1989). In the Phase II RI Report, Section 4.4 discusses data reduction for EBS-79 in detail; however, highlights relating to human health risk assessment are presented here:

- Analytical results bearing the U qualifier (indicating that the analyte was not detected at the given sample quantitation level [SQL]) are retained in the data set and considered non-detects. When calculating statistics (i.e., the 95% upper confidence limit), results bearing the U qualifier are assigned a numerical value of one-half its SQL per U.S. EPA guidance (EPA 1989);
- Analytical results bearing the J qualifier (indicating that the reported value was estimated because the analyte was detected at a concentration below the SQL or for other reasons) are retained at the measured concentration.

If duplicate samples were taken or duplicate analyses were conducted on a single sample, the following guidelines are employed to select the appropriate sample measurement:

- If both samples/analyses showed that the analyte was present, the average of the analyses is used as the concentration.
- If only one sample/analysis indicated that the analyte was present, it is retained for analysis and combined with 1/2 the detection limit to calculate the average.
- If both samples/analyses were non-detect, the average of the 1/2 of the detection limits are retained for analysis, if appropriate.

Common laboratory contaminants, including acetone, 2-butanone, methylene chloride, chloroform, toluene, phthalate esters, and uncommon laboratory contaminants are considered to be COPCs unless it is evident that their presence is not related to site-specific activities but are due to laboratory contamination.

### **5.1.2 Exposure Pathways of Concern**

A detailed discussion of the selection of receptors and pathways of concern is provided in the Phase II RI Report. Table 5-1 presents a summary of the exposure pathways for groundwater. Receptors of concern are potential future residential adults and children and future construction workers.

It is conservatively assumed that future residents would contact groundwater as tap water, thus ingesting groundwater via the tap and contacting it dermally and via inhalation of any volatile compounds while showering and bathing via the tap as well. Any groundwater accessed by residents via the tap is assumed as filtered for inorganics.

Construction workers could also contact groundwater when they dig at depth. As such, construction workers are evaluated for incidental ingestion of and dermal contact with groundwater. It is assumed that construction workers will contact groundwater outside; therefore, total (or unfiltered) data are used for inorganics.

### **5.1.3 Human Health Risk-Based Screening**

Risk-based screening is conducted to determine chemicals warranting further investigation at a site. This evaluation presents conservative screening by comparing maximum detected chemical concentrations to U.S. EPA recommended risk-based screening values (RBCs). Any analyte in any medium for which the maximum measured concentration exceeds the RBC is retained for further investigation and is considered a COPC.

RBCs that are used in the selection of COPCs are medium-specific and are discussed below. For groundwater, the U.S. EPA Region III tap water RBCs (U.S. EPA 2003a) are used for screening for both the residential and construction worker scenarios. Per Region III guidance (U.S. EPA 1993a), one-tenth of the RBC for non-carcinogens is used to account for potential additivity of toxic effects.

An analyte is eliminated from the list of COPCs if it is an essential nutrient of low toxicity, and if its reported maximum concentration is unlikely to be associated with adverse health impacts. COPCs excluded from further consideration on this basis include calcium, magnesium, potassium, and sodium.

#### **5.1.4 Human Health COPCs Selected**

Human health COPCs are presented in Table 5-2. Table 5-2 includes both filtered and non-filtered (total) inorganic data. For the residential scenario, using filtered inorganic data, the COPCs are manganese, heptachlor, heptachlor epoxide, and benzene. For the construction worker scenario, using total (unfiltered) inorganic data, the COPCs are arsenic, cadmium, manganese, thallium, heptachlor, heptachlor epoxide, and benzene.

There are no other COPCs in groundwater for either the residential or construction worker scenario. Benzene is the only volatile organic chemicals present in groundwater above screening levels; therefore, per the work plan, the potential for indoor inhalation of benzene vapors is addressed as a viable pathway (EA 1999).

## **5.2 EXPOSURE ASSESSMENT**

The Phase II RI provides an in-depth discussion of the exposure assessment for EBS-79.

For this re-assessment of groundwater, exposure point concentrations (EPCs) are developed for each COPC following the methodology of the Phase II RI and are presented in Table 5-3. Rationale for the derivation of each EPC is provided in the table and follows U.S. EPA guidance (U.S. EPA 1989).

Likewise, the exposure parameters follow those presented and discussed in the Phase II RI. These exposure parameters are presented in Table 5-4.1 for the adult resident, Table 5-4.2 for the child resident, and Table 5-4.3 for the construction worker. Inhalation of vapors parameters are presented in Appendix B (Table B-15) and are based on U.S. EPA Region III guidance. For all receptors, a reasonable maximum exposure (RME) and an average exposure (AE) scenario are evaluated. The parameters for both the RME and AE scenarios are the same as those in the Phase II RI with the exception of chemical-specific dermal gastrointestinal absorption values which are taken instead from the latest U.S. EPA guidance (U.S. EPA 2000b).

### 5.3 TOXICITY ASSESSMENT

The Phase II RI provides an in-depth discussion of the exposure assessment for EBS-79. For this re-assessment of groundwater, toxicity values for each COPC are determined following the methodology of the Phase II RI and are presented in Tables 5-5.1 through 5-6.2. The EPA database IRIS is accessed to obtain the most recently recommended toxicity information for each COPC (U.S. EPA 2003b). Updated parameters are employed where applicable. References for the toxicity information for each COPC are provided in the tables and follow U.S. EPA guidance (U.S. EPA 1989).

Table 5-5.1 presents the oral and dermal toxicity information for non-carcinogens. Table 5-5.2 presents the inhalation toxicity information for non-carcinogenic COPCs. Table 5-5.3 presents the chemical-specific parameters necessary to calculate dermal risks. Table 5-6.1 presents the oral and dermal toxicity information for carcinogens, and Table 5-6.2 presents the inhalation toxicity information for carcinogenic COPCs.

### 5.4 RISK RESULTS

The methodologies for calculating risk are discussed thoroughly in the Phase II RI human health risk assessment. For this re-assessment of groundwater, the methodologies presented in the Phase II RI are followed.

Average exposure (AE) and reasonable maximum exposure (RME) scenario chemical-specific, pathway-specific risk estimates are presented by receptor group in Tables 5-7.1 through 5-7.6 for non-carcinogenic risk and Tables 5-8.1 through 5-8.4 for carcinogenic risk.

Tables 5-7.1 (AE) and 5-7.2 (RME) present the non-carcinogenic groundwater risk for the adult resident. Tables 5-7.3 (AE) and 5-7.4 (RME) present the non-carcinogenic groundwater risk for the child resident. Tables 5-7.5 (AE) and 5-7.6 (RME) present the non-carcinogenic groundwater risk for the construction worker.

For the residential scenario, estimated risks were summed for the adult and child receptors to assess lifetime cancer risks. Tables 5-8.1 (AE) and 5-8.2 (RME) present the carcinogenic groundwater risk for the adult and child resident. Tables 5-8.3 (AE) and 5-8.4 (RME) present the carcinogenic groundwater risk for the construction worker.

Calculations and pathway-specific formulas are presented in Appendix B for both the RME and AE exposure scenarios. Potential RME risks are summarized in Table 5-9.1 for the residential scenario and Table 5-9.2 for the construction worker scenario. Table 5-10.1 presents the groundwater risk drivers for residents, and Table 5-10.2 presents the risk drivers for construction workers. A risk driver is defined as a COPC with cancer risks greater than  $10^{-6}$  or non-cancer risk greater than 0.1 per EPA RAGS D (U.S. EPA 2001).

Comparison to EPA standards for acceptability were discussed in detail in the Phase II RI and are detailed briefly here. Non-carcinogenic risks are compared to a threshold of 1.0 per target organ to determine acceptability as a standard in human health risk assessment. The VDEQ goal is that the acceptable cancer risk range is less than  $10^{-6}$  for any one COPC (including all exposure pathways) or less than  $10^{-4}$  for all COPCs and pathways combined (VA DEQ 2001). The U.S. EPA acceptable risk range for carcinogens is defined as  $10^{-6}$  to  $10^{-4}$  (U.S. EPA 1990). The results of this risk assessment are discussed below in relation to these standards of acceptability.

#### **5.4.1 Residential Results**

Potential RME risks are summarized in Table 5-9.1 for the residential scenario. The exposure scenario assumptions and calculations are presented in Appendix B.

Potential non-cancer risks for the resident are presented individually for the child and the adult receptors. The child hazard index (HI) for groundwater is calculated as 4.4 and the adult HI is calculated as 2.0 for the RME scenario. These both exceed the acceptable threshold of 1.0 for non-carcinogenic risk. A breakdown by target organ is provided in Table 5-10.1. The only target organ exceeding the 1.0 threshold for the adult and the child is the central nervous system, based solely on manganese.

The RME excess cancer risk for the resident is combined for the child and adult receptors to account for lifetime cancer risk and is calculated as  $5.3 \times 10^{-6}$  for the RME scenario. RME excess lifetime cancer risks to future residents (combined adult and child) for groundwater are within U.S. EPA's acceptable risk range of  $10^{-6}$  to  $10^{-4}$ . Heptachlor, heptachlor epoxide and benzene in groundwater had calculated RME risks exceeding  $10^{-6}$ , which is the DEQ individual chemical threshold goal for acceptable risks. However, cumulative risks for this pathway were less than the DEQ threshold of  $10^{-4}$ .

## 5.4.2 Construction Worker Results

Potential RME risks are summarized in Table 5-9.2 for the construction worker scenario. The exposure scenario assumptions and calculations are presented in Appendix B for the AE and RME scenarios.

The HI for groundwater is calculated as 34 for the RME scenario. This exceeds the acceptable threshold of 1.0 for non-carcinogenic risk. A breakdown by target organ is provided in Table 5-10.2. The target organs exceeding the 1.0 threshold for the construction worker are skin, liver, kidney, central nervous system, and blood, based solely on total inorganic (non-filtered) groundwater concentrations (arsenic, cadmium, manganese, thallium). These non-carcinogenic risks are driven primarily by the dermal pathway. Manganese is the only COPC with elevated incidental ingestion risks.

The RME excess cancer risk for the construction worker is calculated as  $1.3 \times 10^{-5}$ . RME excess lifetime cancer risks to the construction worker for groundwater are within U.S. EPA's acceptable risk range of  $10^{-6}$  to  $10^{-4}$ . Total arsenic (non-filtered) in groundwater had calculated RME risks exceeding  $10^{-6}$ , which is the DEQ individual chemical threshold goal for acceptable risks. However, cumulative risks for this pathway were less than the DEQ threshold of  $10^{-4}$ .

## 5.5 UNCERTAINTY ASSESSMENT

There are numerous uncertainties involved in the human health risk assessment process. These are discussed at length in the Phase II RI. This addendum to the uncertainty assessment focuses on the comparison of COPCs in groundwater to background.

The Phase II RI provided a comparison to background for soil but did not compare groundwater to background based on lack of groundwater background data. A groundwater background study has since been performed (WESTON 2003). Appendix C contains the groundwater background data tables from this Weston report. Statistical comparisons of site groundwater to background groundwater inorganics are presented in Table 5-11.

### 5.5.1 Manganese

Manganese is evaluated as a COPC for both dissolved (residential) and total (construction worker), or unfiltered samples. Manganese is a risk driver for non-carcinogenic risk for the residential and construction worker scenarios.

Based on the statistical comparison to background, manganese at the site is within background. Thus, concentrations at the site of manganese in groundwater are not attributable to site-related risk. Elimination of manganese as a COPC based on background proves residential non-cancer risk to be less than the target of 1.0 and acceptable for both the child and adult receptors. Elimination of manganese as a COPC also reduces the non-carcinogenic construction worker risk and eliminates the central nervous system as a target organ exceeding the 1.0 acceptable threshold. In addition, with the elimination of manganese, the dermal pathway is the only elevated non-carcinogenic risk for the construction worker.

### **5.5.2 Arsenic**

Arsenic is evaluated as a COPC for only total (construction worker scenario), or unfiltered samples. Arsenic is not present in site groundwater above the RBC for the residential (filtered) scenario. Arsenic is a risk driver for carcinogenic and non-carcinogenic risk for the construction worker scenario.

The statistical comparison to background for arsenic cannot be performed because arsenic was not detected in any background samples. The detection limit achieved for background samples is an order of magnitude greater than the arsenic tap water RBC screening value. As such, it is impossible to state whether or not arsenic is present in the background samples at levels consistent with the site data. The statistical comparison provided in Table 5-11 for arsenic is based on the detection limit of the background samples. There is a great deal of uncertainty in this assumption. Although this statistical comparison indicates that arsenic is present at the site below or at background, it cannot be stated for certain that arsenic is present in site groundwater at background because of the elevated detection limits in the background data set.

EBS-79 groundwater samples did achieve a detection limit below the screening level for arsenic. Arsenic was also only detected in one sample at the site in groundwater. Risks calculated for total arsenic are therefore based on the maximum concentration at the site and half the detection limit of all of the other samples, likely biasing the calculated risks high.

In addition, in the Phase I RI, an analysis performed on arsenic site groundwater data versus arsenic concentrations in field blank samples indicated that arsenic concentrations in the site samples were consistent with those in the blanks (EA 2000). As such, the uncertainty associated with arsenic as a COPC is high and likely biases the risks high.

### 5.5.3 Cadmium

Cadmium is evaluated as a COPC for only total (construction worker scenario), or unfiltered, samples. Cadmium is not present in site groundwater above the RBC for the residential (filtered) scenario. Cadmium is a risk driver for carcinogenic and non-carcinogenic risk for the construction worker scenario.

As with arsenic, the statistical comparison to background for the other non-filtered COPCs is inconclusive based on the Shapiro-Wilks test due to the low detection frequency of cadmium at the site and in the background data set. The statistical comparison provided in Table 5-11 for cadmium is based on the detection limit of the background samples. There is a great deal of uncertainty in this assumption. Although this statistical comparison indicates that cadmium is present at the site below or at background, it cannot be stated for certain that cadmium is present in site groundwater at background because of the elevated detection limits.

### 5.5.4 Thallium

Thallium is evaluated as a COPC for only total (construction worker scenario), or unfiltered samples. Thallium is not present in site groundwater above the RBC for the residential (filtered) scenario. Thallium is a risk driver for carcinogenic and non-carcinogenic risk for the construction worker scenario.

The statistical comparison to background for thallium also cannot be performed because thallium was not detected in any background samples. Thallium was also only detected in one sample at the site in groundwater. Risks calculated for total thallium are therefore based on the maximum concentration at the site and half the detection limit of all of the other samples, likely biasing the calculated risks high. The statistical comparison provided in Table 5-11 for thallium is based on the detection limit of the background samples. There is a great deal of uncertainty in this assumption. Although this statistical comparison indicates that thallium is present at the site below or at background, it cannot be stated for certain that thallium is present in site groundwater at background because of the elevated detection limits in the background data set.

### 5.5.5 Construction Worker Remaining Risks

With the consideration of background, the only potential risk to groundwater at the site is non-carcinogenic construction worker dermal contact with unfiltered inorganics. The construction worker scenario is quite conservative with its approach to groundwater exposure, assuming that

construction workers would contact groundwater for 8 hours per day, 150 days per year. While construction workers may contact groundwater at the site while digging at depth (groundwater ranges from 15 feet to 0 feet at the swale), such workers do not contact groundwater on a daily basis at the site. The use of these conservative parameters biases the risk high. Further, use of personal protective equipment such as boots and gloves while in contact with groundwater would eliminate this pathway and its associated risk.

## **5.6 GROUNDWATER HUMAN HEALTH SUMMARY AND CONCLUSIONS**

All applicable groundwater data relative to the site were evaluated for potential human health risk. Based on a comparison to conservative U.S. EPA Region III screening values (RBCs), only a few metals and two pesticides are found at potentially elevated levels as shown in Table 5-2. There are no pesticides, PAHs, or volatiles of concern in site groundwater.

While considering background groundwater data at the site, the assessment of risks demonstrated potential concern only for construction worker exposure to unfiltered groundwater based on dermal contact with inorganics. Total arsenic, cadmium, and thallium are the risk drivers. This risk would be eliminated through the use of personal protective equipment such as boots and gloves. There were no unacceptable risks for the residential scenario.

Although unacceptable risk is calculated for future construction workers that may dermally contact site groundwater, it is highly unlikely that groundwater will be encountered during future construction activities. A review of the Phase II RI well gauging data has shown that average depth to groundwater across the site (represented in wells MW-3, MW-4 and MW-5) ranged from approximately 12-ft to 16-ft below ground surface. Future construction activities will likely be limited to shallower depths.

In addition, the risk assessment calculation used the standard reasonable maximum exposure scenario for future construction workers, exposure to groundwater for 8 hours per day, 150 days per year. If future construction does extend to the depths of groundwater, it is even less likely that contact with groundwater will be contacted for this extended length of time. Therefore, the use of personal protective equipment (boots and gloves) would eliminate potential unacceptable risk for this receptor.

**TABLE 5-1**  
**SELECTION OF EXPOSURE PATHWAYS, FORT PICKETT EBS-79**  
**GROUNDWATER ANALYSIS ONLY**

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Groundwater	Tap Water	Resident	Adult	Ingestion	On-Site	Quant	Future residents may ingest groundwater as drinking water
					Child	Dermal	On-Site	Quant	Future residents may be exposed to groundwater while showering
			Groundwater	Constr Worker	Adult	Ingestion	On-Site	Quant	Future residents may ingest groundwater as drinking water
						Dermal	On-Site	Quant	Future resident children may be exposed to groundwater while bathing
		Air	Shower Head	Resident	Adult	Inhal VOCs	On-Site	Quant	Construction workers may contact groundwater while digging at depth
			Bath Tub	Resident	Child	Inhal VOCs	On-Site	None	Construction workers may contact groundwater while digging at depth
									Future resident adults may inhale VOCs while showering
									VOCs inhaled while bathing are minimal

TABLE 5-2  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
GROUNDWATER - TAP WATER

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Inorganics-Total																	
7429-90-5	ALUMINUM	73.3		684		ug/L	EBS79-MW-4	5/6	23.1 - 37.9	684	6.08E+02	3.65E+03	N	N/A	N/A	No	BSL
7440-38-2	ARSENIC	2.6	B	2.6	B	ug/L	EBS79-MW-3	1/6	1.7 - 3.2	2.6	N/A	4.46E-02	C	N/A	N/A	Yes	ASL
7440-39-3	BARIUM	18.7		113		ug/L	MW-5	6/6	0.6 - 4.5	113	9.65E+01	2.56E+02	N	N/A	N/A	No	BSL
7440-41-7	BERYLLIUM	0.0825	/U	0.332		ug/L	MW-5	2/6	0.1 - 0.2	0.332	4.50E-01	7.30E+00	N	N/A	N/A	No	BSL
7440-43-9	CADMIUM	0.26		2.4		ug/L	EBS79-MW-4	2/6	0.2 - 0.4	2.4	6.65E+01	1.83E+00	N	N/A	N/A	Yes	ASL
7440-70-2	CALCIUM	189	B	5220		ug/L	MW-3	6/6	55.6 - 104	5220	2.44E+03	N/A	N/A	N/A	N/A	No	NUT
7440-47-3	CHROMIUM	1.46		2.585		ug/L	MW-4	2/6	0.8 - 2.5	2.585	2.30E+00	1.10E+01	N	N/A	N/A	No	BSL
7440-48-4	COBALT	1.7		25.1		ug/L	MW-3	3/6	0.9 - 7.5	25.1	2.62E+01	7.30E+01	N	N/A	N/A	No	BSL
7440-50-8	COPPER	1.62		1.62		ug/L	MW-3	1/6	0.7 - 1.2	1.62	N/A	1.46E+02	N	N/A	N/A	No	BSL
7439-89-6	IRON	51.95	UJ/J	2940	J	ug/L	MW-3	6/6	5.5 - 15	2940	1.69E+03	1.10E+03	N	N/A	N/A	No	NUT
7439-92-1	LEAD	1.3	B	3.73	B	ug/L	MW-3	6/6	1.1 - 1.5	3.73	4.91E+00	1.50E+01		N/A	N/A	No	BSL
7439-95-4	MAGNESIUM	817		1890		ug/L	MW-3	6/6	22.4 - 95.6	1890	1.36E+03	N/A		N/A	N/A	No	NUT
7439-96-5	MANGANESE	26.55		1250		ug/L	MW-3	6/6	0.4 - 2.4	1250	6.42E+02	5.11E+02	N	N/A	N/A	Yes	ASL
7440-02-0	NICKEL	2.44		3.015	/U	ug/L	MW-4	3/6	2 - 13.1	3.015	1.05E+01	7.30E+01	N	N/A	N/A	No	BSL
7440-09-7	POTASSIUM	1890		2980		ug/L	MW-5	6/6	9.1 - 174	2980	2.47E+03	N/A		N/A	N/A	No	NUT
7440-23-5	SODIUM	1640	K	4620		ug/L	EBS79-MW-4	6/6	62.3 - 198	4620	4.19E+03	N/A		N/A	N/A	No	NUT
7440-28-0	THALLIUM	1.1		1.1		ug/L	EBS79-MW-3	1/6	1 - 5.5	1.1	N/A	2.56E-01	N	N/A	N/A	Yes	ASL
7440-66-6	ZINC	4.27		9.27		ug/L	MW-3	3/6	1.7 - 4	9.27	1.22E+02	1.10E+03	N	N/A	N/A	No	BSL
Inorganics-Dissolved																	
7429-90-5	ALUMINUM	54.5		54.55		ug/L	MW-4	2/2	23.1 - 23.1	54.55	N/A	3.65E+03	N	N/A	N/A	No	BSL
7440-39-3	BARIUM	18.5		33.8		ug/L	MW-4	2/2	0.6 - 0.6	33.8	N/A	2.56E+02	N	N/A	N/A	No	BSL
7440-41-7	BERYLLIUM	0.1265		0.1265		ug/L	MW-4	1/2	0.1 - 0.1	0.1265	N/A	7.30E+00	N	N/A	N/A	No	BSL
7440-70-2	CALCIUM	1835		5250		ug/L	MW-3	2/2	104 - 104	5250	N/A	N/A		N/A	N/A	No	NUT
7440-47-3	CHROMIUM	0.914		2.535		ug/L	MW-4	2/2	0.8 - 0.8	2.535	N/A	1.10E+01	N	N/A	N/A	No	BSL
7440-48-4	COBALT	1.475		25.7		ug/L	MW-3	2/2	0.9 - 0.9	25.7	N/A	7.30E+01	N	N/A	N/A	No	BSL
7439-89-6	IRON	55.6	J/J	2660	J	ug/L	MW-3	2/2	15 - 15	2660	N/A	1.10E+03	N	N/A	N/A	No	NUT
7439-95-4	MAGNESIUM	1275		1880		ug/L	MW-3	2/2	22.4 - 22.4	1880	N/A	N/A		N/A	N/A	No	NUT
7439-96-5	MANGANESE	25.15		1350		ug/L	MW-3	2/2	0.4 - 0.4	1350	N/A	5.11E+02	N	N/A	N/A	Yes	ASL
7440-02-0	NICKEL	2.98		3.555		ug/L	MW-4	2/2	2 - 2	3.555	N/A	7.30E+01	N	N/A	N/A	No	BSL
7440-09-7	POTASSIUM	1935		2510		ug/L	MW-3	2/2	9.1 - 9.1	2510	N/A	N/A		N/A	N/A	No	NUT
7782-49-2	SELENIUM	1.735	/U	1.735	/U	ug/L	MW-4	1/2	2.3 - 2.3	1.735	N/A	1.83E+01	N	N/A	N/A	No	BSL
7440-23-5	SODIUM	2520	K	4660	K/K	ug/L	MW-4	2/2	198 - 198	4660	N/A	N/A		N/A	N/A	No	NUT
7440-66-6	ZINC	3.1	/U	9.63		ug/L	MW-3	2/2	4 - 4	9.63	N/A	1.10E+03	N	N/A	N/A	No	BSL
Pesticides																	
72-55-9	4,4'-DDE	0.01	J	0.01	J	ug/L	EBS79-MW-5	1/6	0.0048 - 0.008	0.01	N/A	1.97E-01	C	N/A	N/A	No	BSL
50-29-3	4,4'-DDT	0.02	J	0.03	J	ug/L	EBS79-MW-4	2/6	0.004 - 0.007	0.03	N/A	1.97E-01	C	N/A	N/A	No	BSL
319-84-6	ALPHA-BHC	0.00839	J	0.00899	J	ug/L	EBS79-MW-4	2/6	0.002 - 0.009	0.00899	N/A	1.06E-02	C	N/A	N/A	No	BSL
60-57-1	DIELDRIN	0.0023	J	0.0023	J	ug/L	EBS79-MW-5	1/6	0.002 - 0.012	0.0023	N/A	4.19E-03	C	N/A	N/A	No	BSL
959-98-8	ENDOSULFAN I	0.0054	J	0.0056	J	ug/L	EBS79-MW-5	2/6	0.0038 - 0.038	0.0056	N/A	2.19E+01	N	N/A	N/A	No	BSL
33213-65-9	ENDOSULFAN II	0.0058	J	0.0078	J	ug/L	EBS79-MW-4	2/6	0.0048 - 0.01	0.0078	N/A	2.19E+01	N	N/A	N/A	No	BSL
1031-07-8	ENDOSULFAN SULFATE	0.01	J	0.04	J	ug/L	EBS79-MW-4	2/6	0.0058 - 0.012	0.04	N/A	2.19E+01	N	N/A	N/A	No	BSL
72-20-8	ENDRIN	0.01	J / J	0.01	J / J	ug/L	EBS79-MW-4 / EBS79-MW-5	2/6	0.0066 - 0.007	0.01	N/A	1.10E+00	N	N/A	N/A	No	BSL
53494-70-5	ENDRIN KETONE	0.0077	J	0.0077	J	ug/L	EBS79-MW-4	1/6	0.0028 - 0.009	0.0077	N/A	1.10E+00	N	N/A	N/A	No	BSL
58-89-9	GAMMA-BHC	0.01	J / J	0.01	J / J	ug/L	EBS79-MW-4 / EBS79-MW-5	2/6	0.0016 - 0.007	0.01	N/A	5.15E-02	C	N/A	N/A	No	BSL
5103-74-2	GAMMA-CHLORDANE	0.0053	J	0.0053	J	ug/L	EBS79-MW-5	1/6	0.0034 - 0.02	0.0053	N/A	1.91E-01	C	N/A	N/A	No	BSL
76-44-8	HEPTACHLOR	0.03	J	0.03	J	ug/L	EBS79-MW-5	1/6	0.0046 - 0.017	0.03	N/A	1.49E-02	C	N/A	N/A	Yes	ASL
1024-57-3	HEPTACHLOR EPOXIDE	0.01	J	0.01	J	ug/L	EBS79-MW-5	1/6	0.0038 - 0.007	0.01	N/A	7.36E-03	C	N/A	N/A	Yes	ASL

TABLE 5-2  
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
EBS79 - FT. PICKETT  
GROUNDWATER - TAP WATER

Scenario Timeframe: Current/Future  
Medium: Groundwater  
Exposure Medium: Groundwater  
Exposure Point: EBS79-Ft. Pickett

CAS Number	Chemical	Minimum <sup>(1)</sup> Concentration	Minimum Qualifier	Maximum <sup>(1)</sup> Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Concentration <sup>(2)</sup> Used for Screening	Background <sup>(3)</sup> Value	Screening <sup>(4)</sup> Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for <sup>(5)</sup> Contaminant Deletion or Selection	
Volatiles																	
71-43-2	BENZENE	1.175	/U	1.175	/U	ug/L	MW-4	1/6	0.3 - 0.3	1.175	N/A	3.40E-01	C	N/A	N/A	Yes	BSL
100-41-4	ETHYLBENZENE	0.8025	/U	1		ug/L	EBS79-MW-4	2/6	0.3 - 0.33	1	N/A	1.34E+02	N	N/A	N/A	No	BSL
MPXYLENES	M & P XYLENES	1		1.445	/U	ug/L	MW-4	2/6	0.6 - 0.74	1.445	N/A	2.13E+01	N	N/A	N/A	No	BSL
95-47-6	O-XYLENE	1		1		ug/L	EBS79-MW-4	1/6	0.2 - 0.31	1	N/A	2.13E+01	N	N/A	N/A	No	BSL
108-88-3	TOLUENE	0.6225	/U	0.6225	/U	ug/L	MW-4	1/6	0.31 - 0.5	0.6225	N/A	7.47E+01	N	N/A	N/A	No	BSL

(1) Minimum/maximum detected concentration.  
(2) Maximum concentration used as screening value.  
(3) Background Value listed as the maximum detected background value from Final Background Groundwater Survey (Weston 2003).  
(4) Screening Toxicity Value - Taken from USEPA Region 3 Risk Based Criteria (RBCs) Table, USEPA, April 2003. For non-carcinogens, value shown is equal to 1/10 the Tap Water RBC. For carcinogens the value shown is equal to the Tap Water RBC.  
(5) Rationale Codes

Selection Reason: Above Screening Toxicity and Background Levels (ASL)  
Deletion Reason: Essential Nutrient (NUT)  
Below Screening Toxicity Level (BSL)

Surrogates used: Chromium VI for Chromium, Endosulfan for Endosulfan I, Endosulfane II and Endosulfan sulfate, Endrin for Endrin ketone, Chlordane for Gamma-chlordane, Xylene for M&P xylene and O-xylene.

Definitions:

N/A = Not Applicable  
ND = No Data  
COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
C = Carcinogenic  
N = Non-Carcinogenic

Qualifiers:

B = Indicates an estimated value.  
J = Indicates an estimated value.  
K = Reported value is biased high. Actual value is expected to be lower.  
L = Reported value may be biased low. Actual value is expected to be higher.  
U/ \_ = Combined qualifiers of a non-detected and detected duplicate value.

**TABLE 5-3**  
**MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY**  
**EBS79 - FT. PICKETT**  
**GROUNDWATER - TAP WATER**

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: EBS79-Ft. Pickett

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Inorganics-Total												
ARSENIC	ug/L	1.52E+00	2.05E+00	2.60E+00	B	ug/L	2.05E+00	95% UCL-N	W - Test (3)	1.52E+00	Mean	Regional Guidance
CADMIUM	ug/L	5.60E-01	1.30E+00	2.40E+00		ug/L	2.40E+00	Max	W - Test (2,1)	5.60E-01	Mean	Regional Guidance
MANGANESE	ug/L	3.38E+02	7.18E+02	1.25E+03		ug/L	1.25E+03	Max	W - Test (2,1)	3.38E+02	Mean	Regional Guidance
THALLIUM	ug/L	1.73E+00	2.67E+00	1.10E+00		ug/L	1.10E+00	Max	W - Test (2,1)	1.10E+00	Max	Mean > Max based on one detect
Inorganic-Dissolved												
MANGANESE	ug/L	6.88E+02	4.87E+03	1.35E+03		ug/L	1.35E+03	Max	W - Test (21)	6.88E+02	Mean	Regional Guidance
Pesticides												
HEPTACHLOR	ug/L	1.00E-02	1.84E-02	3.00E-02	J	ug/L	3.00E-02	Max	W - Test (2,1)	1.00E-02	Mean	Regional Guidance
HEPTACHLOR EPOXIDE	ug/L	4.05E-03	6.53E-03	1.00E-02	J	ug/L	9.24E-03	95% UCL-T	W - Test (1)	4.05E-03	Mean	Regional Guidance

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Normal Data (Mean).

Qualifiers: B = Indicates an estimated value.

J = Indicates an estimated value.

- (1) Shapiro-Wilk W Test indicates data are log-normally distributed.
- (2) 95% UCL exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.
- (3) Shapiro-Wilk W Test indicates data are normally distributed.

**TABLE 5-4.1**  
**VALUES USED FOR RESIDENT ADULT DAILY TOTAL GROUNDWATER INTAKE EQUATIONS**  
**EBS79 - FT. PICKETT**

Scenario Timeframe: Future Medium: Groundwater Exposure Medium: Groundwater Exposure Point: Tap Water Receptor Population: Resident Receptor Age: Adult
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Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	AE Value	AE Rationale/Reference
Ingestion	CR	Ingestion Rate	L/day	2	U.S. EPA 1991	1.4	BPJ
	EF	Exposure Frequency	day/yr	350	U.S. EPA 1991	350	BPJ
	ED-NC	Exposure Duration	yr	30	U.S. EPA 1989	7	BPJ
	ED-C	Exposure Duration	yr	24	U.S. EPA 1991	7	BPJ
	BW	Body Weight	kg	70	U.S. EPA 1989	70	U.S. EPA 1989
	AT-NC	Averaging time - Noncancer	days	10,950	U.S. EPA 1989	2,555	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
Dermal	SA	Surface Area for Contact	cm <sup>2</sup>	18,000	U.S. EPA 1992	18,000	U.S. EPA 1992
	PC	Permeability Coefficient	cm/hr	chemical-specific		chemical-specific	
	ET	Event Time	hr/day	0.58	U.S. EPA 1992	0.25	U.S. EPA 1992
	EF	Exposure Frequency	day/yr	350	U.S. EPA 1991	350	BPJ
	ED-NC	Exposure Duration	yr	30	U.S. EPA 1989	7	BPJ
	ED-C	Exposure Duration	yr	24	U.S. EPA 1991	7	BPJ
	BW	Body Weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991
	AT-NC	Averaging time - Noncancer	days	10,950	U.S. EPA 1989	2,555	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
	CF	Conversion Factor	L/cm <sup>3</sup>	1.00E-03	U.S. EPA 1989	1.0E-03	U.S. EPA 1989

Note : BPJ = Best Professional Judgement

**TABLE 5-4.2**  
**VALUES USED FOR RESIDENT CHILD DAILY TOTAL GROUNDWATER INTAKE EQUATIONS**  
**EBS79 - FT. PICKETT**

Scenario Timeframe: Future Medium: Groundwater Exposure Medium: Groundwater Exposure Point: Site EBS-79 Receptor Population: Resident Receptor Age: Child
--

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	AE Value	AE Rationale/Reference
Ingestion	CR	Ingestion Rate	L/day	1	U.S. EPA 1991	0.6	BPJ
	EF	Exposure Frequency	day/yr	350	U.S. EPA 1991	350	BPJ
	ED	Exposure Duration	yr	6	U.S. EPA 1991	2	BPJ
	BW	Body Weight	kg	15	U.S. EPA 1989	15	U.S. EPA 1989
	AT-NC	Averaging time - Noncancer	days	2,190	U.S. EPA 1989	730	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
Dermal	SA	Surface Area for Contact	cm2	6,600	U.S. EPA 2000	6,600	U.S. EPA 2000
	PC	Permeability Coefficient	cm/hr	chemical-specific		chemical-specific	
	ET	Event Time	hr/day	1	U.S. EPA 1992	0.33	U.S. EPA 1992
	EF	Exposure Frequency	day/yr	350	U.S. EPA 1991	350	BPJ
	ED	Exposure Duration	yr	6	U.S. EPA 1991	2	BPJ
	BW	Body Weight	kg	15	U.S. EPA 1991	15	U.S. EPA 1991
	AT-NC	Averaging time - Noncancer	days	2,190	U.S. EPA 1989	730	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
	CF	Conversion Factor	L/cm3	0.001	U.S. EPA 1989	0.001	U.S. EPA 1989

Note : BPJ = Best Professional Judgement

**TABLE 5-4.3**  
**VALUES USED FOR CONSTRUCTION WORKER DAILY GROUNDWATER INTAKE EQUATIONS**  
**EBS79 - FT. PICKETT**

Scenario Timeframe: Future Medium: Groundwater Exposure Medium: Groundwater Exposure Point: Site EBS-79 Receptor Population: Construction Worker Receptor Age: Adult
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Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	AE Value	AE Rationale/Reference
Ingestion	CR	Ingestion Rate	L/day	0.004	BPJ	0.004	BPJ
	EF	Exposure Frequency	day/yr	150	BPJ	10	BPJ
	ED	Exposure Duration	yr	1	BPJ	1	BPJ
	BW	Body Weight	kg	70	U.S. EPA 1989	70	U.S. EPA 1989
	AT-NC	Averaging time - Noncancer	days	365	U.S. EPA 1989	365	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
Dermal	SA	Surface Area for Contact	cm <sup>2</sup>	5,700	U.S. EPA 1992	2,300	U.S. EPA 1992
	PC	Permeability Coefficient	cm/hr	chemical-specific		chemical-specific	
	ET	Event Time	hr/day	8	BPJ	8	BPJ
	EF	Exposure Frequency	day/yr	150	U.S. EPA 1991	10	BPJ
	ED	Exposure Duration	yr	1	U.S. EPA 1991	1	BPJ
	BW	Body Weight	kg	70	U.S. EPA 1991	70	U.S. EPA 1991
	AT-NC	Averaging time - Noncancer	days	365	U.S. EPA 1989	365	U.S. EPA 1989
	AT-C	Averaging Time - Cancer	days	25,550	U.S. EPA 1989	25,550	U.S. EPA 1989
	CF	Conversion Factor	L/cm <sup>3</sup>	0.001	U.S. EPA 1989	0.001	U.S. EPA 1989

Note : BPJ = Best Professional Judgement

**TABLE 5-5.1**  
**NON-CANCER TOXICITY DATA - ORAL/DERMAL**  
**EBS79 - FT. PICKETT**

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value (mg/kg- day)	Oral to Dermal Adjustment Factor (GI ABS) (1)	Adjusted Dermal RfD (2) (mg/kg bw-day)	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (mm/dd/yy)
<b>Inorganics</b>								
ARSENIC	Chronic	3.00E-04	0.95	2.85E-04	Skin	3/1	IRIS	8/4/2003
CADMIUM	Chronic	5.00E-04	0.05	2.50E-05	Kidneys	NA/NA	IRIS	8/4/2003
MANGANESE	Chronic	2.00E-02	0	0.00E+00	Central Nervous System	1/1	IRIS	8/4/2003
THALLIUM	Chronic	7.00E-05	1	7.00E-05	Liver, Blood	NA/NA	IRIS	8/4/2003
<b>Pesticides/PCBs</b>								
HEPTACHLOR	Chronic	5.00E-04	0.5	2.50E-04	Liver, Central Nervous System	300/1	IRIS	8/4/2003
HEPTACHLOR EPOXIDE	Chronic	1.30E-05	0.5	6.50E-06	Liver, Central Nervous System	1000/1	IRIS	8/4/2003

N/A= Not Applicable

(1) Taken from Region III Guidance.

(2) Dermal toxicological values adjusted from oral values using Region III recommended chemical-specific gastrointestinal absorption factors(GI ABS). RfDs are multiplied by the GI ABS.

(3) IRIS - Integrated Risk Information System. For IRIS values, the date IRIS was searched is provided.

HEAST - Health Affects Summary Tables. For HEAST values, the date of HEAST is provided.

EPA-NCEA - National Center for Environmental Assessment. For EPA-NCEA values, the date of the article provided by EPA-NCEA is provided.

**TABLE 5-5.2**  
**NON-CANCER TOXICITY DATA - INHALATION**  
**EBS79 - FT. PICKETT**

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation (RfC) (mg/kg- day)	Adjusted Inhalation RfD (1)	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (2) (mm/dd/yy)
<b>Inorganics</b>							
ARSENIC	NA	NA	NA	None	NA	IRIS	8/4/2003
CADMIUM	Chronic	5.75E-05	0.05	Kidneys	300/3	EPA-NCEA	12/18/1998
MANGANESE	Chronic	1.43E-05	0	Central Nervous System	1000/1	IRIS	8/4/2003
THALLIUM	NA	NA	1	None	NA	IRIS	8/4/2003
<b>Pesticides/PCDDs/PCDFs</b>							
HEPTACHLOR	Chronic	NA	0.5	None	NA	NA	8/4/2003
HEPTACHLOR EPOXIDE	Chronic	NA	0.5	None	NA	NA	8/4/2003

N/A= Not Applicable

(1) Equation not necessary for these COPCs.

(2) For IRIS values, the date IRIS was searched is provided.

For HEAST values, the date of HEAST is provided.

For NCEA values, the date of the article provided by NCEA is provided.

**TABLE 5-5.3**  
**CHEMICAL-SPECIFIC PARAMETERS**  
**EBS79 - FT. PICKETT**

Chemical of Potential Concern	Absorption Factor	Reference	Permeability Constant (cm/hr)	Reference
<b>Inorganics</b>				
ARSENIC	0.03	U.S. EPA, 2000	1.00E-03	On-line Database <sup>(1)</sup>
CADMIUM	0.001	U.S. EPA, 2000	1.00E-03	On-line Database <sup>(1)</sup>
MANGANESE	NA	U.S. EPA, 2000	1.00E-03	On-line Database <sup>(1)</sup>
THALLIUM	NA	U.S. EPA, 2000	1.00E-03	On-line Database <sup>(1)</sup>
<b>Pesticides/PCDDs/PCDFs</b>				
HEPTACHLOR	0.1	U.S. EPA, 2000	1.10E-02	On-line Database <sup>(1)</sup>
HEPTACHLOR EPOXIDE	0.1	U.S. EPA, 2000	1.10E-02	On-line Database <sup>(1)</sup>

(1) Toxicity and Chemical-Specific Factors Database. [Http://risk.lsd.ornl.gov/cgi-bin/tox](http://risk.lsd.ornl.gov/cgi-bin/tox). June 2001

**TABLE 5-6.1**  
**CANCER TOXICITY DATA - ORAL/DERMAL**  
**EBS79 - FT. PICKETT**

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (GI ABS) <sup>(1)</sup>	Adjusted Cancer Slope Factor <sup>(2)</sup>	Units	Weight of Evidence/Cancer Guideline Description	Source	Date <sup>(3)</sup> (mm/dd/yy)
<b>Inorganics</b>							
ARSENIC	1.5	0.95	1.58E+00	per (mg/kg-day)	A	IRIS	8/4/2003
CADMIUM	NA	0.007	NA	per (mg/kg-day)	B1	IRIS	8/4/2003
MANGANESE	NA	0	NA	per (mg/kg-day)	D	IRIS	8/4/2003
THALLIUM	NA	0	NA	per (mg/kg-day)	D	IRIS	8/4/2003
<b>Pesticides/PCDDs/PCDFs</b>							
HEPTACHLOR	4.50E+00	0.5	9.00E+00	per (mg/kg-day)	B2	IRIS	8/4/2003
HEPTACHLOR EPOXIDE	9.10E+00	0.5	1.82E+01	per (mg/kg-day)	B2	IRIS	8/4/2003

N/A= Not Applicable

(1) Taken from Region III Guidance.

(2) Dermal Toxicological values adjusted from oral values using Region III recommended chemical-specific gastrointestinal absorption factors(GI ABS). CSFs are divided by the GI ABS.

(3) For IRIS values, the date IRIS was searched is provided.

For HEAST values, the date of HEAST is provided.

For NCEA values, the date of the article

provided by NCEA is provided.

EPA Group: A - Human carcinogen

B1 - Probable human carcinogen -

indicate that limited human data are available

B2 - Probable human carcinogen -

indicates sufficient evidence in animals

and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

Weight of Evidence: Known/Likely

Cannot be Determined

Not Likely

**TABLE 5-6.2**  
**CANCER TOXICITY DATA - INHALATION**  
**EBS79 - FT. PICKETT**

Chemical of Potential Concern	Chronic/ Subchronic	Adjustment	Inhalation Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source	Date <sup>(1)</sup>
<b>Inorganics</b>							
ARSENIC	Chronic	NA	1.51E+01	per (mg/kg-day)	A	IRIS	8/4/2003
CADMIUM	Chronic	NA	6.30E+00	per (mg/kg-day)	A	IRIS	8/4/2003
MANGANESE	NA	NA	NA	per (mg/kg-day)	D	IRIS	8/4/2003
THALLIUM	NA	NA	NA	per (mg/kg-day)	D	IRIS	8/4/2003
<b>Pesticides/PCDDs/PCDFs</b>							
HEPTACHLOR	Chronic	NA	4.50E+00	per (mg/kg-day)	B2	IRIS	8/4/2003
HEPTACHLOR EPOXIDE	Chronic	NA	9.10E+00	per (mg/kg-day)	B2	IRIS	8/4/2003

N/A= Not Applicable

(1) For IRIS values, the date IRIS was searched is provided.

For HEAST values, the date of HEAST is provided.

For NCEA values, the date of the article provided by NCEA is provided.

EPA Group: A - Human carcinogen

B1 - Probable human carcinogen -

indicate that limited human data are available

B2 - Probable human carcinogen -

indicates sufficient evidence in animals  
and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

Weight of Evidence: Known/Likely

Cannot be Determined

Not Likely

**TABLE 5-7.1 SUMMARY OF NONCANCER RISKS FOR RESIDENT ADULTS AT FORT PICKETT -- AVERAGE EXPOSURE (AE) SCENARIO, SUMMARY OF NONCANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Inhalation of Volatiles from Groundwater	Total Groundwater
	HQ	HQ	HQ	
<b>Inorganics</b>				
MANGANESE	6.59E-01	NA	--	6.59E-01
<b>Pesticides/PCBs</b>				
HEPTACHLOR	3.84E-04	2.72E-05	--	4.11E-04
HEPTACHLOR EPOXIDE	5.97E-03	4.22E-04	--	6.40E-03
<b>Volatiles</b>				
BENZENE	2.05E-03	2.77E-04	8.51E-03	1.08E-02
<b>Cumulative Risk</b>	6.68E-01	7.27E-04	8.51E-03	6.77E-01

**TABLE 5-7.2 SUMMARY OF NONCANCER RISKS FOR RESIDENT ADULTS AT FORT PICKETT -- REASONABLE  
MAXIMUM EXPOSURE (RME) SCENARIO, SUMMARY OF NONCANCER RISKS ACROSS ALL EXPOSURE  
PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Inhalation of Volatiles from Groundwater	Total Groundwater
	<b>HQ</b>	<b>HQ</b>	<b>HQ</b>	
<b>Inorganics</b>				
MANGANESE	1.85E+00	NA	--	1.85E+00
<b>Pesticides/PCBs</b>				
HEPTACHLOR	1.64E-03	1.89E-04	--	1.83E-03
HEPTACHLOR EPOXIDE	1.95E-02	2.24E-03	--	2.17E-02
<b>Volatiles</b>				
BENZENE	6.07E-03	1.33E-03	7.56E-02	8.30E-02
<b>Cumulative Risk</b>	1.88E+00	3.76E-03	7.56E-02	1.96E+00

**TABLE 5-7.3 SUMMARY OF NONCANCER RISKS FOR RESIDENT CHILDREN AT FORT PICKETT --  
AVERAGE EXPOSURE (AE) SCENARIO, SUMMARY OF NONCANCER RISKS ACROSS ALL  
EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	<b>HQ</b>	<b>HQ</b>	
<b>Inorganics</b>			
MANGANESE	1.32E+00	NA	1.32E+00
<b>Pesticides/PCBs</b>			
HEPTACHLOR	7.68E-04	6.14E-05	8.30E-04
HEPTACHLOR EPOXIDE	1.19E-02	9.54E-04	1.29E-02
<b>Volatiles</b>			
BENZENE	4.10E-03	6.26E-04	4.73E-03
<b>Cumulative Risk</b>	1.34E+00	1.64E-03	1.34E+00

**TABLE 5-7.4 SUMMARY OF NONCANCER RISKS FOR RESIDENT CHILDREN AT FORT PICKETT --  
REASONABLE MAXIMUM EXPOSURE (RME) SCENARIO, SUMMARY OF NONCANCER RISKS  
ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	<b>HQ</b>	<b>HQ</b>	
<b>Inorganics</b>			
MANGANESE	4.32E+00	NA	4.32E+00
<b>Pesticides/PCBs</b>			
HEPTACHLOR	3.84E-03	5.57E-04	4.39E-03
HEPTACHLOR EPOXIDE	4.54E-02	6.60E-03	5.20E-02
<b>Volatiles</b>			
BENZENE	1.42E-02	3.93E-03	1.81E-02
<b>Cumulative Risk</b>	4.38E+00	1.11E-02	4.39E+00

**TABLE 5-7.5 SUMMARY OF NONCANCER RISKS FOR CONSTRUCTION WORKERS AT FORT PICKETT -- AVERAGE EXPOSURE (AE) SCENARIO, SUMMARY OF NONCANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	<b>HQ</b>	<b>HQ</b>	
<b>Inorganics</b>			
ARSENIC	7.93E-03	3.84E-02	4.63E-02
CADMIUM	1.75E-03	1.61E-01	1.63E-01
MANGANESE	2.65E-02	NA	2.65E-02
THALLIUM	2.46E-02	1.13E-01	1.38E-01
<b>Pesticides/PCBs</b>			
HEPTACHLOR	3.14E-08	3.17E-06	3.21E-06
HEPTACHLOR EPOXIDE	4.88E-07	4.94E-05	4.98E-05
<b>Volatiles</b>			
BENZENE	1.68E-07	3.24E-05	3.25E-05
<b>Cumulative Risk</b>	6.07E-02	3.39E-01	4.00E-01

**TABLE 5-7.6 SUMMARY OF NONCANCER RISKS FOR CONSTRUCTION WORKERS AT  
FORT PICKETT -- REASONABLE MAXIMUM EXPOSURE (RME) SCENARIO, SUMMARY OF  
NONCANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	<b>HQ</b>	<b>HQ</b>	
<b>Inorganics</b>			
ARSENIC	1.60E-01	1.93E+00	2.09E+00
CADMIUM	1.13E-01	2.57E+01	2.58E+01
MANGANESE	1.47E+00	NA	1.47E+00
THALLIUM	3.69E-01	4.21E+00	4.58E+00
<b>Pesticides/PCBs</b>			
HEPTACHLOR	1.41E-06	3.53E-04	3.55E-04
HEPTACHLOR EPOXIDE	1.67E-05	4.19E-03	4.20E-03
<b>Volatiles</b>			
BENZENE	5.21E-06	2.49E-03	2.50E-03
<b>Cumulative Risk</b>	2.11E+00	3.18E+01	3.39E+01

**TABLE 5-8.1 SUMMARY OF CANCER RISKS FOR RESIDENT ADULT AND CHILDREN AT FORT PICKETT -- AVERAGE EXPOSURE (AE) SCENARIO, SUMMARY OF CANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Inhalation of Groundwater	Total Groundwater
	Risk	Risk	Risk	
<b>Inorganics</b>				
MANGANESE	--	--	--	--
<b>Pesticides/PCBs</b>				
HEPTACHLOR	1.36E-07	1.01E-08	--	1.46E-07
HEPTACHLOR EPOXIDE	1.11E-07	8.22E-09	--	1.19E-07
<b>Volatiles</b>				
BENZENE	5.32E-08	7.52E-09	6.28E-08	1.23E-07
<b>Cumulative Risk</b>	3.00E-07	2.58E-08	8.09E-08	3.26E-07

**TABLE 5-8.2 SUMMARY OF CANCER RISKS FOR RESIDENT ADULT AND CHILDREN AT FORT PICKETT -- REASONABLE MAXIMUM EXPOSURE (RME) SCENARIO, SUMMARY OF CANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Inhalation of Groundwater	Total Groundwater
	Risk	Risk	Risk	
<b>Inorganics</b>				
MANGANESE	--	--	--	--
<b>Pesticides/PCBs</b>				
HEPTACHLOR	NA	NA	--	0.00E+00
HEPTACHLOR EPOXIDE	2.32E-06	2.89E-07	--	2.61E-06
<b>Volatiles</b>				
BENZENE	6.30E-07	1.50E-07	3.75E-07	7.80E-07
<b>Cumulative Risk</b>	NA	NA	3.75E-07	0.00E+00

**TABLE 5-8.3 SUMMARY OF CANCER RISKS FOR CONSTRUCTION WORKERS AT FORT PICKETT -- AVERAGE EXPOSURE (AE) SCENARIO, SUMMARY OF CANCER RISKS ACROSS ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	Risk	Risk	
<b>Inorganics</b>			
ARSENIC	5.10E-08	2.47E-07	2.98E-07
CADMIUM	--	--	--
MANGANESE	--	--	--
THALLIUM	--	--	--
<b>Pesticides/PCBs</b>			
HEPTACHLOR	1.01E-12	1.02E-10	1.03E-10
HEPTACHLOR EPOXIDE	8.24E-13	8.34E-11	8.42E-11
<b>Volatiles</b>			
BENZENE	3.95E-13	7.63E-11	7.67E-11
<b>Cumulative Risk</b>	5.10E-08	2.47E-07	2.98E-07

**TABLE 5-8.4 SUMMARY OF CANCER RISKS FOR CONSTRUCTION WORKERS AT FORT PICKETT --  
REASONABLE MAXIMUM EXPOSURE (RME) SCENARIO, SUMMARY OF CANCER RISKS ACROSS  
ALL EXPOSURE PATHWAYS**

Chemical of Concern	Ingestion of Groundwater	Dermal Contact with Groundwater	Total Groundwater
	Risk	Risk	
<b>Inorganics</b>			
ARSENIC	1.03E-06	1.24E-05	1.34E-05
CADMIUM	--	--	--
MANGANESE	--	--	--
THALLIUM	--	--	--
<b>Pesticides/PCBs</b>			
HEPTACHLOR	4.53E-11	1.14E-08	1.14E-08
HEPTACHLOR EPOXIDE	2.82E-11	7.07E-09	7.10E-09
<b>Volatiles</b>			
BENZENE	1.23E-11	5.87E-09	5.89E-09
<b>Cumulative Risk</b>	1.03E-06	1.24E-05	1.34E-05

TABLE 5-9.1  
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs  
REASONABLE MAXIMUM EXPOSURE  
FORT PICKETT EBS-79

Location: EBS-79
Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total		Primary Target Organ	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Groundwater Child	EBS-79	Inorganics					Inorganics					
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	4.3E+00	NA	--	4.3E+00
			Pesticides/PCBs					Pesticides/PCBs					
			HEPTACHLOR	7.4E-07	1.1E-07	--	8.5E-07	HEPTACHLOR	Liver, Central Nervous System	3.8E-03	5.6E-04	--	4.4E-03
			HEPTACHLOR EPOXIDE	4.6E-07	6.7E-08	--	5.3E-07	HEPTACHLOR EPOXIDE	Liver, Central Nervous System	4.5E-02	6.6E-03	--	5.2E-02
			(Total for Child)	1.2E-06	1.7E-07	0.0E+00	1.4E-06		(Total for Child)	4.4E+00	7.2E-03	---	4.4E+00
	Groundwater Adult	EBS-79	Inorganics					Inorganics					
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	1.8E+00	NA	--	1.8E+00
			Pesticides/PCBs					Pesticides/PCBs					
			HEPTACHLOR	1.6E-06	1.82E-07	--	1.8E-06	HEPTACHLOR	Liver, Central Nervous System	1.6E-03	1.89E-04	--	1.8E-03
			HEPTACHLOR EPOXIDE	9.9E-07	1.13E-07	--	1.1E-06	HEPTACHLOR EPOXIDE	Liver, Central Nervous System	1.9E-02	2.24E-03	--	2.2E-02
			(Total for Adult)	2.6E-06	3.0E-07	---	2.9E-06		(Total for Adult)	1.9E+00	2.4E-03	---	1.9E+00
	Groundwater Adult + Child	EBS-79	Inorganics										
			MANGANESE	NA	NA	NA	NA						
			Pesticides/PCBs										
			HEPTACHLOR	2.3E-06	2.9E-07	NA	2.6E-06						
			HEPTACHLOR EPOXIDE	1.4E-06	1.8E-07	NA	1.6E-06						
			(Total for Child + Adult)	3.8E-06	4.7E-07	---	4.2E-06		Total Hazard Index Across Groundwater (Child)				4.4E+00
	Total Risk Across Groundwater (Adult + Child)						4.2E-06		Total Hazard Index Across Groundwater (Adult)				1.9E+00
Total Risk Across All Media and All Exposure Routes						4.2E-06	Total Hazard Index Across All Media and All Exposure Routes (Child)						4.4E+00
							Total Hazard Index Across All Media and All Exposure Routes (Adult)						1.9E+00

TABLE 5-9.2  
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs  
REASONABLE MAXIMUM EXPOSURE  
FORT PICKETT EBS-79

Location: EBS-79
Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total		Primary Target Organ	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Groundwater	EBS-79	Inorganics (Total)					Inorganics (Total)					
			ARSENIC	1.0E-06	1.2E-05	--	1.3E-05	ARSENIC	Skin	1.6E-01	1.9E+00	--	2.1E+00
			CADMIUM	--	--	--	NA	CADMIUM	Kidneys	1.1E-01	2.6E+01	--	2.6E+01
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	1.5E+00	NA	--	1.5E+00
			THALLIUM	--	--	--	NA	THALLIUM	Liver, Blood	3.7E-01	4.2E+00	--	4.6E+00
			Pesticides/PCBs					Pesticides/PCBs					
			HEPTACHLOR	4.5E-11	1.1E-08	--	1.1E-08	HEPTACHLOR	Liver, Central Nervous System	1.4E-06	3.5E-04	--	3.5E-04
			HEPTACHLOR EPOXIDE	2.8E-11	7.1E-09	--	7.1E-09	HEPTACHLOR EPOXIDE	Liver, Central Nervous System	1.7E-05	4.2E-03	--	4.2E-03
			(Total)	1.0E-06	1.2E-05	---	1.3E-05	(Total)	2.1E+00	3.2E+01	---	3.4E+01	
Total Risk Across Groundwater							1.3E-05	Total Hazard Index Across Groundwater					3.4E+01
Total Risk Across All Media and All Exposure Routes							1.3E-05	Total Hazard Index Across All Media and All Exposure Routes					3.4E+01

TABLE 5-10.1  
RISK ASSESSMENT SUMMARY  
REASONABLE MAXIMUM EXPOSURE  
FORT PICKETT EBS-79

Location: EBS-79
Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total		Primary Target Organ	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Groundwater Child	EBS-79	Inorganics					Inorganics					
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	4.3E+00	NA	--	4.3E+00
			Pesticides/PCBs					Pesticides/PCBs					
			HEPTACHLOR	7.4E-07	1.1E-07	--	8.5E-07	HEPTACHLOR	Liver, Central Nervous System	--	--	--	NA
			HEPTACHLOR EPOXIDE	4.6E-07	6.7E-08	--	5.3E-07	HEPTACHLOR EPOXIDE	Liver, Central Nervous System	--	--	--	NA
		(Total for Child)	1.2E-06	--	--	--		(Total for Child)	4.3E+00	--	---	4.3E+00	
	Groundwater Adult	EBS-79	Inorganics					Inorganics					
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	1.8E+00	NA	--	1.8E+00
			Pesticides/PCBs					Pesticides/PCBs					
			HEPTACHLOR	1.6E-06	1.82E-07	--	1.8E-06	HEPTACHLOR	Liver, Central Nervous System	--	--	--	NA
			HEPTACHLOR EPOXIDE	9.9E-07	1.13E-07	--	1.1E-06	HEPTACHLOR EPOXIDE	Liver, Central Nervous System	--	--	--	NA
		(Total for Adult)	2.6E-06	3.0E-07	---	2.9E-06		(Total for Adult)	1.8E+00	--	---	1.8E+00	
	Groundwater Adult + Child	EBS-79	Inorganics										
			MANGANESE	NA	NA	NA	NA						
			Pesticides/PCBs										
			HEPTACHLOR	2.3E-06	2.9E-07	NA	2.6E-06						
			HEPTACHLOR EPOXIDE	1.4E-06	1.8E-07	NA	1.6E-06						
		(Total for Child + Adult)	3.8E-06	4.7E-07	---	4.2E-06		Total Hazard Index Across Groundwater (Child)				4.3E+00	
		Total Risk Across Groundwater (Adult + Child)					4.2E-06		Total Hazard Index Across Groundwater (Adult)				1.8E+00
Total Risk Across All Media and All Exposure Routes						4.2E-06	Total Hazard Index Across All Media and All Exposure Routes (Child)						4.3E+00
							Total Hazard Index Across All Media and All Exposure Routes (Adult)						1.8E+00
							Total Hazard Index for CNS (Child)						4.3E+00
							Total Hazard Index for CNS (Adult)						1.8E+00

TABLE 5-10.2  
RISK ASSESSMENT SUMMARY  
REASONABLE MAXIMUM EXPOSURE  
FORT PICKETT EBS-79

Location: EBS-79
Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total		Primary Target Organ	Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Groundwater	EBS-79	Inorganics (Total)					Inorganics (Total)					
			ARSENIC	1.0E-06	1.2E-05	--	1.3E-05	ARSENIC	Skin	1.6E-01	1.9E+00	--	2.1E+00
			CADMIUM	--	--	--	NA	CADMIUM	Kidneys	1.1E-01	2.6E+01	--	2.6E+01
			MANGANESE	--	--	--	NA	MANGANESE	Central Nervous System	1.5E+00	NA	--	1.5E+00
			THALLIUM	--	--	--	NA	THALLIUM	Liver, Blood	3.7E-01	4.2E+00	--	4.6E+00
			(Total)	1.0E-06	1.2E-05	---	1.3E-05	(Total)	2.1E+00	3.2E+01	---	3.4E+01	
Total Risk Across Groundwater							1.3E-05	Total Hazard Index Across Groundwater					3.4E+01
Total Risk Across All Media and All Exposure Routes							1.3E-05	Total Hazard Index Across All Media and All Exposure Routes					3.4E+01

Total Hazard Index for Skin	2.1E+00
Total Hazard Index for Kidneys	2.6E+01
Total Hazard Index for CNS	1.5E+00
Total Hazard Index for Liver	4.6E+00
Total Hazard Index for Blood	4.6E+00

**TABLE 5-11**  
**BACKGROUND COMPARISON**  
**FORT PICKETT EBS-79**

Background Groundwater Data					Site Groundwater Data				Wilcox Rank Sum Test (S)			
analyte	n	FOD	mean (ug/l)	max detected value (ug/l)	n	FOD	mean (ug/l)	max detected value (ug/l)	S	Pr	conclusion	COPC
Arsenic	16	0%	10.0	--	6	17%	1.51	2.6	21	0.9999	Pr > .05, so site does not exceed background	No
Cadmium	16	0%	1.33	--	6	33%	0.56	2.4	37	0.9918	Pr > .05, so site does not exceed background	No
Manganese	16	100%	224	641.5	6	100%	338	1250	68	0.5145	Pr > .05, so site does not exceed background	No
Thallium	16	0%	15.0	--	6	17%	1.73	1.1	21	0.9999	Pr > .05, so site does not exceed background	No

Notes: Arsenic, cadmium and thallium background statistics are based on the achieved detection limits.

n: number of samples taken

FOD: frequency of detection

S: Wilcoxon Rank Sum statistic (calculated per Gilbert 1987).

Pr: Wilcoxon Rank Sum statistic (calculated from tables per Gilbert 1987). One-sided, alpha of 0.05 assumed (probability of 95%).

## 6. REVISED ECOLOGICAL RISK SCREENING

### 6.1 INTRODUCTION

The IRA performed by Weston (Weston July 2001) and summarized in Section 3.0 has resulted in the removal of RI soil sample locations (EA June 2001) that contained concentrations of contaminants which presented risks to ecological receptors. These removal actions only addressed soil; consequently any risks identified earlier from exposure to sediment or surface water (Phase II RI Section 8.0, EA June 2001) have not been affected by these removal actions.

Eighteen surface soil samples collected during the RI (EA 2001) and prior to the removal action remain and have been identified and included in this ecological risk screening. Two samples (SS118 and SS119-0.5) not addressed in the IRA remain however they were collected up-gradient of EBS-79. Consequently, these two samples were not included in this revised risk screening. All post removal action soil samples were taken at the base of IRA excavations that were subsequently backfilled. These samples represent soils now located beneath the surface soil 'root' zone (0-1-ft bgs) where ecological receptors would be exposed. Therefore, these post-IRA samples were excluded from this post-IRA ecological risk screening. As such, this ecological risk screening includes the original, RI (EA June 2001), surface soil data that remains after the soil removal action.

A simple Step 1 and 2 ecological risk screening has been performed for this assessment (USEPA 1997). All conservative exposure assumptions described in the RI for this type of ecological risk assessment apply to this analysis. The risk assessment process follows that applied earlier in the RI (EA June 2001).

### 6.2 COPC SCREEN

The maximum concentrations of detected analytes found in the surface soil samples following the removal action have been compared with conservative toxicological screening values. These soil screening values are presented in [Table 6-1](#). Some modifications have been made in these screening values presented in the Phase II RI Section 8.0 (EA June 2001) at the request of the USEPA<sup>1</sup>. Specifically all toxicological sources of screening values other than USEPA 1995 have been replaced with the USEPA (1995) values if they are available. Most screening values

are consistent with those found in the Phase II RI Table 8-2 (EA June 2001) with the following exceptions.

- Arsenic: Table 8-2 shows the screening value of 10 mg/kg, based a value reported in Efroymson et al. (1997a). This has been replaced with the USEPA (1995) screening value of 328 mg/kg.
- Cobalt: The screening value of 20 mg/kg from Efroymson et al. (1997a) has been replaced with the USEPA (1995) screening value of 100 mg/kg.
- Manganese: Efroymson et al (1997b) found a screening value of 100 mg/kg that was used in Section 8. This has been replaced with the USEPA (1995) screening value of 330 mg/kg.
- Mercury: The RIVM (2000) screening value of 4.9 mg/kg used in Section 8 has been replaced with USEPA (1995) screening value of 0.058 mg/kg.
- Silver: Efroymson et al. (1997a) screening value of 2 mg/kg has been replaced with the USEPA screening value of 0.0000098 mg/kg.

Post-removal ecological COPC identifications are shown in [Table 6-2](#) and are compared with identified pre-removal (RI) COPC in [Table 6-3](#). Before the removal action 14 metals were identified as COPC (Phase II RI Table 8-3, EA June 2001); these have been reduced by the IRA to 11 COPC ([Table 6-3](#)). The most dramatic reductions in identified COPC are found for pesticides (RI identified 9 COPCs and post-IRA identified no COPCs), PAH (RI identified 16 PAH COPCs and post-IRA identified no PAH COPCs) and VOCs (RI identified 5 COPCs, post-IRA identified one COPC). As such, the only post-IRA organic ecological COPC is acetone. Clearly the removal action has been effective in reducing ecological COPCs, particularly organic compounds.

### 6.3 POST-IRA RISK CHARACTERIZATION

All identified measurement and assessment endpoints and the conceptual site model developed in Section 8 of the RI (EA June 2001) for the terrestrial environment are the same for this post- IRA ecological risk screening. Post-IRA risks for plants, soil invertebrates, and food web receptors are discussed below.

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<sup>1</sup> Email of 3/19/02 from Jeffrey Tuttle, USEPA Region III to Don McLaughlin of USEPA Region III to screen for ecological COPC using Region III BTAG numbers whenever possible.

### 6.3.1 Post-IRA Risk for Terrestrial Plants

As discussed in Section 8.6.1 (EA June 2001), the risk to terrestrial plants for a screening ecological risk assessment is based on a calculation of an Ecological Quotient:

$$\text{Ecological Quotient} = \text{Maximum Surface Soil Concentration} / \text{Toxicity Reference Value}$$

As in Section 8 (EA June 2001), Toxicity Reference Values for plants are the toxicological benchmarks for terrestrial plants provided by ORNL (Efroymson et al. 1997a). The results of the post-IRA plant ecological risk assessment are shown in [Table 6-4](#). If the Maximum Surface Soil Concentration is less than the Toxicity Reference Value, then the Ecological Quotient will be less than 1.0. In this circumstance, no risk is inferred to the plant. If the Maximum Surface Soil Concentration is greater than the Toxicity Reference Value, then the Ecological Quotient will be greater than 1.0, and this carries the inference of potential risk. Post-IRA action plant Ecological Quotients for aluminum, chromium, lead, manganese, vanadium, and zinc exceeded the potential risk threshold of 1.0. Lead (EQ = 2.24), Manganese (EQ = 2.58) and zinc (EQ = 2.62) had small exceedances, indicating that the risk of these COPCs to terrestrial plants is negligible due to the conservative nature of this exposure and toxicity assessment.

The EQ for aluminum was 484. As discussed in Section 8.6.1 (EA June 2001), the Toxicity Reference Value for aluminum (50 mg/kg) was based on a single study, which does not allow a high degree of confidence in the benchmark (Efroymson et al. 1997a).

The EQ for chromium has decreased post-IRA from 51 (Table 8-13) to 28 (Table 4-4). The Toxicity Reference Value of 1 mg/kg has low confidence because of the small number of studies on which it is based (Efroymson et al. 1997a). The maximum measured Fort Pickett background chromium concentration was 20.5 mg/kg similar to the new maximum chromium concentration (28 mg/kg) at EBS-79.

An EQ of 21 was found for vanadium post-IRA ([Table 6-4](#)), down from 31 pre-IRA (Table 8-13, EA June 2001). The vanadium Toxicity Reference Value of 2 mg/kg was based on a secondary citation reporting unspecified toxic effects. No primary references were available for this metal, consequently, confidence in this value is low (Efroymson et al. 1997a).

Plant Toxicity Reference Values for DDT and acetone do not exist, consequently it is impossible to estimate risk to plants from these organic chemicals.

Based on this assessment, perceived plant risks from aluminum, chromium, and vanadium were based on low confidence toxicity values. Given that no signs of plant stress were observed during site visits, the low confidence in toxicity values used for this assessment, and the overall conservative nature of plant toxicity testing, acceptable risks are found for terrestrial plants at EBS-79 post-IRA.

### **6.3.2 Post-IRA Risk for Soil Invertebrates**

Post-IRA risk to soil invertebrates was investigated using the earthworm as a representative species for the guild. Risk to the earthworm was based on calculation of an Ecological Quotient similar to that for plants.

As in Section 8.6.2 (EA June 2001), earthworm Toxicity Reference Values were from Efroymson et al. (1997b). If the maximum site surface soil concentration is less than the Toxicity Reference Value, then the Ecological Quotient will be less than 1.0. In this circumstance, no risk was inferred to the earthworm. If the Maximum Surface Soil Concentration is greater than the Toxicity Reference Value, then the Ecological Quotient will be greater than 1.0, and this carries the inference of potential risk. Fewer chemicals and metals have been tested for toxicity, therefore there were many COPCs for which risks to soil invertebrates cannot be quantified.

The results of the screening level post-IRA earthworm assessment at EBS-79 are shown in Table 4-5. Maximum surface soil concentrations were lower than the earthworm Toxicity Reference Values for lead, nickel and zinc consequently acceptable earthworm risk is implied for these metals. Confidence in the chromium Toxicity Reference Value of 0.4 mg/kg is low because it is based on limited toxicological data (Efroymson et al 1997b). Consequently, potential risks to the earthworm (soil invertebrates) from chromium at EBS-79 may not be as high as would be predicted with a post-IRA  $EQ_{max}$  of 69. Manganese and mercury had  $EQ_{max}$  below 3.0, and given the conservatism involved in the Step 2 ERA, are not expected to result in hazards to soil invertebrates at EBS-79.

### **6.3.3 Post-IRA Screening Level Terrestrial Food-Web Risk**

The post-IRA screening level food web risk characterization has been performed using the same exposure and toxicity assumptions found in Section 8.6.3.1 (EA June 2001). It was assumed that prey items have the same dry-weight concentration as the maximum soil or sediment

concentration of COPCs on the site and wet-weight consumption quantities were used with dry-weight soil concentrations. COPCs are assumed to be 100 percent bioavailable and the area use factor was 1.0. These assumptions are conservative and contribute to the conservative nature of the risk characterization and to probable overestimation of risk.

COPCs that have been identified with HQs of NA, i.e., Not Available, do not have appropriate TRVs. These COPCs cannot be eliminated as of concern, although they cannot be quantified. Such a COPC have to be considered as a potential risk through dietary exposure.

- **Avian Species**

Food web hazards for avian species were characterized through comparisons of exposure concentrations (defined as the maximum surface soil concentrations of the COPCs post-IRA at EBS-79) to the NOAEL TRVs, listed in the RI Table 8-11 (EA June 2001). Post-IRA risks to the American robin and American kestrel have been evaluated and are summarized in [Table 6-6](#). Detailed exposures, TRVs and risks for each COPC are shown in [Tables 6-7](#) and [6-8](#) for the American robin and American kestrel respectively.

Eight inorganic COPC were determined to pose potential risks to the American robin through dietary exposure. Hazard quotients, defined as the ratio of exposure dose to the NOAEL TRV, ranged from 477 for aluminum to 2.8 for manganese ([Table 6-6](#)). Aluminum at EBS-79 is likely not bioavailable due to the mediating effects of soil pH (see Section 8.6.3.1.1, EA June 2001). In addition, the NOAEL for avian species was based on dosing highly soluble aluminum sulfate [ $\text{Al}_2(\text{SO}_4)_3$ ] to the receptors. No effect was observed, therefore the dose (109.7 mg/kg/day) was designated as a NOAEL (Sample et al. 1996). Aluminum found in soil and sediment is not in this highly soluble form, thus artificially lowering the NOAEL. A NOAEL HQ of 8.8 was found for the robin from exposure to mercury, the result of a 10x factor included in the dose from food as desired by the EPA. Elimination of the 10x from food dose would have resulted in a HQ less than 1.0 for mercury.

The risk from exposure of the American kestrel to COPC is presented in [Table 6-8](#) and summarized in [Table 6-6](#). Six inorganic COPCs were determined to pose potential risks to the kestrel through dietary exposure (aluminum, chromium, lead, mercury, vanadium, and zinc). Issues related to aluminum and the use of 10x the dose from food for mercury also apply to the American kestrel.

- **Mammalian Species**

The potential impact to mammalian species from exposure to COPCs via the food web was assessed. For this assessment, the ROCs were defined as the short-tailed shrew, meadow vole, and eastern cottontail. These representative species are potentially at risk from the concentrations in the soil in and around EBS-79. Species at these higher trophic levels are potentially exposed to toxic substances through the food web as the chemicals proceed upward via magnification. The potential hazards were characterized through comparisons of exposure concentrations to the NOAEL TRVs, listed in Table 8-11 (EA June 2001).

The risk from exposure of the short-tailed shrew to COPCs is presented in **Table 6-9** and summarized in **Table 6-6**. Six inorganic COPCs were determined to pose potential risks to the shrew through dietary exposure (aluminum, antimony, lead, manganese, thallium, and vanadium). The very high HQ for aluminum of 7191 is suspect. This is based on a three-generation reproductive study on mice using highly soluble aluminum chloride dosed orally in water. Not only is this a form of aluminum not found in soils, but also no reproductive endpoint was identified. The endpoint found was reduced weight of generations 2 and 3 for the mice. No effects were found on the number of litters or the number of offspring per litter (Sample et al. 1996).

The risk from exposure of the meadow vole to COPCs is presented in **Table 6-10** and summarized in **Table 6-6**. The same six inorganic COPCs identified as posing potential risk to the shrew also posed potential risk for the meadow vole. The high aluminum HQ is suspect for the same reasons discussed above for the shrew.

The risk from exposure of the eastern cottontail to COPCs is presented in **Table 6-11**. COPC identified as posing potential risk to the rabbit are identical to those found for all other mammals.

The risk from exposure of the red fox to COPCs are summarized in Table 4-6 and presented in **Table 6-12**. COPC identified as posing potential risk to the rabbit are identical to those found for all other mammals.

## **6.4 POST-IRA ECOLOGICAL RISK SUMMARY**

A screening-level ERA has been performed on surface soil samples remaining post-IRA of EBS-79. The removal action has significantly reduced ecological risks at the site, particularly for

organic compounds. The only remaining identified risks were related to metals at the site. A refined ERA was performed on pre-removal samples (Phase II RI Section 8-11, EA June 2001). Metal concentrations at EBS-79 were not significantly impacted by the IRA, consequently the conclusions found for metals in the RI (EA June 2001) continue to apply. Specifically, metals were not found to represent population-level risk once more realistic exposure parameters are considered.

NOAEL risks were slightly above 1.0 for chromium, lead, thallium, vanadium, and zinc for some receptors, however LOAEL risks were less than 1.0 for these same receptors. No adverse population-level effects are expected under these conditions from these metals.

Aluminum was found to continue to present perceived risk to many receptors. The distribution of aluminum in surface soil at EBS-79 was compared with that found in surface soil in background (Weston 1999a). This comparison examined the mean and variance of the 8 background surface soil aluminum concentrations to the concentrations found in the EBS-79 surface soils. The background and site data were distributed normally (Weston 1999a). Initially, the variance was examined to determine if they were statistically similar using an F-Test. This statistical test revealed that the variance of aluminum concentrations in both background and site samples were similar (using an alpha of 0.05). Finally, a T-Test was performed to determine if the mean background concentration was the same as the mean site concentration. The T-Test concluded that the means are similar (using an alpha of 0.05). These analysis shows that EBS-79 surface soil aluminum concentrations are the same as those found in background at Fort Pickett.

For these reasons, ecological receptors at EBS-79 are not at risk for population-level effects from metals that remain in surface soils. As noted earlier, any risks identified in the RI Chapter 8 (EA June 2001) for surface water or sediment have not changed by the IRA.

**TABLE 6-1 SUMMARY OF ECOLOGICAL RISK SOIL SCREENING VALUES**

<i>Chemical</i>	<i>CAS No.</i>	<i>Units</i>	<i>Ecological Screening Levels</i>	<i>Source</i>
<b><i>Inorganics</i></b>				
Aluminum	7429-90-5	mg/kg (dry)	1	EPA (1995b)
Antimony	7440-36-0	mg/kg (dry)	0.48	EPA (1995b)
Arsenic	7440-38-2	mg/kg (dry)	328	EPA (1995b)
Barium	7440-39-3	mg/kg (dry)	440	EPA (1995b)
Beryllium	7440-41-7	mg/kg (dry)	0.02	EPA (1995b)
Cadmium	7440-43-9	mg/kg (dry)	2.5	EPA (1995b)
Calcium	7440-70-2	mg/kg (dry)	None	
Chromium	7440-47-3	mg/kg (dry)	0.0075	EPA (1995b)
Cobalt	7440-48-4	mg/kg (dry)	100	EPA (1995b)
Copper	7440-50-8	mg/kg (dry)	15	EPA (1995b)
Iron	7439-89-6	mg/kg (dry)	None	
Lead	7439-92-1	mg/kg (dry)	0.01	EPA (1995b)
Magnesium	7439-95-4	mg/kg (dry)	None	
Manganese	7439-96-5	mg/kg (dry)	330	EPA (1995b)
Mercury	7439-97-6	mg/kg (dry)	0.058	EPA (1995b)
Nickel	7440-02-0	mg/kg (dry)	2	EPA (1995b)
Potassium	7440-09-7	mg/kg (dry)	None	
Silver	7440-22-4	mg/kg (dry)	0.0000098	EPA (1995b)
Thallium	7440-29-0	mg/kg (dry)	0.001	EPA (1995b)
Vanadium	7440-62-2	mg/kg (dry)	0.5	EPA (1995b)
Zinc	7440-66-6	mg/kg (dry)	10	EPA (1995b)
<b><i>PAHs</i></b>				
2-Methylnaphthalene	91-57-6	ug/kg (dry)	100	EPA (1995b)
Acenaphthene	83-32-9	ug/kg (dry)	100	EPA (1995b)
Acenaphthylene	131-11-3	ug/kg (dry)	100	EPA (1995b)
Anthracene	120-12-7	ug/kg (dry)	100	EPA (1995b)
Benz[a]anthracene	56-55-3	ug/kg (dry)	100	EPA (1995b)
Benzo[a]pyrene	50-32-8	ug/kg (dry)	100	EPA (1995b)
Benzo[b]fluoranthene	205-99-2	ug/kg (dry)	100	EPA (1995b)
Benzo[g,h,i]perylene	191-24-2	ug/kg (dry)	100	EPA (1995b)
Benzo[k]fluoranthene	207-08-9	ug/kg (dry)	100	EPA (1995b)
Chrysene	218-01-9	ug/kg (dry)	100	EPA (1995b)
Dibenz[a,h]anthracene	53-70-3	ug/kg (dry)	100	EPA (1995b)
Fluoranthene	206-44-0	ug/kg (dry)	100	EPA (1995b)
Fluorene	86-73-7	ug/kg (dry)	100	EPA (1995b)
Indeno[1,2,3-c,d]pyrene	193-39-5	ug/kg (dry)	100	EPA (1995b)
Naphthalene	91-20-3	ug/kg (dry)	100	EPA (1995b)
Phenanthrene	85-01-8	ug/kg (dry)	100	EPA (1995b)
Pyrene	129-00-0	ug/kg (dry)	100	EPA (1995b)
<b><i>Pesticides/PCBs</i></b>				
4,4'-DDD	72-54-8	ug/kg (dry)	100	EPA (1995b)
4,4'-DDE	75-55-9	ug/kg (dry)	100	EPA (1995b)
4,4'-DDT	50-29-3	ug/kg (dry)	100	EPA (1995b)
Aldrin	309-00-2	ug/kg (dry)	100	EPA (1995b)
alpha-Chlordane	5103-71-9	ug/kg (dry)	100	EPA (1995b)
alpha-HCH	319-84-6	ug/kg (dry)	100	EPA (1995b)
Aroclor 1260	11096-82-5	ug/kg (dry)	100	EPA (1995b)
beta-HCH	319-85-7	ug/kg (dry)	100	EPA (1995b)
delta-HCH	319-86-8	ug/kg (dry)	100	EPA (1995b)
Dieldrin	60-57-1	ug/kg (dry)	100	EPA (1995b)
Endosulfan I	959-98-8	ug/kg (dry)	400	RIVM (2000)

**TABLE 6-1 SUMMARY OF ECOLOGICAL RISK SOIL SCREENING VALUES**

<i>Chemical</i>	<i>CAS No.</i>	<i>Units</i>	<i>Ecological Screening Levels</i>	<i>Source</i>
Endosulfan Sulfate	1031-07-8	ug/kg (dry)	400	RIVM (2000)
Endrin Aldehyde	7421-93-4	ug/kg (dry)	100	EPA (1995b)
gamma-Chlordane	5103-71-9	ug/kg (dry)	100	EPA (1995b)
gamma-HCH (Lindane)	58-89-9	ug/kg (dry)	100	EPA (1995b)
Heptachlor	76-44-8	ug/kg (dry)	100	EPA (1995b)
Heptachlor Epoxide	111024-57-3	ug/kg (dry)	100	EPA (1995b)
<i>Semivolatile organics</i>				
bis(2-Ethylhexyl)phthalate	117-81-7	ug/kg (dry)	Use Total Phthalate	RIVM (2000)
Di-n-butylphthalate	84-74-2	ug/kg (dry)	Use Total Phthalate	RIVM (2000)
Total Phthalates		ug/kg (dry)	6,000	RIVM (2000)
<i>Volatile Organics</i>				
Acetone	67-64-1	ug/kg (dry)	None	
Styrene	100-42-5	ug/kg (dry)	100	EPA (1995b)
Toluene	108-88-3	ug/kg (dry)	100	EPA (1995b)

TABLE 6-2 POST-IRA SURFACE SOIL ECOLOGICAL COPC FOR FT. PICKETT EBS 79

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Screening Toxicity Value	SVR	COPC Flag	Additional Considerations
Inorganic													
7429-90-5	ALUMINUM	4950		24200	K	mg/kg	SS124-0.5	13/13	3.4 - 33	1	24200	Yes	Essential Nutrient
7440-36-0	ANTIMONY	0.51	L	0.91	L	mg/kg	EBS79-SB-15-0.5	7/13	0.21 - 0.856	0.48	1.90	Yes	
7440-38-2	ARSENIC	0.35	L	4.7		mg/kg	EBS79-SB-15-0.5	13/13	0.094 - 1.27	328	0.014	No	
7440-39-3	BARIUM	13.1		99.8		mg/kg	SS124-0.5	13/13	0.117 - 1.3	440	0.227	No	
7440-41-7	BERYLLIUM	0.23	L	1.14		mg/kg	SS124-0.5	13/13	0.01 - 0.106	0.02	57	Yes	
7440-43-9	CADMIUM	0.119		0.636		mg/kg	SS124-0.5	6/13	0.02 - 0.318	2.5	0.254	No	
7440-70-2	CALCIUM	405		2370		mg/kg	SS124-0.5	13/13	6 - 53	NA		No	
7440-47-3	CHROMIUM	8.4		27.5	J	mg/kg	SS124-0.5	13/13	0.043 - 0.53	0.0075	3667	Yes	
7440-48-4	COBALT	2.6		11.3		mg/kg	SS124-0.5	13/13	0.25 - 0.67	100	0.113	No	
7440-50-8	COPPER	2.3		14.8		mg/kg	SS124-0.5	13/13	0.074 - 0.53	15	0.987	No	
7439-89-6	IRON	6650	K	23500	K	mg/kg	SS124-0.5	13/13	0.84 - 32	NA		No	Essential Nutrient
7439-92-1	LEAD	9.3		112	J	mg/kg	SS124-0.5	13/13	0.094 - 0.412	0.01	11200	Yes	Essential Nutrient
7439-95-4	MAGNESIUM	670	J	3410		mg/kg	EBS79-SB-9-0.5	13/13	1.4 - 26.5	NA		No	
7439-96-5	MANGANESE	128		1290		mg/kg	SS124-0.5	13/13	0.047 - 0.98	330	3.91	Yes	Essential Nutrient
7439-97-6	MERCURY	0.041		0.201		mg/kg	SS124-0.5	5/13	0.018 - 0.06	0.058	3.47	Yes	
7440-02-0	NICKEL	3.3		10.8		mg/kg	SB103-0.5	13/13	0.064 - 1.2	2	5.40	Yes	
7440-09-7	POTASSIUM	608		3980	L	mg/kg	EBS79-SB-12-0.5	13/13	2.78 - 27.6	NA		No	
7440-22-4	SILVER	0.642		0.7725		mg/kg	SS121-0.5	3/13	0.2 - 0.89	0.0000098	78827	Yes	Essential Nutrient
7440-28-0	THALLIUM	0.15		0.57		mg/kg	EBS79-SB-15-0.5	4/13	0.1 - 1.59	0.001	570	Yes	
7440-62-2	VANADIUM	9.4		41.7		mg/kg	SS124-0.5	13/13	0.17 - 0.88	0.5	83.4	Yes	
7440-66-6	ZINC	39.7	J	131	J	mg/kg	SS124-0.5	13/13	0.24 - 1.59	10	13.1	Yes	
PAHs													
91-57-6	2-METHYLNAPHTHALENE	0.0025	J	0.059		mg/kg	EBS79-SB-15-0.5	9/16	0.00138 - 0.0444	0.1	0.590	No	
83-32-9	ACENAPHTHENE	0.004		0.004		mg/kg	EBS79-SB-15-0.5	1/16	0.000499 - 0.0158	0.1	0.040	No	
208-96-8	ACENAPHTHYLENE	0.0019		0.00945		mg/kg	EBS79-SB-8-0.5	2/16	0.000511 - 0.0162	0.1	0.095	No	
120-12-7	ANTHRACENE	0.0022		0.0022		mg/kg	EBS79-SB-15-0.5	1/16	0.000257 - 0.00808	0.1	0.022	No	
56-55-3	BENZ[A]ANTHRACENE	0.00283	J	0.0105		mg/kg	SS125-0.5	4/16	0.000357 - 0.0113	0.1	0.105	No	
191-24-2	BENZO(G,H,I)PERYLENE	0.0057	J	0.0087		mg/kg	EBS79-SB-15-0.5	2/16	0.000565 - 0.0178	0.1	0.087	No	
50-32-8	BENZ[A]PYRENE	0.0032		0.0084		mg/kg	EBS79-SB-15-0.5	2/16	0.000807 - 0.0251	0.1	0.084	No	
205-99-2	BENZO[B]FLUORANTHENE	0.0029		0.021		mg/kg	EBS79-SB-15-0.5	3/16	0.000499 - 0.0158	0.1	0.210	No	
207-08-9	BENZO[K]FLUORANTHENE	0.0036		0.0098		mg/kg	EBS79-SB-15-0.5	2/16	0.000691 - 0.0218	0.1	0.098	No	
218-01-9	CHRYSENE	0.0023		0.015		mg/kg	EBS79-SB-15-0.5	7/16	0.00023 - 0.00727	0.1	0.150	No	
53-70-3	DIBENZ[A,H]ANTHRACENE	0.0024		0.0024		mg/kg	EBS79-SB-15-0.5	1/16	0.000373 - 0.0117	0.1	0.024	No	
206-44-0	FLUORANTHENE	0.0026		0.0229		mg/kg	SS123-0.5	9/16	0.000384 - 0.0121	0.1	0.229	No	
86-73-7	FLUORENE	0.00113	J	0.0036		mg/kg	EBS79-SB-15-0.5	3/16	0.000499 - 0.0162	0.1	0.036	No	
193-39-5	INDENO[1,2,3-C,D]PYRENE	0.00143	J	0.0088		mg/kg	EBS79-SB-15-0.5	5/16	0.000384 - 0.0121	0.1	0.088	No	
91-20-3	NAPHTHALENE	0.0018	_ / U	0.0229		mg/kg	SS123-0.5	9/16	0.000499 - 0.0158	0.1	0.229	No	
85-01-8	PHENANTHRENE	0.0026		0.0158	J	mg/kg	SB102-0.5	6/16	0.000384 - 0.0158	0.1	0.158	No	
129-00-0	PYRENE	0.00214	J	0.02		mg/kg	EBS79-SB-15-0.5	9/16	0.000346 - 0.0109	0.1	0.200	No	

TABLE 6-2 POST-IRA SURFACE SOIL ECOLOGICAL COPC FOR FT. PICKETT EBS 79

CAS Number	Chemical	Minimum Concentration	Minimum Qualifier	Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentraion	Detection Frequency	Range of Detection Limits	Screening Toxicity Value	SVR	COPC Flag	Additional Considerations
PCB													
11096-82-5	AROCLOR-1260	0.0031825	_ / U	0.0482		mg/kg	SS123-0.5	3/13	0.000895 - 0.0143	0.1	0.482	No	
PESTICIDES													
72-54-8	4,4'-DDD	0.000525		0.0065	J	mg/kg	SS106-0.5	7/18	0.000041 - 0.00053	0.1	0.065	No	
72-55-9	4,4'-DDE	0.000302	UJ / J	0.031	J	mg/kg	SS105-0.5	8/18	0.000038 - 0.00361	0.1	0.310	No	
50-29-3	4,4'-DDT	0.00182	J	0.28	J	mg/kg	SS105-0.5	9/15	0.000047 - 0.00451	0.1	2.800	Yes	
309-00-2	ALDRIN	0.00010175	J / UJ	0.00036975	UJ / J	mg/kg	SS108-0.5	2/18	0.000052 - 0.00066	0.1	0.004	No	
5103-71-9	ALPHA-CHLORDANE	0.00062	J	0.0023	J	mg/kg	SS106-0.5	5/19	0.00025 - 0.00088	0.1	0.023	No	
319-85-7	BETA-HCH	0.000628	J	0.0034	J	mg/kg	SS109-0.5	5/19	0.000036 - 0.00062	0.1	0.034	No	
319-86-8	DELTA-HCH	0.00158325	UJ / J	0.00502	J	mg/kg	SS124-0.5	7/19	0.000032 - 0.00062	0.1	0.050	No	
60-57-1	DIELDRIN	0.0009	J	0.0012	J	mg/kg	SS106-0.5	2/18	0.000056 - 0.00054	0.1	0.012	No	
959-98-8	ENDOSULFAN I	0.00056	J	0.00056	J	mg/kg	SS105-0.5	1/18	0.00005 - 0.00091	0.4	0.001	No	
1031-07-8	ENDOSULFAN SULFATE	0.000234	J / UJ	0.00081	J	mg/kg	SS105-0.5	2/18	0.000032 - 0.0011	0.4	0.002	No	
7421-93-4	ENDRIN ALDEHYDE	0.0016		0.0016		mg/kg	EBS79-SB-15-0.5	1/18	0.000043 - 0.0012	0.1	0.016	No	
58-89-9	GAMMA-HCH	0.00030175	UJ / J	0.00076	J	mg/kg	SS104-0.5	5/19	0.000077 - 0.00057	0.1	0.008	No	
5103-74-2	GAMMA-CHLORDANE	0.00051425	UJ / J	0.00239	J	mg/kg	SS123-0.5	9/18	0.00005 - 0.00044	0.1	0.024	No	
76-44-8	HEPTACHLOR	0.0033	J	0.0033	J	mg/kg	SS105-0.5	1/18	0.000056 - 0.00076	0.1	0.033	No	
1024-57-3	HEPTACHLOR EPOXIDE	0.000364	J	0.0027	J	mg/kg	SS109-0.5	6/19	0.00017 - 0.001	0.1	0.027	No	
Semivolatiles													
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.038	J	0.127		mg/kg	SB103-0.5	7/13	0.0186 - 0.067	NA			Use total phthalates
84-74-2	DIBUTYLPHTHALATE	0.364		0.364		mg/kg	SB103-0.5	1/13	0.0464 - 0.0696	NA			Use total phthalates
	TOTAL PHTHALATES	0.364		0.491		mg/kg	SB103-0.5	1/13	0.0464 - 0.0696	6	0.082	No	
Volatile													
67-64-1	ACETONE	0.013	UJ / _	0.11		mg/kg	EBS79-SB-15-0.5	3/16	0.00196 - 0.0121	None		Yes	
100-42-5	STYRENE	0.00379		0.00379		mg/kg	SS125-0.5	1/16	0.001 - 0.00606	0.1	0.038	No	
108-88-3	TOLUENE	0.00442		0.00442		mg/kg	SB101-0.5	1/16	0.0007 - 0.00606	0.1	0.044	No	

**TABLE 6-3 COMPARISON OF PRE- AND POST-IRA ECOLOGICAL COPC**

<i>Chemical</i>	<i>IDENTIFIED COPC</i>	
	<i>Pre-Interim Remedial Action Surface Soil</i>	<i>Post-Interim Remedial Action Surface Soil</i>
<i>Inorganics</i>		
Aluminum	X	X
Antimony	X	X
Barium	X	
Beryllium	X	X
Cadmium	X	
Chromium	X	X
Copper	X	
Lead	X	X
Manganese	X	
Mercury		X
Nickel	X	X
Selenium	X	
Silver		X
Thallium	X	X
Vanadium	X	X
Zinc	X	X
<i>Pesticides/PCBs</i>		
4,4' -DDD	X	
4,4' -DDE	X	
4,4' -DDT	X	X
Aldrin	X	
Alpha-HCH	X	
Aroclor 1260	X	
Beta-HCH	X	
Endosulfan Sulfate	X	
Endrin Aldehyde	X	
Heptachlor	X	
<i>PAHs</i>		
2-Methylnaphthalene	X	
Acenaphthene	X	
Acenaphthylene	X	
Benz[a]anthracene	X	
Benzo[a]pyrene	X	
Benzo[b]fluoranthene	X	
Benzo[g,h,i]perylene	X	
Benzo[k]fluoranthene	X	
Chrysene	X	
Dibenz[a,h]anthracene	X	
Fluoranthene	X	
Fluorene	X	
Indeno[1,2,3-c,d]pyrene	X	
Naphthalene	X	
Phenanthrene	X	
Pyrene	X	

**TABLE 6-3 COMPARISON OF PRE- AND POST-IRA ECOLOGICAL COPC**

<i>Chemical</i>	<i>IDENTIFIED COPC</i>	
	<i>Pre-Interim Remedial Action Surface Soil</i>	<i>Post-Interim Remedial Action Surface Soil</i>
<i>Semivolatile organics</i>		
Dibenzofuran	X	
P-Nitroaniline	X	
<i>Volatile Organics</i>		
Acetone	X	X
Carbon disulfide	X	
Ethylbenzene	X	
m&p-Xylenes	X	
Methylene chloride	X	
o-Xylene	X	
Toluene	X	

**TABLE 6-4 SCREENING-LEVEL ECOLOGICAL QUOTIENTS FOR TERRESTRIAL PLANTS  
FOR COPCs POST-IRA**

<b>COPC</b>	<b>Surface Soil Maximum</b>	<b>Toxicity Reference Value</b>	<b>Ecological Quotient (EQ<sub>max</sub>)</b>
<i>Inorganics (mg/kg)</i>			
<b>Aluminum</b>	24200	50	<b>484</b>
Antimony	0.91	5	0.18
Beryllium	1.14	10	0.11
<b>Chromium</b>	27.5	1	<b>27.5</b>
<b>Lead</b>	112	50	<b>2.24</b>
<b>Manganese</b>	1290	500	<b>2.58</b>
Mercury	0.201	0.3	0.67
Nickel	10.8	30	0.36
Silver	0.7725	2	0.39
Thallium	0.57	1	0.57
<b>Vanadium</b>	41.7	2	<b>20.9</b>
<b>Zinc</b>	131	50	<b>2.62</b>
<i>Pesticides (ug/kg)</i>			
4,4'-DDT	280	NA	NA
<i>Volatile Organics (ug/kg)</i>			
Acetone	110	NA	NA

Reference Toxicity Values from Efroymson et al. 1997a

NA = Not Available

**TABLE 6-5 SCREENING-LEVEL ECOLOGICAL QUOTIENTS FOR SOIL INVERTEBRATES  
FOR COPCs POST-IRA**

COPC	Surface Soil Maximum	Toxicity Reference Value	Ecological Quotient (EQ <sub>max</sub> )
<i>Inorganics (mg/kg)</i>			
Aluminum	24200	NA	NA
Antimony	0.91	NA	NA
Beryllium	1.14	NA	NA
<b>Chromium</b>	27.5	0.4	<b>69</b>
Lead	112	500	0.22
<b>Manganese</b>	1290	500	<b>2.58</b>
<b>Mercury</b>	0.201	0.1	<b>2.01</b>
Nickel	10.8	200	0.05
Silver	0.7725	NA	NA
Thallium	0.57	NA	NA
Vanadium	41.7	NA	NA
Zinc	131	200	0.655
<i>Pesticides (ug/kg)</i>			
4,4'-DDT	280	NA	NA
<i>Volatile Organics (ug/kg)</i>			
Acetone	110	NA	NA

N/A = Not Available

Reference Toxicity Values from Efroymson et al. 1997b

TABLE 6-6 POST-IRA TERRESTRIAL HAZARD QUOTIENT SUMMARY

**TERRESTRIAL SPECIES**  
**MAXIMUM CONCENTRATION HAZARD QUOTIENT VALUES**  
**SITE EBS 79**  
**FORT PICKETT**

Ecological Contaminants of Concern	Vole		Shrew		Robin		Rabbit		Kestrel		Red Fox	
	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>
<b>Aluminum</b>	<b>4945</b>	<b>495</b>	<b>7191</b>	<b>719</b>	<b>476</b>	<b>47.6</b>	<b>2994</b>	<b>299</b>	<b>69.4</b>	<b>6.9</b>	<b>6321</b>	<b>632</b>
<b>Antimony</b>	<b>2.86</b>	0.29	<b>4.17</b>	0.42	NA	NA	<b>1.73</b>	0.17	NA	NA	<b>3.64</b>	0.37
Beryllium	0.37	0.04	0.54	0.05	NA	NA	0.22	0.02	NA	NA	0.47	0.05
<b>Chromium</b>	0.00	NA	0.00	NA	<b>59</b>	<b>12</b>	0.00	NA	<b>8.7</b>	<b>1.73</b>	0.00	NA
<b>Lead</b>	<b>2.99</b>	0.30	<b>4.34</b>	0.44	<b>62.8</b>	<b>6.28</b>	<b>1.81</b>	0.18	<b>9.2</b>	0.92	<b>3.82</b>	0.38
<b>Manganese</b>	<b>3.12</b>	0.97	<b>4.56</b>	<b>1.41</b>	<b>2.79</b>	0.28	<b>1.88</b>	0.59	0.41	0.04	<b>4.04</b>	<b>1.24</b>
<b>Mercury</b>	0.32	NA	0.44	NA	<b>8.84</b>	<b>4.42</b>	0.20	NA	<b>1.39</b>	0.69	0.41	NA
Nickel	0.06	0.03	0.08	0.04	0.30	0.22	0.03	0.02	0.04	0.03	0.07	0.04
<b>Silver</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Thallium</b>	<b>15.7</b>	<b>1.62</b>	<b>24.3</b>	<b>2.37</b>	<b>2.93</b>	NA	<b>10.8</b>	0.98	0.09	NA	<b>20.5</b>	<b>2.10</b>
<b>Vanadium</b>	<b>45.7</b>	<b>4.56</b>	<b>66</b>	<b>6.64</b>	<b>7.9</b>	<b>0.79</b>	<b>27.7</b>	<b>2.76</b>	<b>1.15</b>	0.12	<b>58.3</b>	<b>5.83</b>
<b>Zinc</b>	0.17	0.09	0.25	0.13	<b>19.5</b>	<b>2.16</b>	0.11	0.05	<b>2.84</b>	0.31	0.22	0.11
Acetone	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	0.00	0.00

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>i</sub> = Hazard Quotient based on the LOAEL

**TABLE 6-7 POST-IRA SCREENING LEVEL FOOD WEB MODEL FOR THE AMERICAN ROBIN**

Site EBS 79

Fort Pickett

**American Robin**

Body Weight 0.0635000 kg  
 Food Ingestion Rate 1.9600000 kg/kg-bw-day  
 Water Ingestion Rate 0.0000000 L/kg-bw-day  
 Soil Ingestion Rate 0.2000000 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>l</sub>
Aluminum	24200	0	24200	52272	109.7	1097	476.50	47.65
Antimony	0.91	0	0.91	1.9656	NA	NA	NA	NA
Beryllium	1.14	0	1.14	2.4624	NA	NA	NA	NA
Chromium	27.5	0	27.5	59.4	1	5	59.40	11.88
Lead	112	0	112	241.92	3.85	38.5	62.84	6.28
Manganese	1290	0	1290	2786.4	997	9970	2.79	0.28
Mercury	0.201	0	0.201	3.9798	0.45	0.9	8.84	4.42
Nickel	10.8	0	10.8	23.328	77.4	107	0.30	0.22
Silver	0.7725	0	0.7725	1.6686	NA	NA	NA	NA
Thallium	0.57	0	0.57	1.2312	0.42	NA	2.93	NA
Vanadium	41.7	0	41.7	90.072	11.4	114	7.90	0.79
Zinc	131	0	131	282.96	14.5	131	19.51	2.16
Acetone	0.11	0	0.11	0.2376	NA	NA	NA	NA

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>l</sub> = Hazard Quotient based on the LOAELFoodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

**TABLE 6-8 POST-IRA SCREENING LEVEL FOOD WEB MODEL FOR THE AMERICAN KESTREL**

Site EBS 79

Fort Pickett

**American Kestrel**

Body Weight 0.1030000 kg  
 Food Ingestion Rate 0.3100000 kg/kg-bw-day  
 Water Ingestion Rate 0.0000000 L/kg-bw-day  
 Soil Ingestion Rate 0.0047000 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>
Aluminum	24200	0	24200	7615.74	109.7	1097	69.42	6.94
Antimony	0.91	0	0.91	0.286377	NA	NA	NA	NA
Beryllium	1.14	0	1.14	0.358758	NA	NA	NA	NA
Chromium	27.5	0	27.5	8.65425	1	5	8.65	1.73
Lead	112	0	112	35.2464	3.85	38.5	9.15	0.92
Manganese	1290	0	1290	405.963	997	9970	0.41	0.04
Mercury	0.201	0	0.201	0.6240447	0.45	0.9	1.39	0.69
Nickel	10.8	0	10.8	3.39876	77.4	107	0.04	0.03
Silver	0.7725	0	0.7725	0.24310575	NA	NA	NA	NA
Thallium	0.57	0	0.57	0.179379	2.1	NA	0.09	NA
Vanadium	41.7	0	41.7	13.12299	11.4	114	1.15	0.12
Zinc	131	0	131	41.2257	14.5	131	2.84	0.31
Acetone	0.11	0	0.11	0.034617	NA	NA	NA	NA

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>i</sub> = Hazard Quotient based on the LOAEL

Foodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

**TABLE 6-9 POST-IRA SCREENING LEVEL FOOD WEB MODEL FOR THE SHORT-TAILED SHREW**

Site EBS 79

Fort Pickett

**Short-Tailed Shrew**

Body Weight 0.0125000 kg  
 Food Ingestion Rate 0.6200000 kg/kg-bw-day  
 Water Ingestion Rate 0.0000000 L/kg-bw-day  
 Soil Ingestion Rate 0.0620000 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>l</sub>
Aluminum	24200	0	24200	16504.4	2.295	22.952	7191.46	719.08
Antimony	0.91	0	0.91	0.62062	0.149	1.487	4.17	0.42
Beryllium	1.14	0	1.14	0.77748	1.45	14.5	0.54	0.05
Chromium	27.5	0	27.5	18.755	6015	NA	0.00	NA
Lead	112	0	112	76.384	17.58	174.83	4.34	0.44
Manganese	1290	0	1290	879.78	193	624	4.56	1.41
Mercury	0.201	0	0.201	1.258662	2.86	NA	0.44	NA
Nickel	10.8	0	10.8	7.3656	87.91	175.83	0.08	0.04
Silver	0.7725	0	0.7725	0.526845	NA	NA	NA	NA
Thallium	0.57	0	0.57	0.38874	0.016	0.164	24.30	2.37
Vanadium	41.7	0	41.7	28.4394	0.428	4.285	66.45	6.64
Zinc	131	0	131	89.342	351.7	703.3	0.25	0.13
Acetone	0.11	0	0.11	0.07502	22	109.9	0.00	0.00

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>l</sub> = Hazard Quotient based on the LOAEL

Foodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

**TABLE 6-10 POST-IRA STEP 2 FOOD WEB MODEL FOR THE MEADOW VOLE**

Site EBS 79

Fort Pickett

**Meadow Vole**

Body Weight                      0.0355000 kg  
 Food Ingestion Rate            0.3500000 kg/kg-bw-day  
 Water Ingestion Rate          0.0000000 L/kg-bw-day  
 Soil Ingestion Rate            0.0084000 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>
Aluminum	24200	0	24200	8673.28	1.754	17.538	4944.86	494.54
Antimony	0.91	0	0.91	0.326144	0.114	1.136	2.86	0.29
Beryllium	1.14	0	1.14	0.408576	1.11	11.1	0.37	0.04
Chromium	27.5	0	27.5	9.856	4600	NA	0.00	NA
Lead	112	0	112	40.1408	13.44	134.35	2.99	0.30
Manganese	1290	0	1290	462.336	148	477	3.12	0.97
Mercury	0.201	0	0.201	0.7051884	2.18	NA	0.32	NA
Nickel	10.8	0	10.8	3.87072	67.18	134.35	0.06	0.03
Silver	0.7725	0	0.7725	0.276864	NA	NA	NA	NA
Thallium	0.57	0	0.57	0.204288	0.013	0.126	15.71	1.62
Vanadium	41.7	0	41.7	14.94528	0.327	3.274	45.70	4.56
Zinc	131	0	131	46.9504	268.7	537.4	0.17	0.09
Acetone	0.11	0	0.11	0.039424	16.8	84	0.00	0.00

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>i</sub> = Hazard Quotient based on the LOAEL

Foodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

**TABLE 6-11 POST-IRA STEP 2 FOOD WEB MODEL FOR THE EASTERN COTTONTAIL**

Site EBS 79

Fort Pickett

**Eastern Cottontail**

Body Weight 0.8010000 kg  
 Food Ingestion Rate 0.0930000 kg/kg-bw-day  
 Water Ingestion Rate 0.0000000 L/kg-bw-day  
 Soil Ingestion Rate 0.0019000 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>
Aluminum	24200	0	24200	2296.58	0.767	7.674	2994.24	299.27
Antimony	0.91	0	0.91	0.086359	0.05	0.497	1.73	0.17
Beryllium	1.14	0	1.14	0.108186	0.49	4.9	0.22	0.02
Chromium	27.5	0	27.5	2.60975	2010	NA	0.00	NA
Lead	112	0	112	10.6288	5.88	58.79	1.81	0.18
Manganese	1290	0	1290	122.421	65	209	1.88	0.59
Mercury	0.201	0	0.201	0.1873119	0.96	NA	0.20	NA
Nickel	10.8	0	10.8	1.02492	29.4	58.79	0.03	0.02
Silver	0.7725	0	0.7725	0.07331025	NA	NA	NA	NA
Thallium	0.57	0	0.57	0.054093	0.005	0.055	10.82	0.98
Vanadium	41.7	0	41.7	3.95733	0.143	1.433	27.67	2.76
Zinc	131	0	131	12.4319	117.6	235.2	0.11	0.05
Acetone	0.11	0	0.11	0.010439	7.3	36.7	0.00	0.00

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>i</sub> = Hazard Quotient based on the LOAEL

Foodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

**TABLE 6-12 POST-IRA STEP 2 FOOD WEB MODEL FOR THE RED FOX**

Site EBS 79

Fort Pickett

**Red Fox**

Body Weight 2.9500000 kg  
 Food Ingestion Rate 0.1400000 kg/kg-bw-day  
 Water Ingestion Rate 0.0000000 L/kg-bw-day  
 Soil Ingestion Rate 0.0039200 kg/kg-bw-day

**Maximum Concentrations**

Ecological Contaminant of Concern	Soil Concentration (mg/kg)	Water Concentration (mg/L)	Food Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ <sub>n</sub>	LOAEL HQ <sub>i</sub>
Aluminum	24200	0	24200	3482.864	0.551	5.515	6320.99	631.53
Antimony	0.91	0	0.91	0.1309672	0.036	0.357	3.64	0.37
Beryllium	1.14	0	1.14	0.1640688	0.35	3.5	0.47	0.05
Chromium	27.5	0	27.5	3.9578	1445	NA	0.00	NA
Lead	112	0	112	16.11904	4.22	42.25	3.82	0.38
Manganese	1290	0	1290	185.6568	46	150	4.04	1.24
Mercury	0.201	0	0.201	0.28218792	0.69	NA	0.41	NA
Nickel	10.8	0	10.8	1.554336	21.12	42.25	0.07	0.04
Silver	0.7725	0	0.7725	0.1111782	NA	NA	NA	NA
Thallium	0.57	0	0.57	0.0820344	0.004	0.039	20.51	2.10
Vanadium	41.7	0	41.7	6.001464	0.103	1.03	58.27	5.83
Zinc	131	0	131	18.85352	84.5	169	0.22	0.11
Acetone	0.11	0	0.11	0.0158312	5.3	26.4	0.00	0.00

NA = Not Available, HQ<sub>n</sub> = Hazard Quotient based on the NOAEL, HQ<sub>i</sub> = Hazard Quotient based on the LOAELFoodweb Model Calculations:

Dose = Dose Food + Dose Soil

Dose Food = (Food Concentration x Food Ingestion Rate) (Note: Food concentration is assumed to be equal to soil concentration)

Dose Soil = Soil Concentration x Incidental Soil Ingestion Rate

## 7. FEASIBILITY STUDY

The results of the RI field investigation and risk assessments were used to evaluate the need for remedial action at EBS-79. This RI/FS was conducted in accordance with guidance developed for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). CERCLA was implemented through the National Contingency Plan (NCP) for Oil and Hazardous Substances, as amended in 1990.

The screening level human health risk assessment for soil utilized post-IRA results in comparison to conservative U.S. EPA Region III (EPA 2002a) screening values (RBCs). In this assessment, only metals are found at potentially elevated levels. Based on a comparison to background soil concentrations, arsenic, chromium and manganese are present at the site within their background ranges. Nickel and vanadium are present in surface soil within their background ranges. The Phase II HHRA previously determined that there were no adverse risks associated with these metals at the site. Based upon the results of this screening level assessment and the Phase II HHRA, there are no concerns for human health soil exposure at EBS-79, therefore no further action is recommended to address human health concerns associated with soil at EBS-79.

The IRA focused on reducing ecological risks at EBS-79 and resulted in the removal of soils that contained high concentrations of contaminants, which presented risks to ecological receptors. A simple Step 1 and Step 2 ecological risk screening was performed for this assessment utilizing the RI sample results that remain following the IRA. The only remaining identified risks were related to metals at the site. Based on a refined ERA performed pre-remediation (EA June 2002) these metals were not found to represent population-level risks once more realistic exposure parameters are considered. Consequently, no further action is recommended at EBS Site 79 to address ecological concerns.

The revised human health groundwater risk assessment identified the only potential risk associated with groundwater at the site; non-carcinogenic construction worker dermal contact with unfiltered inorganics. Total arsenic, cadmium, and thallium are the risk drivers. As stated in Section 5, the construction worker scenario is quite conservative with its approach to groundwater exposure. The scenario assumes that construction workers would contact groundwater for 8 hours per day, 150 days per year. While construction workers may contact groundwater at the site while digging at depth, such workers would not contact groundwater continuously on a daily basis at the site. The use of these conservative parameters biases the risk

high. There were no unacceptable risks for the residential scenario. Therefore, no further action is recommended to address human health risks associated with groundwater at EBS-79.

However, it is recommended that future construction workers wear the appropriate PPE such as rubber boots and gloves when and if they come in contact with groundwater at EBS-79.

Based on these findings, the existing constituent concentrations in soil and groundwater at the site do not pose a significant risk to human health and the environment. Therefore, no remedial alternatives were evaluated.

## **8. SUMMARY AND RECOMMENDATIONS**

### **8.1 SUMMARY**

EA prepared the draft Phase II RI (EA June 2001) and submitted the document for review. While the draft Phase II RI was in review, the BRAC environmental office contracted Weston to conduct an Interim Removal Action (IRA) to reduce potential ecological risks associated with soils at EBS-79. Prior to finalizing the Phase II RI report, the EPA requested that post-IRA data (produced by Weston, July 2002) be combined with the pre-IRA (presented in the draft RI, EA June 2001) and a revised screening level ecological and human health risk assessment be prepared. An addendum to the Phase II RI report (EA October 2002) was produced that presents the revised risk assessments including the results of the IRA.

On 6 May 2003, EA received comments to the Phase II RI/FS Addendum and this revised Phase II RI/FS Addendum incorporates the responses to these comments including a revised human health groundwater risk assessment.

#### **8.1.1 RI Field Investigation**

A Phase I and Phase II Remedial Investigation (RI) of EBS-79 was completed by EA during 2000 and 2001, respectively. The RI (EA June 2001) characterized the horizontal and vertical extent of COPCs in affected site media and assessed potential risks to human health and ecological receptors.

The Phase I RI field investigation included surface and subsurface soil sampling, surface water, sediment, and groundwater sampling activities. Analyses included U.S. Environmental Protection Agency (EPA) target compound list and target analyte list (TCL/TAL) organic and inorganic compounds, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyl (PCBs). Based on data gaps identified during the Phase I RI, the Phase II RI field investigation (EA June 2001) included additional surface and subsurface soil, surface water, sediment, and groundwater sampling activities. Analyses again included EPA TCL/TAL organic and inorganic compounds, PAHs, and PCBs.

#### **8.1.2 COPC Occurrence**

Analyte concentrations detected during the RI were compared to EPA residential Risk-Based

Concentrations (RBCs), Maximum Contaminant Levels (MCLs), and ecological screening criteria resulting in the identification of COPCs.

### **Surface Soil**

Within surface soil samples, the VOC and SVOC COPCs predominantly occurred within Building 493 and outside the building in SB-13 and SB-16. Pesticides were elevated across most of the building floor, which was composed of soil. Pesticide results of surface soil samples collected around Building 493 during the Phase II RI showed low levels of pesticides except at SS-105. SS-105 was located outside a building door where DDT was a COPC.

The RI results also assessed the limit of VOC COPCs that were identified in the Phase I RI surface soil sample SB-13, which was likely impacted by contents of a drums that had leaked onto the ground surface. Samples collected from SB-16, SB-17, and SS-116 contained a grayish white, grease-like substance. The extent of stained soil appeared to occur within 10 ft laterally and up to 8 ft deep at the location of SB-16 and SB-17.

The highest concentration of pesticides at EBS-79 were reported in the sample collected from SS-122 and is most likely a unique, isolated occurrence considering the Phase I and II pesticide results for the rest of the site.

In Phase I, the PCB Aroclor-1260 was a COPC at SB-18 adjacent to the utility pole. The Phase II surface soil sample (SS-115), within a grassy drainage ditch downslope of the pole, did not contain PCB concentrations above detectable levels. The PCB occurrence appears to be restricted to soil within 10 feet of the pole.

Metal COPCs for human and/or ecological receptors were identified in the surface soil samples collected during the RI. These COPCs were spread across the site with no clear 'hot spot' or source area and may represent background levels.

### **Subsurface Soil**

One PAH and six metals were identified as COPCs in Phase I and seven metals were identified as COPCs in the Phase II. The Phase II results were consistent with the Phase I results, which appeared to show background metal concentrations and not a site contaminant source.

## **Sediment**

Four metals (aluminum, arsenic, manganese, and thallium) were identified as COPCs for human receptors and seven metals were ecological COPCs in Phase I. In Phase II, four TAL metals (aluminum, arsenic, iron, and manganese) were considered COPCs for human receptors and three metals were considered ecological COPCs. Phase I and II metal concentrations were similar.

The highest concentration of lead was reported in the soil sample collected from the upslope inlet. This lead may be from leaded fuel previously stored at the former UST site. The organic COPCs (excluding acetone as possible sampling artifact) predominantly occurred in the upstream location SS-19 and only during Phase I. The VOC COPCs identified in Phase I were generally petroleum constituents and may again be originating from petroleum plume seeps upgradient of the site.

Pesticide COPCs were significant in the upslope and downslope samples and likely indicative of more widespread historical applications of pesticides.

## **Surface Water**

Compared to sediment results, similar occurrences of COPCs occur within the surface water in the drainage ditch. VOC, SVOC, and PAH COPCs were identified in Phase I and predominantly occurred in the upgradient sample with TPH levels decreasing markedly downslope. The surface water sample collected in Phase II did not contain organic COPCs. The non-detection of BTEX in the Phase II sample is likely due to the condition of recent surface water runoff and a lower water table at this time.

The surface water in the rest of the ditch in Phase II also did not exhibit evidence of dissolved petroleum contamination such as odors, sheen, or discoloration. Sample SW-4 in Phase II sampling was an indicator of local runoff quality, including that derived from EBS-79, which did not contain dissolved petroleum compounds. In Phase I, surface sample results appeared to be impacted by groundwater seepage near the upper end of the ditch and culvert (EA 2000a).

Metal COPCs, arsenic, aluminum, antimony, and lead, were higher in concentration in the downgradient sample and, in general, similar in Phase I and II. The lead, as explained above,

may be associated with the petroleum plume. Pesticides in ditch samples appeared to be related to more widespread historical applications of pesticides.

## **Groundwater**

BTEX and PAHs were at higher concentrations in MW-1 (Phase I) and MW-2. These wells are hydraulically down gradient from the former UST site, BCT-22, and likely intersect the petroleum plume that originates from the former UST site. The BTEX concentrations in MW-1 in Phase I were similar to the nearby surface water concentrations and, thus, this well likely was representative of the perched groundwater in this area at this time. Trace levels of ethylbenzene and xylenes in MW-4 may reflect the margin of the dissolved petroleum plume.

### **8.1.3 RI Human Baseline Risk Assessment**

Non-carcinogenic risks exceeded the U.S. EPA threshold of 1.0 (target-organ specific) for potential future resident adults and children and for potential future construction workers. Risks for resident adults and children and construction workers were driven primarily by the ingestion of groundwater pathway; benzene was the primary risk driver. Breakdown by target organ for all COPCs indicated that all of these potential risks were not of concern with the exception of the groundwater pathway. All other media pathways were below the acceptable non-carcinogen target organ threshold for all receptors.

Cancer risks for the site exceeded the U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  only in groundwater with benzene, again, as the primary risk driver. Benzene concentrations in the two groundwater samples collected from monitoring well MW-2 were two magnitudes higher than the next highest concentration.

### **8.1.4 Ecological Risk Assessment**

The results of the Step 1 and 2 ERA indicated that there were several COPCs identified with the potential to cause unacceptable risks to ecological receptors at the site, therefore, a more refined Step 3 ERA was performed. The Step 3 ERA focused on those media/COPC/ROC combinations for which potential risk was identified as a result of the Step 2 ERA and for which appropriate toxicity values were available in the toxicological literature.

## Surface Soil

In the Step 3 ERA, the identified ROCs for soils were terrestrial plants, soil invertebrates, mammals (meadow vole, short-tailed shrew, Eastern cottontail, and red fox), and birds (American robin and American kestrel).

The risks to terrestrial plants from exposure to COPCs in surface soil at EBS-79 were acceptable. Acceptable risk was also found for the Eastern cottontail, red fox, robins, and American kestrel.

Risks to soil invertebrates were found for chromium based on this assessment, ( $EQ_{\text{mean}}$  of 49). NOAEL risks to the robin from exposure to aluminum, DDD, DDE, and DDT were equal to or greater than 10 and LOAEL risks were all greater than 1.0. Consequently robins appeared to be at risk from these contaminants. NOAEL HQs for the meadow vole were below 1.0 for all chemicals with the exception of aluminum (43) and LOAEL risks exceeded 1.0. This indicated that risks for the meadow vole from exposure to aluminum were moderately high. Aluminum concentrations also potentially posed a risk to the short-tailed as the NOAEL HQ for aluminum exceeded 100 (303), and the LOAEL HQ exceeded 1.0.

## Surface Water

Eleven ecological COPCs were identified in surface water. Acceptable risk for aquatic receptors was found for all appropriate COPCs except for aluminum. The  $EQ_{\text{mean}}$  for aluminum was elevated (2.4), however the toxicity data used to derive this value was based on the protection of fish. Since the drainage ditch contains surface water intermittently, the ditch cannot support a population of fish, therefore this toxicity value does not apply.

## Sediment

Twenty-seven ecological COPCs were identified in the drainage ditch sediment. Ecological receptors identified that may be exposed to these COPCs in sediment included benthic invertebrates, mallard ducks, belted kingfishers, and raccoons.

Acceptable risks were found for benthic invertebrates, the mallard duck, and raccoons for all COPCs. The only COPCs with NOAEL HQ greater than 1.0 for the belted kingfisher were total PAH (58) and DDD (2.1). These risks are being driven by consumption of fish by the belted kingfisher. Since fish are not expected in the ditch at EBS-79, risks to the belted kingfisher are acceptable.

### **8.1.5 Interim Removal Action**

Weston was contracted by the BRAC environmental office to conduct an Interim Removal Action (IRA) at EBS-79 addressing site soils in locations that posed a potential risk to ecological receptors. The IRA conducted by Weston occurred in November 2001 and included the excavation of 940 tons of soil from six areas of concern (AOC) corresponding to the areas recommended in the Draft Phase II RI (EA, June 2001). These AOCs were identified as: Inside Building 493, Outside Building 493, the Utility Pole, SB-13 and SB-14, SB-16 and SB-17, and SS-122.

Following each phase of excavation, post excavation soil confirmatory samples were collected and submitted for laboratory analysis for VOCs, SVOCs, pesticides, PCBs, TAL metals, and/or cyanide. Excavations continued until the confirmatory samples indicated concentrations were below the IRA remedial goals, with the exception of metals, at which time the excavations were backfilled to grade with clean fill. The excavation within Building 493 was then finished with a concrete slab. Exterior excavations were raked smooth, seeded with grass, and topped with a coat of straw.

### **8.1.6 Post-IRA Human Health Risk Assessment**

Data collected during the Phase I RI, Phase II RI (EA 2001) and the IRA (Weston 2002) were included in the post-IRA human health risk assessment. Data associated with Phase I RI and Phase II RI soil samples from areas that were removed by Weston during the IRA was not included in the post remediation assessment because they do not reflect current site conditions. The IRA was limited to EBS-79 soil therefore the post remediation evaluation includes a re-evaluation of EBS-79 surface and subsurface soil.

Based on a comparison to conservative U.S. EPA Region III screening values, only metals are found at potentially elevated levels in soil. However, the Phase II RI HHRA (EA June 2001) selected the same inorganic COPCs as this screening assessment and evaluated their potential risk under conservative exposure assumptions. The Phase II HHRA then determined that there were no adverse risks associated with these metals at the site; therefore, there are no concerns for human health soil exposure at EBS-79.

The Phase II RI groundwater results indicated site-related risks above U.S. EPA's risk range of  $10^{-6}$  to  $10^{-4}$  for carcinogens and U.S. EPA's target hazard index (HI) of 1.0 for non-carcinogens;

benzene was the primary risk driver. Benzene risks also exceeded the VDEQ goal of  $10^{-6}$  for an individual COPC. The Fort Pickett BRAC Cleanup Team determined that the elevated levels of BTEX from MW-2 and MW-1 could be attributed to BCT-22 and that MW-1 and MW-2 data will be included in a risk assessment being performed at the Former Fuel Station (BCT-22). Therefore, this assessment presents a recalculation of risk for groundwater excluding data from the two wells MW-1 and MW-2 to more accurately reflect potential risk associated with onsite sources at EBS-79.

The only potential risk to groundwater at the site is non-carcinogenic construction worker dermal contact with unfiltered inorganics. The construction worker scenario is quite conservative with its approach to groundwater exposure, assuming that construction workers would contact groundwater for 8 hours per day, 150 days per year. While construction workers may contact groundwater at the site while digging at depth such workers would not contact groundwater continuously on a daily basis at the site as conservatively assumed in the risk assessment. The use of these conservative parameters biases the risk high. As a precaution, should construction workers contact groundwater at the site, it is recommended that they wear waterproof boots and gloves.

### **8.1.7 Post-IRA Screening Level Ecological Risk Assessment**

Ecological COPCs present in the soils at EBS-79 were addressed in the IRA. The IRA performed by Weston resulted in the removal of RI soil sample locations that contained concentrations of contaminants that presented risks to ecological receptors. All post-IRA soil samples were taken at the base of IRA excavations and represent soils now located beneath the surface soil 'root' zone (0-1-ft bgs) where ecological receptors would be exposed. Therefore, these post-IRA samples were excluded from this post-IRA ecological risk screening. As such, this ecological risk screening includes RI surface soil data that remains after the IRA. Eighteen surface soil samples collected during the RI (EA 2001) were included in this ecological risk screening. Two samples (SS118 and SS119-0.5) not addressed in the IRA remain however they were collected up-gradient of EBS-79. Consequently, these two samples were not included in this revised risk screening.

The screening-level (Step 1 and 2) ERA concluded that the only remaining identified risks were related to metals at the site. The refined (Step 3) ERA performed on all pre-IRA data in the Phase II RI (Phase II RI Section 8-11, EA June 2001) concluded that pre-IRA metal concentrations do not represent population-level risk. It is reasonable to assume that if a Step 3

ERA was to be run on the post-IRA metal concentrations, then the same results would be achieved. Therefore, there does not appear to be any population level risks to ecological receptors in soils at EBS-79.

As noted earlier, the IRA only addressed soil; consequently any risks identified earlier from exposure to sediment or surface water were not affected by these removal actions. Ecological risks associated with surface water and sediment in the drainage ditch at EBS-79 still exists. The Phase II ERA identified aluminum as a COPC in surface water and total PAHs and DDD in sediment. However, risks from these compounds were associated with a hypothetical population of fish. Since the drainage ditch at EBS-79 contains water intermittently, it can not support a population of fish therefore, the risks to these fish and the belted kingfisher who potentially would eat these fish are negligible.

### **8.1.8 Feasibility Study**

The results of the RI, IRA, and the revised risk assessments were used to evaluate the need for remedial action at EBS-79. The IRA focused on reducing ecological risks at EBS-79 and resulted in the removal of soils that contained high concentrations of contaminants, which presented risks to ecological receptors. Both the revised human health and ecological assessments concluded that the existing constituent concentrations in soil and groundwater at EBS-79 do not pose a significant risk to human health (with the exception for future construction workers) and the environment. Therefore, no remedial alternatives were evaluated for EBS-79.

## **8.2 RECOMMENDATIONS**

The IRA removed areas of ecological risks associated with site soils and risks associated with human health are confined to future construction worker dermal exposure to site groundwater. Therefore EA recommends No Further Action to address environmental concerns at EBS-79. However, EA does recommend that any future construction worker wear appropriate PPE such as waterproof boots and gloves if and when they come in contact with groundwater at EBS-79.

Although unacceptable risk does still exist for future construction workers that may come in contact with site groundwater, it is highly unlikely that groundwater would be encountered during future construction activities. A review of the Phase II RI well gauging data has shown that average depth to groundwater across the site (represented in wells MW-3, MW-4, and MW-

5) ranged from approximately 12-ft to 16-ft below ground surface. Future construction activities will likely be limited to shallower depths.

In addition, risk assessment calculation used the standard exposure scenario for future construction workers; exposure to groundwater for 8 hours a day / 150 day per year. If future construction does extend to the depths of groundwater, it is even less likely that future construction workers will be in contact with groundwater for this extended period of time.

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## **APPENDIX A**

### **EPA AND VADEQ PHASE II RI/FS ADDENDUM COMMENTS AND RESPONSE TO COMMENTS**

23 July 2003  
EA 6114404/6154703

Francis Gilmore  
BRAC Environmental Coordinator  
2193 Military Road  
Pickett Park  
Blackstone, VA 23824

**RE: Responses to EPA and VDEQ Comments to the Phase II RI / FS Report Addendum, EBS-79 (Former Maintenance Compound) Fort Pickett, Virginia.**

Dear Mr. Gilmore:

On 6 May 2003, EA Engineering, Science, and Technology, Inc. (EA) received electronically U.S. Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (VDEQ) comments to the Phase II RI/FS Report Addendum (submitted in October 2002) from the Fort Pickett BRAC Environmental Office. Included below are EA responses to these comments.

**Comments from EPA:**

*General Comments -*

**Comment 1)** Executive Summary, Page ES-2. Please revise the last sentence of the last paragraph to indicate that No “Further” Action is recommended at EBS-79, based on the results of the Removal Action performed at the Site.

**Response:** The last sentence of the Executive Summary will be revised to indicate that “No Further Action” is recommended at EBS-79.

**Comment 2)** The Interim Removal Action (IRA) removed polynuclear aromatic hydrocarbon (PAH) contaminated soils from EBS-79. The Addendum then eliminated these PAHs as constituents of potential concern (COPCs) when the maximum detected concentration was less than the appropriate screening level value. This process did not account for all of the PAHs whose screening value was less than the sample detection limit (Benz[a]anthracene and indeno[1,2,3-cd]pyrene are examples). Even though all these PAH constituents cannot be evaluated quantitatively, they should still be retained as COPCs in soils since they are known COPCs in groundwater, and may be contributing to the groundwater contamination at EBS-79.

**Response:** Section 5.5.2 - Analyte Reporting Limits Above Screening Criteria and Table 5-15 in

the Phase II Remedial Investigation Report (EA, June 2001) contain information and a discussion regarding sample results that reported detection limits above the screening value.

**Comment 3)** The alleged petroleum related contamination (groundwater and soils) west of EBS-79 at the Base Closure Team parcel 22 (BCT-22) former underground storage tank (UST) site is reportedly being addressed via Virginia Volunteer Remediation Program procedures. However, the data provided in this Addendum does not clearly prove that all the contaminants in the groundwater under BCT-22 are a result of past petroleum releases. As an example, the benzene and PAHs detected in MW-2 (which may or may not be a result of petroleum spillage/vehicle usage at the UST) are noted by the Addendum to be related to the former USTs. However, the groundwater flow information provided in the Addendum indicates that well MW-2 is upgradient or at least crossgradient to the former USTs. This issue should be resolved by the Base Realignment and Closure (BRAC) Team, prior to accepting the Addendum recommendations as adequate. In addition, the PAH, pesticide, and metals contamination in the groundwater are not addressed by the BCT-22 field sampling plan, since these contaminants are not related (primarily) to operations at former petroleum transportation and storage facilities. The BRAC Team should clearly determine that EBS-79 soils are not contributing to groundwater contamination, before approval of no further remedial action for groundwater at EBS-79 is granted.

**Response:** Figure 1-1 shows the location of both the abandoned MW-2 and the existing MW-2. However, the figure legend only shows the symbol for the abandoned MW-2 (which is cross-gradient from the former USTs). The existing MW-2 (located on the east side of Bakers Row) is down-gradient of the former USTs located at BCT-22. The Figure 1-1 legend will be revised to show the symbol for the existing well MW-2. The location of the existing well MW-1 will also be added to this figure and a clear boundary line between the two sites (EBS-79 and BCT-22) will also be added for clarity.

A second figure will also be added (Figure 1-2) that depicts the groundwater flow pattern across the sites. This figure will utilize groundwater flow data provided to EA by the BRAC Office.

Additionally, a revised human health risk assessment section discussing groundwater will be added to the EBS-79 Phase II RI/FS Report Addendum. The Fort Pickett BRAC Cleanup Team determined that the elevated levels of BTEX from MW-2 and MW-1 could be attributed to BCT-22 and that MW-1 and MW-2 data (including other trace contaminants pesticides, metals, PAH's) will be included in a risk assessment being performed at the Former Fuel Station (BCT-22). Therefore, the revised human health risk assessment section to be added to the Addendum will not utilize groundwater quality data from existing wells MW-1 and MW-2. The revised human health risk assessment will utilize all remaining groundwater data at EBS-79. Metal concentrations in groundwater will also be compared to the Fort Pickett background groundwater data (provided by the BRAC Office).

**Comment 4)** Section 3 of the Addendum discusses the Interim Removal Action (IRA) conducted by Weston Solutions, Inc., (Weston) at six areas of concern within EBS-79. At SB-13, SB-14, SB-16, and SB-17, the text notes that the excavations were halted, even though the remedial goals were not met for numerous metals. The text further states that the remaining metals concentrations, while exceeding the specific contaminant remedial goals, were less than the respective EPA Region 3 risk based screening (RBC) values. Please clarify if the remaining non-carcinogen metals concentrations were less than the published RBC values, or if these non-carcinogen metals concentrations were less than the published RBC value adjusted to hazard index of 0.1 for non-carcinogens as directed by EPA for Region 3 CERCLA sites.

**Response:** Section 3 of the Addendum provides a summary of the Final Interim Removal Action (IRA) Report (Weston, July 2002). The statements made in the Addendum regarding the remaining metal concentrations in Areas SB-13/14 and SB-16/17 were taken directly from Sections 5.2.4 (Area SB-13/14) and 5.2.5 (Area SB-16/17) of the approved Final IRA Report (Weston, July 2002).

The approved IRA used site-specific remediation goals (RGs) for comparison, which were based on background. The IRA was performed “to remediate previous impacts from pesticide and petroleum releases” (IRA pg 5-11). The IRA also states that “inorganics that exceeded the Fort Pickett Background concentrations included aluminum, chromium, copper, iron, magnesium, nickel, potassium, vanadium, and zinc. For the most part the exceedences were less than twice the remedial goal, and all were within an order of magnitude. Further, with the exception of iron, the concentrations detected are within EPA Region III Risk Based Concentrations for residential soils” (IRA pg 5-11). A hazard index of 1.0 was apparently used for comparison.

However, as indicated in the text of the addendum and in Table 3-8 of the addendum, site concentrations were compared to residential soil as part of the addendum effort and were based on a hazard index of 0.1 for non-carcinogens (10% of the published value in the tables). There were several inorganic exceedences of residential soil RBCs (aluminum, arsenic, chromium, manganese, nickel, thallium, and vanadium).

This will be clarified in Chapter 3 of the addendum. Further, a discussion of background soil will be added to the human health assessment of soil in the addendum.

**Comment 5)** The Addendum notes in Section 3 that “VOC [volatile organic compound], SVOC [semi-volatile organic compound], PAH [polynuclear aromatic hydrocarbon], PCB [polychlorinated biphenyl], and pesticide COPCs [constituents of potential concern] identified in the RI (EA June 2001) are no longer identified as COPCs,” since most of the specific locations with COPCs detections above (or below, in some cases) non detect and exceeding RBCs were removed during the IRA. However, Table 4-2.1 shows that several of the PAHs listed have range of detection limits above the respective BTAG values, and two of the PAHs listed were above the RBCs. Even though these constituents cannot always be evaluated quantitatively, they should be retained for the public record since they cannot be reliably screened from further

consideration and since they are known COPCs in the site groundwater. Please revise the Addendum to retain those PAHs which have elevated detection limits relative to human health risk-based and ecological screening levels, and which also have been detected in the site groundwater

**Response:** Section 5.5.2 - Analyte Reporting Limits Above Screening Criteria and Table 5-15 in the Phase II Remedial Investigation Report (EA, June 2001) contain information and a discussion regarding sample results that reported detection limits above the screening value.

**Comment 6)** The Addendum states that the remaining carcinogenic risk in soils falls between the EPA guidelines of  $10^{-6}$  and  $10^{-4}$ , and are therefore acceptable. However, the associated risks and hazards for these COPCs are not calculated, and the actual levels of risk are unknown. Even if the calculated risks are in the  $10^{-5}$  range, they may not be acceptable based on the degree of conservatism and inherent uncertainty in risk estimates. In order to make a determination whether the carcinogenic risks at EBS-79 are acceptable, the risk assessment methodology (e.g. intake estimates, etc.) should be closely examined. Since this information is not provided within the Addendum, EPA cannot make a determination whether the carcinogenic risks are acceptable. Please revise the Addendum to present the recalculated risks remaining in the site soils, or include the Remedial Investigation Human Health Risk Assessment as an attachment to this Addendum.

**Response:** The Phase II report discusses at length the methodologies and assumptions of the risk calculations and presents the COPC-specific results. A statement reflecting the fact that this information is included in the Phase II report will be added to this discussion in the addendum for clarification.

**Comment 7)** The purpose of this Addendum was to reevaluate the human health and ecological risks remaining in soils after the IRA. However, the Addendum concludes that no further remedial action is recommended at EBS-79. Please revise the Addendum to state that no further remedial action in soils is recommended at EBS-79

**Response:** As stated earlier, a revised human health risk assessment section discussing groundwater will be added to the EBS-79 Phase II RI/FS Report Addendum and will not utilize groundwater quality data from existing wells MW-1 and MW-2. The revised human health risk assessment will utilize all remaining groundwater data at EBS-79. Metal concentrations in groundwater will also be compared to the Fort Pickett background groundwater data (provided by the BRAC Office).

**Comment 8)** Numerous acronyms and abbreviations are missing from the List of Acronyms and Abbreviations. Examples include Base Realignment and Closure (BRAC), Comprehensive Environmental Response, Compensation Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA), polychlorinated biphenyl (PCB), and volatile organic constituents (VOC). Please revise the List of Acronyms and Abbreviations to include all acronyms and

abbreviations used in the Addendum

**Response:** The List of Acronyms and Abbreviations will be revised to include all acronyms and abbreviations stated in the report addendum.

*Specific Comments-*

**Comment 1)** Section 1.1, Introduction, page 1-3: This section states that “If the results from the groundwater samples collected from MW-2 are removed from human health risk consideration, then there are no COPCs above U.S. EPA’s risk targets of  $10^{-4}$  to  $10^{-6}$  for carcinogens and Hazard Index (HI) of 1.0 for non-carcinogens.” This statement appears to apply to individual COPCs, not to the cumulative risks associated with all contaminants at the Site. Please revise the text to discuss the cumulative risks remaining at the Site (carcinogen and non-carcinogen) when the data from MW-2 is excluded from consideration. In addition, please clarify if other monitoring wells at or near EBS-79, which were sampled during previous studies, had detections for benzene, and if so, note these detections and locations in the text of the Addendum.

**Response:** See General Comment #3 and clarification discussion.

**Comment 2)** Figure 1-1, EBS-79 Study Area and BRAC Property: The legend for this Figure depicts a “Former Monitoring Well Location” symbol. Monitoring wells MW-1 to MW-7 are shown on this figure. Please clarify if these monitoring wells have been abandoned, or if they are still serviceable. In addition, the symbol for RI MW-2 is not listed in the legend for Figure 1-1. Please revise the legend for Figure 1-1 to include the symbol for RI MW-2.

**Response:** The symbols for seven well locations on Figure 1-1 match the symbol in the legend corresponding to “Former Monitoring Well Locations”, therefore these former wells were abandoned and not serviceable. Their locations are represented on the figure for completeness. Figure 1-1 will be revised (as stated above) to include the existing well symbol (MW-2) in the legend as well as the location of the existing well MW-1. The text will also be revised to state that the former wells on Figure 1-1 were abandoned.

**Comment 3)** Section 2.2, Hydrogeology, page 2-1: The second paragraph in this section states that “the RI determined the groundwater gradient at the site to be 0.04 and sloping towards the southwest.” The third paragraph states that “Groundwater monitoring wells MW-1 and MW-2, although they are hydraulically cross-gradient from EBS-79, are downgradient from the former UST [underground storage tank] site located west of Bakers Row.” These two statements appear to conflict with Figure 1-1, which shows MW-1 located north of the former USTs and MW-2 located north northeast of the former USTs. Please clarify which is correct (text or Figure 1-1) and revise the Addendum accordingly. In addition, if this inconsistency cannot be resolved, please revise the statement “Dissolved compounds and petroleum sheen observed in these two wells during the RI are likely the results of impacts migrating from the former UST site,” found at the end of paragraph 3 to read “Dissolved compounds and petroleum sheen observed in these

two wells during the RI are potentially the results of impacts migrating from the former UST site, but may also result from westward migration of contaminants found at EBS-79”

**Response:** The statement in Section 2.2 of the Addendum regarding the hydraulic location of wells MW-1 and MW-2 was referring to the existing wells MW-1 and MW-2 located at EBS-79 not the former wells MW-1 and MW-2 located at BCT-22. Figure 1-1 will be revised to show the boundaries of the two sites (EBS-79 and BCT-22) and to more clearly distinguish between existing and abandoned well locations.

### **Comments from EPA’s Toxicologist:**

**Comment 1)** Please provide a map that has sampling locations (and corresponding COPC concentrations, especially metals) that exceed RBC and ecological benchmarks. Please note EPA General Comment No. 5, above.

**Response:** Please refer to Figure 3-2 and Table 3-8 and 3-9 in the Addendum. EPA General Comment No. 5 has been noted.

**Comment 2)** When the removal action was first proposed, it was anticipated that the COPC concentrations remaining in place would fall at, near, or below screening criteria, especially the RBC criteria. This was the basis for EPA recommending that a screening level risk assessment be performed following soil removal. Table 4-2.1, however, indicates that a number of the metals (As, Cr, Mn, Ni, Tl, and V) exceeded the RBCs, one (arsenic) by a factor of greater than ten. Please indicate if this was expected, based on background surveys, and if not, describe how these elevated levels will be addressed

**Response:** Background soil data will be added to Table 4-2.1 and compared to the remaining metal concentrations. This comparison will be discussed in the revised human health section.

**Comment 3)** The issue of groundwater still needs to be addressed and discussed for Site EBS-79.

**Response:** See response to general comment #3.

**Comment 4)** EPA’s Toxicologist will address the MW-2 proposed exclusion of data from human health risk consideration, noted in Section 1.1, Introduction, page 1-3, upon further consultation with the EPA Hydrogeologist. An additional comment related to this proposal may follow.

**Response:** Comment noted.

**VDEQ Comments:**

**Comment 1)** Spell Addendum correctly on front cover.

**Response:** The misspelling on the cover will be corrected.

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**APPENDIX B**

**HUMAN HEALTH GROUNDWATER RISK  
ASSESSMENT TABLES**

**TABLE B-1 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- AVERAGE EXPOSURE SCENARIO (AE)**

*Site Number:*

**EBS-79, GW Addendum**

**\* AE- Ingestion of Groundwater**

Ingestion Rate = CR	1.4 L/day
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	7 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	2,555 days
Averaging Time (Cancer) = AT	25,550 days

Intake (mg/kg-day) = Conc \* CR \* EF \* ED / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

<b>Chemical of Concern</b>	<b>EPC</b> (mg/L)	<b>NCADI</b> (mg/kg-day)	<b>CADI</b> (mg/kg-day)	<b>Chronic RfD</b> (mg/kg-day)	<b>SF</b> per (mg/kg-day)	<b>HQ</b>	<b>Risk</b>
<b>Inorganics</b>							
MANGANESE	6.88E-01	1.32E-02	1.32E-03	2.00E-02	NA	6.59E-01	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	1.00E-05	1.92E-07	1.92E-08	5.00E-04	4.50E+00	3.84E-04	8.64E-08
HEPTACHLOR EPOXIDE	4.05E-06	7.77E-08	7.77E-09	1.30E-05	9.10E+00	5.97E-03	7.07E-08
<b>Volatiles</b>							
BENZENE	3.21E-04	6.16E-06	6.16E-07	3.00E-03	5.50E-02	2.05E-03	3.39E-08
<b>Cumulative Risk</b>						<b>6.68E-01</b>	<b>1.91E-07</b>

**TABLE B-2 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)**

*Site Number:*

**EBS-79, GW Addendum**

**\* RME- Ingestion of Groundwater**

Ingestion Rate = CR	2 L/day
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	30 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	10,950 days
Averaging Time (Cancer) = AT	25,550 days

Intake (mg/kg-day) = Conc \* CR \* EF \* ED / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
<b>Inorganics</b>							
MANGANESE	1.35E+00	3.70E-02	1.59E-02	2.00E-02	NA	1.85E+00	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	3.00E-05	8.22E-07	3.52E-07	5.00E-04	4.50E+00	1.64E-03	1.59E-06
HEPTACHLOR EPOXIDE	9.24E-06	2.53E-07	1.08E-07	1.30E-05	9.10E+00	1.95E-02	9.87E-07
<b>Volatiles</b>							
BENZENE	6.65E-04	1.82E-05	7.81E-06	3.00E-03	5.50E-02	6.07E-03	4.29E-07
<b>Cumulative Risk</b>						<b>1.88E+00</b>	<b>3.00E-06</b>

**TABLE B-3 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- AVERAGE EXPOSURE SCENARIO (AE)**

**Site Number:**

**EBS-79, GW Addendum**

**\* AE- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA	18,000 cm <sup>2</sup>
Event Time = ET	0.25 hr/day
Permeability Constant = PC	chemical-specific cm/hr
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	7 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	2,555 days
Averaging Time (Cancer) = AT	25,550 days
Conversion Factor = CF	0.001 L/cm <sup>3</sup>

Intake (mg/kg-day) = Conc \* SA \* PC \* ET \* EF \* ED \* CF / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

<b>Chemical of Concern</b>	<b>EPC</b> (mg/L)	<b>NCADI</b> (mg/kg-day)	<b>CADI</b> (mg/kg-day)	<b>Chronic RfD</b> (mg/kg-day)	<b>SF</b> per (mg/kg-day)	<b>HQ</b>	<b>Risk</b>
<b>Inorganics</b>							
MANGANESE	6.88E-01	4.24E-05	4.24E-06	0.00E+00	NA	NA	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	1.00E-05	5.74E-09	5.74E-10	2.50E-04	9.00E+00	2.30E-05	5.17E-09
HEPTACHLOR EPOXIDE	4.05E-06	2.32E-09	2.32E-10	6.50E-06	1.82E+01	3.57E-04	4.23E-09
<b>Volatiles</b>							
BENZENE	3.21E-04	2.97E-07	2.97E-08	1.50E-03	1.10E-01	1.98E-04	3.26E-09
<b>Cumulative Risk</b>						<b>5.78E-04</b>	<b>1.27E-08</b>

**TABLE B-4 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)**

**Site Number:**

## EBS-79, GW Addendum

## \* RME- Dermal Contact with Groundwater

Surface Area Available for Contact = SA	18,000 cm <sup>2</sup>
Event Time = ET	0.58 hr/day
Permeability Constant = PC	chemical-specific cm/hr
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	30 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	10,950 days
Averaging Time (Cancer) = AT	25,550 days
Conversion Factor = CF	0.001 L/cm <sup>3</sup>

$$\text{Intake (mg/kg-day)} = \text{Conc} * \text{SA} * \text{PC} * \text{ET} * \text{EF} * \text{ED} * \text{CF} / (\text{BW} * \text{AT})$$

NCADI = Daily intake - Noncarcinogens

**CADI = Daily Intake - Carcinogens**

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

$$\text{Risk} = \text{Cancer Risk} = \text{CADI} * \text{SF}$$

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
MANGANESE	1.35E+00	1.93E-04	8.27E-05	0.00E+00	NA	NA	--
Pesticides/PCBs							
HEPTACHLOR	3.00E-05	3.99E-08	1.71E-08	2.50E-04	9.00E+00	1.60E-04	1.54E-07
HEPTACHLOR EPOXIDE	9.24E-06	1.23E-08	5.27E-09	6.50E-06	1.82E+01	1.89E-03	9.59E-08
Volatiles							
BENZENE	6.65E-04	1.43E-06	6.11E-07	1.50E-03	1.10E-01	9.51E-04	6.73E-08
Cumulative Risk						3.00E-03	3.17E-07

**TABLE B-5 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF VOLATILES FROM GROUNDWATER -- AVERAGE EXPOSURE SCENARIO (AE)**

*Site Number:*

**EBS-79, GW Addendum**

**\* AE- Inhalation of Volatiles from Groundwater**

Showers per Day = SD 1  
 Exposure Frequency = EF 350 day/yr  
 Exposure Duration = ED 7 yr  
 Averaging Time (Noncancer) = AT 2,555 days  
 Averaging Time (Cancer) = AT 25,550 days

Intake (mg/kg-day) = Conc \* EF \* ED \* SD / AT **NA- no volatile chemicals of concern in groundwater**

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

Chemical of Concern	EPC (mg/kg/shower)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
<b>Volatiles</b>							
BENZENE	1.52E-05	1.46E-05	1.40E-06	1.71E-03	2.90E-02	8.51E-03	4.05E-08
<b>Cumulative Risk</b>						<b>8.51E-03</b>	<b>4.05E-08</b>

**TABLE B-6 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF VOLATILES FROM GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)**

*Site Number:*

**EBS-79, GW Addendum**

**\* RME- Inhalation of Volatiles from Groundwater**

Showers per Day = SD 1  
 Exposure Frequency = EF 350 day/yr  
 Exposure Duration = ED 30 yr  
 Averaging Time (Non-Cancer) = AT 2,555 days  
 Averaging Time (Cancer) = AT 25,550 days

Intake (mg/kg-day) = Conc \* EF \* ED \* SD / AT

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

<b>Chemical of Concern</b>	<b>EPC</b> (mg/kg/shower)	<b>NCADI</b> (mg/kg-day)	<b>CADI</b> (mg/kg-day)	<b>Chronic RfD</b> (mg/kg-day)	<b>SF</b> per (mg/kg-day)	<b>HQ</b>	<b>Risk</b>
<b>Volatiles</b>							
BENZENE	3.14E-05	1.29E-04	1.29E-05	1.71E-03	2.90E-02	7.56E-02	3.75E-07
<b>Cumulative Risk</b>						<b>7.56E-02</b>	<b>3.75E-07</b>

**TABLE B-7 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- AVERAGE EXPOSURE SCENARIO (AE)**

**Site Number:**

**EBS-79, GW Addendum**

**\* AE- Ingestion of Groundwater**

Ingestion Rate = CR	0.6 L/day
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	2 yr
Body Weight = BW	15 kg
Averaging Time (Noncancer) = AT	730 days
Averaging Time (Cancer) = AT	25,550 days

Intake (mg/kg-day) = Conc \* CR \* ET \* EF \* ED / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

<b>Chemical of Concern</b>	<b>EPC</b> (mg/L)	<b>NCADI</b> (mg/kg-day)	<b>CADI</b> (mg/kg-day)	<b>Chronic RfD</b> (mg/kg-day)	<b>SF</b> per (mg/kg-day)	<b>HQ</b>	<b>Risk</b>
<b>Inorganics</b>							
MANGANESE	6.88E-01	2.64E-02	7.54E-04	2.00E-02	NA	1.32E+00	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	1.00E-05	3.84E-07	1.10E-08	5.00E-04	4.50E+00	7.68E-04	4.94E-08
HEPTACHLOR EPOXIDE	4.05E-06	1.55E-07	4.44E-09	1.30E-05	9.10E+00	1.19E-02	4.04E-08
<b>Volatiles</b>							
BENZENE	3.21E-04	1.23E-05	3.52E-07	3.00E-03	5.50E-02	4.10E-03	1.93E-08
<b>Cumulative Risk</b>						<b>1.34E+00</b>	<b>1.09E-07</b>

**TABLE B-8 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)**

**Site Number:**

## EBS-79, GW Addendum

### \* RME- Ingestion of Groundwater

Ingestion Rate = CR	1 L/day
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	6 yr
Body Weight = BW	15 kg
Averaging Time (Noncancer) = AT	2,190 days
Averaging Time (Cancer) = AT	25,550 days

$$\text{Intake (mg/kg-day)} = \text{Conc} * \text{CR} * \text{EF} * \text{ED} / (\text{BW} * \text{AT})$$

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

$$\text{Risk} = \text{Cancer Risk} = \text{CADI} * \text{SF}$$

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
MANGANESE	1.35E+00	8.63E-02	7.40E-03	2.00E-02	NA	4.32E+00	--
Pesticides/PCBs							
HEPTACHLOR	3.00E-05	1.92E-06	1.64E-07	5.00E-04	4.50E+00	3.84E-03	7.40E-07
HEPTACHLOR EPOXIDE	9.24E-06	5.91E-07	5.06E-08	1.30E-05	9.10E+00	4.54E-02	4.61E-07
Volatiles							
BENZENE	6.65E-04	4.25E-05	3.64E-06	3.00E-03	5.50E-02	1.42E-02	2.00E-07
Cumulative Risk						4.38E+00	1.40E-06

**TABLE B-9 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- AVERAGE EXPOSURE SCENARIO (AE)**

**Site Number:**

**EBS-79, GW Addendum**

## \* AE- Dermal Contact with Groundwater

Surface Area Available for Contact = SA	6,600 cm <sup>2</sup>
Event Time = ET	0.33 hr/day
Permeability Constant = PC	chemical-specific cm/hr
Exposure Frequency = EF	350 day/yr
Exposure Duration = ED	2 yr
Body Weight = BW	15 kg
Averaging Time (Noncancer) = AT	730 days
Averaging Time (Cancer) = AT	25,550 days
Conversion Factor = CF	0.001 L/cm <sup>3</sup>

$$\text{Intake (mg/kg-day)} = \text{Conc} * \text{SA} * \text{PC} * \text{ET} * \text{EF} * \text{ED} * \text{CF} / (\text{BW} * \text{AT})$$

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

$$\text{Risk} = \text{Cancer Risk} = \text{CADI} * \text{SF}$$

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
MANGANESE	6.88E-01	9.57E-05	2.74E-06	0.00E+00	NA	NA	--
Pesticides/PCBs							
HEPTACHLOR	1.00E-05	1.30E-08	3.71E-10	2.50E-04	9.00E+00	5.19E-05	3.34E-09
HEPTACHLOR EPOXIDE	4.05E-06	5.24E-09	1.50E-10	6.50E-06	1.82E+01	8.07E-04	2.73E-09
Volatiles							
BENZENE	3.21E-04	6.70E-07	1.92E-08	1.50E-03	1.10E-01	4.47E-04	2.11E-09
Cumulative Risk						8.59E-04	6.06E-09

**TABLE B-10 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)**

*Site Number:*

**EBS-79, GW Addendum**

**\* RME- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA                      6,600 cm<sup>2</sup>  
 Event Time = ET    1 hr/day  
 Permeability Constant = PC                                      chemical-specific cm/hr  
 Exposure Frequency = EF     350 day/yr  
 Exposure Duration = ED     6 yr  
 Body Weight = BW     15 kg  
 Averaging Time (Noncancer) = AT                              2,190 days  
 Averaging Time (Cancer) = AT                                  25,550 days  
 Conversion Factor = CF    0.001 L/cm<sup>3</sup>

Intake (mg/kg-day) = Conc \* SA \* PC \* ET \* EF \* ED \* CF / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

<b>Chemical of Concern</b>	<b>EPC</b> (mg/L)	<b>NCADI</b> (mg/kg-day)	<b>CADI</b> (mg/kg-day)	<b>Chronic RfD</b> (mg/kg-day)	<b>SF</b> per (mg/kg-day)	<b>HQ</b>	<b>Risk</b>
<b>Inorganics</b>							
MANGANESE	1.35E+00	5.70E-04	4.88E-05	0.00E+00	NA	NA	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	3.00E-05	1.18E-07	1.01E-08	2.50E-04	9.00E+00	4.71E-04	9.08E-08
HEPTACHLOR EPOXIDE	9.24E-06	3.63E-08	3.11E-09	6.50E-06	1.82E+01	5.58E-03	5.66E-08
<b>Volatiles</b>							
BENZENE	6.65E-04	4.21E-06	3.61E-07	1.50E-03	1.10E-01	2.81E-03	3.97E-08
<b>Cumulative Risk</b>						<b>6.05E-03</b>	<b>1.47E-07</b>

**TABLE B-11 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- AVERAGE EXPOSURE SCENARIO (AE)**

*Site Number:*

**EBS-79, GW Addendum**

**\* AE- Ingestion of Groundwater**

Ingestion Rate = CR	0.004 L/day
Exposure Frequency = EF	10 day/yr
Exposure Duration = ED	1 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	365 days
Averaging Time (Cancer) = AT	25,550 days

Intake (mg/kg-day) = Conc \* CR \* EF \* ED / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
<b>Inorganics (Total)</b>							
ARSENIC	1.52E+00	2.38E-06	3.40E-08	3.00E-04	1.50E+00	7.93E-03	5.10E-08
CADMIUM	5.60E-01	8.77E-07	1.25E-08	5.00E-04	NA	1.75E-03	--
MANGANESE	3.38E+02	5.29E-04	7.56E-06	2.00E-02	NA	2.65E-02	--
THALLIUM	1.10E+00	1.72E-06	2.46E-08	7.00E-05	NA	2.46E-02	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	1.00E-05	1.57E-11	2.24E-13	5.00E-04	4.50E+00	3.14E-08	1.01E-12
HEPTACHLOR EPOXIDE	4.05E-06	6.34E-12	9.06E-14	1.30E-05	9.10E+00	4.88E-07	8.24E-13
<b>Volatiles</b>							
BENZENE	3.21E-04	5.03E-10	7.18E-12	3.00E-03	5.50E-02	1.68E-07	3.95E-13
<b>Cumulative Risk</b>						<b>6.07E-02</b>	<b>5.10E-08</b>

**TABLE B-12 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)**

**Site Number:**

## EBS-79, GW Addendum

## \* RME- Incidental Ingestion of Groundwater

Ingestion Rate = CR	0.004 L/day
Exposure Frequency = EF	150 day/yr
Exposure Duration = ED	1 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	365 days
Averaging Time (Cancer) = AT	25,550 days

$$\text{Intake (mg/kg-day)} = \text{Conc} * \text{CR} * \text{EF} * \text{ED} / (\text{BW} * \text{AT})$$

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

$$\text{Risk} = \text{Cancer Risk} = \text{CADI} * \text{SF}$$

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics (Total)							
ARSENIC	2.05E+00	4.81E-05	6.88E-07	3.00E-04	1.50E+00	1.60E-01	1.03E-06
CADMIUM	2.40E+00	5.64E-05	8.05E-07	5.00E-04	NA	1.13E-01	--
MANGANESE	1.25E+03	2.94E-02	4.19E-04	2.00E-02	NA	1.47E+00	--
THALLIUM	1.10E+00	2.58E-05	3.69E-07	7.00E-05	NA	3.69E-01	--
Pesticides/PCBs							
HEPTACHLOR	3.00E-05	7.05E-10	1.01E-11	5.00E-04	4.50E+00	1.41E-06	4.53E-11
HEPTACHLOR EPOXIDE	9.24E-06	2.17E-10	3.10E-12	1.30E-05	9.10E+00	1.67E-05	2.82E-11
Volatiles							
BENZENE	6.65E-04	1.56E-08	2.23E-10	3.00E-03	5.50E-02	5.21E-06	1.23E-11
Cumulative Risk						2.11E+00	1.03E-06

**TABLE B-13 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND  
NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURE TO DERMAL CONTACT WITH  
GROUNDWATER -- AVERAGE EXPOSURE SCENARIO (AE)**

**Site Number:**

**EBS-79, GW Addendum**

**\* AE- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA	2,300 cm2
Event Time = ET	8 hr/day
Permeability Constant = PC	chemical-specific cm/hr
Exposure Frequency = EF	10 day/yr
Exposure Duration = ED	1 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	365 days
Averaging Time (Cancer) = AT	25,550 days
Conversion Factor = CF	0.001 L/cm3

$$\text{Intake (mg/kg-day)} = \text{Conc} * \text{SA} * \text{PC} * \text{ET} * \text{EF} * \text{ED} * \text{CF} / (\text{BW} * \text{AT})$$

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

$$\text{Risk} = \text{Cancer Risk} = \text{CADI} * \text{SF}$$

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics (Total)							
ARSENIC	1.52E+00	1.09E-05	1.56E-07	2.85E-04	1.58E+00	3.84E-02	2.47E-07
CADMIUM	5.60E-01	4.03E-06	5.76E-08	2.50E-05	NA	1.61E-01	--
MANGANESE	3.38E+02	2.43E-03	3.48E-05	0.00E+00	NA	NA	--
THALLIUM	1.10E+00	7.92E-06	1.13E-07	7.00E-05	NA	1.13E-01	--
Pesticides/PCBs							
HEPTACHLOR	1.00E-05	6.71E-10	9.58E-12	2.50E-04	9.00E+00	2.68E-06	8.63E-11
HEPTACHLOR EPOXIDE	4.05E-06	2.71E-10	3.87E-12	6.50E-06	1.82E+01	4.17E-05	7.05E-11
Volatiles							
BENZENE	3.21E-04	3.47E-08	4.95E-10	1.50E-03	1.10E-01	2.31E-05	5.45E-11
Cumulative Risk						3.13E-01	2.47E-07

**TABLE B-14 FORT PICKETT HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)**

*Site Number:*

**EBS-79, GW Addendum**

**\* RME- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA	5,700 cm <sup>2</sup>
Event Time = ET	8 hr/day
Permeability Constant = PC	chemical-specific cm/hr
Exposure Frequency = EF	150 day/yr
Exposure Duration = ED	1 yr
Body Weight = BW	70 kg
Averaging Time (Noncancer) = AT	365 days
Averaging Time (Cancer) = AT	25,550 days
Conversion Factor = CF	0.001 L/cm <sup>3</sup>

Intake (mg/kg-day) = Conc \* SA \* PC \* ET \* EF \* ED \* CF / (BW \* AT)

NCADI = Daily intake - Noncarcinogens

CADI = Daily Intake - Carcinogens

HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD

Risk = Cancer Risk = CADI \* SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
<b>Inorganics (Total)</b>							
ARSENIC	2.05E+00	5.49E-04	7.84E-06	2.85E-04	1.58E+00	1.93E+00	1.24E-05
CADMIUM	2.40E+00	6.43E-04	9.18E-06	2.50E-05	NA	2.57E+01	--
MANGANESE	1.25E+03	3.35E-01	4.78E-03	0.00E+00	NA	NA	--
THALLIUM	1.10E+00	2.94E-04	4.21E-06	7.00E-05	NA	4.21E+00	--
<b>Pesticides/PCBs</b>							
HEPTACHLOR	3.00E-05	7.47E-08	1.07E-09	2.50E-04	9.00E+00	2.99E-04	9.60E-09
HEPTACHLOR EPOXIDE	9.24E-06	2.30E-08	3.29E-10	6.50E-06	1.82E+01	3.54E-03	5.98E-09
<b>Volatiles</b>							
BENZENE	6.65E-04	2.67E-06	3.81E-08	1.50E-03	1.10E-01	1.78E-03	4.20E-09
<b>Cumulative Risk</b>						<b>3.18E+01</b>	<b>1.24E-05</b>

## **APPENDIX C**

### **GROUNDWATER BACKGROUND DATA TABLES WESTON 2003**

**TABLE 3-1**  
**GROUNDWATER BACKGROUNDSURVEY**  
**SAMPLE LOCATION SUMMARY**

LOCATION	SITE DESCRIPTION	TOPOGRAPHIC ANALYSIS	AERIAL PHOTOGRAPH REVIEW	ARCHAEOLOGICAL SURVEY REVIEW	COMMENTS
GBS-1	Northern section of excess property, east of Military Road on Jeep trail, north of unnamed creek.	Topographic high, potentially upgradient of PI-1, as well as EBS-308 and BCT-4	1937-agricultural development present; 1949-Logging noted to the north; 1951to 1968-inactive; 1994-agricultural development present.	Survey blocks 23 and 16 located north and south of proposed location and found to have been a prehistoric artifact area and area of minor military activity. Proposed site was not investigated.	Past use of pesticides may be detected in groundwater. Groundwater flow toward Tommeheton and Hurricane Branch.
GBS-2	North of Blackstone Airport, south of Route 40.	Topographic high, upgradient of EBS-103, downgradient of BCT-1.	1937-agricultural development present; 1949 to Present-Buildings to south, area grassed.	Area not surveyed.	Past use of pesticides may be detected in groundwater, possible impact from Army activity. Groundwater flow toward Tommeheton Creek.
GBS-3	Directly south of Blackstone Airport, north of West 10th Street.	Topographic high, upgradient of EBS-13, downgradient of PI-6.	1937-heavily wooded, agricultural development to southeast; 1949-Present area cleared of tress, but unused with grass/shrubs present.	Area not surveyed.	Past use of pesticides may be detected in groundwater, possible impact from Army activity, although PI-6 was shown not to be impacted. Groundwater flow toward Hurricane Branch.
GBS-4	Directly east of Building 1214 on West Parade Street.	Topographic high, upgradient of EBS-124, downgradient of PI-11.	1937-agricultural area surrounded by heavily wooded land; 1949-cleared area to east; 1951 Building 1214 built with parking lot to east; 1955 to present parking area re-vegetated.	Survey block 7 was investigated in the general proposed location and found to have been an active military site with structures and roadways, installed and cleared.	Past use of pesticides may be detected in groundwater, possible impact from Army activity, although PI-11 was shown not to be impacted. Alternate site #1. Groundwater flow toward Hurricane Branch.

**TABLE 4-2**  
**SUMMARY OF GBS-1 GROUNDWATER ANALYTICAL RESULTS**

	VA Standard	MCLs	13-Mar-01	25-Apr-01	25-Jul-01	15-Oct-01
<b>Volatile Organics (ug/L)</b>						
Carbon Disulfide	NA	NA	2.43 J	5 U	5 U	5 U
<b>Inorganics (ug/L)</b>						
Aluminum	NA	NA	362	293	219	184 B
Barium	1000	2000	72.6	82.7	63.6	70.9
Beryllium	NA	4	0.19 L	2 UL	2 U	0.45
Cadmium	0.4	5	3 U	3 U	3 U	3 U
Calcium	NA	NA	2440	2240	892 B	605 B
Chromium	50	100	5 U	1.77	1.98	1
Cobalt	NA	NA	6.01	5.51	2.54	3.6
Iron	NA	NA	1690	169	210 B	99.4 B
Lead	50	15	6.38 B	3.96	4.1 B	1.9 B
Magnesium	NA	NA	654	776	588	679
Manganese	NA	NA	349	269	128	155
Nickel	NA	NA	5.8	4.73 B	3.1 B	2.3 L
Potassium	NA	NA	1860	2200	1600	1690
Sodium	NA	NA	4140	4190	3120	2800
Vanadium	NA	2	10 U	1.82	10 U	10 U
Zinc	50	NA	122	47.3 B	23 B	11.2
<b>Pesticides (ug/L)</b>						
4,4-DDD	NA	NA	0.059 U	0.056 U	0.053 U	0.056 U
4,4-DDT	0.001	NA	0.059 U	0.056 U	0.053 U	0.056 U
Dieldrin	NA	NA	0.059 U	0.056 U	0.053 U	0.056 U
Endosulfan II	NA	NA	0.059 U	0.056 U	0.053 U	0.056 U
Endrin	0.004	2	0.059 U	0.056 U	0.053 U	0.056 U
Gamma-BHC (Lindane)	0.01	0.2	0.059 U	0.056 U	0.053 U	0.056 U
Gamma-Chlordane	0.01	2	0.059 U	0.056 U	0.053 U	0.056 U
<b>PCBs (ug/L)</b>						
			ND	ND	ND	ND
<b>Semi-Volatiles Organics (ug/L)</b>						
4-methylphenol	NA	NA	0.558	1.05 U	0.526 U	0.556 U
Benzo(a)pyrene	NA	0.2	0.105 U	0.147	0.105 U	0.111 U
Benzo(g,h,i)perylene	NA	NA	0.105 U	0.484	0.105 U	0.111 U
Dibenz(a,h)Anthracene	NA	NA	0.105 U	0.505	0.105 U	0.111 U
Diethyl Phthalate	NA	NA	0.526 U	0.526 U	0.526 U	0.556 U
di-n-Butyl Phthalate	NA	NA	1.86 B	1.24	0.821 B	0.556 U
Indeno(1,2,3-c,d)Pyrene	NA	NA	0.105 U	0.474	0.105 U	0.111 U
Phenanthrene	NA	NA	0.105 U	0.105 U	0.105 U	0.111 U

ug/L refers to micrograms/Liter

mg/L refers to milligrams/Liter

J indicates estimated at a value less than the reporting limit.

B indicates detected in blank.

Bold indicates value exceeds Federal MCL or Virginia Standard.

U indicates that compound was analyzed but not detected.

L indicates that the reported value may be valued low.

ND - refers to a compound that was analyzed but not detected.

NA - Not Available

VA Standard refers to the statewide water quality standard.

MCLs refers to the Maximum Contaminant Levels, the highest level of a contaminant that is allowed in drinking water.

**TABLE 4-3**  
**SUMMARY OF GBS-2 GROUNDWATER ANALYTICAL RESULTS**

	<b>VA Standard</b>	<b>MCLs</b>	<b>13-Mar-01</b>	<b>25-Apr-01</b>	<b>24-Jul-01</b>	<b>15-Oct-01</b>
<b>Volatile Organics (ug/L)</b>						
Carbon Disulfide	NA	NA	4.36 J	5 U	5 U	5 U
<b>Inorganics (ug/L)</b>						
Aluminum	NA	NA	608	160	140	126 B
Barium	1000	2000	62.8	49.2	30.3	30.9
Beryllium	NA	4	2 UL	2 UL	2 U	0.27
Cadmium	0.4	5	0.625 B	3 U	3 U	3 U
Calcium	NA	NA	2340	2030	647 B	318 B
Chromium	50	100	1.76 B	5 U	5 U	1.2
Cobalt	NA	NA	3.84	5.39	3.99	2.9 B
Iron	NA	NA	1550	505	124 B	75.7 B
Lead	50	15	5.16 B	4.91	5.44 B	5 B
Magnesium	NA	NA	324	324	232	266 B
Manganese	NA	NA	346	466	314	169
Nickel	NA	NA	3.96	2.86 B	10 U	10 UL
Potassium	NA	NA	1390	1430	970	1080
Sodium	NA	NA	2810	2810	2060 B	2210 L
Vanadium	NA	2	1.1	10 U	10 U	10 U
Zinc	50	NA	21.3	21.2 B	15.8 B	20 U
<b>Pesticides (ug/L)</b>						
4,4-DDD	NA	NA	0.056 U	0.059 U	0.059 U	0.059 U
4,4-DDT	0.001	NA	0.056 U	0.059 U	0.059 U	0.059 U
Dieldrin	NA	NA	0.056 U	0.059 U	0.059 U	0.059 U
Endosulfan II	NA	NA	0.056 U	0.059 U	0.059 U	0.059 U
Endrin	0.004	2	0.056 U	0.059 U	0.059 U	0.059 U
Gamma-BHC (Lindane)	0.01	0.2	0.056 U	0.059 U	0.059 U	0.059 U
Gamma-Chlordane	0.01	2	0.037 J	0.059 U	0.059 U	0.059 U
<b>PCBs (ug/L)</b>						
			ND	ND	ND	ND
<b>Semi-Volatiles Organics (ug/L)</b>						
2-methylphenol	NA	NA	0.588 U	1.18 U	0.5 U	0.556 U
Benzo(a)pyrene	NA	NA	0.118 U	0.118 U	0.1 U	0.111 U
Benzo(g,h,i)perylene	NA	NA	0.118 U	0.118 U	0.1 U	0.111 U
Dibenz(a,h)Anthracene	NA	NA	0.118 U	0.118 U	0.1 U	0.111 U
Diethyl Phthalate	NA	NA	2.57	0.588 U	0.5 U	0.556 U
di-n-Butyl Phthalate	NA	NA	4.44 B	0.671	0.59 B	0.744 B
Indeno(1,2,3-c,d)Pyrene	NA	NA	0.118 U	0.118 U	0.1 U	0.111 U
Phenanthrene	NA	NA	0.118 U	0.118 U	0.1 U	0.111 U

ug/L refers to micrograms/Liter

mg/L refers to milligrams/Liter

J indicates estimated at a value less than the reporting limit.

B indicates detected in blank.

Bold indicates value exceeds Federal MCL and/or Virginia Standard

U indicates that compound was analyzed but not detected.

L indicates that the reported value may be valued low.

ND - refers to a compound that was analyzed but not detected.

NA - Not Available

VA Standard refers to the statewide water quality standard.

MCLs refers to the Maximum Contaminant Levels, the highest level of a contaminant that is allowed in drinking water.

**TABLE 4-4**  
**SUMMARY OF GBS-3 GROUNDWATER ANALYTICAL RESULTS**

	VA Standard	MCLs	13--Mar-01	25-Apr-01	24-Jul-01	15-Oct-01
<b>Volatile Organics (ug/L)</b>						
Carbon Disulfide	NA	NA	2.27 J	5 U	5 U	5 U
<b>Inorganics (ug/L)</b>						
Aluminum	NA	NA	198	200 U	70.7	363 B
Barium	1000	2000	109	43.7	25.9	29
Beryllium	NA	4	2 UL	2 UL	2 U	2 U
Cadmium	0.4	5	0.563 B	3 U	<b>0.665</b>	3 U
Calcium	NA	NA	2010	2050	820 B	797 B
Chromium	50	100	2.38 B	5 U	0.974	3.4 B
Cobalt	NA	NA	29.6	4.11	9.88	8.2
Iron	NA	NA	754	154	79.1 B	342 B
Lead	50	15	10 U	2.21	1.52 B	1.6 B
Magnesium	NA	NA	1550	933	796	912
Manganese	NA	NA	726	97.8	109	92.5
Nickel	NA	NA	12.2	2.32 B	4.33 B	5.4
Potassium	NA	NA	1450	2470	1050	1100
Sodium	NA	NA	2820	2940	1730 B	1750 B
Vanadium	NA	2	10 U	10 U	10 U	10 U
Zinc	50	NA	14.4	14 B	13.1 B	20 U
<b>Pesticides (ug/L)</b>						
			ND	ND	ND	ND
4,4-DDD	NA	NA	0.063 U	0.056 U	0.056 U	0.075 U
4,4-DDT	0.001	NA	0.063 U	0.021 J	0.056 U	0.075 U
Dieldrin	NA	NA	0.063 U	0.056 U	0.056 U	0.075 U
Endosulfan II	NA	NA	0.063 U	0.056 U	0.056 U	0.075 U
Endrin	0.004	2	0.063 U	<b>0.03 J</b>	0.056 U	0.075 U
Gamma-BHC (Lindane)	0.01	0.2	0.063 U	0.056 U	0.056 U	0.075 U
Gamma-Chlordane	0.01	2	0.063 U	0.056 U	0.056 U	0.075 U
<b>PCBs (ug/L)</b>						
			ND	ND	ND	ND
<b>Semi-Volatiles Organics (ug/L)</b>						
4-methylphenol	NA	NA	0.625 U	1.05 U	0.556 U	0.833 U
Benzo(a)pyrene	NA	NA	0.125 U	0.105 U	0.111 U	0.167 U
Benzo(g,h,i)perylene	NA	NA	0.125 U	0.105 U	0.111 U	0.167 U
Dibenz(a,h)Anthracene	NA	NA	0.125 U	0.105 U	0.111 U	0.167 U
Diethyl Phthalate	NA	NA	0.625 U	0.526 U	1.08	0.833 U
di-n-Butyl Phthalate	NA	NA	1.93 B	0.737	1.59 B	1.38 B
Indeno(1,2,3-c,d)Pyrene	NA	NA	0.125 U	0.105 U	0.111 U	0.167 U
Phenanthrene	NA	NA	0.125 U	0.105 U	0.322	0.167 U

ug/L refers to micrograms/Liter

mg/L refers to milligrams/Liter

J indicates estimated at a value less than the reporting limit.

B indicates detected in blank.

Bold indicates value exceeds Federal MCL and/or Virginia Standard

U indicates that compound was analyzed but not detected.

ND - refers to a compound that was analyzed but not detected.

NA - Not Available

VA Standard refers to the statewide water quality standard.

MCLs refers to the Maximum Contaminant Levels, the highest level of a contaminant that is allowed in drinking water.

Table 4-6

Upper Tolerance Limit for Inorganics Detected in Groundwater  
Fort Pickett  
Blackstone, VA

Chemical	Background Data			EBS 115 Maximum Detected Concentration (µg/L)	EBS 124 Maximum Detected Concentration (µg/L)
	Arithmetic Mean Concentration <sup>a</sup> (µg/L)	Standard Deviation <sup>a</sup> (µg/L)	95% UTL, (µg/L)		
<b>Inorganics</b>					
Aluminum	180	142	537.47	13,600	7,500
Barium	51.7	23.9	111.87	157	131
Beryllium	0.77	0.36	1.69	0.48	1.03
Cadmium	1.30	0.44	2.41	2.29	1.66
Calcium	1,226	927	3,565.69	35,700	46,600
Chromium	1.59	0.74	3.44	ND	7.40
Cobalt	6.19	6.65	22.98	ND	63.7
Iron	395	536	1,747.33	33,500	12,800
Lead	3.00	1.62	7.08	12.5	6.43
Magnesium	713	349	1,593.20	7,220	7,510
Manganese	223	182	683.00	15,100	3,670
Nickel	3.92	2.77	10.91	7.61	25.3
Potassium	1,669	488	2,901.59	9,800	9,720
Sodium	2,634	980	5,107.13	14,600	17,500
Vanadium	4.56	1.22	7.63	10.7	4.55
Zinc	17.9	28.2	89.16	110	64.2

Shading indicated the maximum detected concentration exceeds the upper tolerance limit.

<sup>a</sup> Nondetects were included at half the sample quantitation limit (EPA, 1989b, 1992).

UTL = Upper tolerance limit.

µg/L = micrograms per liter.

TABLE 4-7  
STATISTICAL SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

Chemical	Frequency of Detection <sup>a</sup>	Range of Detected Concentrations (µg/L)	Range of Sample Quantitation Limits <sup>b</sup> (µg/L)	Arithmetic Mean Concentration <sup>c</sup> (µg/L)	Standard Deviation <sup>c</sup> (µg/L)	Coefficient of Variation	Data Distribution	95% UCL of the Mean <sup>c</sup> (µg/L)	Exposure Point Concentration <sup>d</sup> (µg/L)
<b>Organics</b>									
4-Methylphenol	1 / 16	5.58E-01 - 5.58E-01	5.00E-01 - 1.18E+00	3.73E-01	1.26E-01	3.39E-01	default (lognormal)	4.36E-01	4.36E-01
Benz[a]pyrene	1 / 16	1.47E-01 - 1.47E-01	1.00E-01 - 1.67E-01	6.32E-02	2.37E-02	3.75E-01	default (lognormal)	7.13E-02	7.13E-02
Benz[a,b]perylene	2 / 16	2.11E-01 - 4.84E-01	1.00E-01 - 1.67E-01	9.42E-02	1.11E-01	1.18E+00	default (lognormal)	1.22E-01	1.22E-01
Dibenz[a,h]anthracene	2 / 16	2.00E-01 - 5.05E-01	1.00E-01 - 1.67E-01	9.48E-02	1.15E-01	1.22E+00	default (lognormal)	1.22E-01	1.22E-01
Diethyl phthalate	3 / 16	9.00E-01 - 2.57E+00	5.00E-01 - 8.33E-01	5.16E-01	6.00E-01	1.16E+00	default (lognormal)	7.05E-01	7.05E-01
Di-n-butyl phthalate	5 / 16	6.71E-01 - 1.53E+01	5.26E-01 - 4.44E+00	1.65E+00	3.67E+00	2.23E+00	default (lognormal)	2.47E+00	2.47E+00
Indeno[1,2,3-c,d]pyrene	2 / 16	1.90E-01 - 4.74E-01	1.00E-01 - 1.67E-01	9.23E-02	1.07E-01	1.16E+00	default (lognormal)	1.18E-01	1.18E-01
Phenanthrene	1 / 16	3.22E-01 - 3.22E-01	1.00E-01 - 1.67E-01	7.40E-02	6.66E-02	9.01E-01	default (lognormal)	8.86E-02	8.86E-02
4,4-DDD	1 / 16	1.41E-01 - 1.41E-01	5.30E-02 - 7.50E-02	3.62E-02	2.81E-02	7.76E-01	default (lognormal)	4.27E-02	4.27E-02
4,4-DDT	2 / 16	2.10E-02 - 3.40E-02	5.30E-02 - 7.50E-02	2.92E-02	3.46E-03	1.18E-01	default (lognormal)	3.09E-02	3.09E-02
Dieldrin	1 / 16	2.60E-02 - 2.60E-02	5.30E-02 - 7.50E-02	2.92E-02	2.59E-03	8.89E-02	default (lognormal)	3.03E-02	3.03E-02
Endosulfan II	1 / 16	1.50E-02 - 1.50E-02	5.30E-02 - 7.50E-02	2.85E-02	4.35E-03	1.53E-01	default (lognormal)	3.11E-02	3.11E-02
Endrin	1 / 16	3.00E-02 - 3.00E-02	5.30E-02 - 7.50E-02	2.93E-02	2.54E-03	8.67E-02	default (lognormal)	3.04E-02	3.04E-02
gamma-BHC (Lindane)	1 / 16	1.50E-02 - 1.50E-02	5.30E-02 - 7.50E-02	2.85E-02	4.35E-03	1.53E-01	default (lognormal)	3.11E-02	3.11E-02
gamma-Chlordane	1 / 16	3.70E-02 - 3.70E-02	5.30E-02 - 7.50E-02	2.98E-02	3.19E-03	1.07E-01	default (lognormal)	3.11E-02	3.11E-02
Carbon Disulfide	4 / 16	2.27E+00 - 6.70E+00	5.00E+00 - 5.00E+00	2.86E+00	1.13E+00	3.94E-01	default (lognormal)	3.25E+00	3.25E+00
<b>Inorganics</b>									
Aluminum	9 / 16	7.07E+01 - 6.08E+02	1.26E+02 - 3.63E+02	1.89E+02	1.42E+02	7.90E-01	lognormal	2.56E+02	2.56E+02
Barium	16 / 16	2.59E+01 - 1.09E+02	- -	5.17E+01	2.39E+01	4.62E-01	lognormal	6.54E+01	6.54E+01
Beryllium	5 / 16	1.07E-01 - 4.50E-01	2.00E+00 - 2.00E+00	7.66E-01	3.64E-01	4.76E-01	default (lognormal)	1.34E+00	4.50E-01
Cadmium	1 / 16	6.65E-01 - 6.65E-01	5.63E-01 - 3.00E+00	1.30E+00	4.42E-01	3.41E-01	default (lognormal)	1.88E+00	6.65E-01
Calcium	8 / 16	1.84E+03 - 2.44E+03	3.18E+02 - 8.92E+02	1.23E+03	9.27E+02	7.57E-01	default (lognormal)	2.68E+03	2.44E+03
Chromium	6 / 16	9.68E-01 - 1.98E+00	1.13E+00 - 5.00E+00	1.59E+00	7.35E-01	4.63E-01	lognormal	2.11E+00	1.98E+00
Cobalt	15 / 16	1.89E+03 - 2.96E+01	2.90E+00 - 2.90E+00	6.19E+00	6.65E+00	1.08E+00	lognormal	9.16E+00	9.16E+00
Iron	8 / 16	1.48E+02 - 1.69E+03	7.57E+01 - 3.42E+02	3.95E+02	5.36E+02	1.36E+00	lognormal	1.21E+03	1.21E+03
Lead	3 / 16	2.21E+00 - 4.91E+00	1.52E+00 - 1.00E+01	3.00E+00	1.62E+00	5.39E-01	default (lognormal)	4.62E+00	4.62E+00
Magnesium	15 / 16	2.32E+02 - 1.55E+03	2.66E+02 - 2.66E+02	7.13E+02	3.49E+02	4.89E-01	normal	8.66E+02	8.66E+02
Manganese	16 / 16	4.28E+01 - 7.26E+02	- -	2.23E+02	1.82E+02	8.16E-01	lognormal	3.74E+02	3.74E+02
Nickel	6 / 16	2.30E+04 - 1.22E+01	2.06E+00 - 1.00E+01	3.92E+00	2.77E+00	7.07E-01	lognormal	5.99E+00	5.99E+00
Potassium	16 / 16	9.70E+02 - 2.47E+03	- -	1.67E+03	4.88E+02	2.91E-01	normal	1.88E+03	1.88E+03
Sodium	13 / 16	2.21E+02 - 4.19E+03	1.73E+03 - 2.00E+03	2.63E+03	9.80E+02	3.72E-01	default (lognormal)	3.53E+03	3.53E+03
Vanadium	2 / 16	1.10E+00 - 1.82E+00	1.00E+01 - 1.00E+01	4.56E+00	1.22E+00	2.67E-01	default (lognormal)	5.90E+00	1.82E+00
Zinc	5 / 16	1.08E+01 - 1.22E+02	7.07E+00 - 4.73E+01	1.79E+01	2.82E+01	1.57E+00	default (lognormal)	2.53E+01	2.53E+01

<sup>a</sup> Number of sampling locations at which chemical was detected compared with total number of sampling locations.

<sup>b</sup> Based on nondetected samples.

<sup>c</sup> Nondetects were included at half the sample quantitation limit (EPA, 1989b, 1992).

<sup>d</sup> Based on the lower of the 95% UCL and the maximum detected concentration (EPA, 1989b).

CV - Coefficient of variation.

µg/L - Micrograms per liter.

UCL - Upper confidence limit

**TABLE 4-5  
SUMMARY OF GBS-4 GROUNDWATER ANALYTICAL RESULTS**

	VA Standard	MCLs	13-Mar-01	25-Apr-01	24-Jul-01	15-Oct-01
<b>Volatile Organics (ug/L)</b>						
Carbon Disulfide	NA	NA	6.7	5 U	5 U	5 U
<b>Inorganics (ug/L)</b>						
Aluminum	NA	NA	118	200 U	200 U	137 B
Barium	1000	2000	55.2	41.5	29.1	30.3
Beryllium	NA	4	0.107	2 UL	2 U	0.24
Cadmium	0.4	5	3 U	3 U	3 U	3 U
Calcium	NA	NA	1940	1840	725 B	638 B
Chromium	50	100	1.13 B	5 U	0.968	1.4 B
Cobalt	NA	NA	7	3.59	1.89	2.4
Iron	NA	NA	769	148	93.4 B	126 B
Lead	50	15	10 U	10 U	2.8 B	10 UL
Magnesium	NA	NA	997	907	769	833
Manganese	NA	NA	163	93.6	51	42.8
Nickel	NA	NA	3.38	2.06 B	10 U	10 UL
Potassium	NA	NA	2020	2410	1960	2030
Sodium	NA	NA	2960	2940	2690	2940
Vanadium	NA	2	10 U	10 U	10 U	10 U
Zinc	50	NA	10.8	12.8 B	7.07 B	20 U
<b>Pesticides (ug/L)</b>						
4,4-DDD	NA	NA	0.141	0.053 U	0.056 U	0.059 U
4,4-DDT	0.001	NA	0.059 U	0.034 J	0.056 U	0.059 U
Dieldrin	NA	NA	0.059 U	0.026 J	0.056 U	0.059 U
Endosulfan II	NA	NA	0.059 U	0.015 J	0.056 U	0.059 U
Endrin	0.004	2	0.059 U	0.053 U	0.056 U	0.059 U
Gamma-BHC (Lindane)	0.01	0.2	0.059 U	0.015 J	0.056 U	0.059 U
Gamma-Chlordane	0.01	2	0.059 U	0.053 U	0.056 U	0.059 U
<b>PCBs (ug/L)</b>						
			ND	ND	ND	ND
<b>Semi-Volatiles Organics (ug/L)</b>						
2-methylphenol	NA	NA	0.625 U	1.05 U	0.588 U	0.526 U
Benzo(a)pyrene	NA	NA	0.125 U	0.105 U	0.118 U	0.105 U
Benzo(g,h,i)perylene	NA	NA	0.125 U	0.211	0.118 U	0.105 U
Dibenz(a,h)Anthracene	NA	NA	0.125 U	0.2	0.118 U	0.105 U
Diethyl Phthalate	NA	NA	0.9	0.526 U	0.588 U	0.526 U
di-n-Butyl Phthalate	NA	NA	15.3	0.8	0.812 B	0.526 U
Indeno(1,2,3-c,d)Pyrene	NA	NA	0.125 U	0.19	0.118 U	0.105 U
Phenanthrene	NA	NA	0.125 U	0.105 U	0.118 U	0.105 U

ug/L refers to micrograms/Liter

mg/L refers to milligrams/Liter

J indicates estimated at a value less than the reporting limit.

B indicates detected in blank.

Bold indicates value exceeds Federal MCL and/or Virginia Standard

U indicates that compound was analyzed but not detected.

ND - refers to a compound that was analyzed but not detected

NA - Not Available

VA Standard refers to the statewide water quality standard.

MCLs refers to the Maximum Contaminant Levels, the highest level of a contaminant that is allowed in drinking water.

**TABLE 4-8**  
**SUMMARY OF SECOND, THIRD, AND FOURTH QUARTER QA/QC ANALYTICAL RESULTS**

	4/25/2001 SAMPLE EVENT	4/25/2001 SAMPLE EVENT	4/26/2001 SAMPLE EVENT	RPD % Primary/QC	RPD % Primary/QA	7/24/2001 SAMPLE EVENT	7/24/2001 SAMPLE EVENT	7/25/2001 SAMPLE EVENT	RPD % Primary/QC	RPD % Primary/QA	10/15/2001 SAMPLE EVENT	10/15/2001 SAMPLE EVENT	RPD % Primary/QC	RPD % Primary/QA
	GBS-4	GBS-5	GBS-4D			GBS-4	GBS-5	GBS-4D			GBS-4	GBS-5		
<b>Volatile Organics (ug/L)</b>														
Carbon Disulfide	5 U	5 U	0.9 J	NC	NC	5 U	5 U	ND	NC	NC	5 U	5 U	NC	NC
<b>Inorganics (ug/L)</b>														
Aluminum	200 U	467	154 B	NC	NC	200 U	65.1	117 B	NC	NC	137 B	72.5 B	NC	NC
Barium	41.5	34.9	42.1 B	17%	NC	29.1	28.9	29.0 B	1%	NC	30.3	25.4	18%	NC
Cadmium	3 U	3 U	5 U	NC	NC	3 U	3 U	5 U	NC	NC	3 U	3 U	NC	NC
Calcium	1840	1690 B	2150 B	NC	NC	725 B	713 B	1080 B	NC	NC	638 B	547 B	NC	NC
Chromium	5 U	2.1	1.1 B	NC	NC	0.968	5 U	1.1 B	NC	NC	1.4 B	1.6 B	NC	NC
Cobalt	3.59	14.2	4.4 B	119%	149%	1.89	1.68	50 U	12%	NC	2.4	1.3	59%	NC
Iron	148	1010	163	10%	10%	93.4 B	145 B	81.3 B	NC	NC	126 B	80.1 B	NC	NC
Lead	10 U	10 U	3 U	NC	NC	2.8 B	1.69 B	3 U	NC	NC	10 UL	10 UL	NC	NC
Magnesium	907	1120	1010 B	21%	NC	769	760	808 B	1%	NC	833	728	13%	NC
Manganese	93.6	295	97.9	104%	NC	51	50.4	54.5	1%	7%	42.8	34.9	20%	4%
Nickel	2.06 B	5.48 B	3.6 B	NC	NC	10 U	10 U	10 U	NC	NC	10 UL	2.4 L	NC	NC
Potassium	2410	1130	1870 B	72%	NC	1960	1880	1880 B	4%	NC	2030	1670	8%	NC
Sodium	2940	2510	4060 B	16%	NC	2690	2620	3140 B	3%	NC	2940	2590	13%	NC
Vanadium	10 U	10 U	50 U	NC	NC	10 U	10 U	50 U	NC	NC	10 U	10 U	NC	NC
Zinc	12.8 B	15.3 B	20 U	NC	NC	7.07 B	11.5 B	20.3 B	NC	NC	20 U	20 U	NC	NC
<b>Pesticides (ug/L)</b>														
4,4-DDD	0.053 U	0.053 U	0.100 U	NC	NC	0.056 U	0.056 U	0.11 U	NC	NC	0.059 U	0.056 U	NC	NC
4,4-DDT	0.034 J	0.053 U	0.100 U	NC	NC	0.056 U	0.056 U	0.11 U	NC	NC	0.059 U	0.056 U	NC	NC
Dieldrin	0.026 J	0.053 U	0.100 U	NC	NC	0.056 U	0.056 U	0.11 U	NC	NC	0.059 U	0.056 U	NC	NC
Endosulfan II	0.015 J	0.053 U	0.100 U	NC	NC	0.056 U	0.056 U	0.11 U	NC	NC	0.059 U	0.056 U	NC	NC
Endrin	0.053 U	0.03 J	0.100 U	NC	NC	0.056 U	0.056 U	0.11 U	NC	NC	0.059 U	0.056 U	NC	NC
Gamma-BHC (Lindane)	0.015 J	0.012 J	0.050 U	NC	NC	0.056 U	0.056 U	0.053 U	NC	NC	0.059 U	0.056 U	NC	NC
Gamma-Chlordane	0.053 U	0.053 U	0.050 U	NC	NC	0.056 U	0.056 U	0.053 U	NC	NC	0.059 U	0.056 U	NC	NC
PCBs (ug/L)	ND		ND			ND		ND			ND			
<b>Semi-Volatiles Organics (ug/L)</b>														
4-methylphenol	1.05 U	1.05 U	10 U	NC	NC	0.588 U	0.588 U	10 U	NC	NC	0.526 U	0.556 U	NC	NC
Benzofluorene	0.105 U	0.105 U	10 U	NC	NC	0.118 U	0.118 U	10 U	NC	NC	0.105 U	0.111 U	NC	NC
Benzofluorene	0.211	0.105 U	10 U	NC	NC	0.118 U	0.118 U	10 U	NC	NC	0.105 U	0.111 U	NC	NC
Diethyl Phthalate	0.2	0.105 U	10 U	NC	NC	0.118 U	0.118 U	10 U	NC	NC	0.105 U	0.111 U	NC	NC
Di-n-Butyl Phthalate	0.526 U	0.526 U	10 U	NC	NC	0.588 U	0.588 U	10 U	NC	NC	0.526 U	0.556 U	NC	NC
Indeno(1,2,3-c,d)Pyrene	0.8	0.737	1.2 JB	8%	NC	0.812 B	0.788 B	10 U	NC	NC	0.526 U	0.556 U	NC	NC
Phenanthrene	0.19	0.105 U	10 U	NC	NC	0.118 U	0.118 U	10 U	NC	NC	0.105 U	0.111 U	NC	NC
Phenanthrene	0.105 U	0.105 U	10 U	NC	NC	0.118 U	0.118 U	10 U	NC	NC	0.105 U	0.111 U	NC	NC

ug/L refers to micrograms per liter  
J indicates estimated at a value less than the reporting limit  
B indicates detected in blank  
U indicates that compound was analyzed but not detected  
ND - refers to a compound that was analyzed but not detected  
NA - Not Available  
NC - Indicates not calculated Not Available

Table 5-1  
Recommended Range for Background Groundwater Concentrations at Fort Pickett

Chemical	Range of Detected Concentrations (µg/L)	Arithmetic Mean Concentration <sup>c</sup> (µg/L)	95% UCL of the Mean <sup>c</sup> (µg/L)	95% UTL (µg/L)	Lower Value (µg/L)	Upper Value (µg/L)
<b>Organics</b>						
4-Methylphenol	0.558 - 0.558	0.373	0.44	NC	0.558	-
Benzofluorene	0.147 - 0.147	0.063	0.07	NC	0.147	-
Benzofluorene	0.211 - 0.484	0.094	0.12	NC	0.211	-
Dibenzofluorene	0.200 - 0.505	0.095	0.12	NC	0.200	-
Diethyl phthalate	0.900 - 2.570	0.516	0.70	NC	0.900	-
Di-n-butyl phthalate	0.671 - 15.300	1.648	2.47	NC	0.671	-
Indenol (1,2,3-c,d)pyrene	0.190 - 0.474	0.092	0.12	NC	0.190	-
Phenanthrene	0.322 - 0.322	0.074	0.09	NC	0.322	-
4,4-DDD	0.141 - 0.141	0.036	0.04	NC	0.141	-
4,4-DDT	0.021 - 0.034	0.029	0.03	NC	0.021	-
Dieldrin	0.026 - 0.026	0.029	0.03	NC	0.026	-
Endosulfan II	0.015 - 0.015	0.028	0.03	NC	0.015	-
Endrin	0.030 - 0.030	0.029	0.03	NC	0.030	-
gamma-BHC (Lindane)	0.015 - 0.015	0.028	0.03	NC	0.015	-
gamma-Chlordane	0.037 - 0.037	0.030	0.03	NC	0.037	-
Carbon Disulfide	2.270 - 6.700	2.860	3.25	NC	2.270	-
<b>Inorganics</b>						
Aluminum	70.70 - 608.00	179.606	256.24	537.47	70.70	-
Barium	25.90 - 109.00	51.669	65.37	111.87	25.90	-
Beryllium	0.107 - 0.450	0.766	1.34	1.69	0.107	-
Cadmium	0.665 - 0.665	1.297	1.88	2.41	0.665	-
Calcium	1,840.00 - 2,440.00	1,225.688	2,679.78	3,565.69	1,840.00	-
Chromium	0.968 - 1.980	1.589	2.11	3.44	0.968	-
Cobalt	1.89 - 29.60	6.188	9.16	22.98	1.89	-
Iron	148.00 - 1,690.00	394.613	1,211.55	1,747.33	148.00	-
Lead	2.21 - 4.91	3.002	4.62	7.08	2.210	-
Magnesium	232.00 - 1,550.00	712.938	865.84	1,593.20	232.00	-
Manganese	42.80 - 726.00	223.231	374.13	683.00	42.80	-
Nickel	2.30 - 12.20	3.921	5.99	10.91	2.30	-
Potassium	970.00 - 2,470.00	1,669.375	1,883.41	2,901.59	970.00	-
Sodium	2,210.00 - 4,190.00	2,633.750	3,533.85	5,107.13	2,210.00	-
Vanadium	1.10 - 1.82	4.558	5.90	7.63	1.10	-
Zinc	10.80 - 122.00	17.927	25.25	89.16	10.80	-

<sup>a</sup> Number of sampling locations at which chemical was detected compared with total number of sampling locations.

<sup>b</sup> Based on nondetected samples.

<sup>c</sup> Nondetecteds were included at half the sample quantitation limit (EPA, 1989b, 1992).

NC indicates not calculated.

UTL = Upper tolerance limit

µg/L = Micrograms per liter.

UCL = Upper confidence limit

**FINAL**

**Remedial Action Report  
For The Final Action At  
EBS-13 Salvage Yard  
Fort Pickett, Virginia**

**Prepared for:**

**U.S. Army BRAC Headquarters  
1347 Thorne Avenue SW  
Building 242  
Fort McPherson, Georgia 30330-1062**

**Prepared by:**



**Tetra Tech, Inc.  
800 Oak Ridge Turnpike  
Suite A-500  
Oak Ridge, Tennessee 37830**

**OCTOBER 7, 2005**

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**Remedial Action Report  
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**OCTOBER 7, 2005**



## TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS .....	vii
EXECUTIVE SUMMARY .....	ES-1
1. INTRODUCTION.....	1-3
1.1 PURPOSE .....	1-3
1.2 SITE DESCRIPTION .....	1-4
2. REMEDIAL HISTORY AND SELECTED REMEDY .....	2-1
2.1 REMEDIAL HISTORY .....	2-1
2.2 TIME CRITICAL REMOVAL ACTION.....	2-1
2.3 APPROVED REMEDIAL ACTION .....	2-3
2.4 REMEDIAL ACTION OBJECTIVES.....	2-5
2.5 ADDITIONAL BEST MANAGEMENT PRACTICE .....	2-7
3. REMEDIAL ACTION .....	3-1
3.1 PREPARATION OF RA DOCUMENTS .....	3-1
3.2 PERMITTING.....	3-1
3.3 PRE-MOBILIZATION MEETING .....	3-1
3.4 MOBILIZATION AND SITE PREPARATION .....	3-1
3.5 WELL ABANDONMENT .....	3-2
3.6 WASTE EXCAVATION.....	3-2
3.7 CONFIRMATORY SAMPLING .....	3-2
3.8 WASTE MANAGEMENT .....	3-2
3.9 NUTRIENT APPLICATION FOR ENHANCED NATURAL ATTENUATION.....	3-3
3.10 DECONTAMINATION PAD REMOVAL .....	3-3
4. SITE RESTORATION AND DEMOBILIZATION.....	4-1
4.1 BACKFILLING .....	4-1
4.2 COVERING TEST PIT 4.....	4-1
4.3 SITE RESTORATION.....	4-1
4.4 DEMOBILIZATION .....	4-2
5. MODIFICATIONS TO THE CORRECTIVE ACTION WORK PLAN.....	5-1
6. SUMMARY OF VERIFICATION WORK PERFORMED .....	6-1
6.1 POST-RA REQUIREMENTS .....	6-1
6.2 POST-REMEDIATION SOIL RESULTS.....	6-1
6.3 POST-REMEDIATION GROUNDWATER MONITORING RESULTS.....	6-2
6.4 POST-REMEDIATION STATUS .....	6-3
7. REFERENCES.....	7-1
APPENDIX A: WASTE DISPOSAL DOCUMENTATION .....	A-1
APPENDIX B: SITE PHOTOGRAPHS .....	B-1
APPENDIX C: ANALYTICAL RESULTS .....	C-1



## FIGURES

Figure 1-1	Fort Pickett Site Location .....	1-5
Figure 1-2	Location of EBS-13 Relative to Runway Clear Zone.....	1-6
Figure 2-1	Location of Time Critical Removal Action .....	2-2
Figure 2-2	EBS-13 Land Use Controls.....	2-6
Figure 3-1	Conformation Sampling Location .....	3-4



## ACRONYMS AND ABBREVIATIONS

ARAR	applicable or relevant and appropriate requirements
BCT	BRAC Cleanup Team
bgs	below ground surface
BRAC	Base Realignment and Closure
BRACA	Defense Base Realignment and Closure Act of 1990 (as amended)
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CRZ	Contamination Reduction Zone
DOA	U.S. Department of the Army
DoD	Department of Defense
EBS	Environmental Baseline Survey
EQIS	EQ Industrial Services
EQL	estimated quantitation limit
FRC	Former Recycling Compound
FS	Feasibility Study
ft	feet
IRA	interim removal action
LRA	Land Reuse Authority
LUC	land use control
MCL	maximum contaminant limit
MDL	method detection limit
MPPEH	material potentially presenting an explosive hazard
MW	monitoring well
NCP	the National Oil and Hazardous Substance Pollution Contingency Plan
OCDD	octachlorodioxin
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
RA	remedial action
RAO	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan



RBC	Risk-Based Concentration
RCZ	Runway Clear Zone
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SVOC	semi-volatile organic compound
TCRA	time critical removal action
Tetra Tech	Tetra Tech, Inc.
USEPA	U.S. Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
yd <sup>3</sup>	cubic yard



## EXECUTIVE SUMMARY

This Remedial Action Report (RAR) describes the approach, and documents the successful completion and status of the final remedial action (RA) conducted at the Former Recycle Center (FRC), designated as Environmental Baseline Survey, Parcel 13 (EBS-13), located within Operable Unit 6 at Fort Pickett Army Garrison, Blackstone, Nottoway County, Virginia.

Fort Pickett is undergoing base closure under the Defense Base Realignment and Closure Act (BRACA) of 1990 (as amended) due to its selection by the Base Realignment and Closure (BRAC) 1995 Commission. The strategy for investigation, remediation, and closure is being overseen by the BRAC Cleanup Team (BCT), which includes representatives from the U.S. Department of the Army (DOA) BRAC Atlanta Field Office, U.S. Environmental Protection Agency (USEPA) Region 3, Virginia Department of Environmental Quality (VDEQ), and Fort Pickett Environmental Office. EBS-13 has been identified as a BRAC parcel for transfer or lease.

This RAR presents the results of implementation of the selected RA alternative described in the Decision Document (Tetra Tech 2005). This remedy was developed following the Community Environmental Response Facilitation Act (CERFA), the U.S. Department of Defense (DoD) BRAC Cleanup Plan Guidebook (DoD 1993) guidelines, 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 Substance Pollution Contingency Plan (NCP). USEPA Region 3, VDEQ, and the Commonwealth of Virginia all concurred with the selected remedy. This RA, therefore, was performed based upon the Remedial Investigation/Feasibility Study (RI/FS) conducted for the EBS-13 site, and under the authority and to satisfy the requirements of CERCLA §121, and to the extent practical the NCP. The action was designed and carried out based on information contained in the Administrative Record for this site which is located at the Fort Pickett BRAC Environmental Office, 2193 Military Road, Pickett Park, Blackstone, Virginia 23824.

This RA was conducted to remove the source of continuing groundwater contamination in order to address human health risk (i.e., the risk driver) above the VDEQ target risk goal, associated with exposure to contaminants present in groundwater. Land use controls (LUCs) were also implemented as part of this action to address human health concerns associated with residual contaminant concentrations in groundwater until such time as it is restored for unrestricted use, (i.e., until the USEPA National Primary Drinking Water Standards for benzene, ethylbenzene, toluene, and xylenes [with maximum



contaminant limits (MCLs) of 0.005, 0.7, 1, and 10 parts per million (ppm), respectively] are met. In addition, LUCs were also implemented in order to address safety concerns associated with potential future contact with material potentially presenting an explosive hazard (MPPEH).

The RA described in this RAR successfully reduced the actual and threatened releases of hazardous substances from this site by removing the primary area of concern and the threat to groundwater at the former paint disposal pit (i.e., the source of the human health risk driver) located in the west-central portion of the site. The RA was necessary to protect the public health, welfare, and environment from releases of hazardous substances into the environment. Approval to backfill the excavated area after removal of the contaminated soils was obtained from regulators during the review and approval of the Remedial Action Work Plan (RAWP) (Tetra Tech 2004) prior to mobilization from the site. Although analytical results were not available prior to backfill and demobilization, subsequent confirmatory sample results indicated that after the RA, the concentrations of contaminants remaining in soils were below risk-based concentrations (RBCs), or were not deemed to present an unacceptable future human health risk. No contaminants were detected in the baseline groundwater samples that were collected and analyzed at the conclusion of the RA.



## 1. INTRODUCTION

### 1.1 PURPOSE

This Remedial Action Report (RAR) was prepared by Tetra Tech, Inc., (Tetra Tech), for the U.S. Department of the Army (DOA) to present the details of a remedial action (RA) conducted by Tetra Tech from January 24-29, 2005 at the Environmental Baseline Survey, Parcel 13 (EBS-13), located within Operable Unit 6 at Fort Pickett Army Garrison, Blackstone, Nottoway County, Virginia. The site is a Former Recycling Compound (FRC) on the Fort Pickett Military Reservation in Blackstone, Virginia.

This RAR provides documentation of the implementation of the remedy as selected and presented in the *Decision Document EBS-13 Parcel Operable Unit 6* (Tetra Tech 2005). The remedy was developed and determined to be appropriate for the site following the Community Environmental Response Facilitation Act (CERFA), the U.S. Department of Defense (DoD) Base Realignment and Closure (BRAC) Cleanup Plan Guidebook (DoD 1993) guidelines, and 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 Substance Pollution Contingency Plan (NCP). The Decision Document is based on information contained in the Administrative Record for this site located at the Fort Pickett BRAC Environmental Office, 2193 Military Road, Pickett Park, Blackstone, Virginia 23824. The U.S. Environmental Protection Agency (USEPA) Region 3, Virginia Department of Environmental Quality (VDEQ), and the Commonwealth of Virginia concur with the selected remedy.

The basis for this action was the removal of the source of groundwater contamination to address human health risk (i.e., the risk driver) above the VDEQ target risk goal, associated with exposure to contaminants present in groundwater. Land use controls (LUCs) were initiated as part of this action (i.e., after removal of the source of groundwater contamination) to address human health concerns associated with residual groundwater contamination until such time as it is restored for unrestricted use, i.e., until the USEPA National Primary Drinking Water Standards for benzene, toluene, ethylbenzene, and xylenes (BETX) [with maximum contaminant limits (MCLs) of 0.005, 1, 0.7, and 10 parts per million (ppm), respectively] are met. In addition, LUCs were also implemented to address safety concerns associated with potential future contact with material potentially presenting an explosive hazard (MPPEH).

A Remedial Action Work Plan (RAWP) (Tetra Tech 2004) was developed to govern this work and was reviewed and approved by the Army, USEPA, and VDEQ prior to mobilizing for the RA. The RAWP

describes the actions that were to be accomplished during the implementation of the RA presented in this RAR.

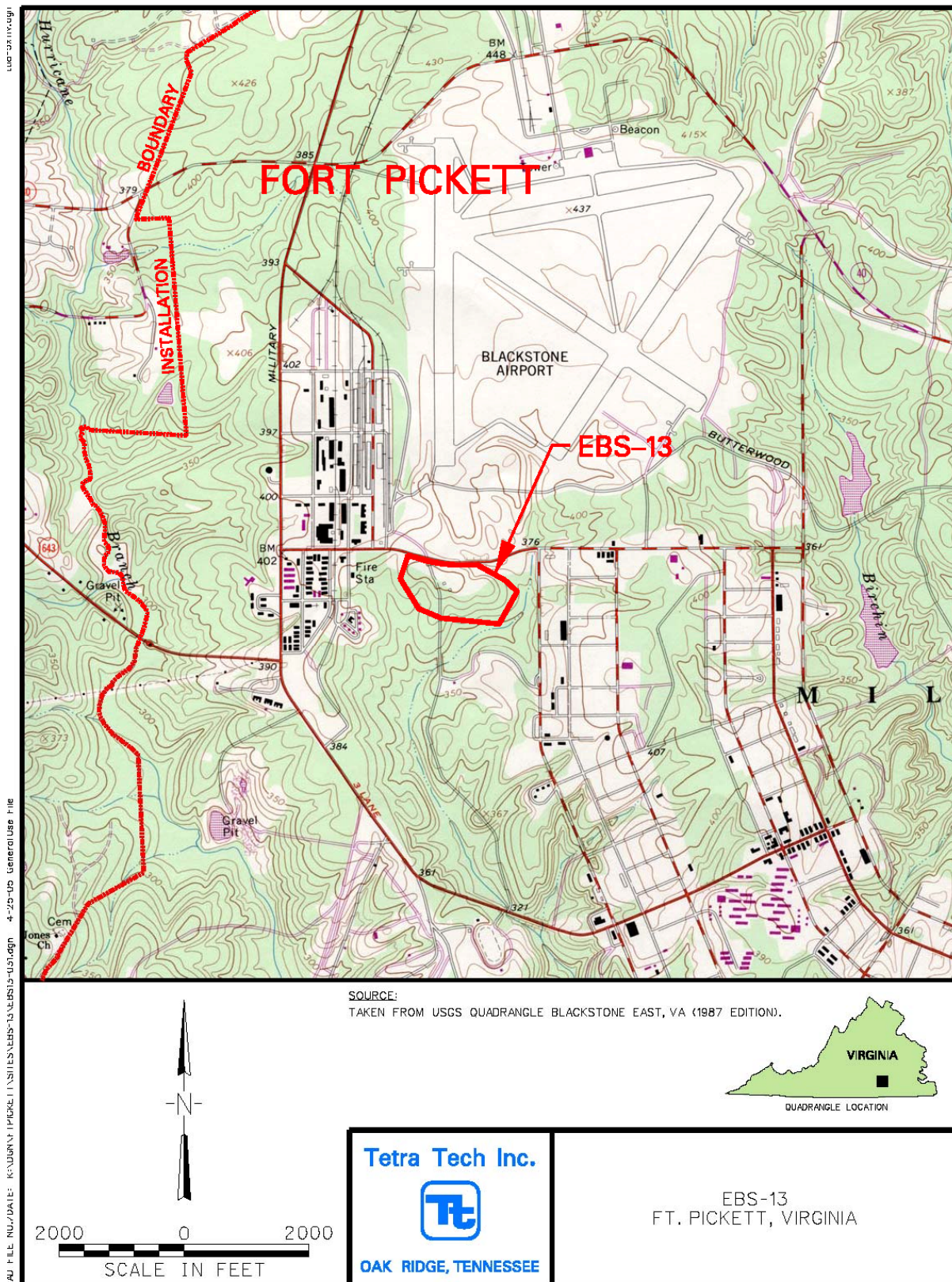
## **1.2 SITE DESCRIPTION**

Fort Pickett is located in Brunswick, Dinwiddie, and Nottoway counties in southern Virginia, and encompasses approximately 45,148 acres, of which 45,008 acres have been identified as BRAC property, subject to transfer or lease, with the rest identified as a potential U.S. Army Reserve enclave. Approximately 2,863 acres of BRAC property, referred to as the Excess Property, have either already been transferred (approximately 2,792 acres) or remain the focus of continued environmental activities. This latter parcel is anticipated to be transferred for private use through the Fort Pickett Local Reuse Authority (LRA). The LRA currently has no plans for the property which is currently zoned for industrial use. EBS-13 comprises approximately 31 acres of the Excess Property. The site is located near the west side of Fort Pickett (Figure 1-1).

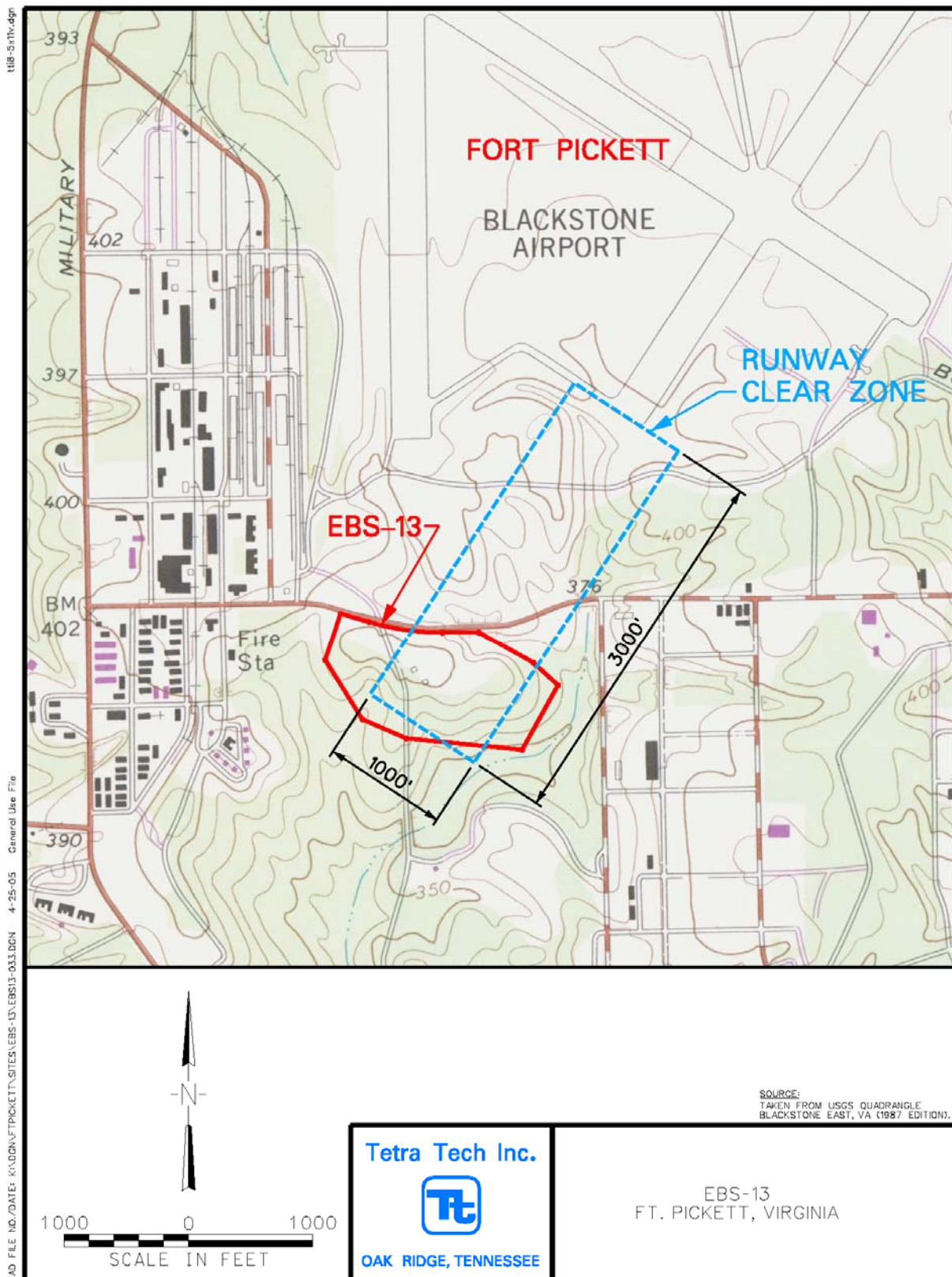
The vast majority of EBS-13 is located within a Runway Clear Zone (RCZ) due to its proximity to two airfield runways (Figure 1-2). An RCZ is the area on the ground at each end of a runway that possesses a high potential for accidents. This area, 1,000 feet (ft) wide by 3,000 ft long, is restricted in its use, with residential, industrial/manufacturing, commercial, public/quasi-public services, and outdoor recreational land uses and activities prohibited. Although the only uses or activities that may be permitted within an RCZ include transportation (highway and street rights-of-way), utilities, resource production and extraction, agriculture (including feedlots and intensive animal husbandry), permanent open spaces, and water areas (including hunting and fishing), additional land use restrictions applicable to this site are described specified in Sections 2.3 and 4.3.

Prior to the 1940s, the EBS-13 site was predominantly forested with some farmland. Since creation of the FRC on the EBS-13 site in the late 1940s until the late 1960s, the site was used for storage of used vehicles, metal containers, crates, and debris piles. In the late 1960s and early 1970s, the FRC area was used as a burial site for metal scrap and demolition debris, and possibly received paints, solvents, and petroleum products.

Because EBS-13 was used as a recycling compound, during previous investigation it was assumed that only empty shell casings and other scrap material (that did not pose an explosive hazard) were moved to the site, unloaded, and either stored or disposed of at the site. Although live ordnance was not observed during any site investigations, based on historical and visual evidence, the St. Louis District of the Army Corps of Engineers determined that since expended ordnance related material had been observed (e.g., empty shell casings, etc.), the potential for safety hazards associated with encountering MPPEH existed at the site.



### Figure 1-1. Fort Pickett Site Location



**Figure 1-2. Location of EBS-13 Relative to Runway Clear Zone**



An aerial photograph review by Environmental Research, Inc. in 1997, and documented in their Aerial Photographic Analysis (ERI 1997), indicated that the majority of the stored materials had been removed from the site by 1970.

Pesticides used to control insect hazards were applied to various areas of Fort Pickett from the early 1940s through the site's closure in 1977. Pesticides available for use during this period included the following: heptachlor epoxide, heptachlor, dieldrin, endrin, aldrin, alpha and gamma chlordane, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT.



## **2. REMEDIAL HISTORY AND SELECTED REMEDY**

### **2.1 REMEDIAL HISTORY**

An interim removal action (IRA) was implemented by Groundwater Technology, Inc., in September 1999 in a 3-acre area on the northwest side of the FRC. The IRA consisted of several tasks including, but not limited to: removal and disposal of four debris piles (Scrap Piles 1, 2, 3, and 4) and two 55-gallon drums; excavation and stockpiling of black, ash-laden soil (from on-site road construction activities); and excavation of four exploratory trenches. Following removal of the scrap piles, debris was still visible in the vicinity of Scrap Piles 1 and 3. Exploratory trenching was performed in these two areas to evaluate the type and depth of the debris. Three trenches were excavated west to east within the area of former Scrap Pile 1 and debris was encountered as deep as 7 ft below ground surface (bgs). One trench was excavated in the area of former Scrap Pile 3 where debris, mostly MPPEH, was encountered as deep as 3 ft bgs.

### **2.2 TIME CRITICAL REMOVAL ACTION**

Results of the Phase I and Phase II Remedial Investigations (RIs) (EA Engineering, Science and Technology 2000; Tetra Tech 2003a), specifically the results of observations and samples from Test Pit 26, soil samples from boring SB-136 and groundwater samples from monitoring well (MW) 136, identified a continuing source of contamination at the FRC. A time critical removal action (TCRA) was conducted at the former paint disposal pit in January 2003 to remove the primary source material (i.e., discarded paints), as well as contaminated soils (Figure 2-1). The TCRA excavation removed approximately 100 cubic yards (yd<sup>3</sup>) of source material and contaminated soil from the area. Additionally, free liquids were encountered within the waste matrices during excavation activities. The liquids were contained within deteriorated metal canisters and the voids therein. The liquids were pumped from the excavation into 55-gallon drums for storage until they could be sampled and ultimately disposed off site. The excavation was backfilled with clean, native soils. After grading, the site was seeded and mulched with straw.

At the conclusion of the excavation portion of the TCRA, confirmatory soil samples were collected from within the excavation (see Section 3 of this report) in accordance with the Field Sampling and Analysis Plan (SAP) (Tetra Tech 2003b) at a frequency of one sample per 100 square feet (ft<sup>2</sup>) of exposed surface area. Based on the dimensions of the excavation, four soil samples were collected from the excavation side-walls and four samples from the pit floor (see Figures 3-1, Detail A). Per the procedures outlined in the SAP, soil samples were placed into zip-lock bags and allowed to equilibrate prior to using a photoionization detector (PID) to check for volatile concentrations. Table C-1 presents the field screening readings on the PID.

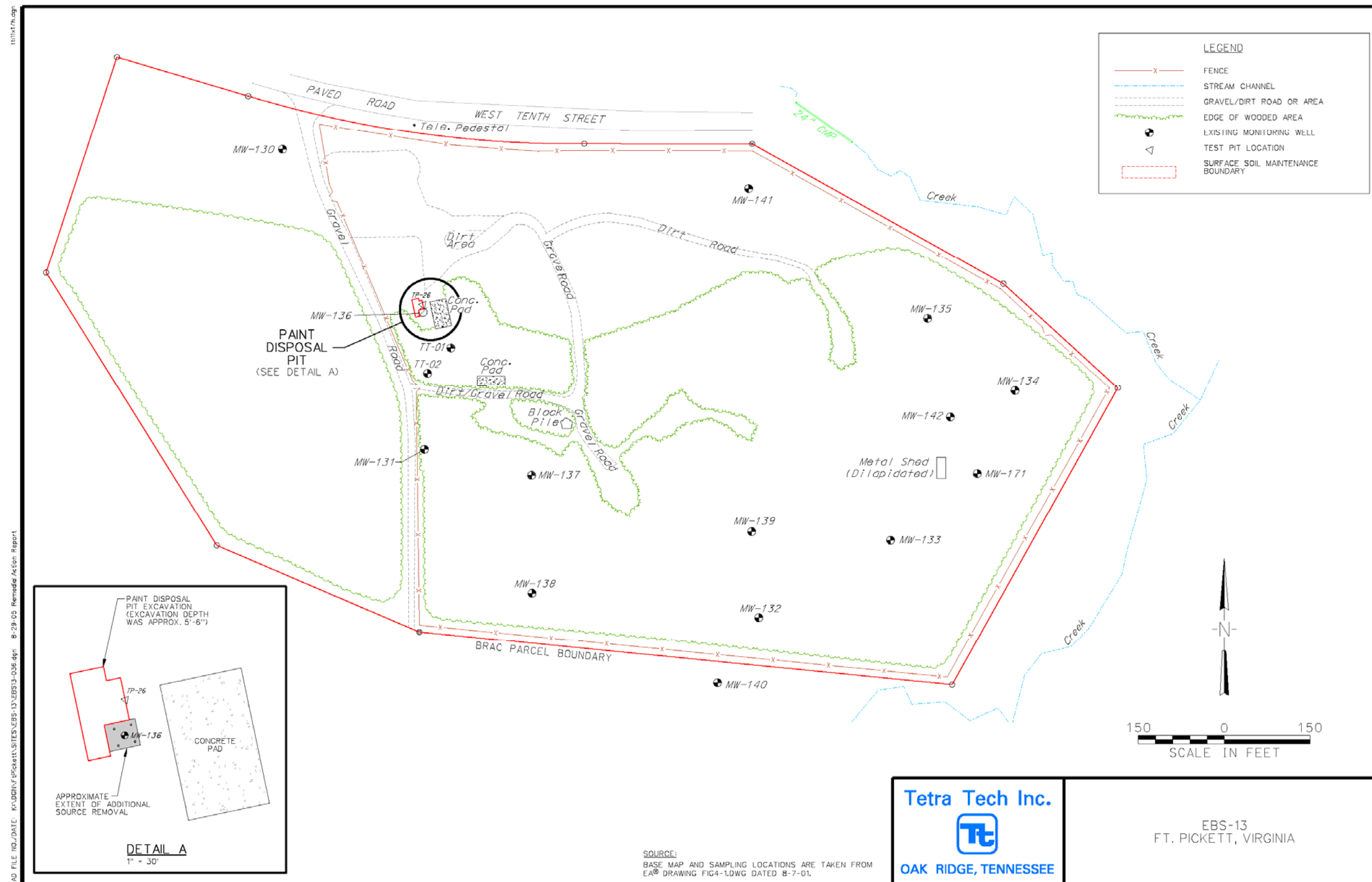


Figure 2-1. Location of Time Critical Removal Action



Soil sample locations F1 and F2 were over-excavated 18 to 24 inches below the excavation floor where a second soil sample was collected, and volatile organic compound (VOC) concentrations were measured via the same PID screening technique. These secondary readings (F1\* and F2\*) were similar in magnitude to the original sample readings (F1 and F2), suggesting that soil contamination extended vertically beyond 6 ft bgs. Although contaminated soil remained beneath the base of the excavation, the remaining source was determined to present no risk to human or ecological receptors (Tetra Tech 2003a).

Eight confirmatory soil samples were collected and analyzed for VOCs, semi-volatile organic compounds (SVOCs) pesticides, dioxins/furans, explosives, and metals. The confirmatory analytical results were screened against USEPA Region 3 Risk-Based Concentrations (RBCs) for residential soils, and are presented in Table C-2. For constituents not found in the RBC tables, a surrogate RBC value was used for screening and confirmatory purposes.

### **2.3 APPROVED REMEDIAL ACTION**

During the TCRA, it was recognized that the area of soil contamination extended to well MW-136, and some contaminated soil would remain adjacent to the well until it could be plugged and abandoned. This residual soil contamination would be a continuing source of groundwater contamination in the immediate area of this well until it could be removed during a subsequent action. The remedy developed to address this residual contamination, documented in the Decision Document for EBS-13 (Tetra Tech 2005), was designed to address human health risk (i.e., the risk driver) above the VDEQ target risk goal, associated with exposure to contaminants present in groundwater. LUCs were also prescribed in order to address human health concerns associated with contaminated groundwater until such time as it is restored for unrestricted use (i.e., until the USEPA National Primary Drinking Water Standards for BTEX are met). The action included plugging and abandoning monitoring well MW-136 in accordance with VDEQ guidance, removal of additional soil at and near MW-136, providing a supplemental oxygen source (in the form of nitrate fertilizer) adjacent to MW-136, and performing long-term groundwater monitoring at the site with institutional controls. In addition, the preferred alternative (developed jointly with VDEQ and USEPA) also included leaving the other surface and subsurface soils in the remainder of EBS-13 (where human health and ecological risks were negligible for soils, based on anticipated future land use) undisturbed, and implementing LUCs since the RA will not immediately restore groundwater to unrestricted use, and the potential will still exist for users of the Site to encounter MPPEH. The objectives for the LUCs that were implemented at EBS-13 after the final RA were therefore to:

1. Prohibit residential reuse of the site in order to prevent exposure to MPPEH;
2. Prohibit exposure to contaminated groundwater; and
3. Prohibit excavation or disturbance of subsurface soils to prevent exposure to MPPEH.



These LUCs are applicable to current and post-transfer use by future property owners and users in areas where the contaminant concentrations for groundwater exceed the PRGs, and areas where the potential for MPPEH exists. Additional details pertaining to the LUCs applicable to EBS-13 are included in the LUC RAWP which is Appendix A of the RAWP for this RA at EBS-13.

The implementation of LUCs prohibiting the disturbance of soil (LUC objectives #1 and #3) are not driven by risk associated with residual contaminants, but rather by the presence of buried (uncontaminated) debris (i.e., MPPEH).

The Army, as the executing agent for environmental restoration activities at Fort Pickett, will be responsible for implementing, maintaining, and monitoring the LUCs at Fort Pickett until the time of transfer. Upon the Army's conveyance of the property, Nottoway County, and its successors, will maintain and monitor the LUCs to ensure compliance with the LUC performance objectives. Figure 2-2 shows the portions of the site subject to LUCs.

As part of this final action, two groundwater monitoring wells (TT-1 and TT-2, installed downgradient of MW-136 in January 2003) will be sampled on a semi-annual basis. Groundwater samples will be analyzed for VOCs (USEPA Method 8260), SVOCs organic compounds (USEPA Method 8270), metals (USEPA Method 7000), and anions (i.e., nitrate/nitrite, sulfate) (USEPA Method 300). Additional information which will be collected semi-annually includes water-level measurements and general groundwater field parameters (pH, conductivity, temperature, redox potential, dissolved oxygen, and turbidity). All groundwater samples also will be field- and laboratory-analyzed for biogeochemical parameters indicative of biological activity in the groundwater, including alkalinity (field), carbon dioxide (lab), ferrous iron (field), and sulfide (field).

A solid oxygen source (i.e., nitrate from an agricultural grade fertilizer) was added to stimulate the biodegradation of organic contaminants (primarily BTEX) in the soil and groundwater beneath the excavation. Groundwater monitoring began in wells TT-01 and TT-02 (downgradient of the excavation and MW-136) as soon as the excavation was complete. Based on the historical groundwater gradient at the site and average aquifer characteristics, summarized in the *Phase II and Supplemental Remedial Investigation* (Tetra Tech 2003a), groundwater seepage velocity is approximately 630 ft per year. The two monitoring wells installed in January 2003, are approximately 80 to 100 ft (TT-01 and TT-02, respectively) downgradient of MW-136. Assuming minimal retardation of VOCs in groundwater (retardation factors of 1.19 to 2.20 in low organic soils) and no *in situ* bioremediation, measurable concentrations of VOCs should be present in samples from TT-01 and/or TT-02. The absence of

measurable concentrations of VOCs in monitoring wells TT-01 and TT-02, accompanied by generally oxidizing conditions in the aquifer (e.g., oxidation reduction potential greater than 100 millivolts) at those locations, is the key indicator that groundwater remediation by natural attenuation is effective and monitoring can cease. Therefore, if the results of 2 years of semi-annual monitoring in TT-01 and TT-02 indicate no measurable concentrations of VOCs and generally oxidizing conditions in the aquifer, it is anticipated that groundwater monitoring will be terminated. Alternatively, assuming the addition of excess nitrate into the aquifer at MW-136 prior to abandonment and minimal retardation of the nitrate anion in groundwater, measurable concentrations of dissolved nitrate may appear in groundwater samples from TT-01 and/or TT-02 within a few months. The appearance of measurable concentrations of nitrate combined with the absence of measurable concentrations of VOCs in samples from these wells will serve as a key indicator that groundwater remediation is effective and monitoring can cease.

## **2.4 REMEDIAL ACTION OBJECTIVES**

Remedial action objectives (RAOs) were developed during the Feasibility Study (FS) and were formulated to consider only those compounds where risk was unacceptable and did not consider chemicals or media of interest that were within acceptable risk ranges. For this reason, compounds detected in surface water, sediment, surface soil, and shallow subsurface soil were not considered for ecological receptors. The carcinogenic and non-carcinogenic risk estimates for total soil and groundwater indicated an unacceptable risk for some compounds for human health receptors.

RAOs developed for this action were the following:

- Remove the source of groundwater contamination in the vicinity of MW-136;
- Reduce the concentration of contaminants in groundwater in the area of MW-136; and
- Prevent potential exposure to contaminated groundwater by implementing LUCs until such time as the groundwater remediation is complete.

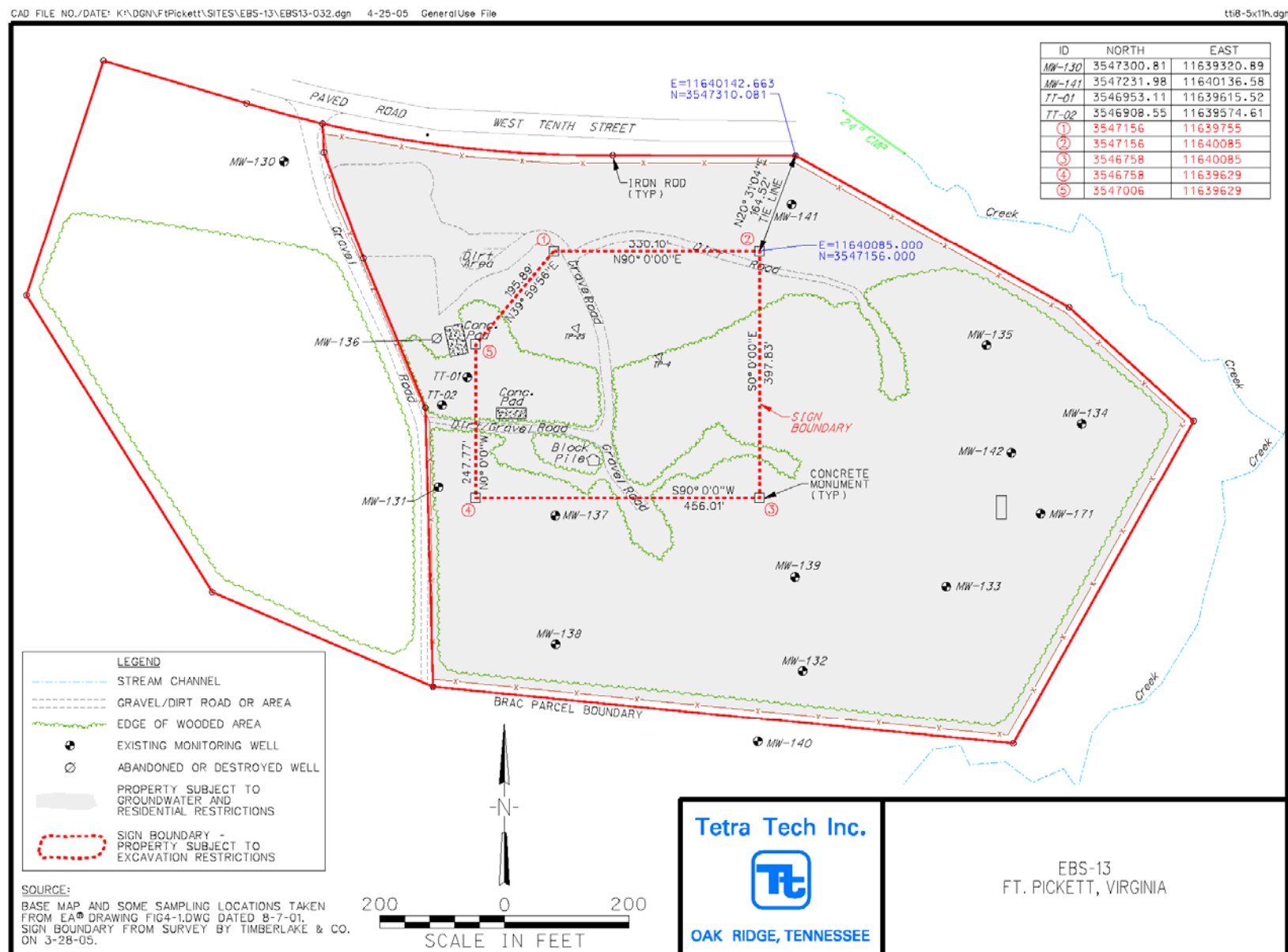


Figure 2-2. EBS-13 Land Use Controls





The basis and rationale for development of the RAOs were the current and reasonably anticipated future land uses and potential beneficial groundwater use. The anticipated future land use of the property is for industrial purposes. RAOs were therefore selected to protect human health based on identified risks from contaminated groundwater and eliminate future groundwater impacts from the source material. Although groundwater will most likely not be utilized in the future for a potable water source (due to the presence and availability of a treated water system within the area), RAOs were deemed to be technically achievable and cost effective.

Based on available information, the BCT, comprised of members from USEPA Region 3, VDEQ, and the BRAC Atlanta Field Office, believed the preferred alternative (ultimately the alternative selected and documented in the Decision Document) would be protective of human health and the environment, comply with all applicable or relevant and appropriate requirements (ARARs), be cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

## **2.5 ADDITIONAL BEST MANAGEMENT PRACTICE**

In addition to accomplishing the elements of the selected remedy as described above, it was also determined that Test Pit 4, a burial site for empty shell casings, required minor action. As a safety precaution to further reduce the possibility of shell casings migrating to the ground surface, the area was covered with a single, 12-inch thick layer of soil, graded, and revegetated with indigenous grasses.



### **3. REMEDIAL ACTION**

Implementation of the RA for EBS-13 included preparation of the RAWP and other work directing documents, evaluating the need for and applying for the necessary permits, and conducting pre-mobilization meetings with the appropriate stakeholders. These tasks, as well as other pre-mobilization, planning, and RA activities are described in the following sections.

#### **3.1 PREPARATION OF RA DOCUMENTS**

The RA was performed in accordance with the *Remedial Action Work Plan* (Tetra Tech 2004) and under the guidance of the *Remedial Investigation Site Safety and Health Plan for Supplemental Remedial Investigation EBS-13* (Tetra Tech 2002a), and *Paint Disposal Pit Time Critical Removal Action at EBS-13, Sampling and Analysis Plan* (Tetra Tech January 2003c).

#### **3.2 PERMITTING**

Excavation (penetration) and hot-cut permits were not required for the actions conducted as part of these field activities.

#### **3.3 PRE-MOBILIZATION MEETING**

Following approval of the RA documents, a pre-mobilization meeting was conducted by Tetra Tech's field supervisor and attended by Army representatives prior to mobilization for initiation of field activities. The project schedule and all outstanding issues were identified, discussed, and a resolution plan established. All outstanding issues were closed prior to mobilization to the site.

#### **3.4 MOBILIZATION AND SITE PREPARATION**

Tetra Tech mobilized personnel, equipment, and supplies to the site beginning in early January 2005. Prior to initiating the RA, erosion and sediment control measures were implemented in accordance with the *Supplemental Remedial Investigation Work Plan* (Tetra Tech 2003b). A waste-staging area was established inside the northern boundary fence of EBS-13, on an existing gravel covered area. An Exclusion Zone and a Contamination Reduction Zone (CRZ) were established around the work area to control access to the area and to prevent the spread and uncontrolled release of contaminated soils to the surrounding environment. A crawler excavator and one waste roll-off container were located within the CRZ during excavation operations (Photograph B-3).

### **3.5 WELL ABANDONMENT**

Prior to abandoning MW-136, potassium bromide was introduced into the well on January 24, 2005. MW-136 was then abandoned in accordance with VDEQ requirements (12VAC5-630-450). The bollards, wellhead pad, and surface casing were removed and disposed. A tremie pipe was used to fill the well with grout slurry from the bottom up to the surface. To eliminate voids and seepage pathways, the tremie pipe was raised during filling, but remained submerged. Solid wastes, generated during well abandonment, were placed in a roll-off container with excavated waste and contaminated soils, characterized, and disposed accordingly. Liquid wastes were contained in 55-gallon drums and characterized for disposal.

### **3.6 WASTE EXCAVATION**

During the previous TCRA, the excavation was “notched” (i.e., excavation was carried out in a way that would not undermine well MW-136 or cause its collapse). Following monitoring well abandonment, an area (approximately 10-ft by 10-ft) of contaminated soils was excavated and placed into three 20 yd<sup>3</sup> lined roll-off containers (Photograph B-4). The area was excavated in 12-inch lifts and continued to a depth of approximately 13 ft bgs. Each roll-off container was filled to approximately 80 percent of capacity to comply with U.S. Department of Transportation weight restrictions, covered with a tarp, and moved into the designated waste staging area.

### **3.7 CONFIRMATORY SAMPLING**

Confirmatory soil samples were collected within the excavation in accordance with the *Supplemental Remedial Investigation Work Plan* (Tetra Tech 2003b) at a frequency of one sample per 100 ft<sup>2</sup> of exposed surface area. Two soil samples (and a duplicate) were collected from the floor of the excavation at its northern (designated E13-NF-2 and E13-DP-2 respectively) and southern (designated E13-SF-2) extent. Two wall soil samples (E13-EW-2 and E13-SW-2) were also taken from the eastern and southern walls of the excavation. Sample locations NF, SF, EW, and SW, are included in Detail A of Figure 3-1. Samples were analyzed for VOCs, SVOCs, pesticides, dioxins/furans, explosives, and metals. Results of the confirmatory samples are included in Table C-3.

### **3.8 WASTE MANAGEMENT**

Solid and liquid wastes generated during RA activities were expected to contain contaminants similar to those observed in the TCRA. Following excavation, the waste was characterized in accordance with the Remedial Investigation (RI) SAP, waste manifests were prepared, and a licensed waste hauler transported the waste to a permitted facility for treatment and/or disposal.



Solid waste generated during excavation consisted of metal and concrete debris from well abandonment, soil from the excavation, polypropylene sheeting, and personal protective equipment. The soil was analyzed using SW-846 methods in accordance with USEPA's Toxicity Characteristic Leaching Procedure for Target Compound List/Target Analyte List analytes. All solid wastes were handled and disposed of based on analytical results. A total of three 20 yd<sup>3</sup> roll-off containers were required to contain and transport the estimated 30 tons of contaminated soil and 3 tons of miscellaneous solid wastes that were generated. Copies of the solid waste manifest and certification verifying proper disposal of these wastes are included in Appendix A.

Liquid wastes, in the form of decontamination fluid and well purge water from wells TT-1 and TT-2 (installed in January 2003), were also generated during the RA. No free liquids were observed within the excavation at any time during the final remediation. Drums of liquid from the groundwater monitoring well purging activities were labeled and stored in the decontamination area of EBS-13 until transported to the EQ Industrial Services (EQIS) facility (EQ North Carolina located in Apex, North Carolina) for disposal. All liquid wastes were handled and disposed of as non-hazardous, based on analytical results obtained during the Supplemental RI and other historical groundwater data presented in the Supplemental RI report. The first round of groundwater sampling and analysis from wells TT-1 and TT-2 confirmed the water from these wells was not hazardous (see Table C-4 for results of the first round of groundwater sampling from these wells). Copies of the liquid waste manifest for shipment of the waste to the EQIS facility and certification verifying proper disposal of these wastes are included in Appendix A.

### **3.9 NUTRIENT APPLICATION FOR ENHANCED NATURAL ATTENUATION**

Nitrate fertilizer was applied to the bottom of the excavation at the rate of approximately 50 pounds per 100 ft<sup>2</sup> of surface area to enhance natural attenuation of site soils and groundwater. The fertilizer was a 30-0-0 (N-P-K) agricultural-grade fertilizer.

#### **3.10 DECONTAMINATION PAD REMOVAL**

A decontamination facility (used to decontaminate field equipment during earlier RIs), which included a decontamination pad and a perimeter fence, was also removed after MW-136, and the residually contaminated soils in the area of the well, were excavated and removed (Photographs B-1 and B-2). The removal of the decontamination pad did not require the removal of soil in the immediate area of the pad based on the determination that the operation of the decontamination pad did not contaminate surrounding soils (i.e., no contaminated material was ever encountered or decontaminated on the pad).

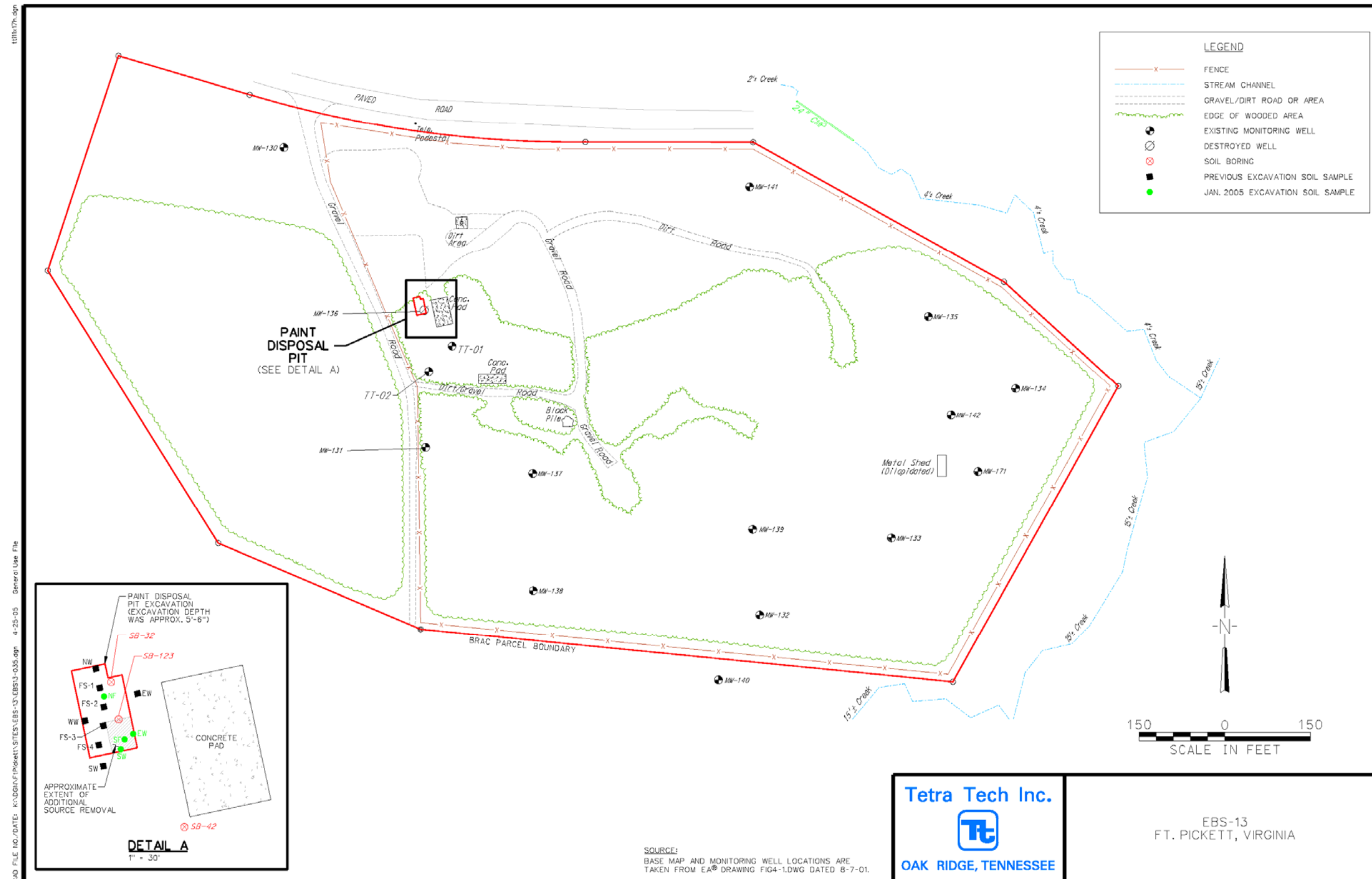


Figure 3-1. Confirmatory Sampling Location



## **4. SITE RESTORATION AND DEMOBILIZATION**

The following sections describe actions which were performed after remediation of site soils was completed.

### **4.1 BACKFILLING**

The excavation was filled with clean imported native soil and compacted using the excavator bucket. The backfill was graded to blend into the surrounding topography. The backfilled soil was compacted by the excavator bucket and traversing the site with the tracked excavator (Photograph B-5). No compaction tests were performed on the backfilled material.

### **4.2 COVERING TEST PIT 4**

Test Pit 4 is a burial pit for empty shell casings. The 17-ft by 12-ft pit was covered with 12 inches of imported clean soil. The soil was placed in a single 12-inch lift, compacted with the excavator bucket, and blended into the surrounding grade. No compaction tests were performed for the backfilled material placed over the test pit area (Photographs B-6 and B-7).

### **4.3 SITE RESTORATION**

After backfill and compaction, the remediated area was raked to a depth of 2 inches, and seeded with indigenous grasses at a rate of 10 pounds of seed per 100 ft<sup>2</sup>, and mulched with straw at a rate of one bale per 400 ft<sup>2</sup>.

Per the requirements specified in the RAWP for LUCs, signs were installed to delineate the boundary of the portion of the site subject to restrictions on the disturbance of subsurface soils. The signs were posted at the boundary of the area on free-standing posts (see photograph B-8) to notify users of the site of the potential hazard. These boundary signs contain the following message:

#### **NOTICE**

This area is suspected to contain underground hazards.  
Contact Nottoway County at (434-645-8696)  
prior to disturbing any subsurface soil in this area.

A single sign (see photograph B-9) was also placed at the entrance to the Site that contains the following message:



**NOTICE**

This area is suspected to contain  
Material Potentially Presenting an Explosive Hazard.  
No disturbance of subsurface soil within posted area is permitted  
without written permission from the U.S. Army Corps of Engineers.  
For information, contact Nottoway County at (434-645-8696).

**4.4 DEMOBILIZATION**

Following site restoration, all personnel, materials, waste, and equipment were removed from the site.



## **5. MODIFICATIONS TO THE CORRECTIVE ACTION WORK PLAN**

No changes or deviations from the work plan were required for execution of this work.



## **6. SUMMARY OF VERIFICATION WORK PERFORMED**

### **6.1 POST-RA REQUIREMENTS**

In accordance with the Decision Document, requirements for the area following completion of the RA included collection of post-excavation soil samples for analysis to document the final status of the RA, long-term groundwater monitoring, implementation of LUCs, and 5 year reviews.

The RAWP specified that groundwater monitoring will continue until:

- Semi-annual results from TT-01 and TT-02 indicate no measurable concentrations of VOCs and generally oxidizing conditions in the aquifer; or
- Measurable concentrations of dissolved nitrate appear in groundwater samples from TT-01 or TT-02 within a few months.

A review of the implementation of this remedy will occur no less often than each 5 years after initiation of this RA to assure that human health and the environment are being protected by the RA that was implemented. The reviews will be conducted in accordance with CERCLA 5-year review guidance. If groundwater monitoring continues until the first 5-year review, evaluation of the remediation at that point will also include an assessment to determine whether to continue or discontinue semi-annual groundwater monitoring.

The final remediation, at the point that it is determined that remediation is complete based on groundwater monitoring results, will ultimately comply with the ARARs identified as part of the selected remedy, i.e., compliance with the USEPA National Primary Drinking Water Standards for BTEX (with MCLs of 0.005, 1, 0.7, and 10 ppm respectively).

### **6.2 Post-Remediation Soil Results**

Soil excavation began on the west side of well location MW-136 and moved north (i.e., the excavation extended north into the area previously excavated during the TCRA performed in September 1999), following deeper stained soil (Photograph B-10). The excavation also extended south of MW-136 in order to remove the area of stained soil that extended in this direction. Two post-excavation soil samples (and a duplicate) were collected from the floor of the excavation from the northern portion (E13-NF-2 and E13-DP-2), and one sample was collected from the southern portion (E13-SF-2). In addition, two soil samples (E13-EW-2 and E13-SW-2) were taken from the eastern and southern walls of the excavation

(Figure 3-1). All confirmatory soil samples were analyzed for VOCs, SVOCs, metals, pesticides, explosives, and dioxins/furans.

VOC contaminants were detected in only one sample (E13-NF-2) and the duplicate sample taken from the same location. VOCs detected in these two samples included ethylbenzene [18 parts per billion (ppb) and 680 ppb, respectively], toluene (32 ppb and 760 ppb) and xylenes (2400 ppb and 4400 ppb).

SVOC contaminants were detected in only one sample (E13-NF-2) and the duplicate sample collected from the same location. SVOCs detected included bis(2-ethylhexyl)phthalate and di-n-butylphthalate (6600 to 10,000 ppb and 4000 to 7000 ppb, respectively); fluoranthene, phenanthrene and pyrene (640, 550, 520 ppb respectively) only in E13-NF-2. Benzo (a) anthracene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzo (g,h,i) pyrene, and benzo (a) pyrene (320, 310, 160, 380, and 240 ppb respectively) were all reported as estimated concentrations in E13-NF-2.

No pesticides or explosives were detected in any of the confirmatory soil samples. The dioxin octachlorodioxin (OCDD) was detected in all soil samples with concentrations ranging from 1340-10,100 pg/g. Non-nutrient metals detected in all soil samples included: aluminum (19900-33800 ppb); chromium (7.5-47.2 ppb); iron (5510-27,600 ppb); lead (27.4-40.4 ppb); manganese (17-135 ppb); vanadium (13.3-56.5 ppb) and zinc (3.5B-39.3 ppb). All soil sample results are included in Table C-3.

### **6.3 Post-Remediation Groundwater Monitoring Results**

The first semi-annual groundwater monitoring event at the site was conducted simultaneously with RA implementation. Groundwater samples were collected at monitoring wells TT-01 and TT-02 in accordance with procedures included in the *Final Work Plan for the Supplemental Remedial Investigation* (Tetra Tech, 2003b). These samples were the first samples collected after the TCRA and were analyzed to establish the baseline for the semi-annual monitoring of these two wells. Groundwater monitoring will continue in these two wells for 5 years or until either tracers from the location of well MW-136 (bromide) or dissolved nitrate from the soil excavation are observed in either well and the accompanying lack of VOC concentrations indicate that the natural attenuation has been effective.

Groundwater samples were collected from monitoring wells TT1 and TT2 (samples E13-T1 GW-1 and E13-T2 GW-1 respectively) at the conclusion of the excavation (on January 25, 2005) to establish baseline concentrations and a basis for comparison for future monitoring results (Photograph B-11). A duplicate sample was also collected from TT1 (sample E13-DP-1) on January 26, 2005. Groundwater samples were analyzed for the following contaminant suites: VOCs; SVOCs; and metals. Samples were



also analyzed for anions. No organic contaminants were identified in the groundwater samples. Metals concentrations in the groundwater samples were all very low with manganese being the only metal having measurable concentrations above the method reporting limit. All post-remediation groundwater monitoring results are included in Table C-4.

#### **6.4 Post-Remediation Status**

No contaminants were detected in the baseline groundwater samples. Baseline concentrations for several tracer anions (nitrate and bromide) have been established for comparison with future monitoring data (See Table C-3).

Measurable concentrations of several VOCs and SVOCs were present in the soil samples (original and duplicate) from a deeper portion of the area of the paint disposal pit previously excavated (See Table C-4). Observed concentrations are low for all of the observed contaminants with most of the concentrations less than the toxicity screening value (i.e., RBCs) used in the original human health risk assessment performed for the site. The only exception was benzo (a) pyrene with an estimated concentration of 240 ppb. Concentrations for VOCs and SVOCs are typically orders of magnitude below RBCs. Despite the presence of benzo (a) pyrene at a concentration above the RBC, the sample depth (15 ft bgs) is beyond the normal depth considered in human health risk scenarios. In addition, a supplemental oxygen amendment (nitrate-based fertilizer) was added to the base of the excavation. All of the organic contaminants observed are susceptible to biodegradation in the presence of an oxygen source. Contaminant concentrations in the source area soils, already below RBCs, will decrease further as bioremediation continues.

After the RA, confirmatory samples indicated that the concentrations of contaminants remaining in soils were below RBCs, or can be expected to be susceptible to further biodegradation in the future and, therefore, do not represent a significant future human health risk.



## 7. REFERENCES

- EA Engineering, Science and Technology. 2000. *Technical Memorandum Phase I Remedial Investigation, Former Recycling Compound, EBS-13, Zone 2, Fort Pickett, Virginia.*
- Environmental Research, Inc. 1997. *Aerial Photographic Analysis, Fort Pickett BRAC Parcel, Blackstone, Virginia.* Prepared for Fort Pickett BRAC Clean-up Team and U.S. Army Corps of Engineers, Norfolk District.
- Tetra Tech, Inc. 2005. *Decision Document, EBS-13 Parcel, Operable Unit 6, Fort Pickett Army Garrison, Blackstone, Virginia.* May 18.
- Tetra Tech, Inc. 2004. *Remedial Action Work Plan for EBS-13, Fort Pickett, Virginia,* December.
- Tetra Tech, Inc. 2003a. *Final Phase II and Supplemental Remedial Investigation for EBS-13, Fort Pickett, Virginia.*
- Tetra Tech, Inc. 2003b. *Work Plan, Supplemental Remedial Investigation, EBS-13, Fort Pickett, Virginia.* January.
- Tetra Tech, Inc. 2003c. *Paint Disposal Pit Time Critical Removal Action Work Plan at EBS-13 Former Recycling Compound for Fort Pickett, Virginia.*
- Tetra Tech, Inc. 2002a. *Site Safety and Health Plan, Supplemental Remedial Investigation, EBS-13, Fort Pickett, Virginia.* December.
- Tetra Tech, Inc. 2002b. *Quality Assurance Project Plan, Supplemental Remedial Investigation, EBS-13, Fort Pickett, Virginia.* December.



# **APPENDIX A**

## **Waste Disposal Documentation**



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EQ NORTH CAROLINA

PAGE 02/03

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No	Manifest Doc No.	2. Page 1 of 1
3. Generator's Name and Mailing Address BRAC Property, Ft Pickett 2193 Military Rd, Fort Pickett Bldg Blackstone VA 22024				
4. Generator's Phone (434) 292-3317				
5. Transporter 1 Company Name EQ Industrial Services		6. US EPA ID Number MFO000263871	A. Transporter's Phone 919-363-4700	
7. Transporter 2 Company Name		8. US EPA ID Number	B. Transporter's Phone	
9. Designated Facility Name and Site Address EQ North Carolina 1805 Investment Blvd. Apex, NC 27502		10. US EPA ID Number NCD98217D29Z	C. Facility's Phone 919-363-4700	
11. Waste Shipping Name and Description		12. Containers	13. Total Quantity	14. Unit Wt/Vol
a. Non-Hazardous, Non-Regulated Material (Purge water)		No. Type		
		0.01 DM 0.0200 P		
b.				
c.				
d.				
D. Additional Descriptions for Materials Listed Above Approval # A) NC5577NH		E. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information  In Case of Emergency Contact EQ IS 1-919-363-4700				
16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.				
Printed/Typed Name Francis Guilmore		Signature Francis Guilmore		Month Day Year 10/22/05
17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed/Typed Name Leon Eaton		Signature Leon Eaton		Month Day Year 02/22/06
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name		Signature		Month Day Year
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.				
Printed/Typed Name Phyllis Hudson		Signature Phyllis Hudson		Month Day Year 10/22/05

ORIGINAL - RETURN TO GENERATOR



## NORTH CAROLINA

This certificate is to verify that the wastes specified for the following manifest number have been properly managed with all applicable local, state and federal regulations.

GENERATOR: BRAC PROPERTY, FT. PICKETT  
MANIFEST NO: 22205  
DATE RECEIVED: 2/22/05

FACILITY:  
EQ North Carolina  
EPA I.D. # NCD982170292

Authorized Signature: \_\_\_\_\_

Date Issued: 3/28/05

1005 INVESTMENT BLVD. • APEX, NORTH CAROLINA 27502

04/09/05 1700 • EQ North Carolina



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PAGE 02/04

MI9243364, Page 1

TK 232



WASTE MANAGEMENT DIVISION  
MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY

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Required under authority of Part 111 and  
Part 131 of Act 451, 1994, as amended

Failure to file may subject you to  
criminal penalties under  
Section 451.15(1) of Act 451, 1994, as amended

Please print or type		Form Approved OMB No. 2030-0080	
<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>VA0213720931</b>	Manifest Document No. <b>13724</b>
3. Generator's Name and Address <b>ARMED &amp; DANGEROUS, FT. PICKETT 2100 MILITARY ROAD, PICKETT PARK BLACKSTONE, VA 22624</b>		A. State Manifest Document Number <b>MI 9243364</b>	
4. Generator's Phone ( ) <b>541 292-3217</b>		B. State Generator's ID	
5. Transporter 1 Company Name <b>ROBBIE D. WOOD</b>		C. State Transporter's ID <b>MI 00000000</b>	
6. Transporter 1 US EPA ID Number <b>ALD00714831</b>		D. Transporter's Phone <b>248-299-7297</b>	
7. Transporter 2 Company Name		E. State Transporter's ID	
8. Transporter 2 US EPA ID Number		F. Transporter's Phone	
9. Designated Facility Name and Site Address <b>MICHIGAN DISPOSE WASTE TREATMENT PLANT 40850 N. 104 SERVICE DRIVE BELLEVILLE, MI 48111</b>		G. State Facility's ID	
10. Designated Facility US EPA ID Number <b>MIID000724831</b>		H. Facility's Phone <b>1-800-833-5463</b>	
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) <b>HAZARDOUS WASTE SOLID, NOX. (D018), 9, NA3077 PGIII</b>		12. Containers No. Type <b>CM</b>	13. Total Quantity Unit <b>00015 T</b> Wt/Vol <b>15 tons estimate</b>
14. Additional Descriptions for Manifest Item Above		14. Waste No. <b>D018</b>	
15. Special Handling Instructions and Additional Information <b>IN CASE OF EMERGENCY CONTACT EQHS 1-800-833-3678 EQUHS 11A1 171</b>		K. Handling Codes a. b. c. d.	
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR: if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.			
Printed/Typed Name <b>Francis Gulmore</b>		Signature <i>Francis Gulmore</i>	
17. Transporter 1 Acknowledgment of Receipt of Materials Printed/Typed Name <b>David E. Thrige</b>		Signature <i>David E. Thrige</i>	
18. Transporter 2 Acknowledgment of Receipt of Materials Printed/Typed Name		Signature	
19. Discrepancy Indication Space			
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 18 Printed/Typed Name <b>BRIAN SCHUCK</b>			
Signature <i>Brian Schuck</i>			
Date <b>03/02/05</b>			

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4108 OR OUT OF STATE AT 811-373-1690 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-6622 24 HOUR PSD DAY.



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**WASTE MANAGEMENT DIVISION**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

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Required under authority of Part 111 and Part 121 of Act 457, 1994, as amended.  
Return to the agency responsible for the permit and/or civil penalties under Sections 324.11-151 or 324.12116 MCL.

Form Approved OMB No. 2050-0039

Please print or type.

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No. **VA0213720931**

2. Page 1

3. Generator Name and Mailing Address  
**BRAC PROPERTY, FT. PICKETT  
2105 MILITARY ROAD, PICKETT PARK  
BLACKSTONE, VA 22024**

4. Generator's Phone ( **834** ) **282-3917**

5. Transporter 1 Company Name  
**ROBBIE D. WOOD**

6. US EPA ID Number  
**ALD06713891**

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address  
**MICHIGAN DISPOSAL WASTE TREATMENT PLANT  
4050 N. 104 SERVICE DRIVE  
BELLEVILLE, MI 48111**

10. US EPA ID Number  
**MOI000724031**

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)  
**HAZARDOUS WASTE SOLID, N.O.R.  
(D018), P. RA3077 F0113**

12. Containers  
No. Type  
**CM 1 00015 T**

13. Total Quantity  
**121.1 L**

14. Unit  
**Wt/Vol**

15. Waste No.  
**D018**

16. Additional Descriptions for Materials Listed Above  
**APPROVAL 11A) 8226MPB  
3**

17. Special Handling Instructions and Additional Information  
**IN CASE OF EMERGENCY CONTACT  
EQHS 1-800-330-3075**

18. GENERAL INFORMATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

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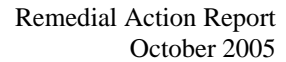
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Failure to file may subject you to  
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Sections 324.11151 or 324.12116 MCL.

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-282-4768 OR OUT OF STATE AT 617-373-7600 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-6860 24 HOUR PER DAY.



## **APPENDIX B**

### **Site Photographs**



**Photograph B-1. Decontamination pad prior to removal**



**Photograph B-2. Decontamination pad removal**



**Photograph B-3. Staging of roll-off container and crawler excavator**



**Photograph B-4. Trenching near monitoring well prior to removal**



**Photograph B-5. Restored site after time critical removal action**



**Photograph B-6. Soil cover over shell casings in “High Density Area”**



**Photograph B-7. Compaction of soil with excavator bucket**



**Photograph B-8. MPPEH area boundary signs**



**Photograph B-9. Site perimeter sign**



**Photograph B-10. Expansion of excavation boundary to “chase” stained soils**



**Photograph B-11. Sampling newly installed monitoring wells**



## **APPENDIX C**

### **Analytical Results**



## ANALYTICAL DATA TERMS AND QUALIFIERS

The following data qualifiers are used throughout Tables C-1 through C-4.

- A** Indicates the amount detected is less than the Lower Calibration Limit or greater than the Upper Calibration Limit.
- B** Indicates compound was also detected in the method blank and data should be interpreted with caution. The possibility that the correct sample result might be less than the reported result and, perhaps zero.
- D** Qualifier is added to indicate a sample (or sample extract) is a diluted sample which was re-run diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve. All of the values obtained in the dilution run will be flagged with a "D" .
- E** Indicates the concentration exceeds the highest concentration level on the standard curve. Usually the sample will be re-run at a dilution to quantify the flagged compound.
- EQL** The estimated quantitation limit (EQL) is the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. The EQL is defined at or near the lowest standard of the calibration curve.
- I** Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).
- J** Indicates an analytical result reported as estimated. The mass spectral data pass the identification criteria showing that the compound is present; however, the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.
- MDL** The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.
- P** The associated numerical value is an estimated quantity. This estimated value is reported because there is greater than a 40 percent difference between the two gas chromatograph columns for the detected concentrations. The higher of the two values is reported unless matrix interference is apparent.
- U** The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte was below the MDL.
- \*** No Calibration for this analyte on the date of this analysis. Results reported as non-detect based on evaluation of ions in retention time window (for Organic analytes), or the value is outside of contract required quality control limits.
- ( )** Indicates analyte was Not Detected or reported as the MDL.
- [ ]** Estimated Maximum Possible Concentration value.
- N** Matrix spikes that did not met the quality control criteria.



**Table C-1.**  
**Confirmatory Sampling Soil Gas Field Screening Results**  
**(Jan 03 – Paint Pit Removal)**

<b>Sample Location</b>	<b>Sample Depth bgs (ft. ± 6-in.)</b>	<b>PID Reading (ppm)</b>
F1	4 ft, 6 inch	237
F2	4 ft, 6 inch	1481
F3	4 ft, 6 inch	1812
F4	4 ft, 6 inch	43
NW	2 ft, 6 inch	10.1
SW	2 ft, 6 inch	1.8
EW	2 ft, 6 inch	85
WW	2 ft, 6 inch	4.9
F1*	6 ft, 0 inch	216
F2*	6 ft, 0 inch	1267

\* resample


**Table C-2. Fort Pickett Time Critical Removal Action Confirmatory Sampling Analytical Results (January 2003 – Paint Pit Removal)**

Contaminant	Sample Number (E13-SB-XX)								
	RBC	F1	F2	F3	F4	NW	SW	EW	WW
<i>Explosives (µg/kg)</i>									
HMX	3.91E+03	0.173 U	0.191 U	0.179 U	0.17 U	0.23 U	0.188 U	0.185 U	0.169 U
TETRYL	7.82E+02	0.088 U	0.097 U	0.092 U	0.087 U	0.095 U	0.096 U	0.094 U	0.086 U
<i>Metals (mg/kg)</i>									
aluminum	7.8E+04	38.5	55	62.8	87.9	40.35	72.9	81	33.3
antimony	3.1E+01	0.001 U	0.0012 U	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.001 U
arsenic	4.3E-01	0.0017	0.0039	0.0023	0.0023	0.005	0.0056	0.0031	0.0037
barium	5.5E+03	0.0181	0.0581	0.052	0.0361	0.0478	0.0521	0.049	0.0537
beryllium	1.6E+02	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0016	0.001 U
cadmium - food	1.6E+04	0.0009 U	0.001 U	0.001 U	0.0012	0.001 U	0.0019	0.0026	0.0009 U
calcium	*	0.706	0.282	0.29	0.0737	0.095	0.24	0.173	0.273
chromium	1.2E+05	0.0176	0.0443	0.0601	0.0269	0.076	0.0657	0.107	0.0356
cobalt	1.6E+03	0.0015	0.0036	0.0035	0.0032	0.0007	0.0043	0.0057	0.003
copper	3.1E+03	0.0015	0.0055	0.0045	0.0025	0.0143	0.0075	0.0152	0.0044
cyanide	1.6E+03	0.86 U	0.95 U	0.89 U	0.85 U	0.92 U	0.93 U	0.92 U	0.84 U
hexavalent chromium	2.3E+02	3E-06 U	3E-06 U	3E-06 U	3E-06 U	3E-06 U	3E-06 U	3E-06 U	3E-06 U
iron	2.3E+04	11.3	21.5	15.5	13.9	40.6	33.8	47.1	23.8
lead	4.0E+02	0.0464	0.0524	0.136	0.0377	0.0461	0.0251	0.0495	0.0273
magnesium	*	0.349	0.841	0.651	0.704	1.013	0.908	4.64	0.68
manganese - food	1.1E+04	0.0276	0.0841	0.052	0.0511	0.0706	0.0499	0.284	0.0541
molybdenum	3.9E+02	0.0004 U	0.0016	0.0018	0.0018	0.002	0.0029	0.0028	0.0014
nickel	1.6E+03	0.0032	0.0091	0.0085	0.0085	0.0025	0.0147	0.0152	0.0065
potassium	*	0.566	1.3	1.22	1.32	1.72	1.5	7.3	0.964
selenium	3.9E+02	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U
silver	3.9E+02	0.0004 U	0.0005 U	0.0005 U	0.0004 U	0.0005 U	0.0005 U	0.0005 U	0.0004 U
sodium	*	0.23	0.231	0.204	0.29	0.339	0.401	0.536	0.135
thallium	5.5E+00	0.0005 U	0.0006 U	0.0006 U	0.0005 U	0.0006 U	0.0006 U	0.0006 U	0.0005 U
vanadium	5.5E+02	0.0203	0.0451	0.0285	0.028	0.0888	0.0676	0.0929	0.0425
zinc	2.3E+04	0.0633	0.0601	0.0644	0.0228	0.039	0.0323	0.0786	0.0305

Table C-2. (continued)

Contaminant	Sample Number (E13-SB-XX)								
	RBC	F1	F2	F3	F4	NW	SW	EW	WW
<i>Semi-Volatile Organics (µg/kg)</i>									
1,3,5-trinitrobenzene	2.3E+03	0.097 U	0.107 U	1.55	0.095 U	0.104 U	0.105 U	0.104 U	0.095 U
1,3-dichlorobenzene	2.3E+03	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
1,3-dinitrobenzene	7.8E+00	0.332 U	0.365 U	0.344 U	0.326 U	0.355 U	0.36 U	0.354 U	0.323 U
1,4-dichlorobenzene	2.7E+01	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
1-methylnaphthalene	1.6E+02	0.034	3.03	2.32	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0013 U
2,4,6-trichlorophenol	5.8E+01	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
2,4,6-trinitrotoluene	2.1E+01	0.079 U	0.086 U	0.081 U	0.077 U	0.084 U	0.085 U	0.084 U	0.077 U
2,4-dichlorophenol	2.3E+02	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
2,4-dimethylphenol	1.6E+03	0.049 U	1.82	13.9	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
2,4-dinitrophenol	1.6E+02	0.037 U	0.041 U	0.038 U	0.036 U	0.0395 U	0.04 U	0.039 U	0.036 U
2,4-dinitrotoluene	1.6E+02	0.061 U	0.068 U	0.064 U	0.06 U	0.065 U	0.067 U	0.066 U	0.06 U
2,6-dinitrotoluene	7.8E+01	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
2-amino-4,6-dinitrotoluene	7.8E+00	0.093 U	0.103 U	0.097 U	0.092 U	0.1 U	0.101 U	0.1 U	0.091 U
2-chloronaphthalene	6.3E+03	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
2-chlorophenol	3.9E+02	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
2-methylnaphthalene	1.6E+03	0.0349	2.99	2.52	0.0013 U	0.0014 U	0.0036	0.0014 U	0.0013 U
2-methylphenol	3.9E+03	0.049 U	3.19	3.93	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
2-nitroaniline	2.3E+01	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
2-nitrotoluene	7.8E+01	0.505 U	0.555 U	0.523 U	0.496 U	0.54 U	0.549 U	0.539 U	0.492 U
3,3'-dichlorobenzidine	1.4E+00	0.135 U	0.149 U	0.14 U	0.133 U	0.1445 U	0.147 U	0.144 U	0.132 U
3-nitrotoluene	7.8E+01	0.173 U	0.191 U	0.179 U	0.17 U	0.185 U	0.188 U	0.185 U	0.169 U
4,6-dinitro-2-methylphenol	7.8E+00	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
4-amino-2,6-dinitrotoluene	7.8E+00	0.151 U	0.166 U	0.156 U	0.149 U	0.1615 U	0.164 U	0.161 U	0.147 U
4-chloroaniline	3.1E+02	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
4-methylphenol	3.9E+02	0.049 U	3.47	4.02	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
4-nitroaniline	3.2E+01	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
4-nitrophenol	6.3E+02	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
4-nitrotoluene	7.8E+01	0.176 U	0.193 U	0.182 U	0.173 U	0.188 U	0.191 U	0.187 U	0.171 U



Table C-2. (continued)

Contaminant	Sample Number (E13-SB-XX)								
	RBC	F1	F2	F3	F4	NW	SW	EW	WW
acenaphthene	4.7E+03	0.0982	3.35	4.33	0.0022 U	0.0024 U	0.0024 U	0.0024 U	0.0022 U
acenaphthylene	4.7E+02	0.0053	0.23	0.191	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.001 U
anthracene	2.3E+04	0.523	15.3	18.8	0.0331	0.0032 U	0.0049	0.0147	0.0099
benzo(a)anthracene	8.7E-01		23.6	24.8	0.0586	0.0057	0.019	0.0277	0.0241
benzo(a)pyrene	8.7E-02	0.539	14.9	13.9	0.0383	0.0077	0.0211	0.0182	0.017
benzo(b)fluoranthene	8.7E-01	0.559	16.1	14.5	0.0414	0.0013 U	0.022	0.0164	0.0154
benzo(g,h,i)perylene	2.3E+02	0.252	6.28	5.13	0.0159	0.0018 U	0.011	0.0056	0.0063
benzo(k)fluoranthene	8.7E+00	0.502	14.5	13.4	0.0367	0.0046	0.0176	0.0147	0.0115
bis(2-chloroethyl)ether	5.8E-01	0.049 U	0.054 U	0.051 U	0.048 U	0.0655 U	0.053 U	0.052 U	0.048 U
bis(2-ethylhexyl)phthalate	4.6E+01	1.89	6.24	82.4	0.06 U	0.0525 U	0.067 U	0.172	0.06 U
carbazole	3.2E+01	0.061 U	4.91	7.14	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
chrysene	8.7E+01	0.811	22.6	22.9	0.0558	0.008	0.0234	0.0277	0.0237
dibenzo(a,h)anthracene	8.7E-02	0.112	3.16	2.72	0.012	0.0016 U	0.0106	0.0016 U	0.0083
dibenzofuran	3.1E+02	0.061 U	1.59	2.42	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
di-n-butyl phthalate	7.8E+03	1.17	2.95	35.6	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
fluoranthene	3.1E+03	1.83	53.1	59.7	0.112	0.006	0.0251	0.0585	0.0684
fluorene	3.1E+03	0.285	7.99	10.3	0.0215	0.0022 U	0.0023 U	0.0056	0.0091
hexachlorobenzene	4.0E-01	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
hexachlorobutadiene	8.2E+00	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
hexachlorocyclopentadiene	4.7E+02	0.025 U	0.027 U	0.025 U	0.024 U	0.0265 U	0.027 U	0.026 U	0.024 U
hexachloroethane	4.6E+01	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
indeno(1,2,3-cd)pyrene	8.7E-01	0.229	6.15	5.17	0.0191	0.0016 U	0.015	0.0108	0.0107
nitrobenzene	3.9E+01	0.061 U	0.068 U	0.064 U	0.06 U	0.0655 U	0.067 U	0.066 U	0.06 U
n-nitroso-di-n-propylamine	**	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
pentachlorophenol	5.3E+00	0.049 U	0.054 U	0.051 U	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
phenanthrene	2.3E+02	1.99	59.9	70.5	0.157	0.0078	0.0172	0.0415	0.0493
phenol	2.3E+04	0.049 U	2.11	2.12	0.048 U	0.0525 U	0.053 U	0.052 U	0.048 U
pyrene	2.3E+03	1.28	34.1	39.1	0.0837	0.0057	0.0247	0.0446	0.0581



Table C-2. (continued)

Contaminant	Sample Number (E13-SB-XX)								
	RBC	F1	F2	F3	F4	NW	SW	EW	WW
<i>Volatile Organics (µg/kg)</i>									
1,1,2,2-tetrachloroethane	3.2E+00	0.0009 U	0.001 U	0.0009 U	0.0009 U	0.0007 U	0.001 U	0.0009 U	0.0009 U
1,1,2-trichloroethane	1.1E+01	0.0006 U	0.0007 U	0.0007 U	0.0006 U	0.0005 U	0.0007 U	0.0007 U	0.0006 U
1,1-dichloroethene	3.9E+03	0.0008 U	0.0009 U	0.0009 U	0.0008 U	0.0007 U	0.0009 U	0.0009 U	0.0008 U
1,2-dichloroethane	7.0E+00	0.0005 U	0.0006 U	0.0005 U	0.0005 U	0.0004 U	0.0006 U	0.0006 U	0.0005 U
1,2-dichloropropane	9.4E+00	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0008 U	0.0011 U	0.0011 U	0.001 U
1,4-dioxane	5.8E+01	0.123 U	0.135 U	0.127 U	0.121 U	0.1 U	0.134 U	0.131 U	0.12 U
4-methyl-2-pentanone	6.3E+03	11.3	23.1	19.1	23.2	0.0036 U	0.0048 U	0.0047 U	3.21
acetone	7.8E+03	0.602	0.0139 U	0.0131 U	1.43	0.0666	0.0138 U	0.0135 U	0.109
benzene	1.2E+01	0.0387	0.676	0.852	0.0053	0.0003 U	0.0004 U	0.0004 U	0.0072
bromodichloromethane	1.0E+01	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0009 U	0.0012 U	0.0011 U	0.001 U
bromomethane	1.1E+02	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0009 U	0.0012 U	0.0012 U	0.0011 U
carbon disulfide	7.8E+03	0.0005 U	0.0006 U	0.0006 U	0.0034	0.0004 U	0.0006 U	0.0006 U	0.0011
carbon tetrachloride	4.9E+00	0.0007 U	0.0008 U	0.0008 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U
chlorobenzene	1.6E+03	0.0008 U	0.0009 U	0.0008 U	0.0008 U	0.0006 U	0.0008 U	0.0008 U	0.0008 U
chloroethane	2.2E+02	0.0013 U	0.0014 U	0.0013 U	0.0012 U	0.001 U	0.0014 U	0.0013 U	0.0012 U
chloroform	7.8E+02	0.0009 U	0.0009 U	0.0009 U	0.0008 U	0.0007 U	0.0009 U	0.0009 U	0.0008 U
chloromethane	4.9E+01	0.0006 U	0.0007 U	0.0006 U	0.0006 U	0.0005 U	0.0007 U	0.0006 U	0.0006 U
cis-1,2-dichloroethene	7.8E+02	0.0005 U	0.0006 U	0.0005 U	0.0005 U	0.0004 U	0.0006 U	0.0006 U	0.0005 U
dibromochloromethane	7.6E+00	0.0007 U	0.0008 U	1.76	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U
ethylbenzene	7.8E+03	0.392	37.7	101	0.0072	0.0044	0.0006 U	0.0006 U	0.006
methylene chloride	8.5E+01	0.0036	0.178	1.98	0.0046	0.0038	0.0009 U	0.0009 U	0.003
naphthalene	1.6E+03	0.0425	2.14	5.84	0.0012 U	0.0017	0.0013 U	0.003	0.0032
tetrachloroethene	1.2E+01	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0005 U	0.0006 U	0.0006 U	0.0006 U
toluene	1.6E+04	1.77	127	242	0.175	0.0202	0.001 U	0.076	0.0405
total 1,2-dichloroethene	7.0E+02	0.0007 U	0.0008 U	0.0008 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U
trichloroethene	1.6E+00	0.0007 U	0.0008 U	0.0008 U	0.0007 U	0.0006 U	0.0008 U	0.0008 U	0.0007 U
vinyl chloride	9.0E-02	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.001 U	0.0013 U	0.0013 U	0.0012 U
xylenes, total	1.6E+05	2.21	204	448	0.0388	0.0275 U	0.1	0.283	0.0304



Table C-2. (continued)

Contaminant	Sample Number (E13-SB-XX)								
	RBC	F1	F2	F3	F4	NW	SW	EW	WW
<i>Pesticides (µg/kg)</i>									
4,4'-DDD	2.7E+00	0.0009 U	0.001 U	0.001 U	0.0009 U	0.001 U	0.001 U	0.001 U	0.0009 U
4,4'-DDE	1.9E+00	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U
4,4'-DDT	1.9E+00	0.0019 U	0.0021 U	0.002 U	0.0019 U	0.0021 U	0.016	0.0021 U	0.0019 U
aldrin	3.8E-02	0.001 U	0.0011 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.001 U	0.001 U
alpha-BHC	1.0E-01	0.001 U	0.0011 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.001 U
alpha-chlordane	1.8E-01	0.0018 U	0.002 U	0.0019 U	0.0018 U	0.002 U	0.002 U	0.0019 U	0.0018 U
aroclor-1016	5.5E+00	0.0192 U	0.0211 U	0.0198 U	0.0188 U	0.0205 U	0.0208 U	0.0204 U	0.0187 U
aroclor-1221	3.2E-01	0.0188 U	0.0207 U	0.0195 U	0.0185 U	0.0201 U	0.0204 U	0.0201 U	0.0183 U
aroclor-1232	3.2E-01	0.0178 U	0.0196 U	0.0184 U	0.0175 U	0.0191 U	0.0194 U	0.019 U	0.0174 U
aroclor-1242	3.2E-01	0.0163 U	0.018 U	0.0169 U	0.0161 U	0.0175 U	0.0178 U	0.0174 U	0.0159 U
aroclor-1248	3.2E-01	0.0162 U	0.0178 U	0.0168 U	0.0159 U	0.0174 U	0.0176 U	0.0173 U	0.0158 U
aroclor-1254	3.2E-01	0.0187 U	0.0205 U	0.0193 U	0.0184 U	0.02 U	0.0203 U	0.0199 U	0.0182 U
aroclor-1260	3.2E-01	0.0194 U	0.0214 U	0.0201 U	0.0191 U	0.0208 U	0.0211 U	0.0207 U	0.0189 U
beta-BHC	3.5E-01	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0015 U	0.0013 U
delta-BHC	4.9E-02	0.0007 U	0.0008 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
dieldrin	4.0E-02	0.0011 U	0.0012 U	0.0011 U	0.001 U	0.0011 U	0.0011 U	0.0011 U	0.001 U
endosulfan I	4.7E+02	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0013 U
endosulfan II	4.7E+01	0.0009 U	0.001 U	0.001 U	0.0009 U	0.001 U	0.001 U	0.001 U	0.0009 U
endosulfan sulfate	4.7E+01	0.0007 U	0.0008 U	0.0008 U	0.0007 U	0.0008 U	0.0008 U	0.0008 U	0.0007 U
endrin	2.3E+01	0.0008 U	0.0009 U	0.0008 U	0.0008 U	0.0008 U	0.0009 U	0.0008 U	0.0008 U
endrin aldehyde	2.3E+00	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0013 U
endrin ketone	2.3E+00	0.001 U	0.0011 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.001 U	0.0009 U
gamma-bhc (lindane)	4.9E-01	0.0012 U	0.0014 U	0.0013 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U
gamma-chlordane	1.8E-01	0.0014 U	0.0015 U	0.0014 U	0.0013 U	0.0015 U	0.0015 U	0.0014 U	0.0013 U
heptachlor	1.4E-01	0.0008 U	0.0008 U	0.0008 U	0.0007 U	0.0008 U	0.0008 U	0.0008 U	0.0007 U
heptachlor epoxide	7.0E-02	0.0016 U	0.0018 U	0.0017 U	0.0016 U	0.0018 U	0.0018 U	0.0018 U	0.0016 U
methoxychlor	3.9E+02	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U
toxaphene	5.8E-01	0.0439 U	0.0482 U	0.0454 U	0.0431 U	0.0469 U	0.0477 U	0.0468 U	0.0428 U

\* soil nutrient, RBC value not listed.





Table C-3. Soils Data (Jan. 05)

Contaminant	E13-XX-2						
	NF <sup>(1)</sup>	NF (Medium Level) <sup>(2)</sup>	SF	EW	SW	DP	DP (Medium Level)
<i>Explosives (µg/kg)</i>							
HMX	U		U	U	U	U	
RDX	U		U	U	U	U	
Nitrobenzene	U		U	U	U	U	
1,3-Dinitrobenzene	U		U	U	U	U	
1,3,5-Trinitrobenzene	U		U	U	U	U	
2,4-Dinitrotoluene	U		U	U	U	U	
2,6-Dinitrotoluene	U		U	U	U	U	
2,4,6-Trinitrotoluene	U		U	U	U	U	
2-Amino-4,6-dinitrotoluene	U		U	U	U	U	
Tetryl	U		U	U	U	U	
4-Amino-2,6-dinitrotoluene	U		U	U	U	U	
2-Nitrotoluene	U		U	U	U	U	
4-Nitrotoluene	U		U	U	U	U	
3-Nitrotoluene	U		U	U	U		
<i>Metals (mg/kg)</i>							
Aluminum	19900		30700	32600	33800	31500	
Antimony	2.6 U		2.6 U	2.5 U	2.7 U	2.5 U	
Arsenic	1.8 B		3.3	1.3 U	2.4 B	3.5	
Barium	31.9 B		44.9 B	14.7 B	27.8 B	57.8	
Beryllium	1 U		1 U	1 U	1.1 U	0.99 U	
Cadmium	0.26 U		0.26 U	0.25 U	0.27 U	0.25 U	
Calcium	256 U		352 B	255 U	270 U	312	
Chromium	15.1		29.8	7.5	37.1	47.2	
Cobalt	2.2 B		1.8 B	1.3 U	1.4 U	2.5 B	
Copper	5 B		8.1	2.8 B	8.8	9.7	
Iron	13900		26200	5510	27600	27500	
Lead	40.4		28.3	27.4	29.3	31.1	
Magnesium	1230 B		1020 B	255 U	1350 B	1280	
Manganese	135		92.8	17	83.3	94.6	
Mercury	0.016 U		0.053	0.017 U	0.019 U	0.013 U	
Nickel	4.6 B		6.4 B	3.3 B	7.1 B	8.1 B	
Potassium	1740		1560	300 B	2200	1680	
Selenium	0.77 U		0.77 U	0.76 U	0.81 U	0.74 U	
silver	1.3 U		1.3 U	1.3 U	1.4 U	1.2 U	
Sodium	256 U		257 U	255 U	270 U	247 U	
Thallium	1.3 U		1.3 U	1.3 U	1.4 U	1.2 U	
Vanadium	19.4		51.1	13.3	46.8	56.5	
Zinc	39.3		27.2	3.5 B	21.3	29.1	

<sup>(1)</sup> NF – North Floor, SF – South Floor, EW – East Wall, SW – South Wall, DP – Duplicate

<sup>(2)</sup> Medium Level - Indicates a sample that was diluted and reanalyzed in order to obtain a result in the medium range of the analytical instrumentation.



Table C-3 (continued)

Contaminant	E13-XX-2						
	NF	NF (Medium Level)	SF	EW	SW	DP	DP (Medium Level)
<i>VOC (µg/kg)</i>							
Acetone	15 J	U	U	U	U	U	1200 J
Benzene	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U
Carbon disulfide	U	U	U	U	U	U	U
Carbon tetrachloride	U	U	U	U	U	U	U
Chlorobenzene	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U
Chloromethane	U	U	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U	U	U
1,2-Dichloroethane	U	U	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	U	U	U	U	U	U	U
1,2-Dichloroethene (Total)	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	U	U	U	U	U	U	U
1,2-Dichloropropane	U	U	U	U	U	U	U
1,4-Dioxane	U	U	U	U	U	U	U
Ethylbenzene	18	U	U	U	U	270 E	680
Methylene chloride	U	U	U	U	U	U	U
4-Methyl-2-pentanone	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	U	U	U	U
Toluene	32	210 J	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	590 E	760
Trichloroethene	U	U	U	U	U	U	U
Vinyl chloride	U	U	U	U	U	U	U
Xylene (Total)	460 E	2400	U	U	U	1600 E	4400
<i>SVOC (µg/kg)</i>							
Acenaphthene	U		U	U	U	U	
Acenaphthylene	U		U	U	U	U	
Anthracene	U		U	U	U	U	
Benzo (a) anthracene	320 J		U	U	U	U	
Benzo (b) fluoranthene	310 J		U	U	U	U	
Benzo (k) fluoranthene	160 J		U	U	U	U	
Benzo (g,h,i) perylene	380 J		U	U	U	U	
Benzo (a) pyrene	240 J		U	U	U	U	
bis (2-Chloroethyl) ether	U		U	U	U	U	
Bis(2-ethylhexyl)phthalate	6600		U	190 J	U	8700 E	
Carbazole	U		U	U	U	U	



Table C-3 (continued)

Contaminant	E13-XX-2						
	NF	NF (Medium Level)	SF	EW	SW	DP	DP (Medium Level)
4-Chloroaniline	U		U	U	U	U	
2-chloronaphthalene	U		U	U	U	U	
2-Chlorophenol	U		U	U	U	U	
Debenz (a,h) anthracene	U		U	U	U	U	
Dibenzofuran	U		U	U	U	U	
1,3-Dichlorobenzene	U		U	U	U	U	
1,4-Dichlorobenzene	U		U	U	U	U	
1,3'-Dichlorobenzidine	U		U	U	U	U	
2,4-Dichlorophenol	U		U	U	U	U	
2,4-Dimethylphenol	U		U	U	U	U	
Di-n-butylphthalate	4000		U	U	U	6100	
4,6-Dinitro-2-methylphenol	U		U	U	U	U	
2,4-Dinitrophenol	U		U	U	U	U	
2,4-Dinitrotoluene	U		U	U	U	U	
2,6-Dinitrotoluene	U		U	U	U	U	
Fluoranthene	640		U	U	U	U	
Fluorene	U		U	U	U	U	
Hexachlorbenzene	U		U	U	U	U	
Hexachlorobutadiene	U		U	U	U	U	
Hexachlorocyclopentadiene	U		U	U	U	U	
Hexachloroethane	U		U	U	U	U	
2-Methylnaphthalene	U		U	U	U	U	
3-Methylphenol	U		U	U	U	U	
2-Methylphenol	U		U	U	U	U	
4-Methylphenol	U		U	U	U	U	
Naphthalene	U		U	U	U	U	
2-Nitroaniline	U		U	U	U	U	
4-Nitroaniline	U		U	U	U	U	
Nitrobenzene	U		U	U	U	U	
4-Nitrophenol	U		U	U	U	U	
N-Nitroso-di-n-propylamine	U		U	U	U	U	
Pentachlorophenol	U		U	U	U	U	
Phenanthrene	550		U	U	U	U	
Phenol	U		U	U	U	U	
Pyrene	520		U	U	U	U	
2,4,6-Trichlorophenol	U		U	U	U	U	
<i>Pesticides (µg/kg)</i>							
Aldrin	UD		UD	UD	UD	UD	
Alpha-BHC	UD		UD	UD	UD	UD	
Alpha-Chlordane	UD		UD	UD	UD	UD	
Beta-BHC	UD		UD	UD	UD	UD	



Table C-3 (continued)

Contaminant	E13-XX-2						
	NF	NF (Medium Level)	SF	EW	SW	DP	DP (Medium Level)
4,4'-DDD	UD		UD	UD	UD	UD	
4,4'-DDE	UD		UD	UD	UD	UD	
4,4'-DDT	UD		UD	UD	UD	UD	
Delat-BHC	UD		UD	UD	UD	UD	
Dieldrin	UD		UD	UD	UD	UD	
Endosulfan I	UD		UD	UD	UD	UD	
Endosulfan II	UD		UD	UD	3.3 JPD	UD	
Endosulfan Sulfate	UD		UD	UD	UD	UD	
Endrin	UD		UD	UD	UD	UD	
Endrin Aldehyde	UD		UD	UD	UD	UD	
Endrin Ketone	UD		UD	UD	UD	UD	
Gamma-BHC	UD		UD	1.7 B	UD	UD	
Gamma-Chlordane	UD		UD	UD	UD	UD	
Heptachlor	UD		UD	UD	UD	UD	
Heptachlor Epoxide	UD		UD	UD	UD	UD	
Methoxychlor	UD		UD	UD	UD	UD	
Toxaphene	UD		UD	UD	UD	UD	
<i>Dioxins and Furans (pg/g)</i>							
OCDD	1700 A		10100	1340	3980	3730	
OCDF							
WHO TEQ (ND=0)	0.17		1.01	0.134	0.398	0.373	
WHO TEQ (ND=1/2)	275		278	280	279	275	



Table C-4. Groundwater Data

Monitoring Well	TT-01		TT-01 (Duplicate)		TT-02	
Sample ID	E13-T1GW-1		E13-DP-1		E13-T2GW-1	
Analyte	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier
<b>VOCs</b>						
1,1,2,2-Tetrachloroethane	0.20	U	0.20	U	0.20	U
1,1,2-Trichloroethane	0.20	U	0.20	U	0.20	U
1,1-Dichloroethene	0.30	U	0.30	U	0.30	U
1,2-Dichloroethane	0.20	U	0.20	U	0.20	U
1,2-Dichloropropane	0.20	U	0.20	U	0.20	U
1,2-Dichloroethene (Total)	0.30	U	0.30	U	0.30	U
1,4-Dioxane	0.20	U	0.20	U	0.20	U
4-Methyl-2-pentanone	1.00	U	1.00	U	1.00	U
Acetone	2.00	U	2.00	U	2.00	U
Benzene	0.20	U	0.20	U	0.20	U
Bromodichloromethane	0.20	U	0.20	U	0.20	U
Bromomethane	0.40	U	0.40	U	0.40	U
Carbon disulfide	0.30	U	0.30	U	0.30	U
Carbon tetrachloride	0.30	U	0.30	U	0.30	U
Chlorobenzene	0.20	U	0.20	U	0.20	U
Chloroethane	0.30	U	0.30	U	0.30	U
Chloroform	0.30	U	0.30	U	0.30	U
Chloromethane	0.40	U	0.40	U	0.40	U
cis-1,2-Dichloroethene	0.30	U	0.30	U	0.30	U
Dibromochloromethane	0.20	U	0.20	U	0.20	U
Ethylbenzene	0.20	U	0.20	U	0.20	U
Methylene chloride	0.30	U	0.30	U	0.30	U
Tetrachloroethene	0.30	U	0.30	U	0.30	U
Toluene	0.20	U	0.20	U	0.20	U
trans-1,2-Dichloroethene	0.30	U	0.30	U	0.30	U
Trichloroethene	0.20	U	0.20	U	0.20	U
Vinyl chloride	0.50	U	0.50	U	0.50	U
Xylene (Total)	0.20	U	0.20	U	0.20	U
<b>SVOCs</b>						
1,3-Dichlorobenzene	1.1	U	1.1	U	1.1	U
1,3'-Dichlorobenzidine	1.1	U	1.1	U	1.1	U
1,4-Dichlorobenzene	1.1	U	1.1	U	1.1	U
2,4,6-Trichlorophenol	1.1	U	1.1	U	1.1	U
2,4-Dichlorophenol	1.1	U	1.1	U	1.1	U
2,4-Dimethylphenol	1.1	U	1.1	U	1.1	U
2,4-Dinitrophenol	1.1	U	1.1	U	1.1	U
2,4-Dinitrotoluene	1.1	U	1.1	U	1.1	U
2,6-Dinitrotoluene	1.1	U	1.1	U	1.1	U
2-chloronaphthalene	1.1	U	1.1	U	1.1	U
2-Chlorophenol	1.1	U	1.1	U	1.1	U
2-Methylnaphthalene	1.1	U	1.1	U	1.1	U
2-Methylphenol	1.1	U	1.1	U	1.1	U



Table C-4 (continued)

Monitoring Well	TT-01		TT-01 (Duplicate)		TT-02	
Sample ID	E13-T1GW-1		E13-DP-1		E13-T2GW-1	
Analyte	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier
2-Nitroaniline	1.1	U	1.1	U	1.1	U
3-Methylphenol	1.1	U	1.1	U	1.1	U
4,6-Dinitro-2-methylphenol	1.1	U	1.1	U	1.1	U
4-Chloroaniline	1.1	U	1.1	U	1.1	U
4-Methylphenol	1.1	U	1.1	U	1.1	U
4-Nitroaniline	1.1	U	1.1	U	1.1	U
4-Nitrophenol	1.1	U	1.1	U	1.1	U
Acenaphthene	0.55	U	0.55	U	0.55	U
Acenaphthylene	0.50	U	0.50	U	0.50	U
Anthracene	0.28	U	0.28	U	0.28	U
Benzo (a) pyrene	0.33	U	0.33	U	0.33	U
Benzo (a) anthracene	0.21	U	0.21	U	0.21	U
Benzo (b) fluoranthene	0.32	U	0.32	U	0.32	U
Benzo (g,h,i) perylene	1.1	U	1.1	U	1.1	U
Benzo (k) fluoranthene	0.49	U	0.49	U	0.49	U
bis (2-Chloroethyl) ether	1.1	U	1.1	U	1.1	U
Bis(2-ethylhexyl)phthalate	1.1	U	1.1	U	1.1	U
Carbazole	1.1	U	1.1	U	1.1	U
Dibenz (a,h) anthracene	0.88	U	0.88	U	0.88	U
Dibenzofuran	1.1	U	1.1	U	1.1	U
Di-n-butylphthalate	1.1	U	1.1	U	1.1	U
Fluoranthene	0.24	U	0.24	U	0.24	U
Fluorene	0.51	U	0.51	U	0.51	U
Hexachlorobenzene	1.1	U	1.1	U	1.1	U
Hexachlorobutadiene	1.1	U	1.1	U	1.1	U
Hexachlorocyclopentadiene	1.1	U	1.1	U	1.1	U
Hexachloroethane	1.1	U	1.1	U	1.1	U
Naphthalene	0.54	U	0.54	U	0.54	U
Nitrobenzene	1.1	U	1.1	U	1.1	U
N-Nitroso-di-n-propylamine	1.1	U	1.1	U	1.1	U
Pentachlorophenol	1.1	U	1.1	U	1.1	U
Phenanthrene	0.38	U	0.38	U	0.38	U
Phenol	1.1	U	1.1	U	1.1	U
Pyrene	0.36	U	0.36	U	0.36	U
<b>Metals</b>						
Aluminum	32.4	B	32.8	B	25	U
Antimony	5	U	5	U	5	U
Arsenic	5	U	5	U	5	U
Barium	25.8	B	25.6	B	33.5	B
Beryllium	4	U	4	U	4	U
Cadmium	1	U	1	U	1	U
Calcium	1000	U	1000	U	2690	B
Chromium	5	U	5	U	5	U
Cobalt	20	U	20	U	20	U



Table C-4 (continued)

Monitoring Well	TT-01		TT-01 (Duplicate)		TT-02	
Sample ID	E13-T1GW-1		E13-DP-1		E13-T2GW-1	
Analyte	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier	Concentration (ug/L)	Lab Qualifier
Copper	10	U	10	U	10	U
Iron	50	U	50	U	50	U
Lead	1.6	U	1.5	U	1.5	U
Magnesium	1000	U	1000	U	1010	B
Manganese	51.3		50.8		5	U
Mercury	0.08	U	0.08	U	0.08	U
Molybdenum	5	U	5	U	5	U
Nickel	10	U	10	U	10	U
Potassium	1060	B	1070	B	1530	B
Selenium	3	U	3	U	3	U
Silver	5	U	5	U	5	U
Sodium	2840	B	2850	B	3930	B
Thallium	2	U	2	U	2	U
Vanadium	20	U	20	U	20	U
Zinc	5	U	5	U	5	U



## **Pickett Reservoir 2009**

Pickett Reservoir is a 384-acre mainstream impoundment of the Nottoway River located within and owned by the Fort Pickett Military Reservation. The reservoir serves as water supply for the town of Blackstone and for the military base. Management activities on the lake are the responsibility of the Virginia Department of Game and Inland Fisheries. The lake provides a warmwater fishery for largemouth bass, bluegill, redear sunfish, yellow perch, and channel catfish. Gizzard shad and sunfish species are the primary forage in Pickett Reservoir.

The largemouth bass fishery at Pickett Reservoir is average for a Southside impoundment. The size distribution is good with fish from three to twenty-one inches observed in our spring 2008 electrofishing survey but the density is lower than average for impoundments in this part of Virginia. The population is dominated by fish in the 11-17 inch range which makes for a nice fishery. Very few fish below 10 inches were sampled and few large fish were observed. The numbers of fish larger than 15 inches was greatly improved over previous surveys and density was about normal for Pickett Reservoir. Density of bass at Pickett Reservoir, measured as number of fish sampled per hour, was almost 77 bass/hour in 2008. Average catch rates for Southside reservoirs ranges from 100-150 bass/hour.

Besides largemouth bass, Pickett Reservoir has a good bream fishery as well. Bluegill and redear sunfish are present in the lake in high densities and average sizes. Bluegill density remains very high but no fish over eight inches were sampled in the 2008 survey. The size distribution and numbers of bluegill were very similar in 2001. Most bluegill sampled ranged in size from 4-7 inches and few small fish were detected. Turbid water conditions might have contributed to us not detecting fish smaller than four inches. Redear sunfish, "shellcracker", are also present in Pickett Reservoir. All redear surveyed ranged in size from 5-9 inches with most about seven inches. Density of redear is much lower than bluegill but was still about average for a Piedmont impoundment.

Fort Pickett also has a limited crappie fishery, with both black and white crappie in the reservoir. Most crappie sampled were about eight inches but crappie over 13 inches were present in low numbers. Other fish species of angler interest include channel catfish and very limited numbers of yellow perch (up to 10 inches). The reservoir is also heavily populated by redhorse sucker species.

Overall Pickett Reservoir offers an average fishery for most of the typical warmwater sportfish species. While none is exceptional as a stand-alone fishery, the diversity of species offers anglers of all types an opportunity to catch their favorite species. Bank fishing opportunities exist in several locations around the reservoir and Pickett can be accessed 24 hours a day. There is no boat motor size restriction on Pickett Reservoir, but the speed limit is set at 25 mph. You can reach Pickett Reservoir by traveling west on Route 40 from Blackstone. Turn left onto Route 46 and travel approximately six miles to the reservoir.

Legal Description  
for  
County of Nottoway  
December 7, 1999

Lot 1

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron on a southern corner of the hereinafter described tract or parcel, said iron marks a common corner with lands of The Town of Blackstone and is located N.89 54'53"E., 94.09' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along lands of the Town of Blackstone N.09 27'25"W., 1221.28' to a set iron on the southern side of State Route No. 40; thence along the southern side of State Route No. 40 S.80 30'37"W., 594.57' to a point; thence along a curve to the left having a radius of 899.93', an arc distance of 559.64', a delta angle of 35 37'50" and a chord bearing and distance of S.62 41'42"W., 550.66' to a point; thence S.44 52'47"W., 894.88' to a set iron on the south side of State Route No. 40; thence a new line S.00 30'00"W., 2246.90' to a set iron; thence N.89 30'00"W., 1969.76' to a set iron; thence N.49 57'38"W., 37.68' to a set iron on the eastern side of Military Road; thence crossing Military Road N.73 58'58"W., 80.00' to a set iron on the western side of Military Road; thence along the western side of Military Road along a curve to the left having a radius of 2904.79', an arc distance of 147.00', a delta angle of 02 53'58" and a chord bearing and distance of S.14 34'03"W., 146.98' to a set iron; thence leaving Military Road N.89 35'13"W., 1850.38' to a set iron on the western boundary of the Fort Pickett Military Reservation; thence along the said western boundary N.02 20'07"W., 131.74' to a found monument; thence N.01 32'20"W., 325.58' to a found monument; thence N.00 04'40"E., 319.50' to a found monument on the boundary with other lands of The Town of Blackstone; thence with lands of The Town of Blackstone N.86 40'43"E., 44.59' to a found monument; thence N.11 34'17"E., 731.37' to a set iron on the southern side of State Route No. 40; thence along the southern side of State Route No. 40 along a curve to the left having a radius of 1218.24', an arc distance of 49.70', a delta angle of 02 20'15" and a chord bearing and distance of S.61 48'18"W., 49.70' to a point; thence S.60 38'11"W., 602.69' to a point; thence crossing State Route No. 40 N.06 29'25"E., 135.72' to a set iron; thence along the northern side of State Route No. 40 N.60 38'11"E., 523.20' to a point; thence along a curve to the right having a radius of 1328.24', an arc distance of 577.22', a delta angle of 24 53'58" and a chord bearing and distance of N.73 05'10"E., 572.69' to a point; thence N.85 32'09"E., 370.16' to a point; thence along a curve to the right having a radius of 4462.37', an arc distance of 552.53', a delta angle of 07 05'40" and a chord bearing and distance of N.89 04'59"E., 552.18'; thence S.87 22'11"E., 827.23' to a point at the intersection of the north side of State Route No. 40 with a line 40 feet west of the center of Military Road; thence along the western side of Military Road 40 feet from said centerline N.16 55'02"E., 2723.20' to a point; thence along a curve to the left having a radius of 2824.79', an arc distance of 941.78', a delta angle of 19 06'08" and a chord bearing and distance of N.07 21'58"E., 937.42' to a set iron 40 feet west of the center of

Military Road and 25 feet South of the center of Wilson-Jones Lane; thence along the southern side of Wilson-Jones Lane 25 feet from the centerline S.62 59'07"W., 522.01' to a set iron; thence S.56 33'07"W., 228.97' to a set iron; thence S.41 30'36"W., 127.56' to a set iron; thence S.58 22'36"W., 206.65' to a set iron; thence S.59 12'57"W., 400.74' to a set iron; thence S.58 23'02"W., 633.78' to a set iron; thence leaving the southern side of Wilson-Jones Lane N.31 36'58"W., 33.85' to a set iron; thence N.57 08'03"E., 140.99' to a set iron; thence N.58 29'07"E., 524.37' to a found monument; thence N.59 09'49"E., 570.88' to a found monument on the northwestern boundary of the Fort Pickett Military Reservation; thence along the northwestern boundary of Fort Pickett Military Reservation N.07 54'48"E., 632.17' to a found iron; thence N.06 20'51"E., 152.63' to a found monument; thence N.12 03'23"E., 722.66' to a found monument; thence N.03 12'24"E., 538.75' to a found monument; thence N.01 06'22"E., 612.86' to a found monument; thence N.05 40'05"E., 321.58' to a set iron; thence N.05 48'10"E., 767.82' crossing Highway 460 Business and passing through a found iron on line at 764.6' to a point on the southern right-of-way line of Norfolk Southern Railroad; thence along the southern right-of-way line of Norfolk Southern Railroad along a curve to the left having a radius of 5670.27', an arc distance of 584.84', a delta angle of 05 54'34" and a chord bearing and distance of N.65 58'46"E., 584.58' to a found iron; thence N.22 38'25"W., 30.09' to a found iron; thence along a curve to the left having a radius of 5640.27', an arc distance of 526.66', a delta angle of 05 21'00" and a chord bearing and distance of N.60 19'36"E., 526.47' to a found iron; thence S.07 23'06"E., 22.05' to a point; thence along a curve to the left having a radius of 5660.27', an arc distance of 610.60', a delta angle of 06 10'51" and a chord bearing and distance of N.54 39'20"E., 610.31' to a point; thence N.51 33'54"E., 186.13' to a point; thence S.08 57'06"E., 266.29' to a point; thence N.81 02'54"E., 15.76' to a point on the eastern side of State Route No. 636 25 feet from the centerline; thence along the eastern side of State Route No. 636 25 feet from the centerline along a curve to the left having a radius of 625.00', an arc distance of 72.46', a delta angle of 06 38'35" and a chord bearing and distance of S.00 28'58"W., 72.42' to a point; thence S.02 50'19"E., 486.74' to a point; thence along a curve to the right having a radius of 114.53', an arc distance 196.80', a delta angle of 98 27'27" and a chord bearing and distance of S.46 23'24"W., 173.46'; thence N.84 22'52"W., 195.20' to a point 25 feet south of the center of State Route No. 636 and on the southern right-of-way of Highway 460 Business; thence along the southern right-of-way of Highway 460 Business along a curve to the right having a radius of 1179.00', an arc distance of 938.14', a delta angle of 45 35'27" and a chord bearing and distance of S.60 17'28"W., 913.59' to a point; thence S.83 05'11"W., 474.77' to a point on the southern right-of-way line of Highway No. 460 Business and 40 feet east of the center of Military Road; thence along the eastern side of military road 40 feet from centerline S.07 01'36"E., 2602.17' to a point; thence along a curve to the right having a radius of 2904.79', an arc distance of 1184.43', a delta angle of 23 21'45" and a chord bearing and distance of S.04 39'16"W., 1176.24' to a set iron 40 feet East of the center of Military Road; thence leaving Military Road S.77 44'17"E., 774.38' to a set iron 25 feet West of the center of a railroad spur track; thence along said railroad spur track 25 feet from centerline N.22 07'10"E., 203.00' to a set iron 25 feet West of said railroad spur track and 20 feet South of the center of an electrical right of way; thence along the southern side of said electrical right-of-way 20 feet from the centerline S.77 44'17"E., 1189.57' to a set iron; thence N.31

19'33"W., 44.43' to a point; thence along a curve to the right having a radius of 6275.84', an arc distance of 973.28', a delta angle of 08 53'08" and a chord bearing and distance of N.26 52'59"W., 972.30' to a point; thence N.22 26'24"W., 502.36' to a set iron on the eastern side of a railroad spur track 25 feet from its centerline; thence along the eastern side of said railroad spur track 25 feet from its centerline N.22 07'10"E., 212.18' to a set iron; thence leaving said railroad spur track N.83 23'28"E., 606.12' to a set iron on the western side of another railroad spur track 25 feet from its centerline; thence along the western side of said railroad spur track 25 feet from its centerline S.09 27'25"E., 445.80' to a set iron; thence leaving the railroad spur track S.83 23'28"W., 604.79' to a set iron; thence S.22 26'24"E., 218.78' to a point; thence along a curve to the left having a radius of 6225.45', an arc distance of 965.52', a delta angle of 08 53'10" and a chord bearing and distance of S.26 52'59"E., 964.56' to a point; thence S.31 19'34"E., 44.43' to a point; thence along a curve to the right having a radius of 2669.42', an arc distance of 813.08', a delta angle of 17 27'06" and a chord bearing and distance of S.22 36'01"E., 809.94' to a set iron on the northern side of State Route No. 40 N.80 30'37"E., 1835.67' to a point; thence along a curve to the right having a radius of 792.71', an arc distance of 820.18', a delta angle of 59 16'52" and a chord bearing and distance of S.69 50'57"E., 784.08' to a point; thence S.40 12'31"E., 1469.04' to set iron; thence crossing State Route No 40 S.25 41'11"W., 120.51' to a point on the southwest side of State Route No. 40; thence along the southwest side of State Route No. 40 N.40 12'31"E., 196.96' to a set iron; thence leaving State Route No. 40 S.80 32'08"W., 2494.22' to a set iron; thence N.09 27'52"W., 207.36' to a set iron; thence S.80 32'08"W., 155.00' to a set iron; thence N.09 27'52"W., 39.86' to a found iron; thence S.80 32'24"W., 378.96' to the place and point of beginning.

Said tract or parcel of land contains 434.07 acres, more or less, and is more clearly shown as Lot 1 on that certain plat by Maxey-Hines & Associates, P.C. entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999.

SAVE and EXCEPT that certain tract or parcel of land triangular in shape lying between Highway No. 460 Business and State Route No. 636 containing 1.26 Acres and being more particularly described as follows:

Beginning at a point on the eastern right-of-way of Highway No. 460 Business and on the northern side of State Route No. 636 25 feet from its centerline; thence along the eastern side of Highway No. 460 Business along a curve to the left having a radius of 1179.00', an arc distance of 577.56', a delta angle of 28 04'04" and a chord bearing and distance of N.20 38'32"E., 571.81' to a point; thence N.06 36'30"E., 61.92' to a point; thence leaving Highway No. 460 Business along the western side of State Route No. 636 25 feet from its centerline S.02 50'19"E., 546.09' to a point; thence along a curve to the right having a radius of 64.53', an arc distance of 110.88', a delta angle of 98 27'27" and a chord bearing and distance of S.46 23'24"W., 97.73' to a point; thence N.84 22'52"W., 165.78' to the place and point of beginning.

Said tract or parcel contains 1.26 acres, more or less, and is more clearly shown as an "excluded area" on that certain plat by Maxey-Hines and Associates, P.C. entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999

## Lot 2

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron on the northeast corner of the hereinafter described tract or parcel, said iron is located 25 feet southeast of the center of State Route No. 636 and 25 feet southwest of the center of the M.R.T.C. Road and is located N.03 44' 11"E., 8809.74' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along the southeastern side of State Route No. 636 along a curve to the left having a radius of 538.57', an arc distance of 183.85', a delta angle of 19 33' 31" and a chord bearing and distance of S.61 20' 33"W., 182.95' to a point; thence S.51 33' 48"W., 1033.91' to a set iron; thence leaving State Route No. 636 S.13 12' 27"E., 373.00' to a set iron; thence S.52 17' 04"W., 281.64' to a set iron on the eastern side of a railroad spur track 25 feet from its centerline; thence along the eastern side of said railroad spur track 25 feet from its centerline N.10 04' 47"W., 198.25' to a point; thence along a curve to the right having a radius of 400.40', an arc distance of 206.79', a delta angle of 29 35' 30" and a chord bearing and distance of N.04 42' 58"E., 204.50' to a point on the eastern side of said railroad spur 25 feet from its centerline and on the southeastern side of State Route No. 636 25 feet from its centerline; thence along the southeastern side of State Route No. 636 S.46 53' 50"W., 143.04' to a point; thence along a curve to the right having a radius of 1552.89', an arc distance of 157.22', a delta angle of 05 48' 03" and a chord bearing and distance of S.49 47' 51"W., 157.15' to a point; thence S.52 41' 53"W., 385.98' to a point; thence along a curve to the left having a radius of 235.44', an arc distance of 157.72', a delta angle of 38 22' 57" and a chord bearing and distance of S.33 30' 24"W., 154.79' to a point; thence S.14 18' 55"W., 4.04' to a point on the right-of-way line of Norfolk Southern Railroad; thence along the right-of-way of Norfolk Southern Railroad N.06 48' 54"E., 155.46' to a point; thence N.51 33' 54"E., 2054.50' to a point; thence S.81 11' 31"W., 20.23' to a point; thence N.51 33' 54"E., 109.49' to a point; thence leaving Norfolk Southern Railroad along the southwest side of the M.R.T.C. Road S.38 21' 16"E., 80.98' to the place and point of beginning.

Said tract or parcel of land contains 4.48 acres, more or less, and is more clearly shown as Lot 2 on that certain plat entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999.

## Lot 3

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron at the southeast intersection of Military Road and 10<sup>th</sup> Street, said iron is located 25 feet West of the center of Military Road and 25 feet

South of the centerline of 10<sup>th</sup> Street and is further defined as being located S.30 50'31"W., 7717.52' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along the southern side of 10<sup>th</sup> Street 25 feet from its centerline N.90 00'00"E., 1720.02' to a point; thence along a curve to the right having a radius of 943.38', an arc distance of 271.69', a delta angle of 16 30'04" and a chord bearing and distance of S.81 44'58"E., 270.75' to a point; thence S.73 29'56"E., 98.55' to a set iron; thence leaving and crossing 10<sup>th</sup> Street N.00 30'00"E., 651.42' to a set iron; thence S.67 30'49"E., 594.09' to a set iron; thence S.55 46'58"E., 1510.00' to a set iron; thence N.25 41'11"E., 1044.89' to a set iron; thence N.34 13'02"E., 6541.10' to a set iron on the northeast right-of-way line of State Route No. 40; thence along the northeastern right-of-way of State Route 40 S.34 37'49"W., 403.67' to a point; thence S.40 20'27"E., 150.75' to a point; thence S.34 37'49"E., 285.23' to a set iron; thence turning and crossing State Route No. 40 S.43 51'41"W., 162.07' to a set iron on the southwestern right-of-way line of State Route No. 40 and the western side of Dearing Avenue 25 feet from its centerline; thence along the western side of Dearing Avenue 25 feet from its centerline along a curve to the left having a radius of 343.31', an arc distance of 262.81', a delta angle of 43 51'41" and a chord bearing and distance of S.21 55'50"W., 256.44' to a point; thence S.00 00'00"W., 4774.50' to a set iron 25 feet West of the centerline of Dearing Avenue and 25 feet North of the centerline of 10<sup>th</sup> Street; thence along a line 25 feet North of and parallel to the centerline of 10<sup>th</sup> Street N.90 00'00"W., 2954.91' to a set iron; thence crossing 10<sup>th</sup> Street along a line 25 feet West of and parallel to West Parade S.00 00'00"W., 1091.51' to a set iron; thence crossing West Parade N.90 00'00"E., 1698.22' to a set iron 25 feet west of the centerline of East Parade; thence along a line 25 feet West of and parallel to the centerline of East Parade S.00 05'39"E., 1411.54' to a point; thence along a curve to the left having a radius of 597.96', an arc length of 233.68', a delta angle of 22 23'29" and a chord bearing and distance of S.11 17'23"E., 232.20' to a point; thence S.22 29'08"E., 1707.83' to a set iron; thence leaving East Parade S.67 52'54"W., 487.93' to a set iron; thence S.22 07'06"E., 548.96' to a set iron 25 feet North of the centerline of Military Road; thence along a line 25 feet North of and parallel to Military Road S.62 17'20"W., 725.37' to a point; thence along a curve to the right having a radius of 4558.66', an arc distance of 420.02', a delta angle of 05 16'45" and a chord bearing and distance of S.64 55'42"W., 419.87' to a point; thence S.67 34'05"W., 18.57' to a set iron 25 feet North of the centerline of Military Road and 25 feet East of the centerline of West Parade; thence along a line 25 feet East of and parallel to West Parade N.22 22'12"W., 320.27' to a set iron; thence crossing West Parade along a line 25 feet northwest of and parallel to the centerline of 20<sup>th</sup> Street S.67 34'05"W., 775.24' to a set iron 25 feet northwest of the centerline of 20<sup>th</sup> Street and 25 feet northeast of the centerline of Armistead Avenue; thence along a line 25 feet northeast of and parallel to Armistead Avenue S.22 22'12"E., 320.27' to a set iron 25 feet northeast of the centerline of Armistead Avenue and 25 feet northwest of the centerline of Military Road; thence along a line 25 feet northwest of and parallel to the centerline of Military Road S.67 34'05"W., 718.13' to a point; thence along a curve to the right having a radius of 929.93', an arc distance of 692.82', a delta angle of 42 41'12" and a chord bearing and distance of S.88 54'40"W., 676.90' to a point; thence N.69 44'44"W., 2098.55' to a point; thence along a curve to the right having a radius of 957.21', an arc distance of 580.39', a delta angle of 34 44'26" and a

chord bearing and distance of N.52 22'31"W., 571.54' to a point; thence N.35 00'18"W., 3192.47' to a point; thence along a curve to the right having a radius of 813.48', an arc distance of 496.99', a delta angle of 35 00'18" and a chord bearing and distance of N.17 30'09"W., 489.30' to a point; thence N.00 00'00"W., 1901.26' to the place and point of beginning.

Said tract or parcel of land contains 1101.41 acres, more or less, and is more clearly shown as Lot 3 on that certain plat entitled "Boundary Survey Lot 3 and Lot 4 for County of Nottoway" dated December 7, 1999.

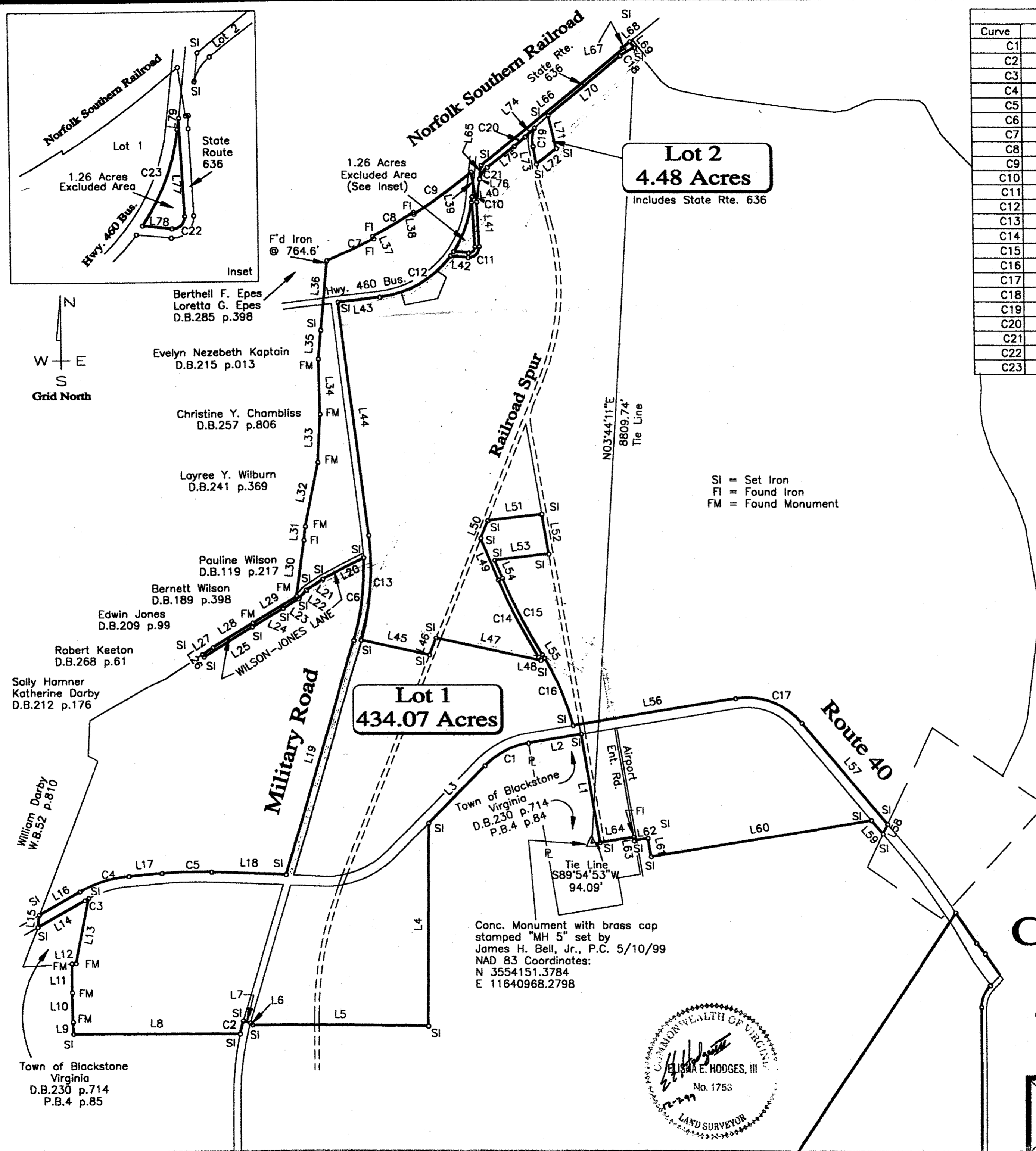
#### Lot 4

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron at the northeast corner of the hereinafter described parcel of land said iron is further defined as being located S.46 33'06"W., 6903.91' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence due South, 3549.06' to a set iron 25' North of the centerline of West Entrance Road; thence along a line 25' North of and parallel to the centerline of West Entrance Road N.85 48'24"W., 481.44' to a point; thence along a curve to the right having a radius of 1407.39', an arc distance of 690.47', a delta angle of 28 06'35" and a chord bearing and distance of N.71 45'07"W., 683.57' to a point where the centerline of Hurricane Creek intersects a line 25' North of the centerline of West Entrance Road; thence leaving West Entrance Road along the centerline of Hurricane Creek as it meanders as referenced by the following eleven (11) courses: thence N.16 14'21"E., 380.27'; thence N.02 00'31"W., 170.96'; thence N.59 35'20"W., 406.16'; thence N.21 13'36"W., 254.85'; thence N.65 50'00"W., 463.04'; thence N.16 50'40"E., 450.56'; thence N.01 25'15"W., 399.57'; thence N.47 27'36"W., 531.50'; thence N.17 31'11"E., 475.10'; thence N.25 47'35"W., 383.18'; thence N.05 50'24"E., 394.98'; thence leaving Hurricane Creek S.57 55'05"E., 68.64' to a found monument; thence S.03 24'07"W., 196.94' to a found monument; thence S.89 55'30"E., 239.12' to a found monument; thence N.89 46'32"E., 580.99' to a found monument; thence S.88 43'25"E., 224.56' to a set iron; thence S.87 55'06"E., 380.34' to a found monument; thence Due East or N.90 00'00"E., 677.31' to the place and point of beginning.

Said tract or parcel of land contains 135.41 acres, more or less, and is more clearly shown as Lot 4 on that certain plat entitled "Boundary Survey Lot 3 and Lot 4 for County of Nottoway" dated December 7, 1999.

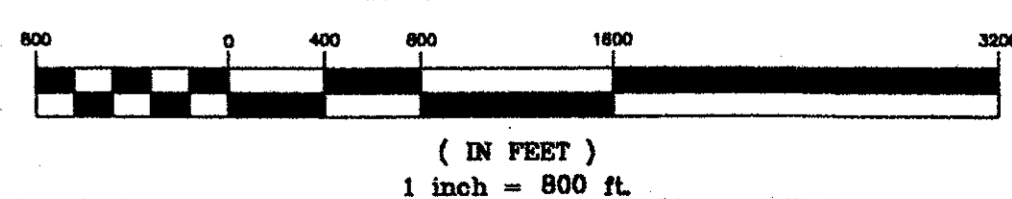
LINE	LENGTH	BEARING
L1	1221.28'	N09°27'25"W
L2	594.57'	S80°30'37"W
L3	894.88'	S44°52'47"W
L4	2246.90'	S00°30'00"W
L5	1969.76'	N89°30'00"W
L6	37.68'	N49°57'38"W
L7	80.00'	N73°58'58"W
L8	1850.38'	N89°35'13"W
L9	131.74'	N02°20'07"W
L10	325.58'	N01°32'20"W
L11	319.50'	N00°04'40"E
L12	44.59'	N86°40'43"E
L13	731.37'	N11°34'17"E
L14	602.69'	S60°38'11"W
L15	135.72'	N06°29'25"E
L16	523.20'	N60°38'11"E
L17	370.16'	N85°32'09"E
L18	827.23'	S87°22'11"E
L19	2723.20'	N16°55'02"E
L20	522.01'	S62°59'07"W
L21	228.97'	S56°33'07"W
L22	127.56'	S41°30'36"W
L23	206.65'	S58°22'36"W
L24	400.74'	S59°12'57"W
L25	633.78'	S58°23'02"W
L26	33.85'	N31°36'58"W
L27	140.99'	N57°08'03"E
L28	524.37'	N58°29'07"E
L29	570.88'	N59°09'49"E
L30	632.17'	N07°54'48"E
L31	152.63'	N06°20'51"E
L32	722.66'	N12°03'23"E
L33	538.75'	N03°12'24"E
L34	612.86'	N01°06'22"W
L35	321.58'	N05°40'05"E
L36	767.82'	N05°48'10"E
L37	30.09'	N22°38'25"W
L38	22.05'	S07°23'06"E
L39	266.29'	S08°57'06"E
L40	15.76'	N81°02'54"E
L41	486.74'	S02°50'19"E
L42	195.20'	N84°22'52"W
L43	474.77'	S83°05'11"W
L44	2602.17'	S07°01'36"E
L45	774.38'	S77°44'17"E
L46	203.00'	N22°07'10"E
L47	1189.57'	S77°44'17"E
L48	44.43'	N31°19'33"W
L49	502.36'	N22°26'24"W
L50	212.18'	N22°07'10"E
L51	606.12'	N83°23'28"E
L52	445.80'	S09°27'25"E
L53	604.79'	S83°23'28"W
L54	218.78'	S22°26'24"E
L55	44.43'	S31°19'34"E
L56	1835.67'	N80°30'37"E
L57	1469.04'	S40°12'31"E
L58	120.51'	S25°41'11"W
L59	196.96'	N40°12'31"W
L60	2494.22'	S80°32'08"W
L61	207.36'	N09°27'52"W
L62	155.00'	S80°32'08"W
L63	39.86'	N09°27'52"W
L64	378.96'	S80°32'24"W
L65	155.46'	N06°48'54"E
L66	2054.50'	N51°33'54"E
L67	20.23'	S81°11'31"W
L68	109.49'	N51°33'54"E
L69	80.98'	S38°21'16"E
L70	1033.91'	S51°33'48"W
L71	373.00'	S13°12'27"E
L72	281.64'	S52°17'04"W
L73	198.25'	N10°04'47"W
L74	143.04'	S46°53'50"W
L75	385.98'	S52°41'53"W
L76	4.04'	S14°18'55"W
L77	546.09'	S02°50'19"E
L78	165.78'	N84°22'52"W
L79	61.92'	N06°36'30"E



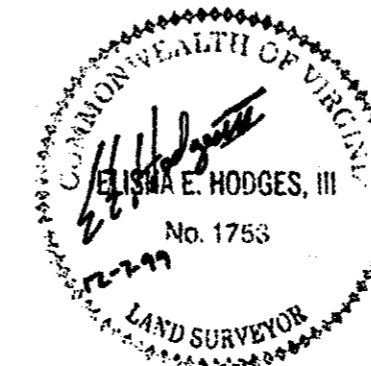
Curve	Length	Radius	Delta	Chord	Chord Length
C1	559.64'	899.93'	35°37'50"	S62°41'42"W	550.66'
C2	147.00'	2904.79'	02°53'58"	S14°34'03"W	146.98'
C3	49.70'	1218.24'	02°20'15"	S61°48'18"W	49.70'
C4	577.22'	1328.24'	24°53'58"	N73°05'10"E	572.69'
C5	552.53'	4462.37'	07°05'40"	N89°04'59"E	552.18'
C6	941.78'	2824.79'	19°06'08"	N07°21'58"E	937.42'
C7	584.84'	5670.27'	05°54'34"	N65°58'46"E	584.58'
C8	526.66'	5640.27'	05°21'00"	N60°19'36"E	526.47'
C9	796.61'	7384.58'	06°10'51"	N53°56'00"E	796.23'
C10	72.46'	625.00'	06°38'35"	S00°28'58"W	72.42'
C11	196.80'	114.53'	98°27'27"	S46°23'24"W	173.46'
C12	938.14'	1179.00'	45°35'27"	S60°17'28"W	913.59'
C13	1184.43'	2904.79'	23°21'45"	S04°39'16"W	1176.24'
C14	973.28'	6275.84'	08°53'08"	N26°52'59"W	972.30'
C15	965.52'	6225.45'	08°53'10"	S26°52'59"E	964.56'
C16	813.08'	2669.42'	17°27'06"	S22°36'01"E	809.94'
C17	820.18'	792.71'	59°16'52"	S69°50'57"E	784.08'
C18	183.85'	538.57'	19°33'31"	S61°20'33"W	182.95'
C19	206.79'	400.40'	29°35'30"	N04°42'58"E	204.50'
C20	157.22'	1552.89'	05°48'03"	S49°47'51"W	157.15'
C21	157.72'	235.44'	38°22'57"	S33°30'24"W	154.79'
C22	110.88'	64.53'	98°27'27"	S46°23'24"W	97.73'
C23	577.56'	1179.00'	28°04'04"	N20°38'32"E	571.81'

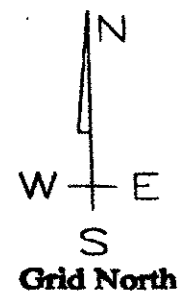
# Boundary Survey Lot 1 and Lot 2 for County of Nottoway

Bellefonte District Nottoway County Virginia  
December 7, 1999  
GRAPHIC SCALE



**Maxey-Hines & Associates, P.C.**  
Land Surveyors • Engineers • Planners • Consultants  
P.O. Box 90 • Farmville • Virginia • 23901 • Tel: 804-392-8827

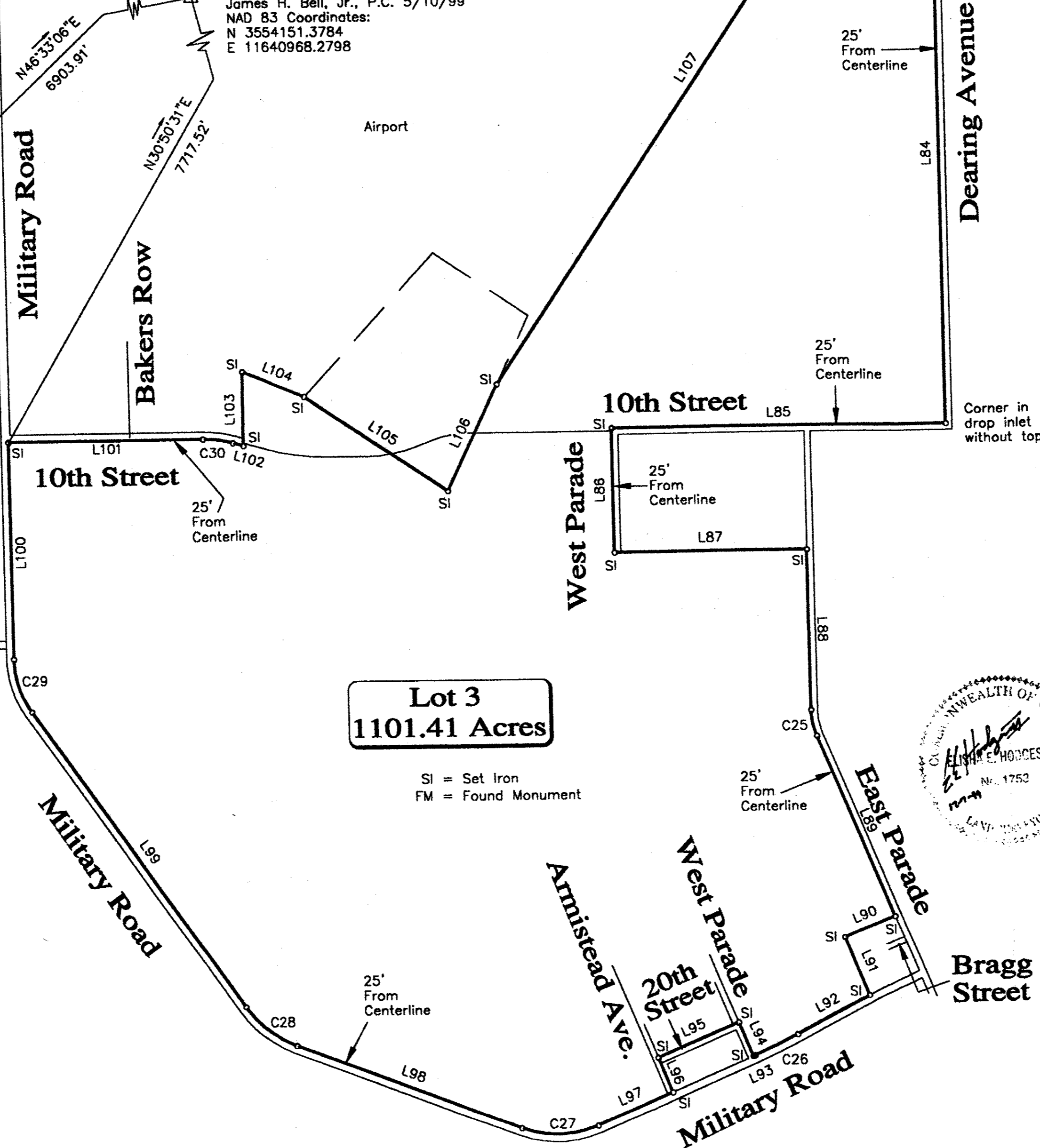
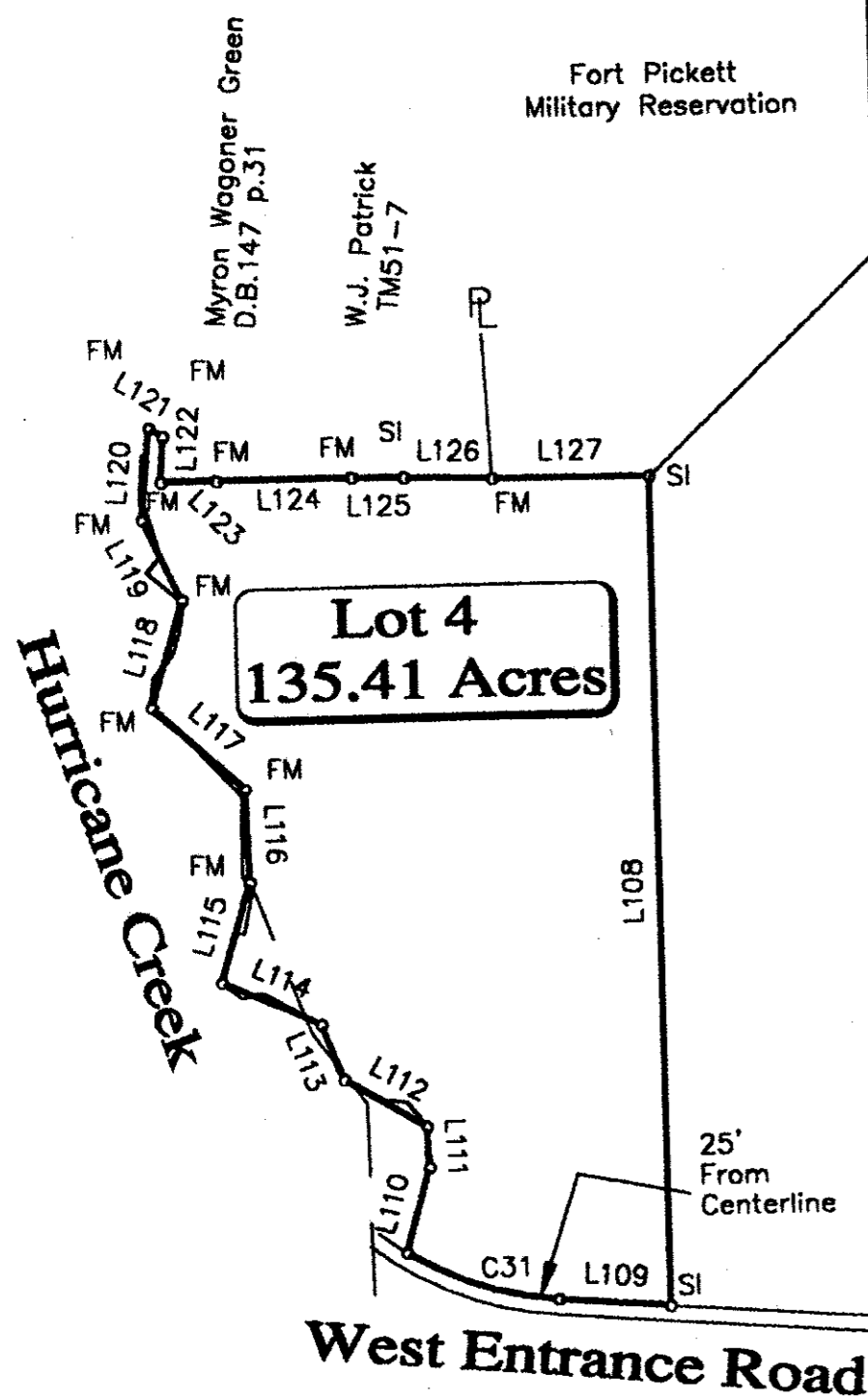




CURVE TABLE					
Curve	Length	Radius	Delta	Chord	Chord Length
C24	262.81'	343.31'	43°51'41"	S21°55'50"W	256.44'
C25	233.68'	597.96'	22°23'29"	S11°17'23"E	232.20'
C26	420.02'	4558.66'	05°16'45"	S64°55'42"W	419.87'
C27	692.82'	929.91'	42°41'15"	S88°54'40"W	676.90'
C28	580.39'	957.21'	34°44'26"	N52°22'31"W	571.54'
C29	496.99'	813.48'	35°00'18"	N17°30'09"W	489.30'
C30	271.69'	943.38'	16°30'04"	S81°44'58"E	270.75'
C31	690.47'	1407.39'	28°06'35"	N71°45'07"W	683.57'

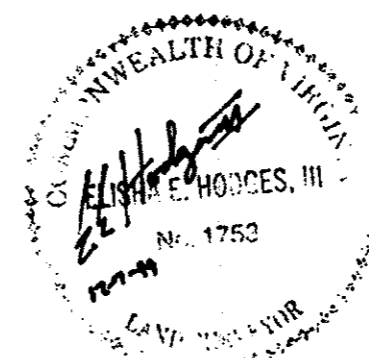
Conc. Monument with brass cap  
stamped "MH 5" set by  
James H. Bell, Jr., P.C. 5/10/99  
NAD 83 Coordinates:  
N 3554151.3784  
E 11640968.2798

LINE TABLE		
LINE	LENGTH	BEARING
L80	403.67'	S34°37'49"E
L81	150.75'	S40°20'27"E
L82	285.23'	S34°37'49"E
L83	162.07'	S43°51'41"W
L84	4774.50'	S00°00'00"W
L85	2954.91'	N90°00'00"W
L86	1091.51'	S00°00'00"W
L87	1698.22'	N90°00'00"E
L88	1411.54'	S00°05'39"E
L89	1707.83'	S22°29'08"E
L90	487.93'	S67°52'54"W
L91	548.96'	S22°07'06"E
L92	725.37'	S62°17'20"W
L93	18.57'	S67°34'05"W
L94	320.27'	N22°22'11"W
L95	775.24'	S67°34'05"W
L96	320.27'	S22°22'12"E
L97	718.13'	S67°34'03"W
L98	2098.55'	N69°44'44"W
L99	3192.47'	N35°00'18"W
L100	1901.26'	N00°00'00"W
L101	1720.02'	N90°00'00"E
L102	98.55'	S73°29'56"E
L103	651.42'	N00°30'00"E
L104	594.09'	S67°30'49"E
L105	1510.00'	S55°46'58"E
L106	1044.89'	N25°41'11"E
L107	6541.10'	N34°13'02"E
L108	3549.06'	S00°00'00"W
L109	481.44'	N85°48'24"W
L110	380.27'	N16°14'21"E
L111	170.96'	N02°00'31"W
L112	406.16'	N59°35'20"W
L113	254.85'	N21°13'36"W
L114	463.04'	N65°50'00"W
L115	450.56'	N16°50'40"E
L116	399.57'	N01°25'15"W
L117	531.50'	N47°27'36"W
L118	475.10'	N17°31'11"E
L119	383.18'	N25°47'35"W
L120	394.98'	N05°50'24"E
L121	68.64'	S57°55'05"E
L122	196.94'	S03°24'07"W
L123	239.12'	S89°55'30"E
L124	580.99'	N89°46'32"E
L125	224.56'	S88°43'25"E
L126	380.34'	S87°55'06"E
L127	677.31'	N90°00'00"E



- Notes:
1. This plat has been prepared without benefit of a title report and therefore does not necessarily indicate all encumbrances on the property.
  2. All easements and right of ways are based on the location of the centerline of the existing facility and are centered or offset as shown.

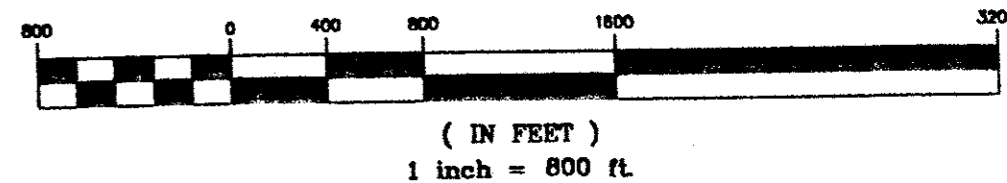
SI = Set Iron  
FM = Found Monument



# Boundary Survey Lot 3 and Lot 4 for County of Nottoway

Bellefonte District Nottoway County Virginia  
December 7, 1999

GRAPHIC SCALE



Maxey-Hines & Associates, P.C.  
Land Surveyors • Engineers • Planners • Consultants  
P.O. Box 90 • Farmville • Virginia • 23901 • Tel: 804-392-8827

**Legal Descriptions of Nine Environmental Sites Withheld from the Economic Development Conveyance to  
The Fort Pickett Local Redevelopment Authority (Nottoway County)**

**Site EBS-115**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 13 feet southerly of the centerline of West 13<sup>th</sup> Street and 22 feet westerly of the centerline of Armistead Avenue; thence on a bearing of South 00 degrees, 01 minutes, 52 seconds East for 1,467.53 feet to a set iron; thence turning to a bearing of South 89 degrees, 31 minutes, 18 seconds West, for 432.21 feet to a set iron; thence turning to a bearing of North 00 degrees, 01 minutes, 46 seconds East, for 1,472.09 feet to a set iron; thence turning to a bearing of South 89 degrees, 52 minutes, 23 seconds East, for 430.65 feet to the starting point. Said tract or parcel contains 11.56 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

**Site BCT-18**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 460 feet easterly of the centerline of Armistead Avenue and 90 feet northerly of the centerline of West 15-1/2<sup>th</sup> Street; thence on a bearing of North 78 degrees, 08 minutes, 16 seconds East for 197.90 feet to a set iron; thence turning to a bearing of South 17 degrees, 14 minutes, 43 seconds East, for 196.80 feet to a set iron; thence turning to a bearing of South 72 degrees, 09 minutes, 08 seconds West, for 213.20 feet to a set iron; thence turning to a bearing of North 13 degrees, 00 minutes, 01 seconds West, for 218.21 feet to the starting point. Said tract or parcel contains 0.98 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

**Site BCT-13**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 205 feet southerly of the centerline of West 17<sup>th</sup> Street and 21.9 feet westerly of the centerline of Armistead Avenue; thence on a bearing of South 20 degrees, 13 minutes, 09 seconds East for 48.59 feet to a set iron; thence turning to a bearing of South 73 degrees, 09 minutes, 03 seconds, for 178.55 feet to a set iron; thence turning to a bearing of North 21 degrees, 16 minutes, 39 seconds West, for 47.18 feet to a set iron; thence turning to a bearing of North 72 degrees, 40 minutes, 56 seconds East, for 179.34 feet to the starting point. Said tract or parcel contains 0.20 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

**Site EBS-124**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 15 feet southerly of the centerline of West 18<sup>th</sup> Street and 22 feet westerly of the centerline of Armistead Avenue, thence on a bearing of 22 degrees, 29 minutes, 48 seconds East for 1,137.22 feet to a set iron; thence turning to a bearing of South 67 degrees, 32 minutes, 18 seconds West, for 430.53 feet to a set iron; thence turning to a bearing of North 22 degrees, 28 minutes, 53 seconds West, for 1,137.52 feet to a set iron; thence turning to a bearing of North 67 degrees, 34 minutes, 40 seconds East, for 430.23 feet to the starting

point. Said tract or parcel contains 11.24 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

#### Site EBS-79

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod 15 feet easterly of the centerline of Bakers Row and 310 feet southerly of the centerline of 10<sup>th</sup> Street, thence on a bearing of 86 degrees, 51 minutes, 56 seconds for 207.29 feet to a set iron; thence turning on a bearing of South 07 degrees, 04 minutes, 15 seconds East, for 346.45 feet to a set iron; thence turning to a bearing of South 87 degrees, 15 minutes, 01 seconds West, for 245.93 feet to a set iron; thence turning to a bearing of South 88 degrees, 04 minutes, 31 seconds West, for 227.02 feet to a set iron; thence turning to a bearing of North 03 degrees, 11 minutes, 20 seconds East, for 225.93 feet to a set iron; thence turning on a bearing of North 87 degrees, 24 minutes, 05 seconds, for 211.88 feet to a set iron; thence turning to a bearing of North 00 degrees, 39 minutes, 19 seconds West, for 116.72 feet to the starting point. Said tract or parcel contains 2.93 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

#### Site EBS-13

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 40 feet southerly of the centerline of 10<sup>th</sup> Street and 945 feet easterly of the centerline of Bakers Row; thence on a bearing of South 73 degrees, 28 minutes, 06 second East for 239.80 feet to a set iron; thence proceeding easterly along West 10<sup>th</sup> Street and 40 feet southerly of its centerline for 596.32 feet to a set iron; thence turning to a bearing of South 89 degrees, 54 minutes, 23 seconds East, for 293.57 feet to a set iron; thence turning to a bearing of South 60 degrees, 54 minutes, 28 seconds East, for 502.91 feet to a set iron; thence turning to a bearing of South 47 degrees, 36 minutes, 54 seconds East, for 270.95 feet to a set iron; thence turning to a bearing of South 29 degrees, 08 minutes, 26 seconds West, for 594.68 feet to a set iron; thence turning to a bearing of North 84 degrees, 21 minutes, 42 seconds West, for 936.83 feet to a set iron; thence turning to a bearing of North 66 degrees, 49 minutes, 45 seconds West, for 385.60 feet to a set iron; thence turning to a bearing of North 31 degrees, 59 minutes, 49 seconds West, for 563.35 feet to a point, marked with an iron rod; thence turning to a bearing of North 18 degrees, 09 minutes, 26 seconds East, for 397.04 feet to the starting point. Said tract or parcel contains 31.47 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

#### Site BCT-19

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 690 feet easterly of the centerline of the entrance road to the Fort Pickett airfield and 700 feet southerly of the centerline of Virginia State Route 40; thence on a bearing of South 88 degrees, 55 minutes, 12 seconds East for 23.35 feet to a set iron; thence turning to a bearing of South 01 degrees, 46 minutes, 07 seconds East, for 38.59 feet to a set iron; thence turning to a bearing of North 72 degrees, 31 minutes, 45 seconds West, for 25.46 feet to a point, marked with an iron rod; thence turning to a bearing of North 00 degrees, 27 minutes, 00 seconds West, for 31.37 feet to the starting point. Said tract or parcel contains 0.02 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

**Site EBS-103**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 1,200 feet easterly of the centerline of the entrance road to the Fort Pickett airfield and 845 feet southerly of the centerline of Virginia State Route 40; thence on a bearing of North 69 degrees, 55 minutes, 22 seconds East for 373.08 feet to a point, marked with an iron rod; thence turning to a bearing of South 85 degrees, 39 minutes, 02 seconds East, for 191.74 feet to a set iron; thence turning to a bearing of South 08 degrees, 30 minutes, 05 seconds, East, for 438.37 feet to a set iron; thence turning to a bearing of South 81 degrees, 27 minutes, 46 seconds West, for 538.01 feet to a point, marked with an iron rod; thence turning to a bearing of North 10degrees, 31 minutes, 58 seconds West, for 406.74 feet to the starting point. Said tract or parcel contains 5.63 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

**Site BCT-15**

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows: Beginning at a point, said point being an iron rod set 8 feet southerly of the centerline of East 13<sup>th</sup> Street and 83 feet westerly of the centerline of East Parade Avenue proceed on a bearing of South 00 degrees, 06 minutes, 56 seconds East for 139.85 feet to a point, marked with an iron rod; thence turning to a bearing of North 84 degrees, 13 minutes, 44 seconds West, for 109.66 feet to a set iron; thence turning to a bearing of North 00 degrees, 51 minutes, 37 seconds West, for 126.11 feet to a point, marked with an iron rod; thence turning to a bearing of North 88 degrees, 35 minutes, 15 seconds East, for 110.75 feet to the starting point. Said tract or parcel contains 0.34 acres, more or less, and is more clearly shown on that certain plat by Robert W. Timberlake, entitled "Plat of Survey Showing a Portion of Property belonging to Fort Pickett" and dated 2 November 1999.

000278, 0  
Return  
to: R. E. Roark  
FEB 17 2000  
Date:

**QUITCLAIM DEED  
FORMER FORT PICKETT MILITARY INSTALLATION  
NOTTOWAY COUNTY, VIRGINIA**

KNOW ALL MEN BY THESE PRESENTS, the UNITED STATES OF AMERICA (the "GRANTOR"), acting by and through the Deputy Assistant Secretary of the Army (I&H) pursuant to a delegation of authority from the SECRETARY OF THE ARMY (the "ARMY"), under and pursuant to the Federal Property and Administrative Services Act of 1949 (Public Law 152, 81st Cong., 63 Stat. 377), as amended, and the delegation of authority to the Secretary of Defense from the Administrator of the General Services Administration (41 CFR 101-47.601), and the re-delegation of authority from the Secretary of Defense to the Secretary of the Army (20 Fed. Reg. 7113), and pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510 as amended, hereinafter referred to as Grantor, and the Fort Pickett Local Redevelopment Authority an agency of the Board of Supervisors of Nottoway County, Virginia, hereinafter referred to as Grantee.

**WITNESSETH THAT:**

**WHEREAS**, the 1995 Defense Base Closure and Realignment Commission, pursuant to Public Law 101-510, as amended, required the Department of Defense to close the military installation formerly known as the Fort Pickett Military Installation and in connection therewith dispose of certain surplus real and personal property, and has made a final disposal decision with respect thereto; and

**WHEREAS**, the Grantor is the owner of the real property located within the former Fort Pickett, a portion of which is to be herein conveyed, that portion is hereinafter referred to as the Property, consisting of approximately 1608 acres that represents 1675 acres as fully described on Exhibit "A" and shown on Exhibit "B" minus those nine (9) tracts of environmentally contaminated sites as fully described and shown on Exhibit "C" and "D" made a part hereof; and

**WHEREAS**, the Grantor for purposes of Public Law 101-510, Section 2905(b)(4)(A) as amended and (Public Law 101-510 Section 2905 as amended by Public Law 103-160 Section 2903), has recognized the Grantee as the redevelopment authority with regard to the Former Fort Pickett, and by this Deed conveys the Property located in Nottoway County, Virginia, pursuant to the terms and conditions of the Memorandum of Agreement (MOA), a copy of which has been provided to the Grantee as acknowledged by the acceptance of this Deed; and

ALSO see PLAT BOOK 5  
PAGES 245 thru 258

**WHEREAS**, the Grantor, as authorized by Public Law 101-510, as amended, and implementing regulations, has determined the Grantee's Rural Economic Development Conveyance Application meets the criteria for conveyance to assist economic development and has accepted the Grantee's application and made a final disposal decision with regard to the Property; and

**WHEREAS**, the Virginia State Historic Preservation Office has determined that the requirements of the Memorandum of Agreement between the United States Army, Virginia State Historic Preservation Officer, and the Advisory Council on Historic Preservation for the Historic Properties of the Fort Pickett Military Installation, have been completed and are acceptable; and

**WHEREAS**, with regard to the Property, the Grantor represents it has fulfilled the requirements of the Base Closure Community Redevelopment and Homeless Assistance Act of 1994.

**A. NOW, THEREFORE**, the Grantor, does hereby grant, remise, release, and forever quitclaim to the Grantee, all its right, title, interest, claim and demand, which the Grantor has in and to the Property including land consisting of four parcels as described in detail on Exhibit "A" and shown on Exhibit "B" minus land shown on Exhibit "C" and Exhibit "D" attached hereto and made a part hereof. Also included in this conveyance are various buildings as shown on Exhibit "E"; the eastern railroad spur track comprising of 4800 linear feet of railroad tracks with easement as shown on Exhibit "B", and joint use of that portion of the spur track that extends from the intersection of the eastern most line with the main line out to the Norfolk Southern Railroad; various facilities and/or fixtures identified as personal property and referenced in Exhibit "P"; a non-exclusive, perpetual easement for roadways as shown on Roadway Survey completed by Maxey Hines & Associates as indicated on Exhibit "F", subject to those easements, conditions and restrictions of record insofar as they may lawfully affect the Property.

**B. EXCLUSIONS, RESERVATIONS, COVENANTS, AND RESTRICTIONS**

(1) Excluded from this conveyance are the following:

(a) The Electrical Distribution System;

(b) Buried Telephone Cables numbered 1 and 4 and all above ground fiber-optic cables of the Fort Pickett telephone system as shown on Exhibit "G";

(c) The Waste Water Collection system;

(d) Nine (9) Environmentally Contaminated Sites within the Boundaries of the Property. (See Exhibits "C" & "D")

(e) The Water Distribution System

(2) The Grantor hereby reserves the following easements for the benefit of the lands retained by the Grantor:

(a) A 10 foot permanent and 30 foot temporary construction easement and a 40 foot permanent easement for overhead telephone cable plant including poles and pedestals for telephone line/cable rights-of-way\* as shown on Exhibit "G";

(b) A 10 foot permanent and 40 foot temporary construction easement for electrical distribution lines and a 40 foot permanent easement for overhead cable plant included within rights-of way\* as shown on Exhibit "H";

(c) Restrictive easements for airfield Clear Zones (CZ's) and Accident Potential Zones (APZ's) as shown on Exhibit "I" and in accordance with guidelines in Army FM5-803-7 dated May 1, 1999;

(d) Restrictive perpetual easement on a 2100-foot safety arc centered on Magazine 1 of the Fort Pickett Ammunition Supply Point as shown and described on Exhibit "J";

(e) A 10 foot permanent and 30 foot temporary construction easements for water distribution system rights-of-way\* & sewer collection system rights-of-way\* within the property being conveyed as shown on Exhibits "K" & "L";

(f) A perpetual non-exclusive easement for Butterwood Tank Trail as shown on Roadway Survey completed by Maxey-Hines & Associates as indicated on Exhibit "M";

(g) A 20 foot irrigation easement for the VPI owned irrigation pipeline under Military Road as shown on Roadway Survey completed by Maxey-Hines & Associates as indicated on Exhibit "N";

That any easements retained shall be for the specific use described and may not be construed to include the further right to authorize any other use within the easements unless approved in writing by the fee holder of the land subject to the easement.

\* Note that the locations for these utility easements as shown on various exhibits are their approximate locations and may not be their actual locations. Easements will only apply to active utility lines.

(3) The Grantee agrees that notwithstanding any other provision of this Deed, the United States assumes no liability to the Grantee, its successors, or assigns, or any other person should access to the waste water collection lines interfere with the reasonable use of the Property; provided the Grantor has used its best efforts to avoid and/or minimize interference with the reasonable use of the Property. The Grantee and its successors and assigns shall have no claim on account of any such interference against the United States or the Commonwealth of Virginia or any officer, agent, employee, or contractor thereof, except as otherwise provided by law.

(4) The Grantor reserves an irrevocable and permanent easement over the Property (Environmental Protection Easement) providing access on and over the Property, which grants to the Grantor the following rights:

(a) To conduct and oversee investigations relating to contamination on or near the Property, including, without limitation, sampling of air, water, sediments, soils, and specifically, without limitation, obtaining split or duplicate samples;

(b) To conduct and oversee operation and maintenance of corrective, remedial or response actions, and any action required by the post-closure activities of the Former Fort Pickett;

(c) To conduct periodic reviews of the corrective, remedial, and response actions, including but not limited to, reviews required by applicable statutes and/or regulations;

(d) To implement additional or new corrective, remedial or response actions if the Grantor, in its discretion, determines that such actions are necessary to protect human health and the environment because the original action has proven to be ineffective, because previously unknown contamination from past Grantor activities must be remediated, or because new technology has been developed which will accomplish the purposes of the corrective, remedial or response actions in a significantly more efficient or cost effective manner.

(e) To install and/or remove groundwater-monitoring wells, and to perform continued monitoring of groundwater conditions, allowing chemical and/or physical testing of wells to evaluate water quality and/or aquifer characteristics.

(5) The Grantor, Environmental Protection Agency (EPA), and Virginia Department of Environmental Quality (VDEQ), and their agents, employees, and contractors, shall have access to and over the Property as reserved, granted and limited by paragraph (3a) through (3f) above) for any investigation, response, remedial action or removal action (all as defined under CERCLA) pursuant to Section 120(h)(3) of CERCLA, 42 U.S.C. § 9620(h)(3). This reservation for access, if exercised, includes the right of access to and uses of, to the extent permitted by law, any available utilities at reasonable cost to the United States.

(a) In exercising the rights hereunder, the United States and the Commonwealth of Virginia shall give the Grantee or its successors or assigns reasonable prior written notice of actions taken on the Property and shall, to the extent reasonable, use its best efforts to avoid and/or minimize the interruption, interference, or disruption to the Grantee's, its successors' or assigns' use of the Property.

(b) The Grantee agrees that notwithstanding any other provision of this Deed, the United States assumes no liability to the Grantee, its successors, or assigns, or any other person should restoration interfere with the reasonable use of the Property; provided the Grantor has used its best efforts to avoid and/or minimize interference with the reasonable use of the Property. The Grantee and its successors and assigns shall have no claim on account of any such interference against the United States or the Commonwealth of Virginia or any officer, agent, employee, or contractor thereof, except as otherwise provided by law.

(c) In exercising the rights hereunder, the Grantor agrees, at no cost or expense to the Grantee, that after completion of any corrective, remedial or response action as determined by regulatory agency approval, and subject to the availability of appropriated funds, it will remove contaminated extraction and treatment systems (wells, tanks, air tower, structures or improvements that have become contaminated as a result of being in contact with contaminated groundwater) and properly close out uncontaminated wells, and abandon in place uncontaminated piping.

**C. TO HAVE AND TO HOLD** the Property unto the Grantee and its successors and assigns forever, provided that this Deed is made and accepted upon each of the following covenants and conditions, as applicable, which conditions shall be binding upon and enforceable against the Grantee, its successors and assigns, in perpetuity, as follows:

**1. AS IS**

Except as otherwise specified herein, the Property is conveyed "As Is, Where Is" without any representation, warranty or guarantee, by the GRANTOR pursuant to applicable law, as to quantity, quality, title, character, condition, size, or kind, or that the same is in condition or fit to be used for the purpose for which intended, and no claim for allowance or deduction upon such grounds will be considered. Except as agreed upon by the GRANTOR in writing herein, or as otherwise provided by law, there is no obligation on the part of the GRANTOR to make any alterations, repairs or additions, and said GRANTOR shall not be liable for any latent or patent defects in the Property. The Grantee acknowledges that the GRANTOR has made no representation or warranty concerning the condition and state of repair of the buildings and appurtenances on the Property nor any agreement or promise to alter, improve, adapt, or repair any portion of the Property, except as otherwise agreed upon by the GRANTOR in writing herein. This Paragraph C.1. "AS IS" is expressly subject to the other provisions of this Deed relating to the environmental condition of the Property.

(a) The Grantee, its successors and assigns, shall not undertake activities on the Property that would interfere with or impede the implementation, construction, monitoring or completion of Response Action and shall give prior written notice to the Grantor, EPA, and the State of any construction, alterations, or similar work on the Property that may interfere with or impede the Response Action; and

(b) In connection with the conveyance of any interest in the Property [or such portion thereof identified above], the Grantee shall include a covenant by the subsequent transferee allowing and agreeing not to interfere with the continued operation of the Response Action on said Property; and

(c) In the event of a transfer of any interest in the Property or any portion thereof, the Grantee and all subsequent transferees of any interest in any portion of the subject Property will provide copies of the final instrument evidencing such transaction to VDEQ, the EPA, and the Grantor by certified mail within fourteen (14) days after the effective date of such transaction.

## 2. AIRFIELD CONSTRUCTION COMPLIANCE

Any construction or alteration on the Property is prohibited, unless a determination of no hazard to air navigation

is issued by the Federal Aviation Administration (FAA) in accordance with Federal Regulation 14CFR77 and Army FM5-803-7 dated May 1, 1999, regarding construction locations and heights.

### 3. NO COST CONVEYANCE

(a) The Grantor agrees to convey to the Grantee and the Grantee to accept conveyance of approximately 1608 acres, by means of a No Cost Economic Development Conveyance. The consideration for this property is an agreement to commit any and all proceeds including proceeds generated from the sale, lease or equivalent toward the economic development of the Property for the benefit of the general public in accordance with the terms of this agreement.

(b) The Grantee agrees that any proceeds including proceeds generated from the sale, lease, or equivalent, received by the Grantee for this property (to include personal property) during at least the first seven years after title conveyance of each individual parcel to the Grantee by execution of a deed or lease in furtherance of conveyance must be used to support the economic redevelopment of the property or economic redevelopment related to the property. The Grantee shall make every effort to reinvest such proceeds as quickly as practicable. Allowable uses of proceeds include the following activities: road construction, transportation management facilities, storm and sanitary sewer construction, police and fire protection facilities and other public facilities, utility construction, building rehabilitation, historic property preservation, pollution prevention equipment or facilities, demolition, disposal of hazardous materials generated by demolition, landscaping, grading and other site or public improvements, planning for or the marketing of the redevelopment and reuse of the installation.

(c) Other activities on the Property that are related to those listed above may also be considered an appropriate, allowable use of proceeds. The Grantee shall have the burden of demonstrating that they are related to those listed above and directly benefit the Grantee's economic redevelopment and long-term job generation efforts, on the property. In addition, the Grantee must notify the Army of the expenditure.

(d) The Grantor will convey and the Grantee will accept transfer of the Property by this Quitclaim Deed. The minimum seven-year accounting period for each parcel begins on the date the Property is transferred to the Grantee by this Deed in accordance with the plan to accept the Property.

(e) The Grantee shall deliver to the Army, acting by and through the Norfolk District Engineer of the Army Corps of

Engineers, on or before the end of the second and seventh year after the transfer of the individual parcel, a statement of receipts and expenditures of the use of proceeds from sales, leases, and other uses of the Property being conveyed (including the use of revenues from personal property), certified by an independent Certified Public Accountant. The Army shall have the right to perform annual audits of the records and accounts of the Grantee in order to ensure compliance with this Subparagraph.

(1) If at any time during the minimum seven year reinvestment period, the Army, in its sole discretion, determines that the Grantee has re-invested the proceeds in a manner inconsistent with the terms of this MOA, upon request, the Grantee shall forward all inappropriately reinvested proceeds to the Army, c/o Norfolk District Engineer, 803 Front street, Norfolk, Virginia 23510-1096.

(2) At any time, during the Army's review of the financial statement, the Grantee shall provide the Army with any additional information, as requested by the Army to assist the Army with its review.

(f) If the Army determines that amounts received by the Grantee were inappropriately reinvested or that the proceeds received by the Army for the Property (and personal property) cannot be appropriately reinvested with the seven-year period, the Army will notify the Grantee of its determination and the amounts that are either inappropriately reinvested or cannot be appropriately reinvested within the seven-year period. The amount shall become due and payable to the Army upon the Grantee's receipt of the notification. The Grantee shall have sixty (60) days from the date of notification to remit the amount due to the Army unless both parties agree to other arrangements for the payment of the amount due. These payments must be paid on or before they are due in order to avoid sanctions imposed by the Debt Collection Act of 1982, 31 U.S.C. 3717. This statute requires the imposition of an interest charge to cover the costs of processing and handling delinquent debts; and assessment of an additional penalty charge on any portion of a debt that is more than ninety (90) days past due. The provisions of the statute will be implemented as stated below.

(1) The Army will impose an interest charge, the amount to be determined by law or regulation, on the late payment. Interest will accrue from the due date. An administrative charge to cover the costs of processing and handling each late payment will also be imposed.

(2) In addition to the charges set forth above, the United States will impose a penalty charge of six percent (6%)

per annum on any payment or portion thereof, more than ninety (90) days past due. The penalty shall accrue from the date of delinquency and will continue to accrue until the debt is paid in full.

(3) All payments received will be applied first to any accumulated interest, administrative and penalty charges and then to any unpaid rental or other payment balance. Interest will not accrue on any administrative or late penalty charges.

(4) If at the end of the seven-year accounting period, the Grantee has not reinvested all the proceeds generated from the sale, lease or equivalent of the Property (including personal property), the Grantee agrees that these amounts shall become due and payable to the Army. This provision will only apply if the Grantee is not able to demonstrate to the satisfaction of the Army, that excess proceeds not reinvested at the end of the seven-year period will be used for an allowable expenditure in the subsequent year. If this condition is satisfied, the Army may, in its sole discretion, extend the accounting period until such excess funds are expended.

(5) If the Grantee fails to submit its annual statement of receipts and expenditures, the Grantee shall pay the Army ten percent (10%) of any proceeds received by the Grantee during the annual accounting period.

#### 4. ENVIRONMENTAL CONDITION

(a) The Grantor represents that Grantee has been given the final Environmental Baseline Survey (EBS), the Memorandum of Agreement (MOA), and the Finding of Suitability to Transfer (FOST), together with other technical environmental reports, investigations, and studies (Environmental Documents) prepared by, or on behalf of, the Grantor. The Grantor represents that the Environmental Documents accurately describe the environmental condition of the Property, to the best of the Grantor's knowledge.

(b) The Grantee, subject to the conditions disclosed and the Response Action required in the Environmental Documents, accepts the physical condition and current level of environmental hazards on the Property and deems the Property to be safe for the Grantee's intended use. If, after conveyance of the Property to the Grantee, there is an actual or threatened release of a hazardous substance on the Property, or in the event that a hazardous substance is discovered or a pre-existing underground storage tank is found on the Property after the date of the conveyance, Grantee or its successor or assigns shall be responsible for such release, newly discovered substance, or

underground storage tank unless Grantee is able to demonstrate that such release, such newly discovered substance, or such underground storage tank was due to Grantor's activities, ownership, use or occupation of the Property, or the activities of Grantor's contractors and/or agents. Nothing in this provision shall be construed to create an additional burden of proof applicable to any administrative or judicial proceedings.

(c) Grantee, its successors and assigns, as consideration for the conveyance, agree to release Grantor from any liability or responsibility for any claims arising out of or in any way predicated on release of any hazardous substance on the Property occurring after the conveyance, where such substance was placed on the Property by the Grantee (or its agents or contractors), its successors or assigns, after the conveyance.

(d) This Paragraph C.3. ENVIRONMENTAL CONDITION shall not affect the Grantor's responsibilities to conduct Response Action(s) required by the Environmental Documents, applicable laws, rules and regulations, or the Grantor's indemnification obligations under applicable laws. Nothing in this Paragraph is intended to, nor shall it be construed to, alter, amend, increase or diminish the parties' rights, liabilities, and duties as set forth more fully in Section 120 (h) of CERCLA, 42 U.S.C. § 9620(h) and/or Section 330 of Public Law 102-484, the Department of Defense Authorization Act of 1993, as amended (10 U.S.C. § 2687, note).

## 5. CERCLA NOTICE AND COVENANTS

(a) Pursuant to Section 120(h)(3) of CERCLA, 42 U.S.C. § 9620, the Grantor hereby notifies the Grantee, its successors and assigns, of the storage, release, and disposal of hazardous substances on the Property; available information regarding the type, quantity, and location of such substances and action taken is provided in the Final Environmental Baseline Survey and CERFA Letter Report for Fort Pickett Military Installation, Virginia dated (Final EBS) incorporated herein by reference. A summary of the areas in which hazardous substance activities occurred is provided in the Notification of Hazardous Substance Storage, Release, and Disposal attached hereto as Exhibit E, and Notification of Petroleum Product Storage, Release, and Disposal, attached hereto as Exhibit F. The information regarding this storage, release, and disposal indicates that there is no threat to human health and the environment. The Grantor hereby covenants that:

(1) Prior to the date of this conveyance, all corrective, remedial and response actions necessary to protect

human health and the environment have been taken with respect to the Property.

(2) All corrective, remedial and response actions necessary to protect human health and the environment with respect to any hazardous substances remaining on the Property after the date of transfer shall be conducted by the Grantor.

(b) As provided under CERCLA, the covenants provided in Paragraph C.4. (a) (1) and (a) (2) above shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party, with respect to such Property. For purposes of this paragraph and paragraph a above, Grantor and Grantee agree that the mere tenancy or occupation of the Property by the Grantee, its successors or assigns, or the mere ownership of the Property by the Grantee, its successors or assigns, will not cause the Grantee, or its successors or assigns, to be a potentially responsible party under this covenant.

(c) The Grantor reserves an Environmental Protection Easement as provided in Paragraph B, EXCLUSIONS, RESERVATIONS, COVENANTS, AND RESTRICTIONS of this Deed.

(d) Nothing in this Paragraph is intended to, nor shall it be construed to, alter, amend, increase or diminish the parties' rights, liabilities, and duties as set forth more fully in Section 120(h) of CERCLA, 42 U.S.C. Section 9620(h).

## 6. INDEMNIFICATION

(a) The Grantor recognizes its obligation to hold harmless, defend, and indemnify the Grantee and any successor, assignee, transferee, lender, or lessee of the Grantee or its successors and assigns, as required and limited by Section 330 of Public Law 102-484, the Department of Defense Authorization Act of 1993, as amended, (10 U.S.C. § 2687, note) and to otherwise meet its obligations under law.

(b) The Grantee, its successors and assigns, shall indemnify and hold the Grantor harmless from all claims, liability, loss, cost, environmental contamination, or damage relating to the Property and arising out of or resulting from any actions of the Grantee, successors and assigns, and their agents, employees, invitees, contractors, on the Property prior to the date of this Deed, except where such claims, liability, loss, cost, environmental contamination, or damage are the result of the actions of the Grantor or its employees, contractors or agents.

(c) Nothing in this Paragraph is intended to, nor shall it be construed to, alter, amend, increase or diminish the parties' rights, liabilities, and duties as set forth more fully in Section 330 of Public Law 102-484, the Defense Authorization Act of 1993, as amended (10 U.S.C. § 2687, note).

(d) The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of appropriated funds to the Department of the Army, and nothing in this Deed shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act.

## 7. NOTICE OF THE PRESENCE OF ASBESTOS

(a) The Grantee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials (ACM) have been found in various buildings of the Property, as described more fully in the Final EBS. To the best of Grantor's knowledge, the ACM on the Property does not currently pose a threat to human health or the environment. All friable asbestos that posed a risk to human health has either been removed or encapsulated.

(b) The Grantee covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos; and that the Grantor assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Grantee, its successors or assigns, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos on the Property after the date of this Deed, whether the Grantee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured. The Grantee agrees to be responsible for any future remediation of asbestos found to be necessary on the Property.

(c) Grantee, its successors and assigns are hereby informed that unprotected or unregulated exposures to asbestos in product manufacturing, shipyard, building construction workplaces have been associated with asbestos-related diseases. Both the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) regulate asbestos because of the potential hazards associated with exposure to airborne asbestos fibers. Both OSHA and EPA have determined that such exposure increases the risk of asbestos-related diseases, which include certain cancers and which can result in disability or death.

(d) The Grantee acknowledges that it has had an opportunity to inspect the Property as to its asbestos content and condition and any hazardous or environmental conditions relating thereto. The failure of the Grantee to inspect, or be fully informed as to the asbestos condition of all or any portion of the property being conveyed will not constitute grounds for any claim or demand against the Grantor, or any adjustment under this Deed.

(e) The Grantee further agrees to indemnify and hold harmless the Grantor, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorney's fees arising out of, or in any manner predicated upon, exposure to asbestos on any portion of the Property after this conveyance of the Property to the Grantee or any future remediation or abatement of asbestos or the need thereof. The Grantee's obligation hereunder shall apply whenever the United States incurs costs or liabilities for actions giving rise to liability under this section.

#### **8. NOTICE OF THE PRESENCE OF LEAD-BASED PAINT**

(a) The Grantee, and its successors and assigns, are hereby informed and acknowledge that buildings on the Property, constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint. Grantee, its successors and assigns are hereby informed that lead from paint, paint chips, and dust can pose health hazards if not managed properly. Every purchaser of any interest in Residential Real Property on which a residential dwelling was built prior to 1978 is notified that such property may present exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory. Lead poisoning also poses a particular risk to pregnant women. The seller of any interest in residential real property is required to provide the buyer with any information on lead-based paint hazards from risk assessments or inspections in the seller's possession and notify the buyer of any known lead-based paint hazards. "Residential Real Property" means any housing constructed prior to 1978, except housing for the elderly (households reserved for and composed of one or more persons 62 years of age or more at the time of initial occupancy) or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing) or any zero-bedroom dwelling.

(b) Available information concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces is contained in the Environmental Baseline Survey and (for residential properties) the lead-based paint risk assessment, which have been provided to the Grantee. Additionally, the federally approved pamphlet on lead poisoning prevention and the Finding of Suitability to Transfer (FOST) have been provided to the Grantee. The Grantee hereby acknowledges receipt of all of the information described in this Paragraph.

(c) The Grantee acknowledges that it has received the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this document.

(d) The Grantee, its successors and assigns, covenants and agrees that they shall not permit the occupancy or use of any buildings or structures located on the Property, which were constructed or rehabilitated prior to 1978, as residential real property without complying with this Paragraph C.7. NOTICE OF THE PRESENCE OF LEAD BASED PAINT and all applicable federal, state, and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards.

(e) Prior to permitting the occupancy of any buildings or structures located on the Property, which were constructed or rehabilitated prior to 1978, where its use subsequent to sale is intended for residential habitation, Grantee, its successors and assigns, agree to perform, at its sole expense, the Grantor's abatement requirements under Title X of the Housing and Community Development Act of 1992 (Residential Lead-Based Paint Hazard Reduction Act of 1992) (hereinafter Title X). The Grantee, its successors and assigns shall, after consideration of the guidelines and regulations established pursuant to Title X shall: (1) Comply with the joint HUD and EPA Disclosures Rule (24 CFR 35, Subpart H, 40 CFR 745, Subpart F), when applicable, by disclosing to prospective purchasers the known presence of lead-based paint and/or lead-based paint hazards as determined by previous risk assessments; (2) Abate lead-based paint hazards in pre-1978 buildings and structures in paint, dust and bare soil in accordance with the HUD Guidelines; and (3) Comply with the EPA lead-based paint work standards when conducting lead-based paint activities (40 CFR 745, Subpart L).

In complying with these requirements, the Grantee, its successors and assigns, covenant and agree to be responsible for any abatement or remediation of lead-based paint or lead-based paint hazards on the Property found to be necessary as a result of the subsequent use of the Property for residential purposes. The

Grantee its successors and assigns, covenant and agree to comply with solid or hazardous waste laws that may apply to any waste that may be generated during the course of lead-based paint abatement activities.

(f) The Grantor assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Grantee, its successors and assigns, sublessees or to any other person, including members of the general public, arising out of exposure to lead-based paint in connection with the Grantee's possession and/or use of any portion of the Property containing lead-based paint.

(g) The Grantee further agrees to indemnify and hold harmless the Army, its officers, agents and employees, from and against all suits, claims, demands, or actions, liabilities, judgments, costs and attorney's fees arising out of, or in a manner predicated upon personal injury, death or property damage resulting from, related to, caused by or arising out of lead-based paint or lead based paint hazards on the Property.

(h) The covenants, restrictions, and requirements of this Paragraph shall be binding upon the Grantee, its successors and assigns, and shall be deemed to run with the land. The Grantee on behalf of itself, its successors and assigns, covenants that it will include and make legally binding this section on lead based paint in all subsequent transfers, leases, or conveyance documents.

#### **9. PCB Containing Equipment Notification**

(a) The Grantee is hereby informed and does acknowledge that equipment containing polychlorinated biphenyl's (PCB's) at levels below action levels may exist on the Property being conveyed. This equipment is operational, properly labeled in accordance with Federal and State regulations, and has been determined not to be leaking. All PCB containing equipment has been properly labeled in accordance with applicable law and regulation to provide notification to future users. Any PCB contamination or spills related to such equipment has been properly remediated prior to conveyance. The PCB equipment does not currently pose a threat to human health of the environment.

(b) Upon request, the Grantor agrees to furnish to the Grantee, its successors and assigns, any and all records in its possession related to such PCB equipment necessary for the continued compliance by the Grantee, its successors and assigns, with applicable laws and regulations related to the use and storage of PCB's or PCB containing equipment.

c) The Grantee, its successors and assigns, covenant and agree that its continued possession, use and management of any PCB-containing equipment will be in compliance with all applicable laws relating to PCB's and PCB containing equipment, and that the Grantor assumes no liability for the future remediation of PCB contamination or damages for personal injury, illness, disability, or death to the Grantee, its successors or assigns, or to any other person, including members of the general public arising from or incident to future use, handling, management, disposition, or other activity causing or leading to contact of any kind whatsoever with PCBs or PCB-containing equipment, after the date of this Deed, whether or not the Grantee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured. The Grantee, its successors and assigns, agree to be responsible for any future remediation of PCBs or PCB-containing equipment found to be necessary on the Property.

#### 10. COVENANT FOR ARCHEOLOGICAL SITES

(a) In consideration of the conveyance of the real property that includes 44NT72, 44NT45, and 44NT56 as shown on Exhibit "O", located in Fort Pickett in the County of Nottoway, Virginia, which is more fully described in documentation provided to the SHPO, the Grantee hereby covenants on behalf of/itself, its heirs, successors, and assigns at all times to the SHPO, to maintain and preserve 44NT72, 44NT45, and 44NT56, in accordance with the provisions of paragraphs "b" through "k" of this covenant.

(b) The Grantee will notify SHPO in writing prior to undertaking any disturbance of the ground surface or any other action on includes 44NT72, 44NT56, and 44NT45 that would affect the physical integrity of theses sites. Such notice shall describe in reasonable detail the proposed undertaking and its expected effect on the physical integrity of includes 44NT72, 44NT56, and 44NT45.

(c) Within thirty (30) calendar days of the SHPO's receipt of notification provided by the Grantee pursuant to paragraph 2 of this covenant, the SHPO will respond to the Grantee in writing as follows:

(1) That the Grantee may proceed with the proposed undertaking without further consultation; or

(2) That the Grantee must initiate and complete consultation with the SHPO before (he/she/it) can proceed with the proposed undertaking.

If the SHPO fails to respond to the Grantee's written notice within thirty (30) calendar days of the SHPO's receipt of the same, then the Grantee may proceed with the proposed undertaking without further consultation with the SHPO.

(d) If the response provided to the Grantee by the SHPO pursuant to paragraph 3 of this covenant requires consultation with the SHPO, then both parties will so consult in good faith to arrive at mutually-agreeable and appropriate measures that the Grantee will employ to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then the Grantee shall, at a minimum, undertake recordation for the concerned property-in accordance with the Secretary of Interior's standards for recordation (which may include data recovery) and any applicable state standards for recordation, or in accordance with such other standards to which the parties may mutually agree-prior to proceeding with the proposed undertaking. Pursuant to this covenant, any mitigation measures to which the Grantee and the SHPO mutually agree, or any recordation that may be required, shall be carried out solely at the expense of the Grantee.

(e) The Grantee shall make every reasonable effort to prohibit any person from vandalizing or otherwise disturbing any archeological site determined by the SHPO to be eligible for inclusion in the National Register of Historic Places. Any such vandalization or disturbance shall be reported to the SHPO promptly.

(f) The SHPO shall be permitted at all reasonable time to inspect Fort Pickett in order to ascertain its condition and to fulfill its responsibilities thereunder.

(g) In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the SHPO may, following reasonable notice to the Grantee institute suit to enjoin said violation or to require the preservation and/or mitigation of any archeological site affected by such violation. The successful party shall be entitled to recover all costs or expenses incurred in connection with any such suit, including all court costs and attorney's fees.

(h) The Grantee agrees that the SHPO may, at its discretion and without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained in this covenant to a third party.

(i) This covenant is binding on the Grantee, its heirs, successors, and assigns in perpetuity. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in Fort Pickett or any part thereof.

(j) The failure of the SHPO to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

(k) The covenant shall be a binding servitude upon the real property that includes 44NT72, 44NT56, AND 44NT45 and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

#### 11. HISTORICAL PRESERVATION COVENANT

(a) In consideration of this conveyance and other good and valuable consideration, the Grantee hereby covenants on behalf of itself, its heirs, successors and assigns at all times to the Grantor and the Virginia State Historic Preservation Officer (SHPO) to preserve and maintain the Property in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (U.S. Department of the Interior, National Park Service 1992) in order to preserve and enhance those qualities that make Building 1615 eligible for inclusion in the National Register of Historic Places. If the Grantee desires to deviate from these maintenance standards, the Grantee will notify and consult with the SHPO in accordance with Paragraphs B, C, and D of this covenant.

(b) The Grantee will notify the SHPO in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modification to structures or setting that would affect the integrity or appearance of Building 1615. Such notice shall describe in detail the proposed undertaking and its expected effect on the integrity or appearance of Building 1615.

(c) Within thirty (30) calendar days of the appropriate SHPO's receipt of notification provided by the Grantee pursuant to paragraph B of this covenant, the SHPO will respond to the Grantee in writing as follows:

(1) The Grantee may proceed with the proposed undertaking without further consultation; or

(2) The Grantee must initiate and complete consultation with the SHPO before it can proceed with the proposed undertaking. If the SHPO fails to respond to the Grantee's written notice within thirty (30) calendar days of the SHPO's receipt of same, then the Grantee may proceed with the proposed undertaking without further consultation with the SHPO.

(d) If the response provided to the Grantee by the SHPO pursuant to paragraph C of this covenant requires consultation with the SHPO, then both parties will so consult in good faith to arrive at mutually-agreeable mitigation measures that the Grantee will employ to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then the Grantee shall, at a minimum, undertake recordation for the concerned property in accordance with the Secretary of the Interior's standards for recordation and any applicable state standards for recordation, or in accordance with such other standards to which the parties may mutually agree prior to proceeding with the proposed undertaking. Pursuant to this covenant, any mitigation measures to which the Grantee and the SHPO mutually agree, or any recordation that may be required, shall be carried out solely at the expense of the Grantee.

(e) The Grantee hereby agrees that SHPO shall be permitted at all reasonable times to inspect Building 1615 in order to ascertain its condition and to fulfill its responsibilities thereunder.

(f) In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the SHPO may, following reasonable notice to the Grantee, institute suit to enjoin said violation or to require the restoration of Building 1615. The successful party shall be entitled to recover all costs or expenses incurred in connection with such suit, including all court costs and attorneys' fees.

(g) In the event that Building 1615 is substantially destroyed by fire or other casualty, or is not totally destroyed by fire or other casualty, but damage thereto is serious that restoration would be financially impractical in the reasonable judgment of the Owner and the SHPO, this covenant shall terminate on the date of such destruction or casualty. Upon such termination, the Owner shall deliver a duly executed and acknowledged notice of such termination to the SHPO, and record a duplicate original of said notice in the Nottoway County Clerk's Office. Such notice shall be conclusive evidence in favor of

every person dealing with Building 1615 as to the facts set forth therein.

(h) The Grantee agrees that SHPO may, at its discretion without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained in this covenant to a third party.

(i) This covenant is binding on the Grantee, its heirs, successors, and assigns in perpetuity, unless explicitly waived by the SHPO. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in Building 1615 or any part thereof.

(j) The failure of the SHPO to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

(k) The covenant shall be a binding servitude upon Building 1615 and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

## 12. NOTICE OF NON-DISCRIMINATION

With respect to activities related to the Property, the Grantee shall not discriminate against any person or persons or exclude them from participation in the Grantee's operations, programs or activities conducted on the Property, because of race, color, religion, sex, age, handicap, or national origin.

## 13. IMMUNITIES

The Grantee is not entitled to any of the immunities, which the United States may have had in using the Property while it was a part of Fort Pickett. The Grantee is not exempt from acquiring the necessary permits and authorizations from, or from meeting the requirements of the local, county, and state jurisdictions before using the Property for any purpose. The Property, immediately after conveyance to the Grantee, will be subject to all local, county, and state laws, regulations, and ordinances. The Grantee shall comply with the applicable environmental laws and regulations and all other Federal, state, and local laws, regulations, and standards that are or may become applicable to the Grantee's proposed use of the Property. Grantee shall be

solely responsible for fulfilling, at its own cost and expense, the requirements of the new governing authorities, independent of any existing permits or usage by the Grantor.

#### 14. ENFORCEMENT AND NOTICE REQUIREMENT

(a) The provisions of this Deed benefit the governments of the United States of America, the Commonwealth of Virginia, acting on behalf of the public in general, the local governments of Nottoway County and the lands retained by the Grantor and, therefore, are enforceable, by resort to specific performance or legal process by the United States, the Commonwealth of Virginia, Nottoway County and by the Grantee, and its successors and assigns. Enforcement of this Deed shall be at the discretion of the parties entitled to enforcement hereof, and any forbearance, delay or omission to exercise their rights under this Deed in the event of a breach of any term of this Deed, shall not be deemed to be a waiver by any such party of such term or of any subsequent breach of the same or any other terms, or of any of the rights of said parties under this Deed. All remedies available hereunder shall be in addition to any and all other remedies at law or in equity, including CERCLA. The enforcement rights set forth in this deed against the Grantee, or its successors and assigns, shall only apply with respect to the Property conveyed herein and held by such Grantee, its successor or assign, and only with respect to matters occurring during the period of time such Grantee, its successor or assign, owned or occupied such Property or any portion thereof.

(b) The Grantee, its successors or assigns, shall neither transfer the Property, or any portion thereof, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion, to the extent applicable to the Property or any portion thereof, of the environmental protection provisions contained in Paragraphs B.4. EXCLUSIONS, RESERVATIONS, COVENANTS, AND RESTRICTIONS, C.2. AIRFIELD CONSTRUCTION COMPLIANCE C.4. ENVIRONMENTAL CONDITION; C.5. CERCLA NOTICE AND COVENANTS; C.6. INDEMNIFICATION; C.7. NOTICE OF THE PRESENCE OF ASBESTOS; C.8. NOTICE OF THE PRESENCE OF LEAD-BASED PAINT; AND C.9. PCB CONTAINING EQUIPMENT NOTIFICATION; and shall require the inclusion, to the extent applicable, of such environmental protection provisions in all further deeds, transfers, leases, or grant of any interest, privilege, or license.

(c) The COVENANTS, CONDITIONS, and RESTRICTIONS set forth in this Deed are a binding servitude on the Property and will be deemed to run with the Property in perpetuity. Restrictions, stipulations and covenants contained in Paragraphs B.4. EXCLUSIONS, RESERVATIONS, COVENANTS, AND RESTRICTIONS, C.2. AIRFIELD CONSTRUCTION COMPLIANCE C.4. ENVIRONMENTAL CONDITION;

C.5. CERCLA NOTICE AND COVENANTS; C.6. INDEMNIFICATION; C.7. NOTICE OF THE PRESENCE OF ASBESTOS; C.8. NOTICE OF THE PRESENCE OF LEAD-BASED PAINT; AND C.9. PCB CONTAINING EQUIPMENT NOTIFICATION; will be inserted by the Grantee, its successors and assigns, to the extent applicable to the Property or any portion thereof, either verbatim, or by express reference in any deed or other legal instrument by which they divest themselves of either the fee simple title or any other lesser estate in the Property as provided in subparagraph b. above. The Grantee, its successors and assigns, shall neither transfer nor lease the Property, or any portion thereof, nor grant any interest, privilege, or license whatsoever in the Property without providing notice of the environmental protection provisions identified above, which apply to the property conveyed, and shall require notice of such environmental protection provisions in all further deeds, transfers, leases, or grants of any interest, privilege, or license, as provided in subparagraph b. above.

(d) The obligations imposed in this Paragraph upon the successors or assigns of Grantee shall only extend to the property conveyed to any such successor or assign.

(e) All notices required or permitted under this Deed shall be in writing and shall be deemed sufficiently served when delivered by hand if a receipt is obtained therefor, or when actually received if delivered by mail, and if delivered by mail shall be mailed registered or certified first class mail, return receipt requested, postage pre-paid, and in all cases shall be addressed as follows:

To the Grantee:

Fort Pickett Local Redevelopment Authority  
Nottoway County Administration office  
P. O. Box 92  
Nottoway, Virginia 23955

To the Army:

U. S. Army Corps of Engineers  
Norfolk District  
ATTN; CENAO-RE  
803 Front Street  
Norfolk, Virginia 23510-1096

## 15. GENERAL PROVISIONS

(a) LIBERAL CONSTRUCTION. Any general rule of construction to the contrary notwithstanding, this Deed shall be liberally

construed to effectuate the purpose of this Deed and the policy and purpose of CERCLA. If any provision of this Deed is found to be ambiguous, an interpretation consistent with the purpose of this Deed that would render the provision valid shall be favored over any interpretation that would render it invalid.

(b) SEVERABILITY. If any provision of this Deed, or the application of it to any person or circumstance, is found to be invalid, the remainder of the provisions of this Deed, or the application of such provisions to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.

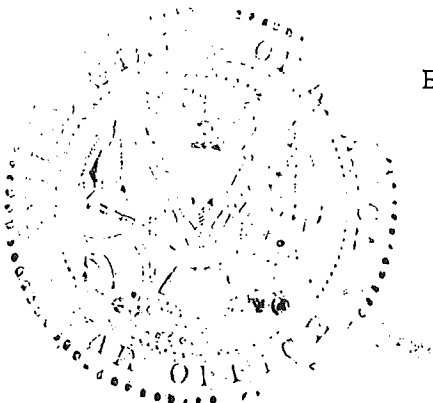
(c) CAPTIONS. The captions in this Deed have been inserted solely for convenience of reference and are not a part of this Deed and shall have no effect upon construction or interpretation.

(d) RIGHT TO PERFORM. Any right which is exercisable by the Grantee, and its successors and assigns, to perform under this Deed may also be performed, in the event of default by the Grantee, or its successors and assigns, by a lender of the Grantee and its successors and assigns.

(e) All rights and powers reserved to the Grantor, and all references in this Deed to Grantor, shall include its successor in function. The Grantor may agree to waive, eliminate, or reduce the obligations of the Grantee, or any subsequent transferee, successor, assignee, licensee, or lessee that are contained in this Deed.

(f) PROVIDED, HOWEVER, that the failure of the Grantor to insist in any one or more instances upon complete performance of any of the said conditions shall not be construed as a waiver or a relinquishment of the future performance of any such conditions, but the obligations of the Grantee, its successors and assigns, as applicable, with respect to such future performance pertaining to the Property shall continue in full force and effect.

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed by the Deputy Assistant Secretary of the Army (I&H), and the seal of the Department of the Army to be hereto affixed this 16th day of February, 2000.



By: Paul W. Johnson  
Paul W. Johnson  
Deputy Assistant Secretary  
of the Army

**ACKNOWLEDGMENT**

COMMONWEALTH OF VIRGINIA)  
: ss  
COUNTY OF ARLINGTON )

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose commission as such expires on the 30th day of November, 2002, do hereby certify that this day personally appeared before me in the said Commonwealth of Virginia, County of Arlington, Paul W. Johnson, Deputy Assistant Secretary of the Army (I&H), whose name is signed to the foregoing document dated the 16th day of February, 2000, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

Given under my hand this 16th day of February, 2000.


Loren A. Cooper  
NOTARY PUBLIC



**ACCEPTANCE**

Nottoway County, a municipal body within the Commonwealth of Virginia, hereby accepts this quitclaim deed for itself, its successors and assigns, subject to all of the conditions, reservations, restrictions, and terms contained herein.

Nottoway County a Virginia Municipal Body

By:   
Robert Ray Taylor  
Chairman, Nottoway County  
Board of Supervisors

**ACKNOWLEDGMENT**

COMMONWEALTH OF VIRGINIA)  
: SS  
COUNTY OF NOTTOWAY )

On this 11<sup>th</sup> day of February, 2000, personally appeared before me, Robert Ray Taylor whose identity is personally known to me and who by me duly sworn (or affirmed), the Chairman of the Board for the Nottoway County Board of Supervisors, a municipal body under the laws of the Commonwealth of Virginia, and that the foregoing document was signed by him on behalf of said Nottoway County and acknowledged to me that said Robert Ray Taylor executed the same.

  
NOTARY PUBLIC

Legal Description  
for  
County of Nottoway  
December 7, 1999

Lot 1

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron on a southern corner of the hereinafter described tract or parcel, said iron marks a common corner with lands of The Town of Blackstone and is located N.89 54'53"E., 94.09' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along lands of the Town of Blackstone N.09 27'25"W., 1221.28' to a set iron on the southern side of State Route No. 40; thence along the southern side of State Route No. 40 S.80 30'37"W., 594.57' to a point; thence along a curve to the left having a radius of 899.93', an arc distance of 559.64', a delta angle of 35 37'50" and a chord bearing and distance of S.62 41'42"W., 550.66' to a point; thence S.44 52'47"W., 894.88' to a set iron on the south side of State Route No. 40; thence a new line S.00 30'00"W., 2246.90' to a set iron; thence N.89 30'00"W., 1969.76' to a set iron; thence N.49 57'38"W., 37.68' to a set iron on the eastern side of Military Road; thence crossing Military Road N.73 58'58"W., 80.00' to a set iron on the western side of Military Road; thence along the western side of Military Road along a curve to the left having a radius of 2904.79', an arc distance of 147.00', a delta angle of 02 53'58" and a chord bearing and distance of S.14 34'03"W., 146.98' to a set iron; thence leaving Military Road N.89 35'13"W., 1850.38' to a set iron on the western boundary of the Fort Pickett Military Reservation; thence along the said western boundary N.02 20'07"W., 131.74' to a found monument; thence N.01 32'20"W., 325.58' to a found monument; thence N.00 04'40"E., 319.50' to a found monument on the boundary with other lands of The Town of Blackstone; thence with lands of The Town of Blackstone N.86 40'43"E., 44.59' to a found monument; thence N.11 34'17"E., 731.37' to a set iron on the southern side of State Route No. 40; thence along the southern side of State Route No. 40 along a curve to the left having a radius of 1218.24', an arc distance of 49.70', a delta angle of 02 20'15" and a chord bearing and distance of S.61 48'18"W., 49.70' to a point; thence S.60 38'11"W., 602.69' to a point; thence crossing State Route No. 40 N.06 29'25"E., 135.72' to a set iron; thence along the northern side of State Route No. 40 N.60 38'11"E., 523.20' to a point; thence along a curve to the right having a radius of 1328.24', an arc distance of 577.22', a delta angle of 24 53'58" and a chord bearing and distance of N.73 05'10"E., 572.69' to a point; thence N.85 32'09"E., 370.16' to a point; thence along a curve to the right having a radius of 4462.37', an arc distance of 552.53', a delta angle of 07 05'40" and a chord bearing and distance of N.89 04'59"E., 552.18'; thence S.87 22'11"E., 827.23' to a point at the intersection of the north side of State Route No. 40 with a line 40 feet west of the center of Military Road; thence along the western side of Military Road 40 feet from said centerline N.16 55'02"E., 2723.20' to a point; thence along a curve to the left having a radius of 2824.79', an arc distance of 941.78', a delta angle of 19 06'08" and a chord bearing and distance of N.07 21'58"E., 937.42' to a set iron 40 feet west of the center of

Military Road and 25 feet South of the center of Wilson-Jones Lane; thence along the southern side of Wilson-Jones Lane 25 feet from the centerline S.62 59'07"W., 522.01' to a set iron; thence S.56 33'07"W., 228.97' to a set iron; thence S.41 30'36"W., 127.56' to a set iron; thence S.58 22'36"W., 206.65' to a set iron; thence S.59 12'57"W., 400.74' to a set iron; thence S.58 23'02"W., 633.78' to a set iron; thence leaving the southern side of Wilson-Jones Lane N.31 36'58"W., 33.85' to a set iron; thence N.57 08'03"E., 140.99' to a set iron; thence N.58 29'07"E., 524.37' to a found monument; thence N.59 09'49"E., 570.88' to a found monument on the northwestern boundary of the Fort Pickett Military Reservation; thence along the northwestern boundary of Fort Pickett Military Reservation N.07 54'48"E., 632.17' to a found iron; thence N.06 20'51"E., 152.63' to a found monument; thence N.12 03'23"E., 722.66' to a found monument; thence N.03 12'24"E., 538.75' to a found monument; thence N.01 06'22"E., 612.86' to a found monument; thence N.05 40'05"E., 321.58' to a set iron; thence N.05 48'10"E., 767.82' crossing Highway 460 Business and passing through a found iron on line at 764.6' to a point on the southern right-of-way line of Norfolk Southern Railroad; thence along the southern right-of-way line of Norfolk Southern Railroad along a curve to the left having a radius of 5670.27', an arc distance of 584.84', a delta angle of 05 54'34" and a chord bearing and distance of N.65 58'46"E., 584.58' to a found iron; thence N.22 38'25"W., 30.09' to a found iron; thence along a curve to the left having a radius of 5640.27', an arc distance of 526.66', a delta angle of 05 21'00" and a chord bearing and distance of N.60 19'36"E., 526.47' to a found iron; thence S.07 23'06"E., 22.05' to a point; thence along a curve to the left having a radius of 5660.27', an arc distance of 610.60', a delta angle of 06 10'51" and a chord bearing and distance of N.54 39'20"E., 610.31' to a point; thence N.51 33'54"E., 186.13' to a point; thence S.08 57'06"E., 266.29' to a point; thence N.81 02'54"E., 15.76' to a point on the eastern side of State Route No. 636 25 feet from the centerline; thence along the eastern side of State Route No. 636 25 feet from the centerline along a curve to the left having a radius of 625.00', an arc distance of 72.46', a delta angle of 06 38'35" and a chord bearing and distance of S.00 28'58"W., 72.42' to a point; thence S.02 50'19"E., 486.74' to a point; thence along a curve to the right having a radius of 114.53', an arc distance 196.80', a delta angle of 98 27'27" and a chord bearing and distance of S.46 23'24"W., 173.46'; thence N.84 22'52"W., 195.20' to a point 25 feet south of the center of State Route No. 636 and on the southern right-of-way of Highway 460 Business; thence along the southern right-of-way of Highway 460 Business along a curve to the right having a radius of 1179.00', an arc distance of 938.14', a delta angle of 45 35'27" and a chord bearing and distance of S.60 17'28"W., 913.59' to a point; thence S.83 05'11"W., 474.77' to a point on the southern right-of-way line of Highway No. 460 Business and 40 feet east of the center of Military Road; thence along the eastern side of military road 40 feet from centerline S.07 01'36"E., 2602.17' to a point; thence along a curve to the right having a radius of 2904.79', an arc distance of 1184.43', a delta angle of 23 21'45" and a chord bearing and distance of S.04 39'16"W., 1176.24' to a set iron 40 feet East of the center of Military Road; thence leaving Military Road S.77 44'17"E., 774.38' to a set iron 25 feet West of the center of a railroad spur track; thence along said railroad spur track 25 feet from centerline N.22 07'10"E., 203.00' to a set iron 25 feet West of said railroad spur track and 20 feet South of the center of an electrical right of way; thence along the southern side of said electrical right-of-way 20 feet from the centerline S.77 44'17"E., 1189.57' to a set iron; thence N.31

19°33'W., 44.43' to a point; thence along a curve to the right having a radius of 6275.84', an arc distance of 973.28', a delta angle of 08°53'08" and a chord bearing and distance of N.26°52'59"W., 972.30' to a point; thence N.22°26'24"W., 502.36' to a set iron on the eastern side of a railroad spur track 25 feet from its centerline; thence along the eastern side of said railroad spur track 25 feet from its centerline N.22°07'10"E., 212.18' to a set iron; thence leaving said railroad spur track N.83°23'28"E., 606.12' to a set iron on the western side of another railroad spur track 25 feet from its centerline; thence along the western side of said railroad spur track 25 feet from its centerline S.09°27'25"E., 445.80' to a set iron; thence leaving the railroad spur track S.83°23'28"W., 604.79' to a set iron; thence S.22°26'24"E., 218.78' to a point; thence along a curve to the left having a radius of 6225.45', an arc distance of 965.52', a delta angle of 08°53'10" and a chord bearing and distance of S.26°52'59"E., 964.56' to a point; thence S.31°19'34"E., 44.43' to a point; thence along a curve to the right having a radius of 2669.42', an arc distance of 813.08', a delta angle of 17°27'06" and a chord bearing and distance of S.22°36'01"E., 809.94' to a set iron on the northern side of State Route No. 40 N.80°30'37"E., 1835.67' to a point; thence along a curve to the right having a radius of 792.71', an arc distance of 820.18', a delta angle of 59°16'52" and a chord bearing and distance of S.69°50'57"E., 784.08' to a point; thence S.40°12'31"E., 1469.04' to set iron; thence crossing State Route No 40 S.25°41'11"W., 120.51' to a point on the southwest side of State Route No. 40; thence along the southwest side of State Route No. 40 N.40°12'31"E., 196.96' to a set iron; thence leaving State Route No. 40 S.80°32'08"W., 2494.22' to a set iron; thence N.09°27'52"W., 207.36' to a set iron; thence S.80°32'08"W., 155.00' to a set iron; thence N.09°27'52"W., 39.86' to a found iron; thence S.80°32'24"W., 378.96' to the place and point of beginning.

Said tract or parcel of land contains 434.07 acres, more or less, and is more clearly shown as Lot 1 on that certain plat by Maxey-Hines & Associates, P.C. entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999.

SAVE and EXCEPT that certain tract or parcel of land triangular in shape lying between Highway No. 460 Business and State Route No. 636 containing 1.26 Acres and being more particularly described as follows:

Beginning at a point on the eastern right-of-way of Highway No. 460 Business and on the northern side of State Route No. 636 25 feet from its centerline; thence along the eastern side of Highway No. 460 Business along a curve to the left having a radius of 1179.00', an arc distance of 577.56', a delta angle of 28°04'04" and a chord bearing and distance of N.20°38'32"E., 571.81' to a point; thence N.06°36'30"E., 61.92' to a point; thence leaving Highway No. 460 Business along the western side of State Route No. 636 25 feet from its centerline S.02°50'19"E., 546.09' to a point; thence along a curve to the right having a radius of 64.53', an arc distance of 110.88', a delta angle of 98°27'27" and a chord bearing and distance of S.46°23'24"W., 97.73' to a point; thence N.84°22'52"W., 165.78' to the place and point of beginning.

Said tract or parcel contains 1.26 acres, more or less, and is more clearly shown as an "excluded area" on that certain plat by Maxey-Hines and Associates, P.C. entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999

## Lot 2

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron on the northeast corner of the hereinafter described tract or parcel, said iron is located 25 feet southeast of the center of State Route No. 636 and 25 feet southwest of the center of the M.R.T.C. Road and is located N.03 44' 11"E., 8809.74' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along the southeastern side of State Route No. 636 along a curve to the left having a radius of 538.57', an arc distance of 183.85', a delta angle of 19 33' 31" and a chord bearing and distance of S.61 20' 33"W., 182.95' to a point; thence S.51 33' 48"W., 1033.91' to a set iron; thence leaving State Route No. 636 S.13 12' 27"E., 373.00' to a set iron; thence S.52 17' 04"W., 281.64' to a set iron on the eastern side of a railroad spur track 25 feet from its centerline; thence along the eastern side of said railroad spur track 25 feet from its centerline N.10 04' 47"W., 198.25' to a point; thence along a curve to the right having a radius of 400.40', an arc distance of 206.79', a delta angle of 29 35' 30" and a chord bearing and distance of N.04 42' 58"E., 204.50' to a point on the eastern side of said railroad spur 25 feet from its centerline and on the southeastern side of State Route No. 636 25 feet from its centerline; thence along the southeastern side of State Route No. 636 S.46 53' 50"W., 143.04' to a point; thence along a curve to the right having a radius of 1552.89', an arc distance of 157.22', a delta angle of 05 48' 03" and a chord bearing and distance of S.49 47' 51"W., 157.15' to a point; thence S.52 41' 53"W., 385.98' to a point; thence along a curve to the left having a radius of 235.44', an arc distance of 157.72', a delta angle of 38 22' 57" and a chord bearing and distance of S.33 30' 24"W., 154.79' to a point; thence S.14 18' 55"W., 4.04' to a point on the right-of-way line of Norfolk Southern Railroad; thence along the right-of-way of Norfolk Southern Railroad N.06 48' 54"E., 155.46' to a point; thence N.51 33' 54"E., 2054.50' to a point; thence S.81 11' 31"W., 20.23' to a point; thence N.51 33' 54"E., 109.49' to a point; thence leaving Norfolk Southern Railroad along the southwest side of the M.R.T.C. Road S.38 21' 16"E., 80.98' to the place and point of beginning.

Said tract or parcel of land contains 4.48 acres, more or less, and is more clearly shown as Lot 2 on that certain plat entitled "Boundary Survey Lot 1 and Lot 2 for County of Nottoway" dated December 7, 1999.

## Lot 3

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron at the southeast intersection of Military Road and 10<sup>th</sup> Street, said iron is located 25 feet West of the center of Military Road and 25 feet

South of the centerline of 10<sup>th</sup> Street and is further defined as being located S.30 50'31"W., 7717.52' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence along the southern side of 10<sup>th</sup> Street 25 feet from its centerline N.90 00'00"E., 1720.02' to a point; thence along a curve to the right having a radius of 943.38', an arc distance of 271.69', a delta angle of 16 30'04" and a chord bearing and distance of S.81 44'58"E., 270.75' to a point; thence S.73 29'56"E., 98.55' to a set iron; thence leaving and crossing 10<sup>th</sup> Street N.00 30'00"E., 651.42' to a set iron; thence S.67 30'49"E., 594.09' to a set iron; thence S.55 46'58"E., 1510.00' to a set iron; thence N.25 41'11"E., 1044.89' to a set iron; thence N.34 13'02"E., 6541.10' to a set iron on the northeast right-of-way line of State Route No. 40; thence along the northeastern right-of-way of State Route 40 S.34 37'49"W., 403.67' to a point; thence S.40 20'27"E., 150.75' to a point; thence S.34 37'49"E., 285.23' to a set iron; thence turning and crossing State Route No. 40 S.43 51'41"W., 162.07' to a set iron on the southwestern right-of-way line of State Route No. 40 and the western side of Dearing Avenue 25 feet from its centerline; thence along the western side of Dearing Avenue 25 feet from its centerline along a curve to the left having a radius of 343.31', an arc distance of 262.81', a delta angle of 43 51'41" and a chord bearing and distance of S.21 55'50"W., 256.44' to a point; thence S.00 00'00"W., 4774.50' to a set iron 25 feet West of the centerline of Dearing Avenue and 25 feet North of the centerline of 10<sup>th</sup> Street; thence along a line 25 feet North of and parallel to the centerline of 10<sup>th</sup> Street N.90 00'00"W., 2954.91' to a set iron; thence crossing 10<sup>th</sup> Street along a line 25 feet West of and parallel to West Parade S.00 00'00"W., 1091.51' to a set iron; thence crossing West Parade N.90 00'00"E., 1698.22' to a set iron 25 feet west of the centerline of East Parade; thence along a line 25 feet West of and parallel to the centerline of East Parade S.00 05'39"E., 1411.54' to a point; thence along a curve to the left having a radius of 597.96', an arc length of 233.68', a delta angle of 22 23'29" and a chord bearing and distance of S.11 17'23"E., 232.20' to a point; thence S.22 29'08"E., 1707.83' to a set iron; thence leaving East Parade S.67 52'54"W., 487.93' to a set iron; thence S.22 07'06"E., 548.96' to a set iron 25 feet North of the centerline of Military Road; thence along a line 25 feet North of and parallel to Military Road S.62 17'20"W., 725.37' to a point; thence along a curve to the right having a radius of 4558.66', an arc distance of 420.02', a delta angle of 05 16'45" and a chord bearing and distance of S.64 55'42"W., 419.87' to a point; thence S.67 34'05"W., 18.57' to a set iron 25 feet North of the centerline of Military Road and 25 feet East of the centerline of West Parade; thence along a line 25 feet East of and parallel to West Parade N.22 22'12"W., 320.27' to a set iron; thence crossing West Parade along a line 25 feet northwest of and parallel to the centerline of 20<sup>th</sup> Street S.67 34'05"W., 775.24' to a set iron 25 feet northwest of the centerline of 20<sup>th</sup> Street and 25 feet northeast of the centerline of Armistead Avenue; thence along a line 25 feet northeast of and parallel to Armistead Avenue S.22 22'12"E., 320.27' to a set iron 25 feet northeast of the centerline of Armistead Avenue and 25 feet northwest of the centerline of Military Road; thence along a line 25 feet northwest of and parallel to the centerline of Military Road S.67 34'05"W., 718.13' to a point; thence along a curve to the right having a radius of 929.93', an arc distance of 692.82', a delta angle of 42 41'12" and a chord bearing and distance of S.88 54'40"W., 676.90' to a point; thence N.69 44'44"W., 2098.55' to a point; thence along a curve to the right having a radius of 957.21', an arc distance of 580.39', a delta angle of 34 44'26" and a

chord bearing and distance of N.52 22'31"W., 571.54' to a point; thence N.35 00'18"W., 3192.47' to a point; thence along a curve to the right having a radius of 813.48', an arc distance of 496.99', a delta angle of 35 00'18" and a chord bearing and distance of N.17 30'09"W., 489.30' to a point; thence N.00 00'00"W., 1901.26' to the place and point of beginning.

Said tract or parcel of land contains 1101.41 acres, more or less, and is more clearly shown as Lot 3 on that certain plat entitled "Boundary Survey Lot 3 and Lot 4 for County of Nottoway" dated December 7, 1999.

#### Lot 4

All that certain tract or parcel of land lying, situate and being on the Fort Pickett Military Reservation in the Bellefonte District of Nottoway County, Virginia, being more particularly described as follows:

Beginning at a set iron at the northeast corner of the hereinafter described parcel of land said iron is further defined as being located S.46 33'06"W., 6903.91' from a Concrete Monument with a brass cap stamped "MH 5" having NAD 83 Coordinates of N=3554151.3784 E=11640968.2798; thence due South, 3549.06' to a set iron 25' North of the centerline of West Entrance Road; thence along a line 25' North of and parallel to the centerline of West Entrance Road N.85 48'24"W., 481.44' to a point; thence along a curve to the right having a radius of 1407.39', an arc distance of 690.47', a delta angle of 28 06'35" and a chord bearing and distance of N.71 45'07"W., 683.57' to a point where the centerline of Hurricane Creek intersects a line 25' North of the centerline of West Entrance Road; thence leaving West Entrance Road along the centerline of Hurricane Creek as it meanders as referenced by the following eleven (11) courses: thence N.16 14'21"E., 380.27'; thence N.02 00'31"W., 170.96'; thence N.59 35'20"W., 406.16'; thence N.21 13'36"W., 254.85'; thence N.65 50'00"W., 463.04'; thence N.16 50'40"E., 450.56'; thence N.01 25'15"W., 399.57'; thence N.47 27'36"W., 531.50'; thence N.17 31'11"E., 475.10'; thence N.25 47'35"W., 383.18'; thence N.05 50'24"E., 394.98'; thence leaving Hurricane Creek S.57 55'05"E., 68.64' to a found monument; thence S.03 24'07"W., 196.94' to a found monument; thence S.89 55'30"E., 239.12' to a found monument; thence N.89 46'32"E., 580.99' to a found monument; thence S.88 43'25"E., 224.56' to a set iron; thence S.87 55'06"E., 380.34' to a found monument; thence Due East or N.90 00'00"E., 677.31' to the place and point of beginning.

Said tract or parcel of land contains 135.41 acres, more or less, and is more clearly shown as Lot 4 on that certain plat entitled "Boundary Survey Lot 3 and Lot 4 for County of Nottoway" dated December 7, 1999.

BOOK 387 PAGE 766

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OCT - 6 2005

Exemption from taxation is claimed under the Virginia Code Section 58.1.811.

This deed was reviewed by: Robert L Oswald, Attorney U.S. Army Corps of Engineers Norfolk District	TAX ID# 54-600147
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**QUITCLAIM DEED  
FORMER FORT PICKETT MILITARY INSTALLATION  
NOTTOWAY COUNTY, VIRGINIA  
PARCEL #EBS-13  
FORMER SALVAGE YARD**

This QUITCLAIM DEED, between the UNITED STATES OF AMERICA (hereinafter the "GRANTOR"), acting by and through the Deputy Assistant Secretary of the Army (Installations and Housing), pursuant to a delegation of authority from the SECRETARY OF THE ARMY (hereinafter the "ARMY"), under the authority of the provisions of the Federal Property and Administrative Services Act of 1949, approved June 30, 1949 (63 Stat. 377), 40 U.S.C. § 101, *et seq.*, as amended, and the Defense Base Closure and Realignment Act of 1990, Public Law No. 101-510, as amended, and Fort Pickett Local Redevelopment Authority, an agency of the Board of Supervisors of Nottoway County, Virginia (hereinafter the "GRANTEE").

**WITNESSETH:**

THAT THE GRANTOR, for and in consideration of One Dollar [\$1.00], cash in hand paid, and other good and valuable consideration, the receipt of all of which is hereby acknowledged, does hereby REMISE, RELEASE AND FOREVER QUITCLAIM unto the GRANTEE, its successors and assigns, all its right, title, and interest in and to the property situated, lying and being in the County of Nottoway, in the Commonwealth of Virginia, containing approximately 31.47 acres, being a portion of the former Fort Pickett, and as shown on the Plat of Survey for Parcel #EBS-13, Exhibit "A", attached hereto and made a part hereof (hereinafter referred to as the "Property"), and more particularly bounded and described as follows, to wit:

**Parcel #EBS-13**

All that certain parcel that contains 31.47 acres as shown on that certain plat by Timberlake & Co. entitled "Plat of survey showing a portion of property belonging to FORT PICKETT located in Belefonte Mag. Dist. Nottoway County, VA" dated November 2, 1999 revised March 16, 2004. Beginning at the most northwestern point having Virginia State Plane Coordinates of N3547462.3042, E11639031.094 thence S73°28'06"E, 239.80' to a point; thence S81°55'06"E, 596.32' following an arc with a radius = 1956.53' to a point; thence S89°54'23"E, 293.57' to a point; thence S60°54'28"E, 502.91' to a point; thence S47°36'54"E, 270.95' to a point; thence

S29°08'26"W, 594.68' to a point; thence N84°21'42"W, 936.83' to a point; thence N66°49'45"W, 385.60' to a point; thence N31°59'49"W, 563.35' to a point; thence N18°09'26"E, 397.04' returning to the starting point.

Said parcel being a portion of the 45,937 acres located in Nottoway, Dinwiddie and Brunswick Counties, Virginia, acquired by the United States of America and identified on the Final Project Ownership Map, for Real Estate Fort Pickett Military Reservation Map, approved by the U. S. Army Corps of Engineers on 4 March 1944.

EXCEPTING, SAVING AND RESERVING unto the GRANTOR and its assigns, from this conveyance, the following rights, powers, privileges and easements, namely a perpetual and assignable easement and right-of-way in, on, over and through the Property to construct, operate and maintain airfield lighting, navigational aids, towers and/or other visual indicators; to regulate or prohibit light emissions, either direct or indirect (reflective), that might interfere with pilot vision; to prohibit electrical emissions that might interfere with aircraft and aircraft communications systems or aircraft navigational equipment; to make low and frequent flights over said Property; to generate noise associated with aircraft in flight, whether or not directly over said Property; to generate noise associated with aircraft, aircraft engines, and aircraft engine test/stand/cell operations at Blackstone Army Airfield/Allen C. Perkinson Airport; to top, cut to ground level, and to remove trees, shrubs, brush or other vegetation that the GRANTOR determines might interfere with the operation of aircraft, including emergency landings; to prohibit and remove any buildings or other non-frangible structures; to regulate or prohibit the release into the air of any substance that would impair the visibility or otherwise interfere with the operations of aircraft including, but not limited to, steam, dust and smoke; to prohibit any use of the land that would unnecessarily attract birds or waterfowl including, but not limited to, operation of sanitary landfills, maintenance of feeding stations or the growing of certain types of vegetation attractive to birds or waterfowl; to post signs on the Property indicating the nature and extent of the GRANTOR's control; and to prohibit uses of the Property other than for the following purposes: highway and street rights-of-way; underground communications and utility facilities; livestock grazing, excluding feedlots and intensive animal husbandry; agriculture; permanent open space; and controlled hunting and fishing for the purpose of wildlife control; together with the right of ingress and egress upon over and across the Property for the purpose of exercising the rights reserved herein.

SUBJECT TO all valid and existing restrictions, reservations, covenants, conditions, and easements including, but not limited to, rights-of-way for highways, pipelines, and public utilities, if any, whether of public record or not.

TO HAVE AND TO HOLD the Property granted herein to the GRANTEE and its successors and assigns, together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest, or claim whatsoever of the GRANTOR, either in law or in equity and subject to the terms, reservations, restrictions, covenants, and conditions set forth in this Deed.

AND IT IS FURTHER AGREED AND UNDERSTOOD by and between the parties hereto that the GRANTEE, by its acceptance of this Deed, agrees that, as part of the consideration for this Deed, the GRANTEE covenants and agrees for itself, its successors and assigns, forever, that this Deed is made and accepted upon each of the following covenants, which covenants shall be binding upon and enforceable against the GRANTEE, its successors and assigns, in perpetuity by the GRANTOR and other interested parties as allowed by federal, state or local law; that the notices, use restrictions, and restrictive covenants set forth here are a binding servitude on the Property herein conveyed and shall be deemed to run with the land in perpetuity; and that the failure to include the notices, use restrictions, and restrictive covenants in subsequent conveyances does not abrogate the status of these restrictions as binding upon the parties, their successors and assigns:

FOST, Encl. 7 1. CERCLA NOTICE

For the Property, the GRANTOR provides the following notice, description, and covenant:

A. Pursuant to section 120(h)(3)(A)(i)(I) and (II) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9620(h)(3)(A)(i)(I) and (II), available information regarding the type, quantity, and location of hazardous substances and the time at which such substances were stored, released, or disposed of, as defined in section 120(h), is provided in Exhibit "B", attached hereto and made a part hereof. Additional information regarding the storage, release, and disposal of hazardous substances on the Property has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the following documents: Fort Pickett Environmental Baseline Survey Report, Fort Pickett, VA (1997); Feasibility Study for Soil and Groundwater EBS-13, Fort Pickett, Blackstone, VA (2004); the Phase II Remedial Investigation Report EBS-13, Fort Pickett, VA (2004); and the Finding of Suitability to Transfer (FOST), Fort Pickett, Virginia, Former Salvage Yard (EBS-13) dated May 2005.

(don't need since content was removed)

Forgot to include petro release into. (see FOST, 4.3.2 and Encl. 8)

we haven't seen this!

B. Pursuant to section 120(h)(3)(A)(i)(III) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9620(h)(3)(A)(i)(III), a description of the remedial action taken, if any, on the Property is provided in Exhibit "B". Additional information regarding the remedial action taken, if any, has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the following documents: Final Decision Document, EBS-13 Parcel, Operable Unit 6 (2005).

not finalized yet!!

FOST, Encl. 7 2. CERCLA COVENANT

Pursuant to section 120(h)(3)(A)(ii) and (B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9620(h)(3)(A)(ii) and (B), the United States warrants that:

A. All remedial action necessary to protect human health and the environment with respect to any hazardous substance identified pursuant to section 120(h)(3)(A)(i)(I) of the

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, remaining on the Property has been taken before the date of this Deed; and

B. Any additional remedial action found to be necessary after the date of this Deed shall be conducted by the United States.

This warranty shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party with respect to such Property. For purposes of this warranty, GRANTEE shall not be considered a potentially responsible party solely due to the presence of a hazardous substance remaining on the Property on the date of this instrument, provided that GRANTEE has not caused or contributed to a release of such hazardous substance.

*F-05T, Encl. 7* 3. **RIGHT OF ACCESS**

A. Pursuant to section 120(h)(3)(A)(iii) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9620(h)(3)(A)(iii), the United States retains and reserves a perpetual and assignable easement and right of access on, over, and through the Property, to enter upon the Property in any case in which an environmental response action or corrective action is found to be necessary on the part of the United States, without regard to whether such environmental response action or corrective action is on the Property or on adjoining or nearby lands. Such easement and right of access includes, without limitation, the right to perform any environmental investigation, survey, monitoring, sampling, testing, drilling, boring, coring, test-pitting, installing monitoring or pumping wells or other treatment facilities, response action, corrective action, or any other action necessary for the United States to meet its responsibilities under applicable laws and as provided for in this Deed. Such easement and right of access shall be binding on the GRANTEE, its successors and assigns, and shall run with the land.

B. In exercising such easement and right of access, the United States shall provide the GRANTEE or its successors or assigns, as the case may be, with reasonable notice of its intent to enter upon the Property and exercise its rights under this covenant, which notice may be severely curtailed or even eliminated in emergency situations. The United States shall use reasonable means, but without significant additional costs to the United States, to avoid and to minimize interference with the GRANTEE'S and the GRANTEE'S successors' and assigns' quiet enjoyment of the Property. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the Property at a reasonable charge to the United States. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE or its successors and assigns, for the exercise of the easement and right of access hereby retained and reserved by the United States.

C. In exercising such easement and right of access, neither the GRANTEE nor its successors and assigns, as the case may be, shall have any claim at law or equity against the United States or any officer, employee, agent, contractor of any tier, or servant of the United States based on actions taken by the United States or its officers, employees, agents, contractors

of any tier, or servants pursuant to, and in accordance with, this covenant. In addition, the GRANTEE, its successors and assigns, shall not interfere with any response action or corrective action conducted by the GRANTOR on the Property.

FOST Encl. 7A. "AS IS"

A. The GRANTEE acknowledges that it has inspected, or has had the opportunity to inspect, the Property and accepts the condition and state of repair of the Property. The GRANTEE understands and agrees that the Property and any part thereof is conveyed "AS IS" without any representation, warranty, or guaranty by the GRANTOR as to quantity, quality, title, character, condition, size, or kind, or that the same is in condition or fit to be used for the purpose(s) intended by the GRANTEE, and no claim for allowance or deduction upon such grounds will be considered.

B. No warranties, either express or implied, are given with regard to the condition of the Property, including, without limitation, whether the Property does or does not contain asbestos or lead-based paint. The GRANTEE shall be deemed to have relied solely on its own judgment in assessing the overall condition of all or any portion of the Property, including, without limitation, any asbestos, lead-based paint, or other conditions on the Property. The failure of the GRANTEE to inspect or to exercise due diligence to be fully informed as to the condition of all or any portion of the Property will not constitute grounds for any claim or demand against the United States.

C. Nothing in this "AS IS" provision will be construed to modify or negate the GRANTOR'S obligation under the CERCLA Covenant or any other statutory obligations.

FOST, Encl. 7 5. **HOLD HARMLESS**

A. To the extent authorized by law, the GRANTEE, its successors and assigns, covenant and agree to indemnify and hold harmless the GRANTOR, its officers, agents, and employees from (1) any and all claims, damages, judgments, losses, and costs, including fines and penalties, arising out of the violation of the notices, use restrictions, and restrictive covenants in this Deed by the GRANTEE, its successors and assigns; and (2) any and all claims, damages, and judgments arising out of, or in any manner predicated upon, exposure to asbestos, lead-based paint, or other condition on any portion of the Property after the date of conveyance.

B. The GRANTEE, its successors and assigns, covenant and agree that the GRANTOR shall not be responsible for any costs associated with modification or termination of the notices, use restrictions, and restrictive covenants in this Deed including, without limitation, any costs associated with additional investigation or remediation of asbestos, lead-based paint, or other condition on any portion of the Property.

C. Nothing in this Hold Harmless provision will be construed to modify or negate the GRANTOR'S obligation under the CERCLA Covenant or any other statutory obligations.

FOST,  
Encl. 7**6. POST-TRANSFER DISCOVERY OF CONTAMINATION**

A. If an actual or threatened release of a hazardous substance or petroleum product is discovered on the Property after the date of conveyance, GRANTEE, its successors or assigns, shall be responsible for such release or newly discovered substance unless GRANTEE, its successors or assigns is able to demonstrate that such release or such newly discovered substance was due to GRANTOR'S activities, use, or ownership of the Property. If the GRANTEE, its successors or assigns believe the discovered hazardous substance is due to GRANTOR'S activities, use or ownership of the Property, GRANTEE, its successors or assigns will immediately secure the site and notify the GRANTOR of the existence of the hazardous substance, and GRANTEE, its successors or assigns will not further disturb, or allow the disturbance of, such hazardous substance without the written permission of the GRANTOR.

B. The GRANTEE, its successors and assigns, as consideration for the conveyance of the Property, agree to release GRANTOR from any liability or responsibility for any claims arising solely out of the release of any hazardous substance or petroleum product on the Property occurring after the date of the delivery and acceptance of this Deed, where such substance or product was placed on the Property by the GRANTEE, or its successors, assigns, employees, invitees, agents, contractors, or any other person after the conveyance. This paragraph shall not affect the GRANTOR'S responsibilities to conduct response actions or corrective actions that are required by applicable laws, rules and regulations, or the GRANTOR'S indemnification obligations under applicable laws.

**7. ENVIRONMENTAL PROTECTION PROVISIONS**

The GRANTEE shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the Environmental Protection Provisions set forth in Exhibit "C", attached hereto and made a part hereof, and shall require the inclusion of the Environmental Protection Provisions in all further Deeds, easements, transfers, leases, or grant of any interest, privilege, or license.

**8. PROXIMITY OF AIRPORT**

The Blackstone Army Airfield/Allen C. Perkinson Airport is in close proximity to the Property. The GRANTEE covenants and agrees, on behalf of itself, its successors and assigns, that it shall comply with the provisions of Title 14, Code of Federal Regulations, Part 77, entitled "Objects Affecting Navigable Airspace" and shall provide such notice to the Administrator of the Federal Aviation Administration and obtain such determination of no hazard to air navigation as may be required by said regulations in connection with any proposed construction on, or alteration of, the Property. Further, the GRANTEE covenants for itself, its successors and assigns that it shall not undertake nor allow any activity on, or use of, the Property that is not permitted by the terms and conditions of this Deed and the GRANTEE, at the request of the GRANTOR or its assigns, shall remove or cause to be removed, at the sole cost and expense of the GRANTEE or the then current owner of the Property, any building, structure or facility that is not permitted by the terms and conditions of this Deed.

FOST, Encl. 7

**9. NON-DISCRIMINATION**

The GRANTEE covenants for itself, its successors, and assigns and every successor in interest to the Property hereby conveyed, or any part thereof, that the said GRANTEE and such successors and assigns shall not discriminate upon the basis of race, color, religion, age, gender, or national origin in the use, occupancy, sale, or lease of the Property, or in their employment practices conducted thereon. This covenant shall not apply, however, to the lease or rental of a room or rooms within a family dwelling unit; nor shall it apply with respect to religion to premises used primarily for religious purposes. The United States of America shall be deemed a beneficiary of this covenant without regard to whether it remains the owner of any land or interest therein in the locality of the Property hereby conveyed and shall have the sole right to enforce this covenant in any court of competent jurisdiction.

**10. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY**

GRANTOR and GRANTEE are aware of their respective obligations and responsibilities under section 330 of the National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, Oct. 23, 1992, 106 Stat. 2371, as amended by section 1002 of the National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Nov. 30, 1993, 107 Stat. 1745.

**11. ANTI-DEFICIENCY ACT**


The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of funds appropriated for this purpose to the Department of the Army, and nothing in this Deed shall be interpreted to require obligations or payments by the GRANTOR in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

**12. NO WAIVER**

The failure of the GRANTOR to insist in any one or more instances upon complete performance of any of the said notices, covenants, conditions, restrictions, or reservations shall not be construed as a waiver or a relinquishment of the future performance of any such covenants, conditions, restrictions, or reservations, and the obligations of the GRANTEE, its successors and assigns with respect to such future performance shall continue in full force and effect.

IN WITNESS WHEREOF, the GRANTOR has caused this Deed to be executed in its name by the Deputy Assistant Secretary of the Army (Installations and Housing) this 26<sup>TH</sup> day of SEPTEMBER, 2005.

UNITED STATES OF AMERICA

By:   
JOSEPH W. WHITAKER  
Deputy Assistant Secretary of the Army  
(Installations and Housing)  
OASA(I&E)

## ACKNOWLEDGEMENT

[illegible]

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose commission as such expires on the 26 day of September, 2005 do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed on the date shown, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

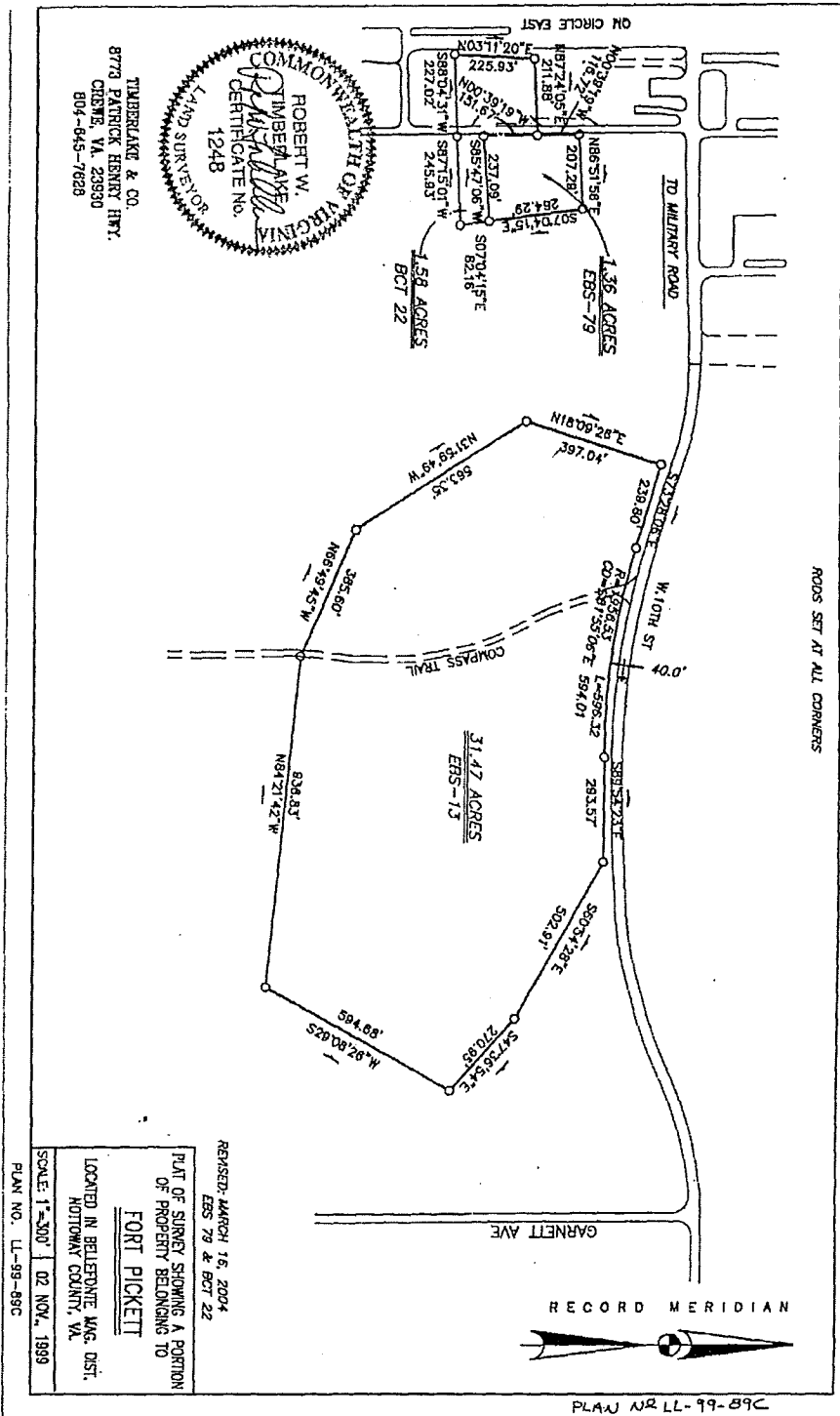
Lucie M. Littlejohn  
Notary Public

My Comm. Exp. 8/31, 2009

**FORT PICKETT LOCAL REDEVELOPMENT AUTHORITY**

James H. Brown  
Notary Public - Clerk  
Nottoway Circuit Court

VIRGINIA: IN THE CLERK'S OFFICE OF NOTTOWAY CIRCUIT COURT  
 On 05-20-2012, at 09:42AM, this instrument was received  
 and upon certification of acknowledgment thereto annexed, admitted to record.  
 The State tax imposed by Sec. 58.1-802 of the Virginia Code, has been paid in the  
 amount of \$ 0  
 Teste: JANE L. BROWN, CLERK  
 RY: *[Signature]*



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BOOK 387 PAGE 775

FOST, Encl. 1

## NOTIFICATION OF HAZARDOUS SUBSTANCE STORAGE, RELEASE OR DISPOSAL

Building Number	Name of Hazardous Substance(s)	Date of Storage, Release, or Disposal	Remedial Actions
Operable Unit 6 Former Salvage Yard Paint Disposal Pit	VOCs, non-PAH SVOCs, and pesticides  Product paint and thinners	Disposal occurred during the operation of the Salvage Yard from 1945 to 1970s. Paints and potentially some solvents were packed into large garbage bags and buried approximately 5 ft. below ground surface in a disposal pit area. These materials leaked from their containers and impacted groundwater.	TCRA conducted in 2003: removal of primary source material (e.g., discarded paints) and secondarily contaminated soils at the former paint disposal pit (approximately 100 cubic yards). Final Remedial Action (FRA) conducted in 2004: removal of additional contaminated soil at the former paint disposal area (60 cubic yards). An oxygen-releasing compound (fertilizer) was added to the base of the excavation.
Operable Unit 6 Former Salvage Yard Groundwater	VOCs, non-PAH SVOCs, PCB, pesticides, explosives, metals	Released occurred during disposal operations from 1945 to 1970s.	Final Remedial Action (FRA) conducted in 2004: an oxygen-releasing compound (fertilizer) was added to a groundwater well to reduce contamination levels in the groundwater.
Operable Unit 6 Former Salvage Yard Two 55-gallon drums in the woods	2,4,6-TNT residue, benzene, carbon tetrachloride, chloroform	Storage and release occurred during the operation of the Salvage Yard from 1945 to 1970s. The two drums contained a greasy, solid material. One of the drums also contained some liquid.	IRA conducted in 1999: drums and contaminated soil were packaged and disposed of at the Michigan Disposal Waste Treatment Plant.
* The information contained in this notice is required under the authority of regulations promulgated under section 120(h) of the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA or 'Superfund') 42 U.S.C. § 9620(h). This table provides information on the storage of hazardous substances for one year or more in quantities greater than or equal to 1,000 kilograms or the hazardous substance's CERCLA reportable quantity (which ever is greater). In addition, it provides information on the known release of hazardous substances in quantities greater than or equal to the substances CERCLA reportable quantity. See 40 C.F.R. Part 373.			

Shd be FAST, Encl. 8  
However, nothing matches AR

FAST, Encl. 6 Exhibit "B"

## ENVIRONMENTAL PROTECTION PROVISIONS

FOST, End. 5

## 1. LAND USE RESTRICTIONS

A. The United States Department of the Army has undertaken careful environmental study of the Property and concluded that the land use restrictions set forth below are required to ensure protection of human health and the environment. The GRANTEE, its successors or assigns shall not undertake nor allow any activity on or use of the Property that would violate the land use restrictions contained herein.

(1) **Residential Use Restriction.** The GRANTEE, its successors and assigns, shall use that portion of the Property identified as area "B" on the Land Use Control Survey Plat, Exhibit "D", attached hereto and made a part hereof, solely for open space activities and not for residential purposes. For purposes of this provision, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12. *} add'l text*

(2) **Groundwater Restriction.** The GRANTEE is hereby informed and acknowledges that the groundwater under the Property contains volatile organic compounds (VOCs), non-polycyclic aromatic hydrocarbon semivolatile organic compounds (non-PAH SVOCs), polychlorinated biphenyls (PCBs), pesticides, explosives, and metals. The GRANTEE, its successors and assigns shall not access or use groundwater underlying that portion of the Property identified as area "B" on Exhibit "D" for any purpose without the prior written approval of United States Department of the Army, the Virginia Department of Environmental Quality and the U.S. Environmental Protection Agency, Region III. For the purpose of this restriction, "groundwater" shall have the same meaning as in section 101(12) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended. *} add'l text*

(3) **Excavation Restriction.** The GRANTEE is hereby informed and acknowledges that the subsurface soil within that portion of the Property identified as area "A" on Exhibit "D", contains buried metallic debris including car parts, nails, wire, tank tracks, and material potentially presenting an explosive hazard (hereinafter "MPPEH"). Based on the presence of MPPEH, the GRANTEE, its successors and assigns shall not disturb site subsurface soils within the designated area without obtaining prior written permission from the U.S. Army Corps of Engineers (USACE), the Virginia Department of Environmental Quality and the U.S. Environmental Protection Agency, Region III. This permission will be required to ensure and document that the USACE has had a sufficient opportunity to review the proposed intrusive activities, and that the appropriate level of ordnance-related support will be provided to address MPPEH should any be encountered during excavations.

B. **Modifying Restrictions.** Nothing contained herein shall preclude the GRANTEE, its successors or assigns from undertaking, in accordance with applicable laws and regulations and without any cost to the GRANTOR, such additional action necessary to allow for other less restrictive use of the Property. Prior to such use of the Property, GRANTEE shall consult with

Exhibit "C"

and obtain the approval of the GRANTOR, and, as appropriate, the State or Federal regulators, or local authorities. Upon the GRANTEE'S obtaining the approval of the GRANTOR and, as appropriate, state or Federal regulators, or local authorities, the GRANTOR agrees to execute an amendment hereto modifying, as appropriate, the land use restrictions imposed hereunder. The recordation of any such amendment shall be the responsibility of the GRANTEE and shall be performed at no additional cost to the GRANTOR.

**C. Submissions.** The GRANTEE, its successors and assigns shall submit any requests for modifications to the above land use restrictions to the GRANTOR, the Virginia Department of Environmental Quality, and the U.S. Environmental Protection Agency, Region III, by first class mail, postage prepaid, addressed as follows:

- (1) GRANTOR: U.S. Army Corps of Engineers  
Norfolk District  
Real Estate Branch  
CENAO-TS-R  
803 Front Street  
Norfolk, VA 23510
- (2) Federal Regulator: Remedial Project Manager (3HS13)  
Federal Facilities Branch  
U.S. Environmental Protection Agency, Region III  
1650 Arch St.  
Philadelphia, PA 19103-2029
- (3) State Regulator: Remedial Project Manager  
Office of Remediation Programs, Federal Facilities  
Virginia Department of Environmental Quality  
629 East Main St., 4<sup>th</sup> Floor  
Richmond, VA 23219

*FOST, Encl. 5*  
**2. NOTICE OF THE POTENTIAL PRESENCE OF MUNITIONS AND EXPLOSIVES OF CONCERN (MEC)**

**A.** The GRANTEE is hereby notified that due to the former use of the Property as a military installation, the Property may contain munitions and explosives of concern (hereinafter "MEC"). The term "MEC" means specific categories of military munitions that may pose unique explosives safety risks and includes: (1) unexploded ordnance ("UXO"), as defined in 10 U.S.C. § 101(e)(5); (2) discarded military munitions ("DMM"), as defined in 10 U.S.C. § 2710(e)(2); or (3) munitions constituents (e.g., trinitrotoluene (TNT), cyclotrimethylene trinitramine (RDX)), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard.).

**B.** The Property was previously used for operations associated with salvage and disposal of scrap metal. As part of this operation, expended shell casings were disposed of on the Property in surface debris piles, burial pits and subsurface fill material. Over 8,700 items

**Exhibit "C"**

certified as Munitions Debris ("MD") were removed from surface debris piles and surface and subsurface areas during investigations and interim removal actions. The potential still exists at the Property to encounter MPPEH within subsurface soils in a designated "high-density" area identified as area "A" on Exhibit "D". An inventory of MD discovered on the Property includes the following:

MD Item	Quantity	Method of Demilitarization
3.5 in. rocket motors	75	Demolition (via detonation)
90 mm AP rounds	9	Demolition (via detonation)
152 mm AP rounds	2	Demolition (via detonation)
105 mm cartridge casing	1	Demolition (via detonation)
40 mm cartridge casing	4840	Shredding
90 mm cartridge casing	187	Shredding
105 mm cartridge casing	2774	Shredding
106 mm cartridge casing	193	Shredding
3.5 in. rocket motor	609	Shredding
SS10 guided missile rocket motor	9	Shredding
90 mm AP projectile	9	Shredding
152 mm AP projectile	1	Shredding

A summary of MEC discovered on the Property is shown in the Notification of Munitions and Explosives of Concern (MEC), Exhibit "E", attached hereto and made a part hereof.

C. If the GRANTEE, any subsequent owner, or any other person should find any MEC on the Property, they shall immediately stop any intrusive or ground-disturbing work in the area or in any adjacent areas and shall not attempt to disturb, remove or destroy it, but shall immediately notify the local Police Department so that appropriate explosive ordnance disposal personnel can be dispatched to address such MEC as required under applicable law and regulations.

#### D. Easement and Access Rights.

(1) The GRANTOR reserves a perpetual and assignable right of access on, over, and through the Property, to access and enter upon the Property in any case in which a munitions response action is found to be necessary, or such access and entrance is necessary to carry out a munitions response action on adjoining property. Such easement and right of access includes, without limitation, the right to perform any additional investigation, sampling, testing, test-pitting, surface and subsurface clearance operations, or any other munitions response action necessary for the United States to meet its responsibilities under applicable laws and as provided for in this Deed. This right of access shall be binding on the GRANTEE, its successors and assigns, and shall run with the land.

(2) In exercising this easement and right of access, the GRANTOR shall give the GRANTEE or the then record owner, reasonable notice of the intent to enter on the Property, except in emergency situations. The GRANTOR shall use reasonable means, without significant additional cost to the GRANTOR, to avoid and/or minimize interference with the GRANTEE'S

Exhibit "C"

and the GRANTEE'S successors' and assigns' quiet enjoyment of the Property. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the Property at a reasonable charge to the United States. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE or its successors and assigns, for the exercise of the easement and right of access hereby retained and reserved by the United States.

(3) In exercising this easement and right of access, neither the GRANTEE nor its successors and assigns, as the case maybe, shall have any claim at law or equity against the United States or any officer, employee, agent, contractor of any tier, or servant of the United States based on actions taken by the United States or its officers, employees, agents, contractors of any tier, or servants pursuant to and in accordance with this Paragraph. In addition, the GRANTEE, its successors and assigns, shall not interfere with any munitions response action conducted by the GRANTOR on the Property.

INSTRUMENT #0501864  
RECORDED IN THE CLERK'S OFFICE OF  
NOTTOWAY ON  
OCTOBER 6, 2005 AT 10:09AM  
JANE L. BROWN, CLERK

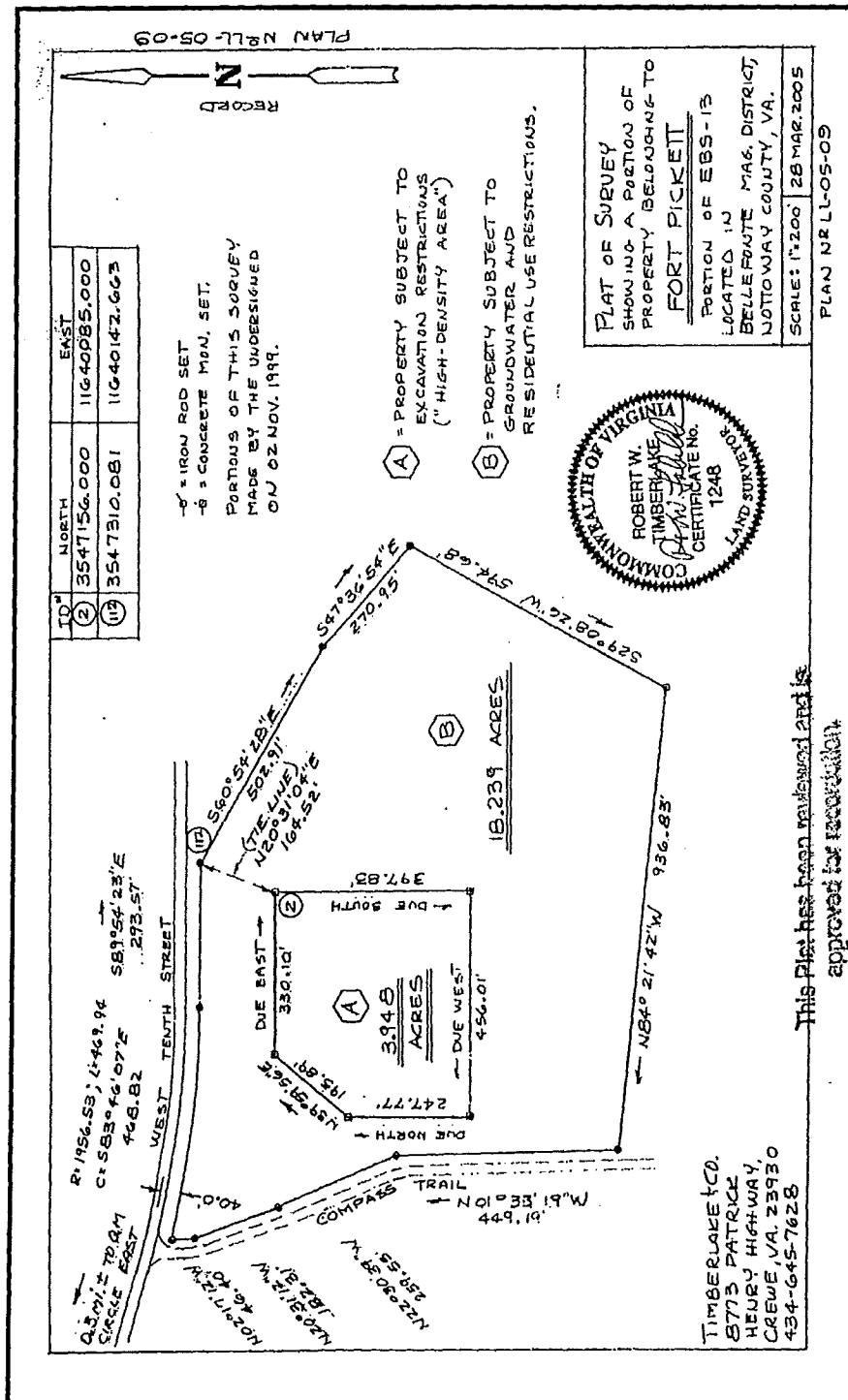
RECORDED BY: CFB

*Cynthia F. Moore, DC*

Exhibit "C"

## LAND USE CONTROL SURVEY PLAT

OCT - 6 2005



VIRGINIA: IN THE CLERK'S OFFICE OF NOTTOWAY CIRCUIT COURT  
On 10-6-05 at 10:00 AM, this instrument was received  
and upon certification of acknowledgment thereto annexed, admitted to record.  
The State tax imposed by Sec. 58.1-802 of the Virginia Code, has been paid in the  
amount of \$ 0

By: Cynthia J. Allen Teste: JANE L. BROWN, CLERK

Exhibit "D"

## NOTIFICATION OF MUNITIONS AND EXPLOSIVES OF CONCERN (MEC)\*

Site	Type of MEC	Date of MEC Activity	Munitions Response Actions
Operable Unit 6 Former Salvage Yard	Material Potentially Presenting an Explosive Hazard (MPPEH) <sup>1, 2</sup>	1945 – 1970s	The potential still exists at the Site to encounter Material Potentially Presenting an Explosive Hazard (MPPEH) within subsurface soils in the designated “high-density” area of the Site.
Operable Unit 6 Former Salvage Yard	Munitions Debris (MD) <sup>3</sup>	1945 – 1970s	As part of the salvage and disposal operation, expended shell casings were disposed of at the Site in surface debris piles, burial pits and subsurface fill material. Over 8,709 items certified as Munitions Debris (MD) were removed from surface debris piles and surface and subsurface areas outside of the “high-density” area during investigations and interim removal actions.

\*Munitions and Explosives of Concern (MEC). This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, means: (A) Unexploded Ordnance (UXO), as defined in 10 § 101(e)(5); (B) Discarded military munitions (DMM), as defined in 10 U.S.C. § 2710(e)(2); or (C) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

<sup>1</sup>Material Potentially Presenting an Explosive Hazard (MPPEH). Material potentially containing explosives or munitions (e.g., munitions containers and packing material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially contaminated with high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, ventilation ducts) associated with munitions production, demilitarization or disposal operations.

<sup>2</sup>Munitions debris is considered MPPEH until technically-qualified personnel: (1) inspect, verify and certify that it does not present an explosive hazard, and consequently is safe for all (e.g., the general public) to receive; or (2) inspect, verify and certify it as to the explosive hazard it may present to a qualified receiver.

<sup>3</sup>Munitions Debris. Remnants of munitions (e.g., penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization or disposal.

VIRGINIA: IN THE CLERK'S OFFICE OF NOTTOWAY CIRCUIT COURT  
On 10-6-05, at NOVA, this instrument was received  
and upon certification of acknowledgment thereto annexed, admitted to record.  
The State tax imposed by Sec. 58.1-802 of the Virginia Code, has been paid in the  
amount of \$ 0.

Teste: JANE L. BROWN, CLERK

By: Cynthia J. Alcala, DC

FOST, Encl. 9 Exhibit “E”

051867 #0

OCT - 6 2005

This deed was prepared/reviewed by:

Attorney  
 U.S. Army Engineer District, Norfolk  
 (address, if required)

Exemption from taxation is claimed under the Virginia Code Section 58.1.811. Tax ID # 54-600147

**QUITCLAIM DEED  
 FORMER FORT PICKETT MILITARY INSTALLATION  
 NOTTOWAY COUNTY, VIRGINIA  
 PARCEL NO. BCT-22**

This QUITCLAIM DEED, between the UNITED STATES OF AMERICA (hereinafter the "GRANTOR"), acting by and through the Deputy Assistant Secretary of the Army (Installations and Housing), pursuant to a delegation of authority from the SECRETARY OF THE ARMY (hereinafter the "ARMY"), under the authority of the provisions of the Federal Property and Administrative Services Act of 1949, approved June 30, 1949 (63 Stat. 377), 40 U.S.C. § 101, *et seq.*, as amended, and the Defense Base Closure and Realignment Act of 1990, Public Law No. 101-510, as amended, and Fort Pickett Local Redevelopment Authority, an agency of the Board of Supervisors of Nottoway County, Virginia (hereinafter the "GRANTEE").

**WITNESSETH:**

THAT THE GRANTOR, for and in consideration of One Dollar [\$1.00 ], cash in hand paid, and other good and valuable consideration, the receipt of all of which is hereby acknowledged, does hereby REMISE, RELEASE AND FOREVER QUITCLAIM unto the GRANTEE, its successors and assigns, all its right, title, and interest in and to the property situated, lying and being in the County of Nottoway, in the Commonwealth of Virginia , containing approximately 1.58 acres, being a portion of the former Fort Pickett, and as shown in the Plat of Survey for Parcel # BCT-22, Exhibit "A", attached hereto and made a part hereof (hereinafter referred to as the "Property"), and more particularly bounded and described as follows, to wit:

**BCT-22**

The parcel contains 1.58 acres as shown on that certain plat by Timberlake & Co. entitled "Plat of survey showing a portion of property belonging to FORT PICKETT located in Belefonte Mag. Dist. Nottoway County, VA" dated November 2, 1999 revised March 16, 2004. Beginning at a point just east of Bakers Row and south of the intersection of Bakers Row and W. 10<sup>th</sup> St. having Virginia State Plane Coordinates of N3547112.9795, E11638102.879 thence N00°39'19"W, 151.67' to a point; thence S85°47'06"W, 237.09' to a point; thence S07°04'15"E, 82.16' to a point; thence S87°15'01"W, 245.93' to a point; thence S88°04'31"W, 227.02' to a point; thence N03°11'20"E, 225.93' to a point; thence N87°24'05"E, 211.88' returning to the starting point.

Said parcel being a portion of the 45,937 acres located in Nottoway, Dinwiddie and Brunswick Counties, Virginia, acquired by the United States of America and identified on the Final Project Ownership Map, for Real Estate Fort Pickett Military Reservation Map, approved by the U. S. Army Corps of Engineers on 4 March 1944.

SUBJECT TO all valid and existing restrictions, reservations, covenants, conditions, and easements, including, but not limited to, rights-of-way for railroads, highways, pipelines, and public utilities, if any, whether of public record or not.

TO HAVE AND TO HOLD the Property granted herein to the GRANTEE and its successors and assigns, together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest, or claim whatsoever of the GRANTOR, either in law or in equity and subject to the terms, reservations, restrictions, covenants, and conditions set forth in this Deed.

AND IT IS FURTHER AGREED AND UNDERSTOOD by and between the parties hereto that the GRANTEE, by its acceptance of this Deed, agrees that, as part of the consideration for this Deed, the GRANTEE covenants and agrees for itself, its successors and assigns, forever, that this Deed is made and accepted upon each of the following covenants, which covenants shall be binding upon and enforceable against the GRANTEE, its successors and assigns, in perpetuity by the GRANTOR and other interested parties as allowed by federal, state or local law; that the notices, use restrictions, and restrictive covenants set forth here are a binding servitude on the Property herein conveyed and shall be deemed to run with the land in perpetuity; and that the failure to include the notices, use restrictions, and restrictive covenants in subsequent conveyances does not abrogate the status of these restrictions as binding upon the parties, their successors and assigns:

## 1. NOTICE

For the Property, the GRANTOR provides the following notice, description, and covenant:

A. The GRANTOR has identified the Property as real property on which no hazardous substances, as defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. § 9601(14)), were stored, released or disposed of, but on which petroleum products or their derivatives are known to have been released or disposed of. Available information regarding the type, quantity and location of petroleum products or their derivatives and the time at which such petroleum products or their derivatives were stored, released, or disposed of is provided in Exhibit "B" (Notification of Petroleum Product Storage, Release or Disposal), attached hereto and made a part hereof. Additional information regarding the storage, release and disposal of petroleum products or their derivatives on the Property has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the following documents: *Draft Remedial Assessment Report for Environmental Sampling at BCT-22, Former Fuel Station, Fort Pickett, Virginia*, MicoPact Engineering, Inc., May 2004; *Site Characterization Report, Former Fueling Station No. 1, Fort Pickett, Blackstone, Virginia*, OES Environmental, Inc., October 2000; *Quarterly Monitoring Report and Addendum to SCR Dated November 2, 2000, Former Fueling Station No. 1, Fort Pickett, Blackstone, Virginia*, OES Environmental, Inc., September 2001; *Quarterly Monitoring Report, Former Fueling Station No. 1, Fort Pickett, Blackstone, Virginia*, OES Environmental, Inc., January 2002.

B. A description of the remedial or corrective action taken, if any, on the property is provided in Exhibit "B" hereto. Additional information regarding the remedial or corrective action taken, if any, has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the following document: *Draft Remedial Assessment Report for Environmental Sampling at BCT-22, Former Fuel Station, Fort Pickett, Virginia*, MicoPact Engineering, Inc., May 2004.

## 2. CERCLA COVENANT

The GRANTOR warrants that:

A. All remedial or corrective action necessary to protect human health and the environment with respect to any petroleum product or its derivatives remaining on the Property has been taken prior to the date of this Deed; and

B. The United States warrants that any remedial action or corrective action found to be necessary after the date of this Deed for hazardous substances existing on the Property prior to the date of this Deed shall be conducted by the United States. This warranty shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to such Property. For purposes of this warranty, GRANTEE shall not be considered a potentially responsible party solely due to the presence of any hazardous substance remaining on the Property on the date of this Deed, provided that the GRANTEE has not caused or contributed to a release of such hazardous substance or petroleum product or its derivatives.

### 3. RIGHT OF ACCESS

A. The United States retains and reserves a perpetual and assignable easement and right of access on, over, and through the Property, to enter upon the Property in any case in which an environmental response action or corrective action is found to be necessary on the part of the United States, without regard to whether such environmental response action or corrective action is on the Property or on adjoining or nearby lands. Such easement and right of access includes, without limitation, the right to perform any environmental investigation, survey, monitoring, sampling, testing, drilling, boring, coring, test-pitting, installing monitoring or pumping wells or other treatment facilities, response action, corrective action, or any other action necessary for the United States to meet its responsibilities under applicable laws and as provided for in this Deed. Such easement and right of access shall be binding on the GRANTEE, its successors and assigns, and shall run with the land.

B. In exercising such easement and right of access, the United States shall provide the GRANTEE or its successors or assigns, as the case may be, with reasonable notice of its intent to enter upon the Property and exercise its rights under this easement, which notice may be severely curtailed or even eliminated in emergency situations. The United States shall use reasonable means, but without significant additional costs to the United States, to avoid and to minimize interference with the GRANTEE's and the GRANTEE's successors' and assigns' quiet enjoyment of the Property. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the Property at a reasonable charge to the United States. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE nor its successors and assigns, for the exercise of the easement and right of access hereby retained and reserved by the United States.

C. In exercising such easement and right of access, neither the GRANTEE nor its successors and assigns, as the case may be, shall have any claim at law or equity against the United States or any officer, employee, agent, contractor of any tier, or servant of the United States based on actions taken by the United States or its officers, employees, agents, contractors of any tier, or servants pursuant to and in accordance with this easement. In addition, the GRANTEE, its successors and assigns, shall not interfere with any response action or corrective action conducted by the GRANTOR on the Property.

### 4. "AS IS"

A. The GRANTEE acknowledges that it has inspected, or has had the opportunity to inspect, the Property and accepts the condition and state of repair of the Property. The GRANTEE understands and agrees that the Property, and any part thereof, is conveyed "AS IS" without any representation, warranty, or guaranty by the GRANTOR as to quantity, quality, title, character, condition, size, or kind, or that the same is in a condition or fit to be used for the purposes intended by the GRANTEE, and no claim for allowance or deduction upon such grounds will be considered.

B. No warranties, either express or implied, are given with regard to the condition of the Property, including, without limitation, whether the Property does or does not contain asbestos or lead-based paint. The GRANTEE shall be deemed to have relied solely on its own judgment in assessing the overall condition of all or any portion of the Property, including, without limitation, any asbestos, lead-based paint, or other conditions on the Property. The failure of the GRANTEE to inspect or to exercise due diligence to be fully informed as to the condition of all or any portion of the Property will not constitute grounds for any claim or demand against the United States.

C. Nothing in this "As Is" provision will be construed to modify or negate the GRANTOR's obligation under the "CERCLA Covenant" or any other statutory obligations.

## **5. HOLD HARMLESS**

A. To the extent authorized by law, the GRANTEE, its successors and assigns, covenant and agree to indemnify and hold harmless the GRANTOR, its officers, agents, and employees from (1) any and all claims, damages, judgments, losses, and costs, including fines and penalties, arising out of the violation of the notices, use restrictions, and restrictive covenants in this Deed by the GRANTEE, its successors and assigns, and (2) any and all claims, damages, and judgments arising out of, or in any manner predicated upon, exposure to asbestos, lead-based paint, or other condition on any portion of the Property after the date of conveyance.

B. The GRANTEE, its successors and assigns, covenant and agree that the GRANTOR shall not be responsible for any costs associated with modification or termination of the notices, use restrictions, and restrictive covenants in this Deed including, without limitation, any costs associated with additional investigation or remediation of asbestos, lead-based paint, or other condition on any portion of the Property.

C. Nothing in this "Hold Harmless" provision will be construed to modify or negate the GRANTOR'S obligation under the "CERCLA Covenant" or any other statutory obligations.

## **6. POST-TRANSFER DISCOVERY OF CONTAMINATION**

A. If an actual or threatened release of a hazardous substance or petroleum product is discovered on the Property after the date of conveyance, GRANTEE, its successors or assigns, shall be responsible for such release or newly discovered substance unless GRANTEE, its successors or assigns is able to demonstrate that such release or such newly discovered substance was due to GRANTOR'S activities, use, or ownership of the Property. If the GRANTEE, its successors or assigns believe the discovered hazardous substance is due to GRANTOR'S activities, use or ownership of the Property, GRANTEE, its successors or assigns will immediately secure the site and notify the GRANTOR of the existence of the hazardous substance, and GRANTEE, its successors or assigns will not further disturb, or allow the disturbance of, such hazardous substance without the written permission of the GRANTOR.

B. The GRANTEE, its successors and assigns, as consideration for the conveyance of the Property, agree to release GRANTOR from any liability or responsibility for any claims arising solely out of the release of any hazardous substance or petroleum product on the Property occurring after the date of the delivery and acceptance of this Deed, where such substance or product was placed on the Property by the GRANTEE, or its successors, assigns, employees, invitees, agents, contractors, or any other person after the conveyance. This paragraph shall not affect the GRANTOR'S responsibilities to conduct response actions or corrective actions that are required by applicable laws, rules and regulations, or the GRANTOR'S indemnification obligations under applicable laws.

**7. ENVIRONMENTAL PROTECTION PROVISIONS**

The GRANTEE shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the Environmental Protection Provisions set forth in Exhibit "C", which is attached hereto and made a part hereof, and shall require the inclusion of the Environmental Protection Provisions in all future deeds, easements, transfers, leases, or grant of any interest, privilege, or license.

**8. PROXIMITY OF AIRPORT**

The Blackstone Army Airfield/Allen C. Perkinson Airport is in close proximity to the Property. The GRANTEE covenants and agrees, on behalf of itself, its successors and assigns and every successor in interest to the Property, or any part thereof, that it shall comply with the provisions of Title 14, Code of Federal Regulations, Part 77, entitled "Objects Affecting Navigable Airspace" and shall provide such notice to the Administrator of the Federal Aviation Administration and obtain such determination of no hazard to air navigation as may be required by said regulations in connection with any proposed construction on, or alteration of, the Property.

**9. NON-DISCRIMINATION**

The GRANTEE covenants for itself, its successors, and assigns and every successor in interest to the Property hereby conveyed, or any part thereof, that the said GRANTEE and such successors and assigns shall not discriminate upon the basis of race, color, religion, age, gender, or national origin in the use, occupancy, sale, or lease of the Property, or in their employment practices conducted thereon. This covenant shall not apply, however, to the lease or rental of a room or rooms within a family dwelling unit nor shall it apply with respect to religion to premises used primarily for religious purposes. The United States of America shall be deemed a beneficiary of this covenant without regard to whether it remains the owner of any land or interest therein in the locality of the Property hereby conveyed and shall have the sole right to enforce this covenant in any court of competent jurisdiction.

**10. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY**

GRANTOR and GRANTEE are aware of their respective obligations and responsibilities under section 330 of the National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, Oct. 23, 1992, 106 Stat. 2371, as amended by section 1002 of the National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Nov. 30, 1993, 107 Stat. 1745. (See 10 U.S.C. § 2687, note.)

**11. ANTI-DEFICIENCY ACT**

The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of funds appropriated for this purpose to the Department of the Army, and nothing in this Deed shall be interpreted to require obligations or payments by the GRANTOR in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

**12. NO WAIVER**

The failure of the GRANTOR to insist in any one or more instances upon complete performance of any of the said notices, covenants, conditions, restrictions, or reservations shall not be construed as a waiver or a relinquishment of the future performance of any such covenants, conditions, restrictions, or reservations, and the obligations of the GRANTEE, its successors and assigns with respect to such future performance shall continue in full force and effect..



## ACCEPTANCE BY GRANTEE

Fort Pickett Local Redevelopment Authority, GRANTEE, hereby accepts this Quitclaim Deed for itself, its successors and assigns, subject to all of the covenants, conditions, reservations, restrictions and terms contained herein this 8 day of August 2005.

## FORT PICKETT LOCAL REDEVELOPMENT AUTHORITY

By: Ronald E Roark  
 Title: County Administrator

COMMONWEALTH OF VIRGINIA )  
 ) SS:  
 COUNTY OF NOTTOWAY )

I, the undersigned, a Deputy clerk Notary Public in and for the Commonwealth of Virginia, County of Nottoway, whose commission as such expires on the \_\_\_\_ day of \_\_\_\_, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Nottoway, Ronald E. Roark, whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed on the date shown, and acknowledged the same for and on behalf of the Fort Pickett Local Redevelopment Authority.

Nichelle L. Elliott, D.C.  
 Notary Public Deputy Clerk  
 Nottoway Circuit Court

## CERTIFICATE OF GRANTEE'S ATTORNEY

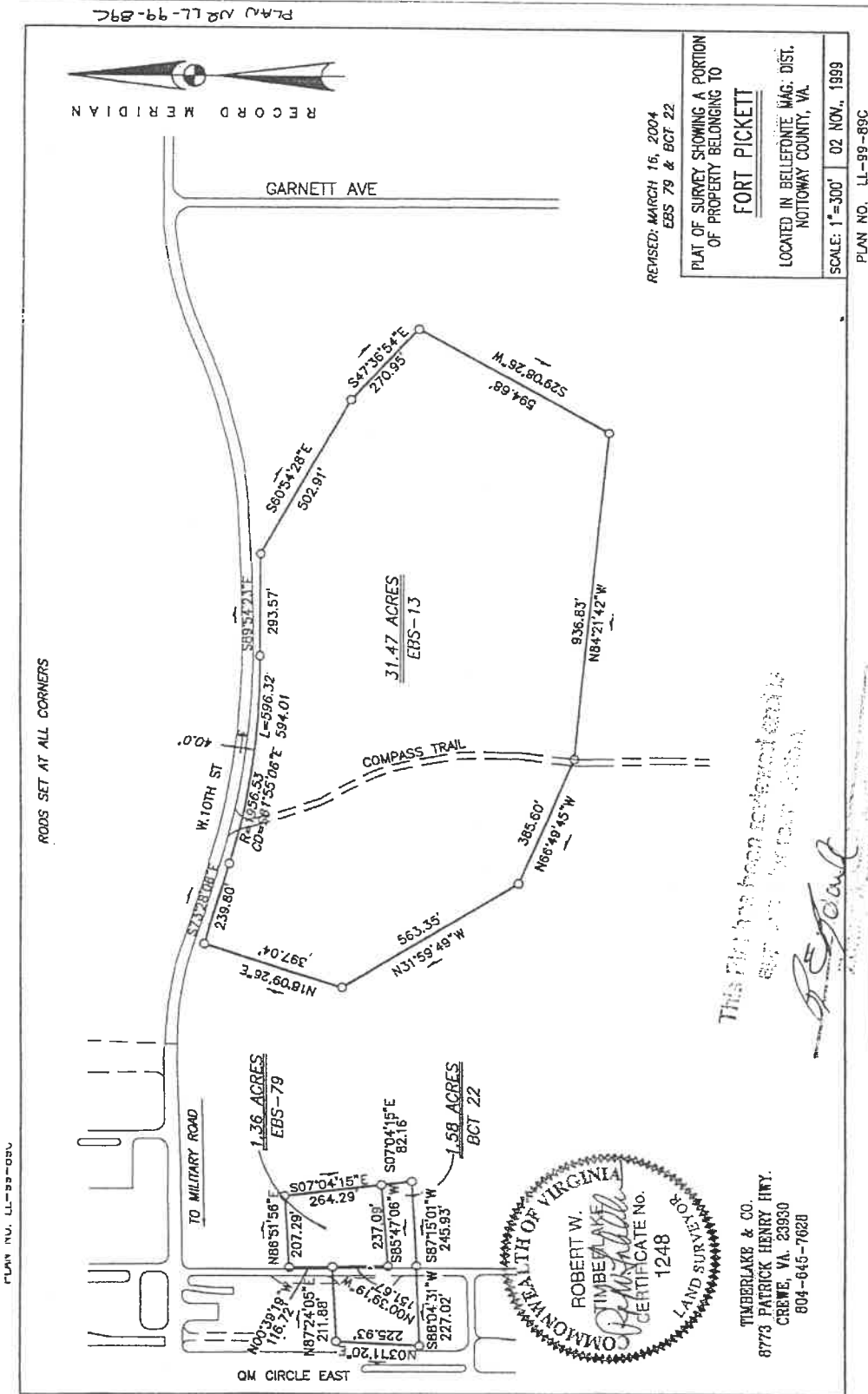
I, MAYO K. GRANT, acting as attorney for the Fort Pickett Local Redevelopment Authority, an agency of the Board of Supervisors of Nottoway County, Virginia, herein referred to as the "GRANTEE", do hereby certify: that I have examined the foregoing Quitclaim Deed and the proceedings taken by the GRANTEE relating thereto, and find that the acceptance thereof by the GRANTEE has been duly authorized and that the execution thereof is in all respects due and proper and in accordance with the laws of the Commonwealth of Virginia, and further that, in my opinion, the Quitclaim Deed constitutes a legal and binding compliance obligation of the GRANTEE in accordance with the terms thereof.

Dated at NOTTOWAY, VA. this 8<sup>TH</sup> day of AUGUST, 2005.

By: [Signature]  
 Title: COUNTY ATTORNEY

PLAT OF SURVEY FOR PARCEL #BCT-22

OCT - 6 2005



VIRGINIA: IN THE CLERK'S OFFICE OF NOTTOWAY CIRCUIT COURT  
On 10-06-2005, at 10:14AM, this instrument was received  
and upon certification of acknowledgment thereto annexed to record.  
The State tax imposed by Sec. 58.1-802 of the Virginia Code, has been paid in the  
amount of \$ 0

Teste: JANE L. BROWN, CLERK  
By: Jane L. Brown, Clerk

Exhibit "A"

## NOTIFICATION OF PETROLEUM PRODUCT STORAGE, RELEASE, OR DISPOSAL

Building Number	Name of Petroleum Product(s)	Date of Storage, Release, or Disposal	Remedial Actions
NA Former Fuel Station No.1	Gasoline, diesel	Storage and release during operation of fuel station from 1940s to 1992	Six 12,000-gallon UST were located at the fuel station compound at any given time. The tanks and contaminated soil (source material) were removed during UST closure activities. All petroleum storage and handling operations have ceased.
NA Ground water	Benzene, MTBE	Release during operation of fuel station from 1940s to 2005	Dissolved phase petroleum components have impacted groundwater below and adjacent to the fuel station. The remedial action consisted of injecting sodium persulfate (an oxidant) into groundwater to reduce the highest levels of the contaminants. An LTM plan is in place to monitor residual levels. LUCs will restrict the use of groundwater.

Exhibit "B"

## ENVIRONMENTAL PROTECTION PROVISIONS

## 1. LAND USE RESTRICTIONS

A. The United States Department of the Army has undertaken careful environmental study of the Property and concluded that the land use restrictions set forth below are required to ensure protection of human health and the environment. The GRANTEE, its successors or assigns, shall not undertake nor allow any activity on or use of the Property that would violate the land use restrictions contained herein.

(1) Groundwater Restriction. The GRANTEE is hereby informed and acknowledges that the groundwater under the Property has benzene and Methyl Tert-Butyl Ether (MTBE). The GRANTEE, its successors and assigns, shall not access or use ground water underlying the Property for any purpose without the prior written approval of United States Department of the Army and the U.S. Environmental Protection Agency (hereinafter "USEPA"), Region III and the Virginia Department of Environmental Quality (hereinafter "VDEQ").

(2) Land Disturbance Restriction. The GRANTEE, its successors and assigns, shall not conduct, or permit others to conduct, any excavation activities (i.e. digging, drilling, or any other excavation or disturbance of the land surface or subsurface) or other activities which disturb soil.

B. Modifying Restrictions. Nothing contained herein shall preclude the GRANTEE, its successors or assigns, from undertaking, in accordance with applicable laws and regulations and without any cost to the GRANTOR, such additional action necessary to allow for other less restrictive use of the Property. Prior to such use of the Property, GRANTEE shall consult with and obtain the approval of the GRANTOR and, as appropriate, the state or federal regulators, or the local authorities. Upon the GRANTEE's obtaining the approval of the GRANTOR and, as appropriate, state or federal regulators, the GRANTOR agrees to record an amendment hereto. This recordation shall be the responsibility of the GRANTEE and at no additional cost to the GRANTOR.

C. Submissions. The GRANTEE, its successors and assigns, shall submit any requests for modifications to the above restrictions to GRANTOR, the USEPA, and the VDEQ, by first class mail, postage prepaid, addressed as follows:

- |               |  |
|---------------|--|
| (1) GRANTOR – | U.S. Army Corps of Engineers, Norfolk District<br>Real Estate Branch<br>803 Front Street<br>Norfolk, VA 23510-1096   |
| (2) USEPA –   | Remedial Project Manager<br>Federal Facilities Branch<br>U.S. Environmental Protection Agency<br>Region III<br>1650 Arch St.<br>Philadelphia, PA 19103-2029  |
| (3) VDEQ –    | Remedial Project Manager<br>Office of Remediation Programs<br>Federal Facilities<br>Virginia Department of Environmental Quality<br>629 East Main St., 4 <sup>th</sup> Floor<br>Richmond, VA 23219 |

Exhibit "C"

(Page 1 of 2)

## 2. NOTICE OF THE POTENTIAL PRESENCE OF MUNITIONS AND EXPLOSIVES OF CONCERN (MEC)

A. The GRANTEE is hereby notified that due to the former use of the Property as a military installation, the Property may contain munitions and explosives of concern (hereinafter "MEC"). The term MEC means specific categories of military munitions that may pose unique explosives safety risks and includes: (1) Unexploded Ordnance (UXO), as defined in 10 U.S.C. § 101(e)(5); (2) Discarded military munitions (DMM), as defined in 10 U.S.C. § 2710(e)(2); or (3) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

B. The GRANTOR represents that, to the best of its knowledge, no MEC is currently present on the Property. If the GRANTEE, its successors, and assigns, or any other person should discover any MEC on the Property, it shall immediately stop further intrusive or ground disturbing work in the area and any adjacent areas, and shall not move, disturb or destroy it, but shall immediately notify the local Police Department and Fort Pickett Range Operations so that appropriate explosive ordnance personnel can be dispatched to address such MEC as required under applicable law and regulations.

### C. Easement and Access Rights.

(1) The GRANTOR reserves a perpetual and assignable right of access on, over, and through the Property, to access and enter upon the Property in any case in which a munitions response action is found to be necessary, or such access and entrance is necessary to carry out a munitions response action on adjoining property. Such easement and right of access includes, without limitation, the right to perform any additional investigation, sampling, testing, test-pitting, surface and subsurface clearance operations, or any other munitions response action necessary for the United States to meet its responsibilities under applicable laws and as provided for in this Deed. This right of access shall be binding on the GRANTEE, its successors and assigns, and shall run with the land.

(2) In exercising this easement and right of access, the GRANTOR shall give the GRANTEE or the then record owner, reasonable notice of the intent to enter on the Property, except in emergency situations. GRANTOR shall use reasonable means, without significant additional cost to the GRANTOR, to avoid and/or minimize interference with the GRANTEE's and the GRANTEE's successors' and assigns' quiet enjoyment of the Property. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the Property at a reasonable charge to the United States. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE or its successors and assigns, for the exercise of the easement and right of access hereby retained and reserved by the United States.

(3) In exercising this easement and right of access, neither the GRANTEE nor its successors and assigns, as the case maybe, shall have any claim at law or equity against the United States or any officer, employee, agent, contractor of any tier, or servant of the United States based on actions taken by the United States or its officers, employees, agents, contractors of any tier, or servants pursuant to and in accordance with this provision. In addition, the GRANTEE, its successors and assigns, shall not interfere with any munitions response action conducted by the GRANTOR on the Property.

Exhibit "C"

(Page 2 of 2)

BOOK 3837 PAGE 794

INSTRUMENT #0501867  
RECORDED IN THE CLERK'S OFFICE OF  
WOTTOWAY ON  
OCTOBER 6, 2005 AT 10:14AM  
JANE L. BROWN, CLERK

RECORDED BY: JLB

*Jane L. Brown,*  
Clerk

Exemption from taxation is claimed under the Virginia Code Section 58.1.811.

APR 15 2005

Tax ID # 54-600147

**QUITCLAIM DEED  
FORMER FORT PICKETT MILITARY INSTALLATION  
NOTTOWAY COUNTY, VIRGINIA  
PARCEL NOS. 1, 2 & 3**

This QUITCLAIM DEED, between the UNITED STATES OF AMERICA (hereinafter the "GRANTOR"), acting by and through the Deputy Assistant Secretary of the Army (Installations and Housing), pursuant to a delegation of authority from the SECRETARY OF THE ARMY (hereinafter the "ARMY"), under the authority of the provisions of the Federal Property and Administrative Services Act of 1949, approved June 30, 1949 (63 Stat. 377), 40 U.S.C. § 101, *et seq.*, as amended, and the Defense Base Closure and Realignment Act of 1990, Public Law No. 101-510, as amended, and Fort Pickett Local Redevelopment Authority, an agency of the Board of Supervisors of Nottoway County, Virginia (hereinafter the "GRANTEE").

**WITNESSETH:**

THAT THE GRANTOR, for and in consideration of One Dollar [\$1.00 ], cash in hand paid, and other good and valuable consideration, the receipt of all of which is hereby acknowledged, does hereby REMISE, RELEASE AND FOREVER QUITCLAIM unto the GRANTEE, its successors and assigns, all its right, title, and interest in and to three parcels of land with the buildings and improvements thereon, situated, lying and being in the County of Nottoway, in the Commonwealth of Virginia , containing approximately 27.16 acres, being a portion of the former Fort Pickett, and as shown on Exhibits "A", "B" and "C", attached hereto and made a part hereof (hereinafter referred to as the "Property"), and more particularly bounded and described as follows, to wit:

**Parcel #1 (EBS-115)**

The parcel contains 14.56 acres as shown on that certain plat by Timberlake & Co. entitled "Plat of survey showing a portion of property belonging to FORT PICKETT located in Belefonte Mag. Dist. Nottoway County, VA" dated 02 Nov., 1999. Beginning at a point on the northeast side of the intersection of Garnett Ave. and W. 15 ½ Street having Virginia State Plane Coordinates of N3544519.9713, E11641150.377 thence N00°01'46"E, 1,472.09' to a point; thence S89°52'23"E, 430.65' to a point; thence S00°01'52"E, 1,467.53' to a point; thence S89°31'18"W, 432.21' returning to the starting point.

Being a portion of tracts acquired by the United States of America all being recorded in the Nottoway County, Virginia Clerk of Courts Office and designated as Tract B-7 from George Wynn, Est, et al, and recorded in Deed Book 88, Page 229; Tract B-9, from Charlotte E. Wynn, et al, and recorded in Deed Book 89, Page 550; Tract B-25 from Joseph Palmer Est., recorded in Deed Book 89, Page 93 and Tract B-88 from Kiah Wynn, recorded in Deed Book 87, Page 353.

**Parcel #2 (EBS-124)**

The parcel contains 11.24 acres as shown on that certain plat by Timberlake & Co. entitled "Plat of survey showing a portion of property belonging to FORT PICKETT located in Belefonte Mag. Dist. Nottoway County, VA" dated 02 Nov., 1999. Beginning at a point on the northeast side of the intersection of Military Road and Garnett Avenue having Virginia State Plane Coordinates of N3542810.0014, E11642264.220 thence N22°28'53"W, 1,137.52' to a point; thence N67°34'40"E, 430.23' to a point; thence S22°29'48"E, 1,137.22' to a point; thence S67°32'18"W, 430.53' returning to the starting point.

Being a portion of tracts acquired by the United States of America all being recorded in the Nottoway County, Virginia Clerk of Courts Office and designated as Tract G-59, from Reames Daniel, et al recorded in Deed Book 82 Page 550, Tract B-82 from Claude L. Cook, et ux recorded in Deed Book, 87 Page 192 and Tract B-24 from H. M. Osborne, et ux, recorded in Deed Book 87, Page 376.

**Parcel #3 (EBS-79)**

The parcel contains 1.36 acres as shown on that certain plat by Timberlake & Co. entitled "Plat of survey showing a portion of property belonging to FORT PICKETT located in Belefonte Mag. Dist. Nottoway County, VA" as revised on March 16, 2004. Beginning at a point on the east side of Bakers Row having Virginia State Plane Coordinates of N3547229.6885, E11638101.544 thence N86°51'56"E, 207.29' to a point; thence S07°04'15"E, 264.29' to a point; thence S85°47'06"W, 237.09' to a point; thence N00°39'19"W, 151.67' to a point; thence N00°39'19"W, 116.72' returning to the starting point.

Being a portion of Tract B-21 acquired by the United States of America being recorded in the Nottoway County, Virginia, Clerk of Courts Office from Duncan Watkins, est. et al as recorded in Deed Book 89, Page 550, Nottoway County, Virginia Clerk of Courts Office.

Said three parcels being a portion of the 45,937 acres located in Nottoway, Dinwiddie and Brunswick Counties, Virginia, acquired by the United States of America and identified on the Final Project Ownership Map, for Real Estate Fort Pickett Military Reservation Map, approved by the U. S. Army Corps of Engineers on 4 March 1944.

SUBJECT TO all valid and existing restrictions, reservations, covenants, conditions, and easements, including but not limited to rights-of-way for highways, pipelines, and public utilities, if any, whether of public record or not.

TO HAVE AND TO HOLD the property granted herein to the GRANTEE and its successors and assigns, together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest, or claim whatsoever of the GRANTOR, either in law or in equity and subject to the terms, reservations, restrictions, covenants, and conditions set forth in this Deed.

AND IT IS FURTHER AGREED AND UNDERSTOOD by and between the parties hereto that the GRANTEE, by its acceptance of this Deed, agrees that, as part of the consideration for this Deed, the GRANTEE covenants and agrees for itself, its successors and assigns, forever, that this Deed is made and accepted upon each of the following covenants, which covenants shall be binding upon and enforceable against the GRANTEE, its successors and assigns, in perpetuity by the GRANTOR and other interested

parties as allowed by federal, state or local law; that the NOTICES, USE RESTRICTIONS, AND RESTRICTIVE COVENANTS set forth here are a binding servitude on the Property herein conveyed and shall be deemed to run with the land in perpetuity; and that the failure to include the NOTICES, USE RESTRICTIONS, AND RESTRICTIVE COVENANTS in subsequent conveyances does not abrogate the status of these restrictions as binding upon the parties, their successors and assigns:

### 1. CERCLA NOTICE

For the Property, the GRANTOR provides the following notice, description, and covenant:

A. Pursuant to section 120(h)(3)(A)(i)(I) and (II) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9620(h)(3)(A)(i)(I) and (II)), available information regarding the type, quantity, and location of hazardous substances and the time at which such substances were stored, released, or disposed of, as defined in section 120(h), is provided in Exhibit "D", attached hereto and made a part hereof. Additional information regarding the storage, release, and disposal of hazardous substances on the Property has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the Finding of Suitability to Transfer (hereinafter "FOST") executed January 24, 2005.

B. Pursuant to section 120(h)(3)(A)(i)(III) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9620(h)(3)(A)(i)(III)), a description of the remedial action taken, if any, on the property is provided in Exhibit "D". Additional information regarding the remedial action taken, if any, has been provided to the GRANTEE, receipt of which the GRANTEE hereby acknowledges. Such additional information includes, but is not limited to, the FOST.

### 2. CERCLA COVENANT

Pursuant to section 120(h)(3)(A)(ii) and (B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9620(h)(3)(A)(ii) and (B)), the GRANTOR warrants that -

A. All remedial action necessary to protect human health and the environment with respect to any hazardous substance identified pursuant to section 120(h)(3)(A)(i)(I) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 remaining on the Property has been taken before the date of this Deed, and

B. Any additional remedial action found to be necessary after the date of this Deed shall be conducted by the GRANTOR.

This warranty shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party with respect to such Property. For purposes of this warranty, GRANTEE shall not be considered a potentially responsible party solely due to the presence of a hazardous substance remaining on the Property on the date of this instrument, provided that GRANTEE has not caused or contributed to a release of such hazardous substance."

### 3. RIGHT OF ACCESS

A. Pursuant to section 120(h)(3)(A)(iii) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9620(h)(3)(A)(iii)), the GRANTOR retains and reserves a perpetual and assignable easement and right of access on, over, and through the property, to

enter upon the property in any case in which an environmental response action or corrective action is found to be necessary on the part of the GRANTOR, without regard to whether such environmental response action or corrective action is on the Property or on adjoining or nearby lands. Such easement and right of access includes, without limitation, the right to perform any environmental investigation, survey, monitoring, sampling, testing, drilling, boring, coring, test-pitting, installing monitoring or pumping wells or other treatment facilities, response action, corrective action, or any other action necessary for the GRANTOR to meet its responsibilities under applicable laws and as provided for in this instrument. Such easement and right of access shall be binding on the GRANTEE, its successors and assigns, and shall run with the land.

B. In exercising such easement and right of access, the GRANTOR shall provide the GRANTEE or its successors or assigns, as the case may be, with reasonable notice of its intent to enter upon the Property and exercise its rights under this covenant, which notice may be severely curtailed or even eliminated in emergency situations. The GRANTOR shall use reasonable means, but without significant additional costs to the GRANTOR, to avoid and to minimize interference with the GRANTEE'S and the GRANTEE'S successors' and assigns' quiet enjoyment of the Property. Such easement and right of access includes the right to obtain and use utility services, including water, gas, electricity, sewer, and communications services available on the Property at a reasonable charge to the GRANTOR. Excluding the reasonable charges for such utility services, no fee, charge, or compensation will be due the GRANTEE nor its successors and assigns, for the exercise of the easement and right of access hereby retained and reserved by the GRANTOR.

C. In exercising such easement and right of access, neither the GRANTEE nor its successors and assigns, as the case may be, shall have any claim at law or equity against the GRANTOR or any officer, employee, agent, contractor of any tier, or servant of the GRANTOR based on actions taken by the GRANTOR or its officers, employees, agents, contractors of any tier, or servants pursuant to and in accordance with this covenant. In addition, the GRANTEE, its successors and assigns, shall not interfere with any response action or corrective action conducted by the GRANTOR on the Property.

#### **4. NOTICE OF THE PRESENCE OF ASBESTOS AND COVENANT**

A. The GRANTEE is hereby informed and does acknowledge that non-friable asbestos or Asbestos Containing Material ("ACM") has been found on the Property. The Property may contain improvements, such as buildings, facilities, equipment, and pipelines, above and below the ground, that contain non-friable asbestos or ACM. The Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency have determined that such unprotected or unregulated exposure to airborne asbestos fibers increases the risk of asbestos-related diseases, including certain cancers that can result in disability or death.

B. The GRANTEE covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos. The GRANTEE agrees to be responsible for any remediation or abatement of asbestos found to be necessary on the Property, to include ACM in or on buried pipelines, that may be required under applicable law or regulation.

C. The GRANTEE acknowledges that it has inspected or has had the opportunity to inspect the Property as to its asbestos and ACM condition and any hazardous or environmental conditions relating thereto. The GRANTEE shall be deemed to have relied solely on its own judgment in assessing the overall condition of all or any portion of the Property, including, without limitation, any asbestos hazards or concerns.

## **5. NOTICE OF THE PRESENCE OF LEAD BASED PAINT (LBP) AND COVENANT AGAINST THE USE OF THE PROPERTY FOR RESIDENTIAL PURPOSE**

A. The GRANTEE is hereby informed and does acknowledge that all buildings on the Property, which were constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Every purchaser of any interest in Residential Real Property on which a residential dwelling was built prior to 1978 is notified that there is a risk of exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning.

B. The GRANTEE covenants and agrees that it shall not permit the occupancy or use of any buildings or structures on the Property as Residential Real Property, as defined under 24 C.F.R. Part 35, without complying with this section and all applicable federal, state, and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards. Prior to permitting the occupancy of the Property where its use subsequent to sale is intended for residential habitation, the GRANTEE specifically agrees to perform, at its sole expense, the Army's abatement requirements under Title X of the Housing and Community Development Act of 1992 (Residential Lead-Based Paint Hazard Reduction Act of 1992).

C. The GRANTEE acknowledges that it has inspected or has had the opportunity to inspect the Property as to its lead-based paint content and condition and any hazardous or environmental conditions relating thereto. The GRANTEE shall be deemed to have relied solely on its own judgment in assessing the overall condition of all or any portion of the Property, including, without limitation, any lead-based paint hazards or concerns.

## **6. NOTICE OF THE POTENTIAL FOR THE PRESENCE OF MUNITIONS AND EXPLOSIVES OF CONCERN (MEC)**

A. The GRANTEE is hereby notified that due to the former use of the Property as a military installation, the Property may contain munitions and explosives of concern (hereinafter "MEC"). The term MEC means specific categories of military munitions that may pose unique explosives safety risks and includes: (1) Unexploded Ordnance (UXO), as defined in 10 U.S.C. § 101(e)(5); (2) Discarded military munitions (DMM), as defined in 10 U.S.C. § 2710(e)(2); or (3) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard.)

B. The GRANTOR represents that, to the best of its knowledge, no MEC is currently present on the Property. If the GRANTEE, its successors, and assigns, or any other person should discover any MEC on the Property, it shall immediately stop further intrusive or ground disturbing work in the area and any adjacent areas, and shall not move, disturb or destroy it, but shall immediately notify the local Police Department and Fort Pickett Range Operations so that appropriate explosive ordnance personnel can be dispatched to address such MEC as required under applicable law and regulations.

## **7. NON-DISCRIMINATION**

The GRANTEE covenants for itself, its successors, and assigns and every successor in interest to the Property hereby conveyed, or any part thereof, that the said GRANTEE and such successors and assigns shall not discriminate upon the basis of race, color, religion, age, gender, or national origin in the use, occupancy, sale, or lease of the property, or in their employment practices conducted thereon. This covenant shall not apply, however, to the lease or rental of a room or rooms within a family dwelling

unit; nor shall it apply with respect to religion to premises used primarily for religious purposes. The United States of America shall be deemed a beneficiary of this covenant without regard to whether it remains the owner of any land or interest therein in the locality of the property hereby conveyed and shall have the sole right to enforce this covenant in any court of competent jurisdiction.

#### 8. "AS IS"

A. The GRANTEE acknowledges that it has inspected or has had the opportunity to inspect the Property and accepts the condition and state of repair of the subject Property. The GRANTEE understands and agrees that the Property and any part thereof is offered "AS IS" without any representation, warranty, or guaranty by the GRANTOR as to quantity, quality, title, character, condition, size, or kind, or that the same is in condition or fit to be used for the purpose(s) intended by the GRANTEE, and no claim for allowance or deduction upon such grounds will be considered.

B. No warranties, either express or implied, are given with regard to the condition of the Property, including, without limitation, whether the Property does or does not contain asbestos or lead-based paint. The GRANTEE shall be deemed to have relied solely on its own judgment in assessing the overall condition of all or any portion of the Property, including, without limitation, any asbestos, lead-based paint, or other conditions on the Property. The failure of the GRANTEE to inspect or to exercise due diligence to be fully informed as to the condition of all or any portion of the Property offered, will not constitute grounds for any claim or demand against the United States.

C. Nothing in this "AS IS" provision will be construed to modify or negate the GRANTOR'S obligation under the CERCLA Covenant or any other statutory obligations.

#### 9. HOLD HARMLESS

A. To the extent authorized by law, the GRANTEE, its successors and assigns, covenant and agree to indemnify and hold harmless the GRANTOR, its officers, agents, and employees from (1) any and all claims, damages, judgments, losses, and costs, including fines and penalties, arising out of the violation of the NOTICES, USE RESTRICTIONS, AND RESTRICTIVE COVENANTS in this Deed by the GRANTEE, its successors and assigns, and (2) any and all any and all claims, damages, and judgments arising out of, or in any manner predicated upon, exposure to asbestos, lead-based paint, or other condition on any portion of the Property after the date of conveyance.

B. The GRANTEE, its successors and assigns, covenant and agree that the GRANTOR shall not be responsible for any costs associated with modification or termination of the NOTICES, USE RESTRICTIONS, AND RESTRICTIVE COVENANTS in this Deed, including without limitation, any costs associated with additional investigation or remediation of asbestos, lead-based paint, or other condition on any portion of the Property.

C. Nothing in this Hold Harmless provision will be construed to modify or negate the GRANTOR'S obligation under the CERCLA Covenant or any other statutory obligations.

#### 10. POST-TRANSFER DISCOVERY OF CONTAMINATION

A. If an actual or threatened release of a hazardous substance or petroleum product is discovered on the Property after the date of conveyance, GRANTEE, its successors or assigns, shall be responsible for such release or newly discovered substance unless GRANTEE is able to demonstrate that such release or such newly discovered substance was due to GRANTOR'S activities, use, or ownership of the

Property. If the GRANTEE, its successors or assigns believe the discovered hazardous substance is due to GRANTOR'S activities, use or ownership of the Property, GRANTEE will immediately secure the site and notify the GRANTOR of the existence of the hazardous substances, and GRANTEE will not further disturb such hazardous substances without the written permission of the GRANTOR.

B. GRANTEE, its successors and assigns, as consideration for the conveyance of the Property, agree to release GRANTOR from any liability or responsibility for any claims arising solely out of the release of any hazardous substance or petroleum product on the Property occurring after the date of the delivery and acceptance of this Deed, where such substance or product was placed on the Property by the GRANTEE, or its successors, assigns, employees, invitees, agents or contractors, after the conveyance. This paragraph shall not affect the GRANTOR'S responsibilities to conduct response actions or corrective actions that are required by applicable laws, rules and regulations, or the GRANTOR'S indemnification obligations under applicable laws.

#### **11. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY**

GRANTOR and GRANTEE are aware of their respective obligations and responsibilities under section 330 of the National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, Oct. 23, 1992, 106 Stat. 2371, as amended by section 1002 of the National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, Nov. 30, 1993, 107 Stat. 1745. (See 10 U.S.C. § 2687, note.)

#### **12. ANTI-DEFICIENCY ACT CLAUSE**

The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of funds appropriated for this purpose to the Department of the Army, and nothing in this Deed shall be interpreted to require obligations or payments by the GRANTOR in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

#### **13. NO WAIVER**

The failure of the Government to insist in any one or more instances upon complete performance of any of the said notices, covenants, conditions, restrictions, or reservations shall not be construed as a waiver or a relinquishment of the future performance of any such covenants, conditions, restrictions, or reservations, but the obligations of the GRANTEE, its successors and assigns, with respect to such future performance shall continue in full force and effect.

#### **14. INCLUSION OF PROVISIONS**

The GRANTEE shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the environmental protection provisions contained herein, and shall require the inclusion of such environmental protection provisions in all further deeds, easements, transfers, leases, or grant of any interest, privilege, or license.

IN WITNESS WHEREOF, the GRANTOR has caused this Deed to be executed in its name by the Deputy Assistant Secretary of the Army (Installations and Housing) this 1st day of April, 2005.

UNITED STATES OF AMERICA

By: Joseph W. Whitaker  
JOSEPH W. WHITAKER  
Deputy Assistant Secretary of the Army  
(Installations and Housing)  
OASA(I&E)

ACKNOWLEDGEMENT

COMMONWEALTH OF VIRGINIA )  
 ) SS:  
COUNTY OF ARLINGTON )

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose commission as such expires on the 30th day of September, 2008, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed on the date shown, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

Heckman J. Hill  
Notary Public

ACCEPTANCE BY GRANTEE

Fort Pickett Local Redevelopment Authority, GRANTEE, hereby accepts this Quitclaim Deed for itself, its successors and assigns, subject to all of the conditions, reservations, restrictions and terms contained therein this 8 day of March 2005.

FORT PICKETT LOCAL REDEVELOPMENT AUTHORITY

By: Ronald E. Ford  
Title: County Administrator

COMMONWEALTH OF VIRGINIA )  
 ) SS:  
 COUNTY OF NOTTOWAY )

I, the undersigned, a <sup>Deputy Clerk</sup> ~~Notary Public~~ in and for the Commonwealth of Virginia, County of Nottoway, whose commission as such expires on the \_\_\_\_ day of n/a, \_\_\_\_, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Nottoway, Ronaki E. Roark Co. Adm., whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed on the date shown, and acknowledged the same for and on behalf of the Fort Pickett Local Redevelopment Authority.

James L. Brown  
~~Notary Public~~ Deputy Clerk  
 Nottoway Circuit Court

Court seal

### CERTIFICATE OF GRANTEE'S ATTORNEY

I, MAYE GRAY, acting as attorney for Fort Pickett Local Redevelopment Authority, an agency of the Board of Supervisors of Nottoway County, Virginia, herein referred to as the "GRANTEE", do hereby certify: that I have examined the foregoing Quitclaim Deed and the proceedings taken by the GRANTEE relating thereto, and find that the acceptance thereof by the GRANTEE has been duly authorized and that the execution thereof is in all respects due and proper and in accordance with the laws of the Commonwealth of Virginia, and further that, in my opinion, the Quitclaim Deed constitutes a legal and binding compliance obligation of the GRANTEE in accordance with the terms thereof.

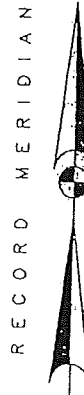
Dated at NOTTOWAY, VA. this 8<sup>TH</sup> day of MARCH, 2005.

By [Signature]  
 Title COUNTY ATTORNEY

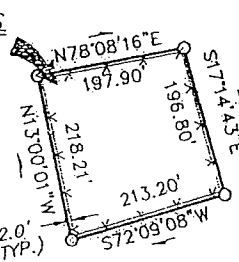
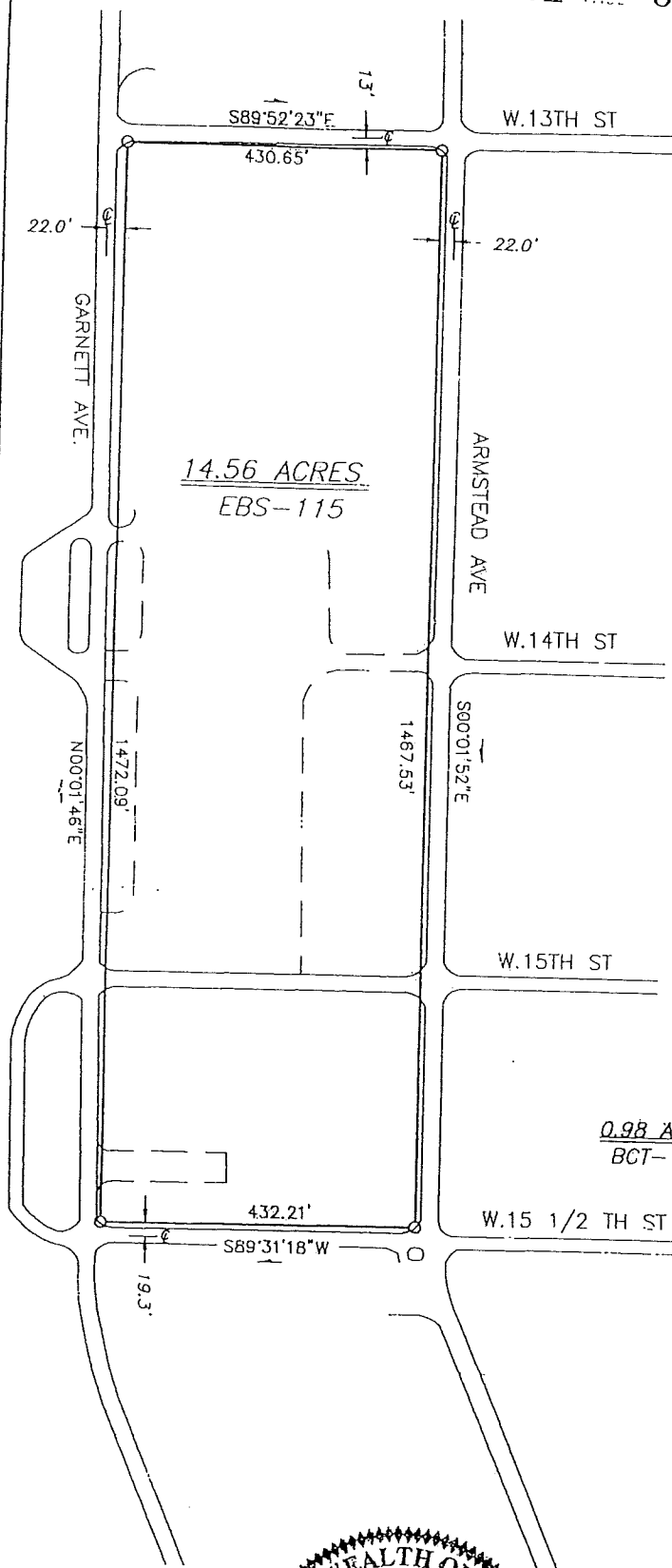
This deed was reviewed by:  
Robert Oswald, Attorney at Law  
 U.S. Army Corps of Engineers  
 Norfolk District  
 803 Front Street  
 Norfolk, Virginia 23510

RODS SET AT ALL CORNERS

BOOK 381 PAGE 691



PLAN NO. LL-99-89A



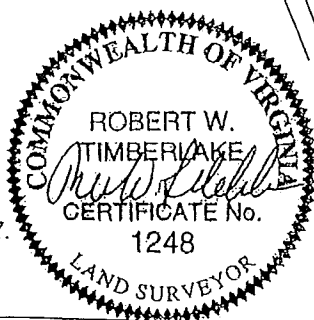
ELEVATED  
WATER STORAGE  
TANK

## EXHIBIT "A"

PLAT OF SURVEY SHOWING A PORTION  
OF PROPERTY BELONGING TO  
FORT PICKETT  
LOCATED IN BELEFONTE MAG. DIST.  
NOTTOWAY COUNTY, VA.

SCALE: 1"=200' 02 NOV., 1999

TIMBERLAKE & CO.  
8773 PATRICK HENRY HWY.  
CREWE, VA. 23930  
804-645-7628



RODS SET AT ALL CORNERS

BOOK 381 PAGE 692

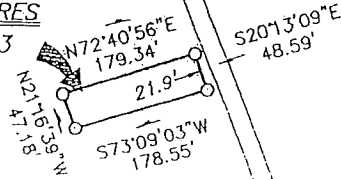
RECORD MERIDIAN



PLAN NO. 11-99-89

0.20 ACRES

BCT-13



W.17TH ST

W.18TH ST

N67°34'40"E

430.23'

22.0'

W.19TH ST

11.24 ACRES

EBS-124

S20°23'48"E

1137.22'

ARMISTEAD AVE

W.20TH ST

21.5'

N22°28'53"W

GARNETT AVE

50.0'

430.53'

S67°32'18"W

MILITARY RD.

TO WEST ENTRANCE ROAD



TIMBERLAKE & CO.  
8773 PATRICK HENRY HWY.  
CREWE, VA. 23930  
804-645-7628

**EXHIBIT "B"**

PLAT OF SURVEY SHOWING A PORTION  
OF PROPERTY BELONGING TO  
FORT PICKETT  
LOCATED IN BELLEFONTE MAG. DIST.  
NOTTOWAY COUNTY, VA.  
SCALE: 1"=200' 02 NOV., 1999

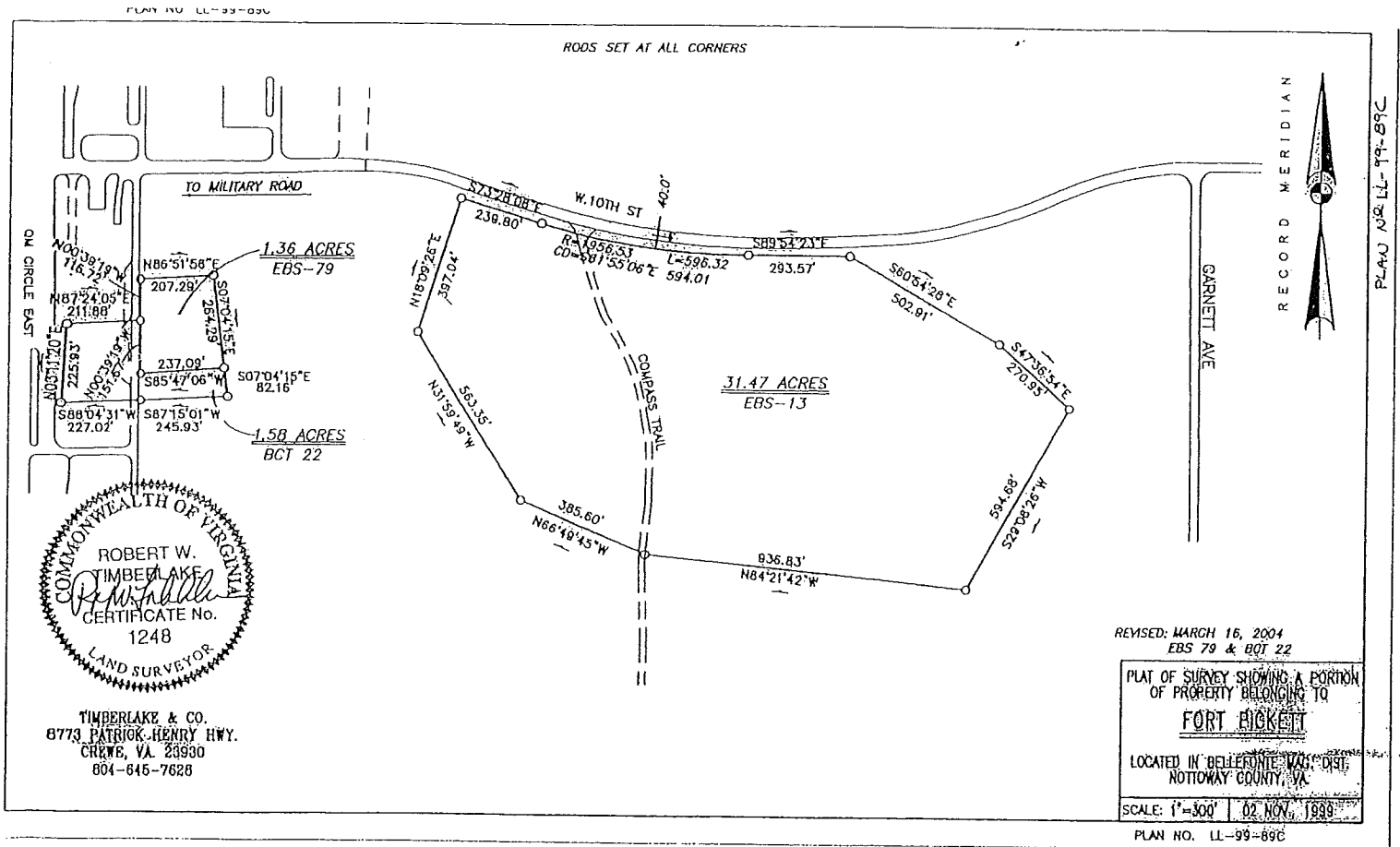


EXHIBIT "C"

## Notification of Hazardous Substance and Petroleum Product Storage, Release or Disposal

Site	Hazardous Substances	Storage or Release	Quantity Stored or Detected	Dates Stored	Quantity Released	Comments/Response Action Taken
EBS-79	PCBs, PAHs, VOCs and Pesticides in Soil	Release	Above RBCs <sup>1</sup>	N/A	Unknown	Removed during 2002 IRA, NFA DD 2004)
EBS-79	PCBs	Storage	Unknown <sup>2</sup>	1942-1995		Storage of PCB occurred within a building located on site
EBS-115	Solvents	Storage	Above 55 gallons	1942 – 1995	N/A	No evidence of significant spills or releases or reported incidents
EBS-124	PAHs, Pesticides, TCE and PCBs in Soil	Release	Above RBCs <sup>1</sup>	N/A	Unknown	Removed during 2003 IRA, NFA DD 2004)

<sup>1</sup> The contaminants indicated were detected in soil samples and could not be related to a specific quantifiable release as outlined in CERCLA 40 C.F.R. 373. The contaminated soil was removed as part of an interim removal action.

<sup>2</sup> The building on this site was utilized to store PCB containing transformers. No inventory exists to document the number of transformers stored at this facility during the specified timeframe.

IRA – Interim Removal Action

NFA – No Further Action

DD – Decision Document

RBC – Risk Based Concentration

Site	Petroleum Substances	Storage or Release	Quantity Stored or Detected	Dates Stored	Quantity Released	Comments/Response Action Taken
EBS-79	Petroleum	Storage	Above 55 gallons	1942 - 1995	N/A	No evidence of significant spills or releases or reported incidents
EBS-115	POLs	Storage	Above 55 gallons	1942 - 1995	N/A	No evidence of significant spills or releases or reported incidents
EBS-124	POLs	Storage	Above 55 gallons	1942 - 1995	N/A	POLs were stored and utilized in support of vehicle maintenance activities
EBS-124	POLs in soil	Release	N/A	N/A	75 Gallons	Removed during 2003 IRA, NFA DD (2004)

IRA – Interim Removal Action

NFA – No Further Action

DD – Decision Document

POLs – Petroleum, Oils, and Lubricants

EXHIBIT “D”

BOOK 381 PAGE 695

VIRGINIA: IN THE CLERK'S OFFICE OF NOTTOWAY CIRCUIT COURT  
On 4-15-05, at 11:05AM, this instrument was received  
and upon certification of acknowledgment thereto annexed, admitted to record.  
The State tax imposed by Sec. 58.1-802 of the Virginia Code, has been paid in the  
amount of \$ 0.

Teste: JAMES W. KING, CLERK

By: Cynthia J. Allen, DC



# *COMMONWEALTH of VIRGINIA*

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Blue Ridge Regional Office**  
[www.deq.virginia.gov](http://www.deq.virginia.gov)

Douglas W. Domenech  
Secretary of Natural Resources

**Lynchburg Office**  
7705 Timberlake Road  
Lynchburg, Virginia 24502  
(434) 582-5120  
Fax (434) 582-5125

David K. Paylor  
Director

Robert J. Weld  
Regional Director

**Roanoke Office**  
3019 Peters Creek Road  
Roanoke, Virginia 24019  
(540) 562-6700  
Fax (540) 562-6725

**STATE WATER CONTROL BOARD**  
**ENFORCEMENT ACTION - ORDER BY CONSENT**  
**ISSUED TO**  
**THE TOWN OF BLACKSTONE**  
**FOR**  
**BLACKSTONE WWTP**  
**VPDES PERMIT No. VA0025194**

**SECTION A: Purpose**

This is a Consent Order issued under the authority of Va. Code § 62.1-44.15 (8a) and (8d) between the State Water Control Board and the Town of Blackstone, for the purpose of resolving certain violations of the State Water Control Law and the applicable Permit and Regulation.

**SECTION B: Definitions**

Unless the context clearly indicates otherwise, the following words and terms have the meanings assigned to them below:

1. "Blackstone" or "Town" means the Town of Blackstone, a political subdivision of the Commonwealth of Virginia. The Town of Blackstone is a "person" within the meaning of Va. Code § 62.1-44.3.

2. "Board" means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia as described in Va. Code §§ 10.1-1184 and 62.1-44.7.
3. "BRRO" means the Blue Ridge Regional Office of DEQ, located in Lynchburg, Virginia.
4. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code § 10.1-1183.
5. "Director" means the Director of the Department of Environmental Quality.
6. "DMR" means Discharge Monitoring Report.
7. "Facility" or "Plant" means the Blackstone WWTP located at Building 2010, Garnett Avenue in Fort Pickett, Virginia, which treats and discharges treated sewage and other municipal wastes, for the residents and businesses of the Town of Blackstone and Fort Pickett.
8. "Notice of Violation" or "NOV" means a type of Notice of Violation under Va. Code § 62.1-44.15.
9. "O & M" means Operation and Maintenance.
10. "Order" means this document, also known as a "Consent Order" or "Order by Consent," a type of Special Order under the State Water Control Law.
11. "Permit" means VPDES Permit number VA0025194; which was issued under the State Water Control Law and the Regulation to the Town on November 25, 2008, and which expires on November 24, 2013.
12. "Pollutant" means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC § 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water... 9 VAC 25-31-10.

13. "Pollution" means such alteration of the physical, chemical, or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety, or welfare or to the health of animals, fish, or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the Board, are "pollution." Va. Code § 62.1-44.3.
14. "Regulation" means the VPDES Permit Regulation at 9 VAC 25-31-10 *et seq.*
15. "SEP" means Supplemental Environmental Project.
16. "State Water Control Law" means Chapter 3.1 (§ 62.1-44.2 *et seq.*) of Title 62.1 of the Va. Code.
17. "State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands. Va. Code § 62.1-44.3.
18. "UT" means unnamed tributary.
19. "Va. Code" means the Code of Virginia (1950), as amended.
20. "VAC" means the Virginia Administrative Code.
21. "VPDES" means the Virginia Pollutant Discharge Elimination System.
22. "WWTP" or "Blackstone WWTP" means the Blackstone Wastewater Treatment Plant, located at Building 2010, Garnett Avenue in Fort Pickett,

Virginia, which treats sewage and other municipal wastes for the residents and businesses of Blackstone and Fort Pickett.

23. "Warning Letter" or "WL" means a type of Notice of Violation under Va. Code § 62.1-44.15.

### **SECTION C: Findings of Fact and Conclusions of Law**

1. The Town of Blackstone owns and operates the Facility in Fort Pickett, Virginia. The Permit allows the Town to discharge treated sewage and other municipal wastes from the Facility to an unnamed tributary of Hurricane Branch, in strict compliance with the terms and conditions of the Permit.
2. Hurricane Branch is located in the Chowan & Dismal Swamp River Basin. Both the UT and Hurricane Branch are listed in the 2008 Integrated Report (IR), and are classified as 5A (the Water Quality Standard is not attained, and the stream is impaired for one or more designated uses by a pollutant(s) and requires the development of a TMDL). Both are listed for aquatic life impairment (benthic), with the UT first listed in 2008 (TMDL due 2020) and Hurricane Branch listed in 2004 (TMDL due 2016). The source of the impairments is unknown.
3. In submitting its DMRs, as required by the Permit, the Town has indicated that it has violated the reporting requirements of Parts I.A. and II. C. and the discharge prohibition requirements of Part II.F. of the subject Permit.
4. BRRO issued the following Warning Letters and Notices of Violation for the Permit violations: WL W2009-12-L-1007, WL W2010-02-L-1010, WL W2010-03-L-1002, WL W2010-04-L-1005, and NOV W2010-05-L-0003.
5. The Town of Blackstone reported unpermitted discharges to State waters which occurred on November 11 and 13, 2009, from the Town's Forest Drive, Gospel Hill, and Williams Pond sewage pump stations. The Town attributed the overflows to a 7" rainfall event from the remnants of Hurricane Ida.

6. The Town of Blackstone reported unpermitted discharges to State waters which occurred on December 8, 2009, from the Town's Forest Drive and Williams Pond sewage pump stations. The Town attributed the overflows to a 2" rainfall event which occurred across the Town's service area.
7. The Town of Blackstone reported unpermitted discharges to State waters which occurred on December 25 and 26, 2009, from the Town's Forest Drive, Gospel Hill and Williams Pond sewage pump stations. The Town attributed the overflows to a 1 1/2" rainfall event which occurred across the Town's service area.
8. The Town of Blackstone reported unpermitted discharges to State waters which occurred on January 25, 2010, from the Town's Forest Drive, Gospel Hill and Williams Pond sewage pump stations. The Town attributed the overflows to a 1" to 2" rainfall event which occurred across the Town's service area.
9. The Town of Blackstone was cited for late submission of the February 2010 DMR which was due on or before March 10, 2010, and was received by the Department on March 23, 2010.
10. The Town of Blackstone reported unpermitted discharges to State waters which occurred on March 29, 2010, from the Town's Forest Drive, Gospel Hill and Williams Pond sewage pump stations. The Town attributed the overflows to a 3" rainfall event which occurred across the Town's service area.
11. The Town's representatives met with the Department's enforcement staff on June 4, 2010 to discuss the unpermitted discharges and late reporting violations incurred by the Town and corrective action required to return to compliance. Town officials explained that a 2 million dollar line item for Public Works Capital Improvement Projects had remained unfunded for the last three years. With the Town's current debt retirement load, it cannot participate in the Department's Construction Assistance Program (CAP) which requires a 50/50 funding match.

12. The Town's operating logs indicate that it discharged treated wastewater from the WWTP from November 1, 2009 through March 31, 2010.
13. Va. Code § 62.1-44.5 states that: "Except in compliance with a certificate issued by the Board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances."
14. The Regulation, at 9 VAC 25-31-50, also states that except in compliance with a VPDES Permit, or another Permit issued by the Board, it is unlawful to discharge into state waters sewage, industrial wastes or other wastes.
15. Va. Code § 62.1-44.15(5a) states that a VPDES Permit is a "certificate" under the statute.
16. The Department has issued no permits or certificates to the Town other than VPDES Permit No. VA0025194.
17. The unnamed tributary, Hurricane Branch, and the Chowan River are surface waters located wholly within the Commonwealth and are "state waters" under State Water Control Law.
18. Based on the overflow reports and late DMR submitted for the Blackstone WWTP, the Board concludes that the Town of Blackstone has violated VPDES Permit No. VA0025194, Va. Code § 62.1-44.5, and 9 VAC 25-31-50 by discharging untreated sewage from the sanitary sewer collection system, while concurrently failing to comply with the conditions of the Permit, as summarized in paragraphs C.3. – C.10., above.
19. In order for the Town to return to compliance, Department staff and representatives of the Town have agreed to the Schedule of Compliance, which is incorporated as Appendix A of this Order.

#### **SECTION D: Agreement and Order**

Accordingly, by virtue of the authority granted it in Va. Code § 62.1-44.15, and upon consideration of Va. Code § 10.1-1186.2, the Board orders the Town of Blackstone, and the Town agrees:

1. To perform the actions described in Appendix A and B of this Order; and
2. To pay a civil charge of \$66,500.00 in settlement of the violations cited in this Order, to be paid as follows:
  - a. The Town of Blackstone shall pay \$16,625.00 of the civil charge within 30 days of the effective date of this Order. Payment shall be made by check, certified check, money order or cashier's check payable to the "Treasurer of Virginia," and delivered to:

Receipts Control  
Department of Environmental Quality  
Post Office Box 1104  
Richmond, Virginia 23218

The Town of Blackstone shall include its Federal Employer Identification Number (FEIN) with the civil charge payment **and** shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Environmental Emergency Response Fund (VEERF).

- b. The Town of Blackstone shall satisfy \$49,875.00 of the civil charge by satisfactorily completing the Supplemental Environmental Project (SEP) described in Appendix B of this Order.
- c. The net project costs of the SEP to the Town of Blackstone shall not be less than the amount set forth in paragraph D.2.b. If it is, the Town of Blackstone shall pay the remaining amount in accordance with paragraph D.2.a. of this Order, unless otherwise agreed to by the Department. "Net project cost" means the net present after-tax cost of the SEP, including tax savings, grants, and first-year cost reductions and other efficiencies realized by virtue of project implementation. If the proposed SEP is for a project for which the Town of Blackstone will receive an identifiable tax savings (e.g., tax credits for pollution control or recycling equipment), grants, or first-year operation cost reductions or other efficiencies, the net project cost shall be reduced by those

- amounts. The costs of those portions of SEPs that are funded by state or federal low-interest loans, contracts, or grants shall be deducted.
- d. By signing this Order the Town of Blackstone certifies that it has not commenced performance of the SEP.
  - e. The Town of Blackstone acknowledges that it is solely responsible for completing the SEP project. Any transfer of funds, tasks, or otherwise by the Town of Blackstone to a third party, shall not relieve the Town of its responsibility to complete the SEP as described in this Order.
  - f. In the event it publicizes the SEP or the SEP results, the Town of Blackstone shall state in a prominent manner that the project is part of a settlement of an enforcement action.
  - g. The Department has the sole discretion to:
    - i. Authorize any alternate, equivalent SEP proposed by the Town; and
    - ii. Determine whether the SEP, or alternate SEP, has been completed in a satisfactory manner.
  - h. Should the Department determine that the Town of Blackstone has not completed the SEP, or alternate SEP, in a satisfactory manner, the Department shall so notify the Town in writing. Within 30 days of being notified, the Town shall pay the amount specified in paragraph D.2.b., above as provided in paragraph D.2.a., above.

#### **SECTION E: Administrative Provisions**

- 1. The Board may modify, rewrite, or amend the Order with the consent of the Town of Blackstone for good cause shown by the Town, or on its own motion pursuant to the Administrative Process Act, Va. Code § 2.2-4000 *et seq.*, after notice and opportunity to be heard.
- 2. This Order addresses and resolves only those violations specifically identified in Section C of this Order. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking

subsequent remediation of the STP; or (3) taking subsequent action to enforce the Order.

3. For purposes of this Order and subsequent actions with respect to this Order only, the Town of Blackstone admits the jurisdictional allegations, findings of fact, and conclusions of law contained herein.
4. The Town of Blackstone consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. The Town of Blackstone declares it has received fair and due process under the Administrative Process Act and the State Water Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to modify, rewrite, amend, or enforce this Order.
6. Failure by the Town of Blackstone to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. The Town of Blackstone shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or other such occurrence. The Town shall show that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. The Town of Blackstone shall notify the DEQ Regional Director verbally within 24 hours and in writing within three business days when

circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of the Order. Such notice shall set forth:

- a. the reasons for the delay or noncompliance;
- b. the projected duration of any such delay or noncompliance;
- c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
- d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

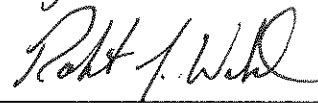
Failure to so notify the Regional Director verbally within 24 hours and in writing within three business days of learning of any condition listed above, which the Town intends to assert will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto, their successors in interest, designees, and assigns, jointly and severally.
10. This Order shall become effective upon execution by both the Director or his designee and the Town of Blackstone. Nevertheless, the Town agrees to be bound by any compliance date which precedes the effective date of this Order.
11. This Order shall continue in effect until:
  - a. The Town of Blackstone petitions the Director or his designee to terminate the Order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order; or
  - b. the Director or Board terminates the Order in his or its sole discretion upon 30 days written notice to the Town.

Termination of this Order, or of any obligation imposed in this Order, shall not operate to relieve the Town of Blackstone from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

12. Any plans, reports, schedules or specifications attached hereto or submitted by the Town of Blackstone and approved by the Department pursuant to this Order are incorporated into this Order. Any noncompliance with such approved documents shall be considered a violation of this Order.
13. The undersigned representative of the Town of Blackstone certifies that he or she is a responsible official authorized to enter into the terms and conditions of this Order and to execute and legally bind the Town to this document. Any documents to be submitted pursuant to this Order shall also be submitted by a responsible official of the Town.
14. This Order constitutes the entire agreement and understanding of the parties concerning settlement of the violations identified in Section C of this Order, and there are no representations, warranties, covenants, terms, or conditions agreed upon between the parties other than those expressed in this Order.
15. By its signature below, the Town of Blackstone voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 4<sup>th</sup> day of August, 2011.



Robert J. Weld, Regional Director  
Blue Ridge Regional Office  
Department of Environmental Quality

The Town of Blackstone voluntarily agrees to the issuance of this Order.

Date: 3/24/11 By: Jennifer H. Beck, Acting Town Manager  
Jennifer H. Beck Acting Town Manager  
Town of Blackstone

Commonwealth of Virginia

County of Nottoway

The foregoing document was signed and acknowledged before me this 24<sup>th</sup> day

of March, 2011, by Jennifer H. Beck, who is Acting Town

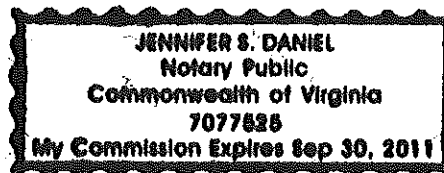
Manager of the Town of Blackstone on behalf of the Town.

Jennifer S. Daniel  
Notary Public

7077525  
Registration No.

My commission expires: 9-30-2011.

Notary seal:



## APPENDIX A

### SCHEDULE OF COMPLIANCE

1. Submit to the Department no later than **December 31, 2011**, for review and approval, a detailed Sanitary Sewer Rehabilitation Corrective Action Plan (SSRCAP) outlining the design and construction of the proposed sanitary sewer collection system rehabilitation and replacement project.
2. Upon approval by the Department, the SSRCAP shall be considered an integral and enforceable part of this Order.
3. The Town of Blackstone shall secure adequate funding to carry out all planning, engineering, and construction activities outlined in the SSRCAP no later than **December 31, 2012**.
4. The Town of Blackstone shall prepare bid documents associated with the planning, engineering, and construction activities outlined in the SSRCAP; publish Request for Proposals (RFPs), conduct bid reviews, and award the selected bid and issue a Notice to Proceed with construction on or before **December 31, 2013**.
5. The Town of Blackstone shall submit to the Department semi-annual Progress Reports as to the status of the SSRCAP on or before **July 10<sup>th</sup>, 2012; January 10<sup>th</sup> and July 10<sup>th</sup>, 2013; January 10<sup>th</sup> and July 10<sup>th</sup>, 2014; January 10<sup>th</sup> and July 10<sup>th</sup>, 2015; January 10<sup>th</sup> and July 10<sup>th</sup>, 2016; and January 10<sup>th</sup>, 2017** for the preceding six-month period.
6. The Town of Blackstone shall complete corrective action in accordance with the SSRCAP approved by the Department as expeditiously as possible, but in no case later than **December 31, 2016**.
7. Submit all reports and correspondence required by this Order to:

G. Marvin Booth, III  
Regional Enforcement Representative  
Department of Environmental Quality  
7705 Timberlake Rd.  
Lynchburg, VA 24502

## **APPENDIX B**

### **SUPPLEMENTAL ENVIRONMENTAL PROJECT**

In accordance with Va. Code § 10.1-1186.2, the Town of Blackstone shall perform the Supplemental Environmental Project (SEP) identified below in the manner specified in this Appendix.

1. The SEP to be performed by the Town of Blackstone is the design and implementation of a Capacity, Management, Operation and Maintenance (CMOM) Plan that identifies ongoing specific activities that the Town will undertake to responsibly and effectively manage, operate, and maintain the Town of Blackstone sanitary sewer system.

2. The Town of Blackstone shall secure the services of a Professional Engineer (P.E.) licensed by the Commonwealth of Virginia to develop a CMOM Plan for the Town. The CMOM Plan shall include a certification statement and bear the Engineer's seal and signature with the submission.

3. The Town of Blackstone shall submit to the Department no later than **October 31, 2011**, for review and approval, a CMOM Plan that, at a minimum, identifies and describes the following:

- A. Major goals of the Town's CMOM Plan;
- B. Administrative and maintenance positions responsible for implementing the activities in the CMOM Plan, including lines of authority by organizational chart;
- C. Resources allocated to each of the various CMOM Plan elements (i.e., O & M budget, number of positions/full-time equivalents (FTEs), equipment where appropriate, etc.);
- D. The Town's legal authority and plans to control infiltration and connections from inflow sources within the Town's collection system, as well as ordinances addressing source control (e.g., Oil and Grease);
- E. Preventative and corrective maintenance programs for the Town's pumping stations, gravity mains, manholes and force mains and associated air release valves and pressure control valves, including identification of critical replacement parts;

F. Training programs to ensure that all Town personnel are qualified to perform their duties;

G. The Town's engineering design criteria for construction of new facilities;

H. Annual audits and performance evaluations of the Town's CMOM Plan to evaluate any changes and/or deficiencies in the CMOM Plan and steps to respond to them. The performance evaluations shall be submitted to the Department and shall contain the following quantitative performance measures of inspection and maintenance activities:

- (i) Linear feet of gravity sewer cleaned;
- (ii) Linear feet of gravity sewer line inspected, repaired, or replaced;
- (iii) Pumping station equipment inspection, repair and replacement.

4. The Town of Blackstone shall promptly respond to any comments made by the Department concerning the sufficiency of the CMOM Plan and shall correct any Plan deficiencies noted by the Department expeditiously and shall submit a final approvable CMOM Plan to the Department by **December 31, 2011**.
5. The Town of Blackstone shall implement the CMOM Program in no case later than **January 31, 2017** and shall continue to implement the CMOM Program for no less than two years.
6. The Town of Blackstone shall submit progress reports on the SEP on a semi-annual basis, due on **January 10<sup>th</sup>** and **July 10<sup>th</sup>** for the proceeding six-month period implementation is ongoing.
7. The Town of Blackstone shall submit a written final report on the SEP, verifying that the SEP has been completed in accordance with the terms of this Order, and certified either by a Certified Public Accountant or by the Town's Mayor or the Town Council. The Town of Blackstone shall submit the final report and certification to the Department within 30 days of completion of the SEP.
8. If the SEP has not or cannot be completed as described in the Order, the Town of Blackstone shall notify the Department in writing no later than **January 31, 2019**. Such notification shall include:
  - A. An alternate SEP proposal, or
  - B. Payment of the amount specified in Paragraph D.2. of the Order.

9. The Town of Blackstone hereby consents to reasonable access by the Department or its staff to property or documents under the Town's control, for verifying progress or completion of the SEP.
10. The Town of Blackstone shall submit to the Department written verification of the final overall and net project cost of the SEP in the form of a certified statement itemizing costs, invoices, and proof of payment within **30 days** of the SEP completion date. For the purposes of this submittal, net project costs can be either the actual, final net project costs or the projected net project costs if such projected net project costs statement is accompanied by a CPA certification or certification from the Town's Mayor or its Council concerning the projected tax savings, grants or first-year operation cost reduction or other efficiencies.

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# CCR Report 2018

## **Is my water safe?**

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

## **Do I need to take special precautions?**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

## **Where does my water come from?**

The source of your drinking water is surface water drawn from the water intake at the Blackstone Reservoir located on Route 46.

## **Source water assessment and its availability**

Under a program developed by VDH, a detailed water assessment has been performed. The Source Water Assessment Report (SWAR) provides you with information concerning potential sources of contamination and measures to reduce or eliminate the sources of contamination. This report may be viewed at the Town Hall, 100 W. Elm St., Blackstone, VA during normal business hours.

## **Why are there contaminants in my drinking water?**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity:

microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

### **How can I get involved?**

If you have any questions about this report, please contact the Town Office and they will direct you to the responsible department. We want our customers to be informed about their water utility. If you want to learn more, please attend any regularly scheduled Town council meeting. They are held on the third Monday of each month at 7:00 PM, in the council chambers at 100 W. Elm St.

### **Cross Connection Control Survey**

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

### **Additional Information for Lead**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Town of Blackstone is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the

potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl2) (ppm)	4	4	1	.2	3.5	2018	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	34	3.8	71	2018	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	76	29	100	2018	No	By-product of drinking water disinfection
Total Organic Carbon (% Removal)	NA	TT	1.28	NA	NA	2018	No	Naturally present in the environment
Inorganic Contaminants								
Barium (ppm)	2	2	.021	NA	NA	2018	No	

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Nitrate [measured as Nitrogen] (ppm)	10	10	.06	NA	NA	2018	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coliform (RTCR)	NA	TT	NA	NA	NA	2018	No	Naturally present in the environment
Turbidity (NTU)	NA	0.3	100	NA	NA	2018	No	Soil runoff
100% of the samples were below the TT value of .3. A value less than 95% constitutes a TT violation. The highest single measurement was .295. Any measurement in excess of 1 is a violation unless otherwise approved by the state.								
Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source	
Inorganic Contaminants								
Copper - action level at consumer taps (ppm)	1.3	1.3	.02	2018		No	Corrosion of household plumbing systems; Erosion of natural deposits	
Inorganic Contaminants								
Lead - action level at consumer taps (ppb)	0	15	7.38	2018	2	No	Corrosion of household plumbing systems; Erosion of natural deposits	

## Violations and Exceedances

### Level 1 Assessment and Sanitary Defects

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliform indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one Level 1 Assessment(s). One Level 1 Assessment(s) were completed. In addition, we were required to take zero corrective action(s) and we completed zero assessment(s).

## Information about TTHM's

Some people who drink trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

## Information about Turbidity

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
% positive samples/month	% positive samples/month: Percent of samples taken monthly that were positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

<b>Important Drinking Water Definitions</b>	
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

**For more information please contact:**

Contact Name: Edward L. Harris  
Address: 100 West Elm Street  
Blackstone, VA 23824  
Phone: 434-292-3172

# MATERIAL SAFETY DATA SHEET

## Section 1. Chemical product and company identification

Product Name: AFFF Foam Concentrate  
Synonym: Aqueous Film Forming Foam  
AFFF Concentrate  
Manufacturer: AMEREX CORPORATION  
Internet Address: [www.amerex-fire.com](http://www.amerex-fire.com)  
Address: 7595 Gadsden Highway  
P.O. Box 81  
Trussville, AL 35173-0081  
Telephone: (205) 655-3271  
Emergency Contacts: Chemtrec 1(800) 424-9300 or  
(703) 527-3887  
Revised: May, 2006

## Section 2. Hazard identification and emergency overview

Emergency overview: Clear, medium green liquid, water-based, detergent odor.

Adverse health effects and symptoms: Irritating to the eyes, respiratory system, and skin. Symptoms may include principally eye pain, also sore throat, coughing, and difficult breathing if inhaled, skin redness after prolonged exposure. Central nervous system and kidney effects may occur upon repeated inhalation or ingestion.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Water	None	None	None
Diethylene glycol monobutyl ether	Not established	Not Established	100 mg/m <sup>3</sup> 8 hr. TWA 200 mg/m <sup>3</sup> 5 min. STEL
Synthetic detergents	Not established	Not established	Not established
Fluoroalkyl surfactants	Not established	Not established	Not established

\*German regulatory limits

Hazard symbols:  
WHMIS (hazardous materials identification system)

## D2B – Product is an irritant

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### Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Water	> 90 %	7732-18-5
Diethylene Glycol Monobutyl Ether	< 2 %	112-34-5
Synthetic detergents	Unknown	Proprietary ingredients
Fluoroalkyl surfactants	Unknown	Proprietary ingredients

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### Section 4. First Aid Measures

**Eye Exposure:** Irrigate eyes at eye wash station and repeat, retracting eyelids often, until pain free. Seek medical attention immediately.

**Skin Exposure:** In case of contact, wash with plenty of soap and water. Launder clothing before reuse. Multiple minor exposures are worse than few large exposures.

**Inhalation:** If respiratory irritation or distress occurs remove victim to fresh air. Provide oxygen if breathing is difficult. Seek medical attention if irritation develops or persists.

**Ingestion:** Do not induce vomiting. Dilute with 4 – 6 cups of water or milk. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.

**Medical conditions possibly aggravated by exposure:** contact with product may aggravate existing skin or eye conditions.

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### Section 5. Fire fighting measures

**Extinguishing media:** non combustible and non flammable – product is an extinguishing agent. Product forms foam when mixed under pressure with water.

**Unusual fire/explosion hazards:** avoid contact with water-reactive materials, burning metals, and electrically charged equipment. (see Section 10).

Insensitive to mechanical impact or static discharge.

HMIS (hazardous materials identification system) rankings:

health = 1, flammability = 0, reactivity = 0, personal protective equipment: SAR or SCBA, eye and skin protection (see Section 8)

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#### Section 6. Accidental release measures

Large spills (one drum or more) should be addressed by hazardous materials technicians following a site-specific emergency response plan and trained in the appropriate use of PPE. Clean up released material using sorbent socks for containment, followed by sorbent material inside containment. Wear appropriate APR for glycol ethers, or if concentration is unknown use supplied air (Section 8). Bag and drum for disposal. If product is used and/or contaminated, for example if mixed with fuel, use PPE and containment appropriate to the nature of the mixture. Prevent undiluted product from entering storm sewer. Handle and dispose of as a hazardous waste unless testing indicates otherwise. Decontaminate with detergent and water.

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#### Section 7. Handling and storage

Avoid eye, respiratory, and skin exposure. Use appropriate PPE (personal protective equipment) when handling, and wash thoroughly after handling (Section 8). Launder exposed clothing before reuse. Keep product in original container until use by trained personnel. Clean used equipment with soap and water before storage. Use this product only in well ventilated areas. Do not mix with other extinguishing agents.

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#### Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use air-purifying respirator (APR) or powered air-purifying respirator (PAPR) with organic vapor cartridges or universal cartridges for low or short-

term exposure, otherwise use positive pressure supplied air respirators (SAR) or self contained breathing apparatus (SCBA).

Eye protection: wear chemical goggles or full face shield.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling product.

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## Section 9. Physical and chemical properties

Appearance: Clear, medium green liquid; detergent odor

Specific gravity: ~ 1.0

Solubility: soluble in water

Non – flammable

Flash point: not applicable

Vapor pressure: <10 mm Hg @ room temperature

Vapor density (air = 1): slightly greater than 1

pH: approximately 7.6

Boiling point: ~260° F

No explosive or oxidizing properties

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## Section 10. Stability and reactivity

Stability: stable under conditions of normal use.

Incompatibles: strong acids, alkalis, and strong oxidizers at high temperature.

Decomposition products: heat of fire may release carbon monoxide, carbon dioxide.

Possibility of hazardous reactions: none

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## Section 11. Toxicological information

Acute toxicity: 2-(2-butoxyethoxy)-ethanol (diethylene glycol monobutyl ether):  
oral rat LD<sub>50</sub>: 5660 mg/kg body weight,  
skin rabbit LD<sub>50</sub>: 2700 mg/kg body weight,  
eye irritation rabbit standard Draize test: 20 mg severe

Target organs in man: eyes, CNS, kidneys. No information was found indicating the product causes sensitization.

**Chronic toxicity:** Diethylene glycol monobutyl ether is known to cause chronic skin and eye irritation after repeated low doses. It is not designated by the National Toxicology Program (NTP) or International Agency for Research on Cancer(IARC) as a known or anticipated carcinogen.

**Reproductive toxicity:** The German MAK commission lists this compound at the lowest, or Group C level, indicating no risk of damage to an embryo or fetus.

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## Section 12. Ecological information

**Ecotoxicity:** LC<sub>50</sub>/96 hour values for fish are over 100mg/l for 2-(2-butoxyethoxy)-ethanol; weak environmental toxin.

**Persistence/  
Degradability:** log K<sub>ow</sub> = 0.56 for diethylene glycol monobutyl ether: rapid photolytic degradation in air: half life < one day: low evaporation rate and water solubility will allow this material to leach into groundwater from a surface release with moderate biodegradation.

**Bioaccummulation:** limited

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## Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations. Do not flush to waterways, and seek prior approval before discharging into a sewer treatment system, due to BOD load and foaming tendency. Contact National Foam's Risk Management Administrator at (610) 363-1400 for information on disposal of used drums and approved disposal facilities.

## Section 14. Transportation information

Proper shipping name: Fire extinguisher charges or compounds N.O.I., class 60.  
This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT, IMO, IATA, RID/ADR, or Canada's TDG. The National motor freight code is 69160 Sub 0.

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## Section 15. Regulatory information

### International Inventory Status Contains ingredients on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	203-961-6
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	ECL	Yes

### European Risk and Safety phrases:

EU Classification:	Xi.	Irritant
R Phrases:	36	Irritating to eyes.
S Phrases:	24	Avoid contact with skin
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### U.S. federal regulatory information:

Glycol ethers are on the EPCRA Community Right-to-Know List, and are under SARA Section 313 and CERCLA reporting requirements. They do not have SARA threshold planning quantities (TPQs) or reportable quantities (RQs).

State regulatory information: Diethylene glycol monobutyl ether is on Pennsylvania's Right-to-Know Hazardous Substance List when present at concentrations over 1%.

California Proposition 65: No component is listed on the California Proposition 65 list.

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## Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Environmental Education & Consulting, Inc.

MEMORANDUM OF AGREEMENT BETWEEN  
FORSCOM (80<sup>th</sup> Training Command TASS)  
AND  
COMMANDER, MANEUVER TRAINING CENTER,  
FORT PICKETT, VIRGINIA ARMY NATIONAL GUARD

1. Agreement. This Memorandum of Agreement (MOA) is between FORSCOM (80<sup>th</sup> Training Command TASS, Richmond, Virginia) and Commander, Maneuver Training Center (MTC), Fort Pickett, Virginia Army National Guard (VAARNG).

2. Objective. This MOA provides for scheduling and training support as specified below for units associated with the FORSCOM Petroleum Training Module (FPTM) until 30 September 2017.

3. Background.

a. The requirement for the FPTM was established by DA DSCLOG Action Officer's Workshop Number 2 on 24 Aug 83. FORSCOM message subject: Southwest Asia Petroleum Distribution Operational Plan Training Module, 182130ZJUL88 identified Fort Pickett, VA, as the selected site for the FPTM.

b. The FPTM provides Quartermaster petroleum pipeline and terminal operating companies and engineer pipeline construction unit's hands-on training on the Inland Petroleum Distribution System (IPDS). The joint training module provides Army petroleum and engineer unit's realistic hands-on training with components of the IPDS equipment using a deployable module with either water or fuel as the training medium.

c. Effective 1 May 2016, 80<sup>th</sup> Training Command (TASS) is assigned the role of the Executive Agent for FPTM.

d. Accordingly, FORSCOM (80<sup>th</sup> Training Command TASS) desires to enter into an agreement with the VA ARNG to allow for the permanent assignment of buildings and associated land, structures, and appurtenances for support of FPTM for the duration of this agreement.

4. Scope.

a. This agreement defines the duties and responsibilities of each organization, documents the boundaries of property and establishes the terms for occupancy.

b. This MOA is applicable to Commander, ARNG-MTC, Fort Pickett, members of 80<sup>th</sup> Training Command (TASS) and any contract personnel operating or overseeing FPTM activities on Fort Pickett.

5. Responsibilities.

a. 80<sup>th</sup> Training Command (TASS):

(1) Develop scheduling of FPTM units with the MTC regarding availability of training areas and onsite support.

(2) Co-host, with the contractor, and in coordination with MTC, the annual pre-training conference at Fort Pickett.

(3) Annually review, update, and monitor environmental considerations at Fort Pickett.

(4) Annually, not later than 31 Oct, submit the proposed pipeline trace for upcoming training year to MTC Directorate of Plans, Training and Security (DPTS).

b. Maneuver Training Center.

(1) Have final approval authority for scheduling and assignment of training areas to be utilized by units training at Fort Pickett.

(2) Coordinate placement of pipeline trace; retain final approval authority.

(3) Have final approval authority for use of all training site resources by units training at Fort Pickett.

(4) Have final approval authority for use of training site resources by all outside contracting firms/individuals employed in support of the FPTM.

6. Property.

a. In lieu of any other real estate instrument, FORSCOM (80<sup>th</sup> Training Command TASS) is granted the right to use the property as a permanent tenant in conjunction with the VaARNG in accordance with Agreement Number DACA65-3-98, Department of the Army Facility Use Agreement for Training and Support of the Virginia Army National Guard and Other Department of Defense Activities, Fort Pickett Military Reservation. This property is further described in **Map Exhibit "A"**.

b. Tenant acknowledges that it has inspected the property, knows its condition, and understands that the same is granted without any representations or warranties whatsoever and without obligation on the part of the VaARNG to make any alterations, repairs or additions thereto.

c. Any interference with the use of or damage to property incident to the exercise of the privileges herein granted shall be promptly corrected to the satisfaction of the MTC Commander.

d. The Tenant shall keep the property in good order and in a clean, safe condition by and at the expense of the Tenant. Subject to the availability of funds, should there be any damage

that may be caused to property of the Army by the activities of the Tenant under this agreement, and in the event there is no funding available for repairs, the Tenant shall seek out appropriations for the repairs. The Tenant shall exercise due diligence in the protection of all property located within their boundaries against fire or damage from any and all other causes.

e. In accordance with Agreement Number DACA65-3-98, Department of the Army Facility Use Agreement for Training and Support of the Virginia Army National Guard and Other Department of Defense Activities, Fort Pickett Military Reservation, the right is reserved to the VAARNG, its officers, agents, and employees to enter upon property at any time and for any purpose necessary or convenient in connection with government purposes; to make inspections, and the Tenant shall have no claim for damages on account thereof against the VAARNG or any officer agent or employee thereof.

f. Tenant shall have the right to use in common with other parties all roads and all water, electric power, and signal lines on MTC Fort Pickett.

g. This agreement is subject to all existing easements, or those subsequently granted as well as established access routes for roadways and utilities located, or to be located, on the property, provided that the proposed grant of a new easement or route will be coordinated with the Tenant, and easements will not be granted which will in the opinion of the MTC Commander interfere with the use of the property by the Tenant.

h. The Tenant shall cut no timber, conduct no mining operations, remove no sand, gravel, or kindred substances from the ground, commit no waste of any kind, nor in any manner substantially change the contour or condition of the Premises except as authorized in writing by the MTC Commander.

i. Environmental Protection.

(1) The Tenant will use all reasonable means available to protect the environment and natural resources and to prevent pollution of its air, ground, and water. The Tenant shall comply with any laws, regulations, conditions, or instructions affecting the activity hereby authorized if and when issued by the Environmental Protection Agency, or any Federal, state, interstate or local governmental agency having jurisdiction to abate or prevent pollution. The disposal of any toxic or hazardous materials within the property is specifically prohibited. Such regulations, conditions, or instructions in effect or prescribed by said Environmental Protection Agency, or any Federal, State Interstate or local governmental agency are hereby made a condition of this License. The Tenant shall not discharge waste or effluent from the property in such a manner that the discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

(2) Where damage nonetheless occurs from activities of the Tenant, the Tenant shall be liable to restore the damaged resources subject to availability of funds. If funds are not available, the Tenant agrees to seek appropriation.

(3) The Tenant must obtain approval in writing from MTC Directorate of Public Works (DPW) before any pesticides or herbicides are applied.

(4) Historic Preservation. The Tenant shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archeological, architectural or other cultural artifacts, relics, remains or objects of antiquity. In the event such items are discovered, the Tenant shall immediately notify DPW and protect the site and the material from further disturbance until given clearance to proceed.

(5) Soil and Water Conservation. The Tenant shall maintain all soil and water conservation structures that may be in existence at the beginning of or that may be constructed by the Tenant during the term of their stay, and the Tenant shall take appropriate measures to prevent or control soil erosion within their property bounds. Any soil erosion occurring outside their property, but resulting from their activities, shall be corrected by the Tenant as directed MTC Commander.

j. Improvements.

(1) No additions to or alterations of the property shall be made without the prior written Approval of the MTC Commander and the US Property and Fiscal Officer for Virginia.

(2) Prior to the initiation of any major construction or structural changes in a building and/or demolition or removal of a structure, Tenant shall obtain written authorization, through MTC DPW. Permanent structural changes, additions, or installations made and financed by Tenant during occupancy shall remain in place and be left in condition comparable to the rest of the buildings or structures. Temporary structural changes, additions, alterations, or installations may be removed by Tenant, at its option, after giving notice of item intent, provided that, if removal is accomplished, the building or structure shall be returned to its original condition upon the request of the MTC Commander.

(3) The land and improvements, existing and to be constructed, shall be carried on the Inventory of Military Real Property of the Virginia Army National Guard. The Tenant shall provide a DD Form 1354 for all improvements to the USPFO for Virginia within 30 days of final acceptance.

(4) The Tenant shall not construct or place any structure, improvement or advertising sign or allow or permit such construction or placement without prior written approval of the MTC Commander.

k. Utilities and Services.

(1) Tenant shall pay the cost of producing or supplying any utilities and/or other services furnished by or through the VAARNG for the use of the tenant.

(2) In addition to the MOA, there also shall be a separate Interservice Support Agreement prescribing the respective operations and services to be performed by VAARNG and Tenant.

(3) This MOA does not document the obligations of funds between the Parties. Any obligation of funds in support of this MOA will be accomplished using a Military Interdepartmental Purchase Request, DD Form 448. The obligation of funds by the Parties is subject to the availability of appropriated funds pursuant to the DoD Financial Management Regulation.

1. Each Party is responsible for all costs of its personnel, including pay and benefits, support and travel. Each Party is responsible for supervision and management of its personnel.

7. Amendments. This MOA may be amended as mutually agreed by the signatories.

8. Disputes: Any disputes under this MOA will be resolved by consultation between the Parties or in accordance with DoDI 4000.19.

9. Effective Date and Duration: This MOA is effective on the date of signature. It is expressly understood and agreed that this MOA embodies the entire agreement between the Parties regarding the MOA's subject matter. Agreement will be reviewed annually. If deemed adequate, this agreement will remain until the next review cycle. Agreement expires on 7 May 2025.

FORREST.SANDRA.LI  
LLIANA.1030031705

NAME

COL Sandra L.E. Forrest  
COL, 80<sup>th</sup> TNG CMD  
Deputy Chief of Staff, G4



NAME

Timothy P Williams  
Major General VAARNG  
The Adjutant General of Virginia

MAHONEY.MARIE.MO  
NTALTO.1045520672

NAME

Marie M Mahoney  
COL NGB  
USPFO for Virginia

SCOTT.WILLIAM.PREST  
ON.JR.1047158946

NAME

William Scott  
LTC, FA, VAARNG  
Commander, MTC, Fort Pickett

Digitally signed by  
SCOTT.WILLIAM.PRESTON.JR.1047158946  
Date: 2016.04.04 11:38:52 -04'00'



## **Appendix B**

### **Preliminary Assessment Documentation**

## **Appendix B.1**

### **Interview Records**

# PA Interview Questionnaire - Environmental Manager

Facility: Fort Pickett  
 Interviewer: [REDACTED]  
 Date/Time: 1-31-2019

Interviewee: <u>[REDACTED]</u> Title: <u>Range Officer</u> Phone Number: <u>[REDACTED]</u> Email: <u>[REDACTED]</u>	Can your name/role be used in the PA Report? <b>Y</b> or N Can you recommend anyone we can interview? <b>Y</b> or N <u>[REDACTED]</u>
1. Roles or activities with the Facility/years working at the Facility.  Fort Pickett Range Officer: September 1986-2012 (Military and Civilian; currently retired [working part time])	
2. Where can I find previous facility ownership information?  Environmental office	
3. What can you tell us about the history of PFAS including aqueous film forming foam (AFFF) at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.  <b>Fire Training Areas – 1991/1992 training on the north end of Airfield 119; Army brought AFFF and the Ft Pickett FD put out the fire (ignited aircraft fuselage); Blackstone Airfield Fire Pits (BRAC-ed in 1995)</b> <b>Firefighting (Active Fire) – Rubber mat fires at Range 15 (circa 2012)</b> Crash – None known Fire Suppression Systems (Hangers/Dining Facilities) – None known; Bldg 460 never had AFFF Non-Technical/Recreational/ Pest Management – None known Metals Plating Facility - A metal plating facility existed in what was called "Pickett Park," an area now BRAC-ed. Facility may have existed between 2000-2012	
4. Fill out CSM Information worksheet with the Environmental Manager.	
5. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing the AFFF/suppression system? Do you have "As Built" drawings for the buildings?  None known	

## PA Interview Questionnaire - Environmental Manager

Facility: Fort Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

6. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? If retrofitted, when was that done?

None known

7. How is AFFF procured? Do you have an inventory/procurement system that tracks use?

Unknown, assumed to be through the environmental office

8. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

Unknown

9. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

Unknown besides the Fire Department. Army, Marines, Navy, Special Forces perform live fire training on ranges and drop zones - would bring their own AFFF for training. No incidents or AFFF use come to mind

10. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

In 1991/1992 a P-4 Pumper was used for training at the Airfield runway. During training, AFFF was used and captured using a canvas/tin pad beneath the training area. Combat batallions from Ft Brag would bring 18-24 helicopters to Ft Pickett for this sort of training. Marines, Army, Navy have all used Ft Pickett for similar training operations.

**PA Interview Questionnaire - Environmental Manager**

Facility: Fort Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

11. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

Unknown. During 1991/1992 training exercise a large canvas/tin pad captured AFFF used during training exercise on Airfield runway.

12. Can you recall specific times when city, county, and/or state personnel came on-post for training? If so, please state which state/county agency or military entity? Do you have any records, including photographs to share with us?

See 1991/1992 training response above.

13. Did military routinely or occasionally fire train off-post? List the units that you can recall used/trained at various areas.

Yes. Marines, Army, Navy.

14. Did individual units come with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Unknown

15. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No emergency response incidents with known AFFF response.

**PA Interview Questionnaire - Environmental Manager**

Facility: Fort Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

16. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No spill logs.

17. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

No

18. Are there mutual aid/use agreements between county, city, and local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement?

Yes, this is likely obtainable through the Environmental office or the Fire Department. Firefighting in local towns is handled by town fire departments. EMS is handled by the county.

19. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste treatment plants, and AFFF ponds)?

No other known locations.

20. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

No known creative uses.

**PA Interview Questionnaire - Environmental Manager**

Facility: Fort Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

21. Are there past studies you are aware of with environmental information on plants/animals/groundwater/soil types, etc., such as Integrated Cultural Resources Management Plans or Integrated Natural Resources Management Plans?

Obtainable through the Environmental Management office.

22. What other records might be helpful to us (environmental compliance, investigation records, admin record) and where can we find them?

Contact the Environmental Management office.

23. Do you have or did you have a chrome plating shop on base? What were/are the years of operation of that chrome plating shop?

A former metal plating facility existed in an area south of the airfield now BRAC-ed circa 2000-2012

24. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control? If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

Unknown

25. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

Other military entities brought their own AFFF, and took it off-post with them when they left.

**PA Interview Questionnaire - Environmental Manager**

Facility: Fort Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

26. Do you recommend anyone else we can interview? If so, do you have contact information for them?

[REDACTED] - owns a small environmental consulting business in Blackstone. He may know more about the former metal plating facility.

[REDACTED] - may know more about rubber mat fires

# PA Interview Questionnaire – Fire Station

Facility: Ft Pickett  
 Interviewer: [REDACTED]  
 Date/Time: 1-31-2019

Interviewee: <u>[REDACTED]</u> Title: <u>Ft Pickett Fire Chief</u> Phone Number: <u>[REDACTED]</u> Email: <u>[REDACTED]</u>	Can your name/role be used in the PA Report? <b>Y</b> or N Can you recommend anyone we can interview? Y or N <u>[REDACTED]</u>
1. Roles or activities with the Facility/years working at the Facility.  With the Fire Department from 1996-Present	
2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.  Maintenance (e.g., ramp washing) - <b>No</b> Fire Training Areas – <b>Yes, outside the current Fire Station, off-facility near the Airfield, 1998 live burn pit, FORSCOM Petroleum Training Module Building (3006)</b> Firefighting (Active Fire) – <b>Used AFFF in response at Range 15</b> Crash – <b>Only on-post crashes occurred pre-1960's/1970's, no records; off-post P47 crash ~1944/45</b> Fire Suppression Systems (Hangers/Dining Facilities) – <b>None use AFFF</b> Fire Protection at Fueling Stations – <b>None use AFFF</b> Non-Technical/Recreational/ Pest Management - <b>None</b>	
3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?  No buildings are constructed with AFFF suppression systems	
4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?  NA AFFF is only present in storage (drums, buckets) and on fire trucks	
5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?  Unknown, information requested	

## PA Interview Questionnaire – Fire Station

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)?  
Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

Ansul 3-6% Ansulite ARC AFFF Foam stored at Fire Department; multiple different brands used throughout tenure of Chief [REDACTED]

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

Solution is mixed in AFFF-capable fire trucks when needed.

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

AFFF is stored at the Fire Station (Building 1485) in five-gallon buckets. Approximately 40 buckets of AFFF are stored in the bays at the Fire Station. Approximately 200 gallons are also stored on two trucks. One truck can store 70 gallons; one truck can store 130 gallons. Additionally, two barrels of AFFF (approximately 100 gallons) are stored at Building 2860 for disposal; the AFFF was accidentally stored in dirty drums and now needs to be disposed of.

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

AFFF buckets are taken onto fire trucks and mixed at the location of emergency response when necessary. Fire trucks/AFFF tanks are cleaned at the Fire Station after use. Runoff at the fire station is directed towards stormwater drains.

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

Fire trucks are stored at the current fire station (Building 1485) primarily, and at times at the fire station storage building (Building 2860). AFFF trucks have been stored at Building 2860.

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

No vehicles have a history of leaking. Records for the history of cleaning are not available.

## PA Interview Questionnaire – Fire Station

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

Fire training occurs at the **current fire station**; approximately 5-10 gallons of AFFF used approximately every other year between (at least) 1996-2014/2015. Fire training also occurs at the **FORSCOM Petroleum Training Module (Bldg 3006)** area (operated by private contractors) at an unknown frequency with an unknown volume of AFFF. Fire training occurred at the **former live burn pit** most often with class A foam, but in 1998 approximately 130 gallons of AFFF was used in an aircraft rescue class to extinguish a coast guard helicopter.

Fire training also occurred off-post at the **Blackstone Army Airfield Burn Pits** a couple times per year, unknown timeframe.

13. What types of fuels/flammables were used at the FTAs?

Diesel

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

**Current Fire Station:** 5-10 gallons of AFFF used approximately every other year between (at least) 1996-2014/2015; sprayed towards storm drain or left in place in the woods.

**FORSCOM Petroleum Training Module (Bldg 3006):** unknown frequency, multiple times per year; fill concrete pits with fuel and burn.

**Former live burn pit:** 1998 one-time event using approximately 130 gallons of AFFF; left in place

**Blackstone Army Airfield Burn Pits:** a couple times per year between 1960-early 90's

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

Yes, a mutual aid agreement with city/county (agreement requested)

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Non-Fort Pickett units have come on-post for training but never used AFFF.

FORSCOM fire training is coordinated with private contractors. All fire department AFFF use is provided by the fire department.

## PA Interview Questionnaire – Fire Station

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

No, fire department did not train off-post

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No. Crashed occurred on post before the 1960s/1970s. An off-post P-47 crash occurred in the 1940s (1944/1945). Emergency response has occurred for helicopters (UH1) and Navy C-Stallions since 1969, but never used AFFF.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No fuel spill logs exist

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

AFFF was not used by the fire department for forest fires; however, rubber mats caught fire at Range 15 during tank fire and the fire department responded with AFFF

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

See response above.

Also, the fire department accidentally released less than 5 gallons of AFFF at Airfield Runway 119 while supporting the police department in high speed/skid training circa 1999.

**PA Interview Questionnaire – Fire Station**

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

No creative/non-technical/etc. uses

Other notes about former fire stations: there have been numerous previous fire station on-post: Building 460 (closed in 1987, still standing); Building 755 (gone, closed before 1986); Building 1268 (tore down before the 1970s); Building 1818 (tore down before the 1970s); Building 2110 (tore down before the 1970s); Fire Station 7 (WWII era)

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

The environmental office at Fort Pickett disposes of AFFF through the recycling center on post. Navy AFFF at Fort Pickett was disposed of in the 1990s.

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?

[REDACTED]

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 2-1-2019

<b>Interviewee:</b> <u>[REDACTED]</u> <b>Title:</b> <u>Forestry Technician / Equip Operator</u> <b>Phone Number:</b> <u>[REDACTED]</u> <b>Email:</b> <u>NA</u>	Can your name/role be used in the PA Report? <b>Y</b> or <b>N</b> Can you recommend anyone we can interview? <b>Y</b> or <b>N</b> _____
<p>1. Roles or activities with the Facility/years working at the Facility.</p> <p>1974-1997 (Forestry Technician) *No use of AFFF known to have occurred by Fort Pickett Forestry Service</p> <p>1997-2007 (DPW Equipment Operator)</p>	
<p>2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.</p> <p>Maintenance (e.g., ramp washing) - <b>No</b> Fire Training Areas – <b>No FTAs used by Forestry Service</b> Firefighting (Active Fire) – <b>No known Forestry Service use of AFFF</b> Crash – <b>No AFFF used during any crashes during tenure</b> Fire Suppression Systems (Hangers/Dining Facilities) – <b>None known</b> Fire Protection at Fueling Stations – <b>Tanks with unknown contents staged on airfield</b> Non-Technical/Recreational/ Pest Management - <b>None</b></p>	
<p>3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?</p> <p>No buildings known to use/have AFFF suppression system.</p>	
<p>4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?</p> <p>None known.</p>	
<p>5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?</p> <p>Never used AFFF, procurement/storage unknown.</p>	

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 2-1-2019

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)?  
Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

Forestry Service did not use AFFF.

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

NA

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

Not stored by the Forestry Service.

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

AFFF not used by Forestry Service.

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

Forestry Service vehicles did not store AFFF. The Forestry Service fights fires with a fireplow and a bulldozer.

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

No Forestry Service vehicles used/stored AFFF.

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 2-1-2019

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

An old burn pit was used for construction debris in the woods near the Old Hospital Area. AFFF was not used at the burn pit. The burn pit was used from approximately 1980-1982. 100 hospital buildings were burned in one day circa 1976-1978; no fire retardants were used. The Forestry Service used a bulldozer and fireplow to fight fires at Fort Pickett. Another burn pit existed near the solar field. The pit was used for burning construction debris in the mid-1980s. No AFFF ever used.

There was never a burn pit at the Old Fire Station, Building 460.

EBS-13 had a wildland fire in 1975-1976 when an airfield flare drop incidentally caused a fire. Forestry Service put out the flames without AFFF.

13. What types of fuels/flammables were used at the FTAs?

NA

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

Forestry service does not have any FTAs at Fort Pickett. The known FD training areas where AFFF may have been used include:

**Current Fire Station**

**Former live burn pit (1998 AFFF use)**

**Blackstone Army Airfield Burn Pits**

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

Yes, a mutual aid agreement with the Blackstone Fire Department

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Not for hands-on training with AFFF. Classroom training at the RTI happens for non Ft Pickett staff occasionally.

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 2-1-2019

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

Forestry Service never trained off-post

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No. The Forestry Service fought approximately 27-30 wildland fires per year. Records were not kept for each fire. Fire Department at times assisted, but never used AFFF. Fires did occur on Range 15 that DF used AFFF on. Only Range 15 has the rubber mats that regularly caught fire. Rubber mats are only in the original portion of the range, not the expanded areas.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No fuel spill logs exist

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

AFFF was not used by the fire department or Forestry service for forest fires.

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

See response to question 14.

The Forestry Service at one point used less than 5-gallons of AFFF in response to a fire at an unknown location and unspecified time.

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: Witte  
Date/Time: 2-1-2019

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

None

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

Unknown

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?

None

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

<b>Interviewee:</b> <u>[REDACTED]</u> <b>Title:</b> <u>FORSCOM Program Manager</u> <b>Phone Number:</b> <u>[REDACTED]</u> <b>Email:</b> <u>[REDACTED]</u>	Can your name/role be used in the PA Report? <b>Y</b> or <b>N</b> Can you recommend anyone we can interview? <b>Y</b> or <b>N</b> <u>                    </u> <b>No</b> <u>                    </u>
<p>1. Roles or activities with the Facility/years working at the Facility.</p> <p>2003-Present (All answers in this interview are specific to FORSCOM training module area) The FORSCOM Petroleum Training Module is contracted through USARC (Richmond; 80<sup>th</sup> Division)</p> <p>(Army policy that went into effect ~1 year ago stated that AFFF is only permissible for emergencies; AFFF has not been used since August 2017 at the Petroleum Training Modules)</p>	
<p>2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.</p> <p>Maintenance (e.g., ramp washing) - <b>No</b> Fire Training Areas – <b>FORSCOM FTA used ~5 gallons AFFF per year between 2003-2005; ~15 gallons per year between 2005-2017</b> Firefighting (Active Fire) – <b>No firefighting performed by FORSCOM</b> Crash – <b>NA</b> Fire Suppression Systems (Hangers/Dining Facilities) – <b>No AFFF in the FORSCOM suppression system</b> Fire Protection at Fueling Stations – <b>NA</b> Non-Technical/Recreational/ Pest Management - <b>None</b></p>	
<p>3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?</p> <p>The FORSCOM building does not have an AFFF suppression system.</p>	
<p>4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?</p> <p>None known.</p>	
<p>5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?</p> <p>FORSCOM provides AFFF for training exercises but hasn't been procured in approximately 5 years. AFFF is procured through a private company/contractor.</p>	

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)?  
Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

6% AFFF diluted in a trailer stored at the storage building (Building 977)

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

AFFF is mixed at the training module location (behind Building 3006) in a trailer. Sprayed at training area which is surrounded by gravel.

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

AFFF is stored in a separate AFFF storage room (Building 977), managed by FORSCOM. Shown on markup map. Only 1 trailer actively stores diluted AFFF at a time. Remaining AFFF is stored in 5 gallon buckets (approximately 40-60 buckets).

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

AFFF is mixed at the training module location (behind Building 3006). AFFF is never transferred from trailer to any other vehicle. AFFF in buckets is mixed into trailer at Building 3006.

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

One trailer is used at a time. Unknown number of trailers used throughout history of FORSCOM training activities.

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

One trailer is used at a time for AFFF mixing. It has no history of leaking.

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

FORSCOM only trains at Building 3006, and only stores AFFF at Building 977.

13. What types of fuels/flammables were used at the FTAs?

Diesel

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

FORSCOM FTA used ~5 gallons AFFF per year between 2003-2005; ~15 gallons per year between 2005-2017. Ft Pickett Fire Department only trained at FORSCOM FTA ~2 times since 2003. Army Reserve is the most frequent user of the FORSCOM FTA.

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

FORSCOM does not have a mutual aid agreement with anyone.

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Army, Army Reserve, National Guard, various state guards, etc. have trained at the FORSCOM Petroleum Training Module area. Army Reserve has been the most frequent user of the FORSCOM FTA.

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: [REDACTED]  
Date/Time: 1-31-2019

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

FORSCOM did not train anywhere other than Building 3006

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No fuel spill logs exist

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

FORSCOM has not used AFFF in response to forest fires.

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

See response to question 14.

No other locations known

## PA Interview Questionnaire

Facility: Ft Pickett  
Interviewer: Witte  
Date/Time: 1-31-2019

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

None

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

The same company that provides AFFF manages disposal

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?

None

## **Appendix B.2**

### **Visual Site Inspection Checklist**

## Visual Site Inspection Checklist

Names(s) of people performing VSI:

Recorded by:

ARNG Contact:

Date and Time: 2019

Method of visit (walking, driving, adjacent): Walking

### Source/Release Information

Site Name / Area Name / Unique ID:

Blackstone Airfield Burn Pits

Site / Area Acreage:

5 acres

Historic Site Use (Brief Description):

Fire training burn pits

Current Site Use (Brief Description):

Wooded, unused

Physical barriers or access restrictions:

None

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

FTA was used until 1989 for fire-fighting training. Liquids such as used motor oil, diesel fuel, and jet fuels were poured onto standing water in the pit and ignited. Training staff would extinguish the fire with water.

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

No

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

None; located in wooded area north of the airfield

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

Yes; north of the airfield

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

No; located outside

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Surface water at the FTA is limited to a small, intermittent creek in the northeast corner of the site. A channeled man-made ditch connects the FTA to this creek. There is water flowing in the ditch only after storm events.

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

See above

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

monitoring wells were installed as a part of interim removal action

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

An intermittent creek exists 0.1 miles northeast of the former FTA; a drainage ditch connects the former FTA to the intermittent creek

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

No

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

No, but an interim removal action was conducted during CERCLA investigation; 1,033 tons of soil were removed.

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Yes

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

No

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Anyone

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

See previous response regarding intermittent creek

## Visual Site Inspection Checklist

Names(s) of people performing VSI:

Recorded by:

ARNG Contact:

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### Source/Release Information

Site Name / Area Name / Unique ID:

Former Building 460 (Former Fire Station)

Site / Area Acreage:

approximately 0.4 acres

Historic Site Use (Brief Description):

Formerly used as the Fort Pickett fire station

Current Site Use (Brief Description):

Building 493 (current use unknown) and adjacent storage yard

Physical barriers or access restrictions:

Fort Pickett perimeter fence

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

No known releases of AFFF at the site, but may have been stored there

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

No, Building closed in 1987

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

Fort Pickett cantonment area

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No, but Blackstone Army Airfield located approximately 0.45 miles northeast

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

**Y / N**

1a. If yes, indicate which type of AFFF has been used:

Unknown, but no AFFF exists at the site

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

**Y / N**

1a. If so, note observation and location:

Site drainage flows east

2. Is there channelized flow within the site/area?

**Y / N**

2a. If so, please note observation and location:

Drainage ditch exists on the south side of the site

3. Are monitoring or drinking water wells located near the site?

**Y / N**

3a. If so, please note the location:

Monitoring wells are present

4. Are surface water intakes located near the site?

**Y / N**

4a. If so, please note the location:

No

5. Can wind dispersion information be obtained?

**Y / N**

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

**Y / N**

6a. If so, please note the source and location.

No non-Fort Pickett sources are known or speculated

6b. Will off-site reconnaissance be conducted?

**Y / N**

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

In November 2001, 940 tons of soil were excavated and removed from six areas of concern at the site

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Area east of site is wooded

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No observed erosion

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No standing water observed

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

Yes, restricted via Fort Pickett perimeter fence

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

Residences exist on W Entrance Rd approximately 0.9 miles to the west

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

Yes, a wetland exists less than 0.1 miles west of the site

## Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID: Building 977 (FORSCOM AFFF Storage)

Site / Area Acreage: approximately 0.25 acres storing AFFF

Historic Site Use (Brief Description): Storage

Current Site Use (Brief Description): Storage

Physical barriers or access restrictions: Fort Pickett perimeter fence; fence to the storage area

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

AFFF used by FORSCOM in training is stored at the building

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

AFFF storage is not documented

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

Only Fort Pickett buildings/infrastructure are present

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No, Blackstone Army Airfield located approximately 1.2 miles northwest

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

No

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Site drainage is unknown, but a stream exists less than 0.1 mile to the east

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

No drainage ditches were observed

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

No known drinking water

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

See previous response regarding stream

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

No non-Fort Pickett sources are known or speculated

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

No, has been used as a storage building for known use of interviewees

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

The storage area is paved, but wooded to the east and south

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No observed erosion

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No standing water observed, but NWI shows streams nearby

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

A gate restricts driving onto the storage area, and the Fort Pickett perimeter fence restricts access to the installation

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff, specificall FORSCOM staff

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

Yes, streams exist nearby

## Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID:

Building 3006, FORSCOM Petroleum Training Module Area

Site / Area Acreage:

Approximately 2.2 acres (including buildings, training areas, yards)

Historic Site Use (Brief Description):

Fire Training

Current Site Use (Brief Description):

Fire training

Physical barriers or access restrictions:

Fort Pickett perimeter fence

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

Yes, used for fire training activities

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

No

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

None, located near Fort Pickett Cantonment area

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

No

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

AFFF used for training is used or disposed of by the private company that provides it; unknown frequency of disposal

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA, AFFF only used in the backyard training area

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Drainage escaping the training area flows downslope towards a stream located less than 0.1 miles NE

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

No channelized flow in training area, but there is a nearby stream

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

None known

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

Yes, see previous response

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

No non-Fort Pickett PFAS sources identified

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

The site has been used as a fire training area since at least 2003

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Areas N, E, and S are wooded

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

Yes, restricted to public by Fort Pickett perimeter fence

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Only Fort Pickett staff

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

Yes, see previous response

## Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID:

Building 1485 (Current Fire Station)

Site / Area Acreage:

Approximately 1 acre (buildings and yard)

Historic Site Use (Brief Description):

Fire Station

Current Site Use (Brief Description):

Fire Station

Physical barriers or access restrictions:

Fort Pickett perimeter fence

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

Yes, AFFF is stored and has been occasionally used for training the the Fire Station

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

No

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

Fort Pickett cantonment area

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

**Y / N**

1a. If yes, indicate which type of AFFF has been used:

No AFFF in the suppression system at the Fire Station

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Floor drains lead to stormwater drains

### ***Transport / Pathway Information***

#### Migration Potential:

1. Does site/area drainage flow off installation?

**Y / N**

1a. If so, note observation and location:

Floor drains lead to stormwater drains. There is a WWTP on facility

2. Is there channelized flow within the site/area?

**Y / N**

2a. If so, please note observation and location:

Flow is channelized to stormwater drains

3. Are monitoring or drinking water wells located near the site?

**Y / N**

3a. If so, please note the location:

No

4. Are surface water intakes located near the site?

**Y / N**

4a. If so, please note the location:

No

5. Can wind dispersion information be obtained?

**Y / N**

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

**Y / N**

6a. If so, please note the source and location.

No

6b. Will off-site reconnaissance be conducted?

**Y / N**

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

No

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Portions of the surrounding area are vegetated

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

Yes; the Fort Pickett perimeter fence restricts access

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff, specifically the FD staff

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

No

## Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID:

Former Live Fire Burn Pit

Site / Area Acreage:

Approximately 2 acres (including current AST staging area)

Historic Site Use (Brief Description):

Used as a live brush fire burn pit; 1998 use included aircraft fire and AFFF use

Current Site Use (Brief Description):

AST storage area.

Physical barriers or access restrictions:

Fort Pickett perimeter fence

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

Yes, approximately 130 gallons of AFFF used during 1998 training event

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

No, but photo may exist; aircraft used in training remains at the site

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

None

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

No

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Drainage at the site flows southwest

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

No, but streams exist approximately 0.1 and 0.25 miles south and west of the site, respectively

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

None known

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

See previous response

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

None known

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

No

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Yes, the area is a gravel staging area surrounded by woods

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

Erosion may be taking place on the western edge of the site, where the aircraft exists

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No standing water observed

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

Yes, restricted via the Fort Pickett perimeter fence

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

See previous responses regarding streams

## Visual Site Inspection Checklist

Names(s) of people performing VSI:

Recorded by:

ARNG Contact:

Date and Time: January 31, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID:

Former Hangar

Site / Area Acreage:

Approximately 0.4 acres

Historic Site Use (Brief Description):

Former Blackstone Army Airfield Hangar

Current Site Use (Brief Description):

None, dilapidated hangar still standing; preserved for historic reasons

Physical barriers or access restrictions:

Fort Pickett/airfield perimeter fence

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

None known, although fire training occurred in burn nearby burn pits and aircraft training which may have involved AFFF occurred on airfield

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

NA

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

NA, airfield operations

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

Yes, located on Blackstone Army Airfield

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

Yes, but only water was used

1b. If yes, describe maintenance schedule/leaks:

Unknown; only water used

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Floor drains unknown

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

During use, floor drains would capture runoff. Drain direction unknown.

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

None observed

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

Unknown

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

A stream exists approximately 0.3 miles northeast

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

None known

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

Hangar is no longer used, but still stands.

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Area to the north is vegetated

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

None observed

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

Yes, restricted via airfield perimeter fence

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff, specifically those cleared to enter the airfield

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

No

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

No

## Visual Site Inspection Checklist

Names(s) of people performing VSI:

Recorded by:

ARNG Contact:

Date and Time: February 1, 2019

Method of visit (walking, driving, adjacent): Walking

### *Source/Release Information*

Site Name / Area Name / Unique ID:

Range 15

Site / Area Acreage:

approximately 280 acres with possible AFFF use at 16 locations

Historic Site Use (Brief Description):

Firing range

Current Site Use (Brief Description):

Firing range

Physical barriers or access restrictions:

No barriers

1. Was PFAS used (or spilled) at the site/area?

Y / N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

AFFF was used in response to rubber mat fires at up to 16 firing point locations

2. Has usage been documented?

Y / N

2a. If yes, keep a record (place electronic files on a disk):

AFFF use was not documented

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

No industries nearby

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants:

No

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

No, but AFFF has been used in response to fires on the range

1b. If yes, describe maintenance schedule/leaks:

NA

1c. If yes, how often is the AFFF replaced:

NA

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

NA

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Site drainage flows radially away from the firing points, but the area is large and flow is localized

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

No drainage ditches were observed

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

No known wells, but a spigot exists on the maintenance building restroom north of Route 40

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

No, spigot exists north of Route 40 but is not used for drinking water

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

No

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

No non-Fort Pickett sources are known or speculated

6b. Will off-site reconnaissance be conducted?

Y / N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

**Y / N**

1a. If so, please describe change (ex. Structures no longer exist):

Range 15 was opened approximately 10 years ago

2. Is the site/area vegetated?

**Y / N**

2a. If not vegetated, briefly describe the site/area composition:

Yes, the range is vegetated and wooded outside the range

3. Does the site or area exhibit evidence of erosion?

**Y / N**

3a. If yes, describe the location and extent of the erosion:

No observed erosion

4. Does the site/area exhibit any areas of ponding or standing water?

**Y / N**

4a. If yes, describe the location and extent of the ponding:

No standing water observed, but NWI shows a wetland in the center of the range

### ***Receptor Information***

1. Is access to the site restricted?

**Y / N**

1a. If so, please note to what extent:

A gate restricts driving onto the range, but no physical barriers prevent access to pedestrians

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological**

2a. Circle all that apply, note any not covered above:

Fort Pickett staff, any civilian can access the range

3. Are residential areas located near the site?

**Y / N**

3a. If so, please note the location/distance:

The nearest residence is approximately 0.3 miles northeast of the range

4. Are any schools/day care centers located near the site?

**Y / N**

4a. If so, please note the location/distance/type:

No, but the Butterwood United Methodist Church is 0.3 miles east of the range

5. Are any wetlands located near the site?

**Y / N**

5a. If so, please note the location/distance/type:

Yes, a streams and wetlands exist east, south, and west of the range

## **Appendix B.3**

### **Conceptual Site Model Information**

## Preliminary Assessment – Conceptual Site Model Information

Site Name: Fort Pickett

---

Why has this location been identified as a site?

---

It is a training facility with a history of known AFFF use and storage, as well as potential emergency responses in association with the historical airfield.

---

Are there any other activities nearby that could also impact this location?

---

Adjacent fire training academy, landfill, and BRAC parcels formerly associated with Fort Pickett and used by VAARNG.

---

Training Events

Yes - Fire Station, Building 3006, Live Fire Burn Pit, Airfield Burn Pits (BRAC), Airfield Runway 1/19

Have any training events with AFFF occurred at this site?

---

If so, how often? Unknown, varies from FTA to FTA

---

How much material was used? Is it documented? Varies, most often undocumented

---

**Identify Potential Pathways:** Do we have enough information to fully understand over land surface water flow, groundwater flow, and geological formations on and around the facility? Any direct pathways to larger water bodies?

**Surface Water:**

Surface water flow direction? General runoff flow across Fort Pickett is southeast.

---

Average rainfall? 46.04 inches

---

Any flooding during rainy season? No significant flooding

---

Direct or indirect pathway to ditches? Yes, at various release areas

---

Direct or indirect pathway to larger bodies of water? Unnamed tributaries, Hurricane Branch, Birch Creek, Nottoway River

---

Does surface water pond any place on site? Yes, various water bodies at different release areas

---

Any impoundment areas or retention ponds? Retention pond located at Airfield 1/19

---

Any NPDES location points near the site? Unknown

---

How does surface water drain on and around the flight line? East and west away from the flightline

---

## Preliminary Assessment – Conceptual Site Model Information

### Groundwater:

Groundwater flow direction? Southeast

Depth to groundwater? 7 to 33 ft bgs

Uses (agricultural, drinking water, irrigation)? No use of groundwater at Fort Pickett

Any groundwater treatment systems? Unknown

Any groundwater monitoring well locations near the site? Yes, near EBS-13, potentially more

Is groundwater used for drinking water? No

Are there drinking water supply wells on installation? No

Do they serve off-post populations? No

Are there off-post drinking water wells downgradient None listed, but unlisted wells potentially exist

### Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? Town of Blackstone WWTP on post

If so, do we understand the process and which water is/was treated at the plant? Sanitary sewer water is treated

Do we understand the fate of sludge waste? Sludge fate is unknown

Is surface water from potential contaminated sites treated? Yes

### Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go?

Firefighting equipment is rinsed at the Fire Station, which drains to the WWTP

2. Are nozzles tested? How often are nozzles tested? Where are nozzles tested? Are nozzles cleaned after use? Where does the rinse water flow after cleaning nozzles?

See response above

3. Other?

## Preliminary Assessment – Conceptual Site Model Information

### Identify Potential Receptors:

Site Worker Yes

Construction Worker Yes

Recreational User Off-facility

Residential Off-facility

Child Off-facility/recreational user

Ecological Yes

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?

Pickett Park Day Care Center, Southside VA Community College, Poplar Lawn Baptist Church, Blackstone Baptist Church, Southern Piedmont Agricultural Research and Extension Center

### Documentation


Ask for Engineering drawings (if applicable).

Has there been a reconstruction or changes to the drainage system? When did that occur?

None known


## **Appendix C**

### **Photographic Logs**

<b>Client Name:</b> Army National Guard		<b>Site Location</b> Fort Pickett, VA	<b>Project No.</b> 60552172
<b>Area:</b>	1998 Live Fire Burn Pit		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	1		
<b>Date:</b>	<b>Time</b>		
1/31/2019	9:11		
<b>Description</b> Picture depicting the 1998 live fire training exercise at the former burn pit off of Garnett Avenue. The exercise included spraying AFFF to suppress flames on a coast guard aircraft.			
			

<b>Area:</b>	Building 1485		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	2		
<b>Date:</b>	<b>Time</b>		
1/31/2019	9:57		
<b>Description</b> AFFF-capable fire truck stored at the current fire station, Building 1485. The AFFF nozzle control lever is pictured to the left.			
			

<b>Client Name:</b> Army National Guard		<b>Site Location</b> Fort Pickett, VA	<b>Project No.</b> 60552172
<b>Area:</b>	Building 1485		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	3		
<b>Date:</b> 1/31/2019	<b>Time</b> 9:59		
<b>Description</b> Ansul 3-6% Ansulite ARC AFFF stored in five-gallon buckets in the current fire station, Building 1485.			




<b>Area:</b>	Building 1485		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	4		
<b>Date:</b> 1/31/2019	<b>Time</b> 10:06		
<b>Description</b> The back parking lot of the current fire station, Building 1485, where approximately 5-10 gallons of AFFF has been sprayed in training approximately every other year between 1996-2015. Fire trucks are also washed in this area.			




<b>Client Name:</b> Army National Guard		<b>Site Location</b> Fort Pickett, VA	<b>Project No.</b> 60552172
<b>Area:</b>	Building 977		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	5		
<b>Date:</b>	<b>Time</b>		
1/31/2019	11:43		
<b>Description</b> AFFF stored on pallets in Building 977, the FORSCOM storage building.			



<b>Area:</b>	1998 Live Fire Burn Pit		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	6		
<b>Date:</b>	<b>Time</b>		
1/31/2019	15:12		
<b>Description</b> Coast Guard helicopter at the 1998 live fire burn pit location, used during the AFFF fire training exercise pictured in old photographs.			



<b>Client Name:</b> Army National Guard		<b>Site Location</b> Fort Pickett, VA	<b>Project No.</b> 60552172
<b>Area:</b>	Runway 1/19		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	7		
<b>Date:</b>	<b>Time</b>		
1/31/2019	15:45		
<b>Description</b> The north end of Runway 1/19 where 1991 aircraft fire training that used AFFF was described.			
<b>Area:</b>	Blackstone Army Airfield Burn Pits		
<b>Location:</b>	Fort Pickett		
<b>Photo ID:</b>	8		
<b>Date:</b>	<b>Time</b>		
1/31/2019	16:18		
<b>Description</b> The location of the former Blackstone Army Airfield Burn Pits. The area has been excavated and capped since its use for fire training.		