
FINAL DECISION DOCUMENT

**FORMER SCHENECTADY ARMY DEPOT
AREAS OF CONCERN 1 AND 7:
U.S. ARMY SOUTHERN LANDFILL AND
TRIANGULAR DISPOSAL AREA**

**FORMERLY USED DEFENSE SITE
CO2NY000203**

GUILDERLAND, NEW YORK

PREPARED FOR:



**US Army Corps
of Engineers®
New York District**

JULY 2011

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ABBREVIATIONS/ACRONYMS AND GLOSSARY

ACEMC	Albany County Environmental Management Council
ACHD	Albany County Health Department
AOC	Area of Concern – portion of a site designated for further study.
ARARs	<p>Applicable requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.</p> <p>Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.</p>
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act – federal statute that concerns responses to releases of threats of releases of hazardous substances, pollutants, or contaminants, and concerns compensation and liability
CFR	Code of Federal Regulations – compilation of Federal regulations
COC	Contaminant of Concern – contaminant suspected to be site-related.
DA	Department of the Army
DERP	Defense Environmental Restoration Program – Congressionally authorized in 1986, DERP promotes and coordinates efforts for the evaluation and cleanup of contamination at Department of Defense installations and Formerly Used Defense Sites.
DERP-FUDS	Defense Environmental Restoration Program for Formerly Used Defense Sites
DoD	Department of Defense

ABBREVIATIONS/ACRONYMS AND GLOSSARY (CONTINUED)

EE/CA	Engineering Evaluation / Cost Analysis – Section 300.415(b)(4)(i) of the NCP requires an EE/CA for all non-time-critical removal actions (NCRAs). The goals of the EE/CA are to identify the extent of a hazard, to identify the objectives of the removal action, and to analyze the various alternatives that may be used to satisfy these objectives for cost, effectiveness, and implementability. An EE/CA serves an analogous function to, but is more streamlined than, the remedial investigation/feasibility study (RI/FS) conducted for remedial actions. The results of the EE/CA and the selected removal action are summarized in the Action Memorandum.
EIS	Environmental Impact Statement
FSADVA	Former Schenectady Army Depot – Voorheesville Area
FUDS	Formerly Used Defense Site– a facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances. By the Department of Defense Environmental Restoration Program (DERP) policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to 17 October 1986.
HHRA	Human Health Risk Assessment – an evaluation of the risk posed to humans from exposure to contaminants.
LLDPE	liner low density polyethylene
LUC	Land Use Control – Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, contaminated property to reduce risk to human health and the environment.
MNA	Monitored Natural Attenuation - Natural attenuation relies on natural processes to clean up or <i>attenuate</i> pollution in soil and groundwater.
MW	monitoring well – a hollow pipe drilled into the ground, used to collect groundwater samples.
NCP	National Oil and Hazardous Substances Pollution Contingency Plan – regulations that implement and provide a regulatory framework for CERCLA.
NEIP	Northeastern Industrial Park – current name for the property that was formerly the Schenectady Army Depot – Voorheesville Area.
NYCRR	New York Code of Rules and Regulations – compilation of New York State regulations.
NYS	New York State – state in which the Former Schenectady Army Depot—Voorheesville Area (FSADVA) is located.
NYSDEC	New York State Department of Environmental Conservation – regulatory body for environmental issues in New York State.

ABBREVIATIONS/ACRONYMS AND GLOSSARY (CONTINUED)

NYSDOH	New York State Department of Health – regulatory body for health issues in New York State.
PAHs	polycyclic aromatic hydrocarbons – PAHs are created when products like coal, oil, gas, and garbage are burned but the burning process is not complete.
PCBs	polychlorinated biphenyls - A group of toxic, persistent chemicals used in electrical transformers and capacitors for insulating purposes, and in gas pipeline systems as lubricant.
RAB	Restoration Advisory Board – a forum for the discussion and exchange of information between representatives of the Department of Defense (DoD), regulators, state and local governments, tribal governments, and the affected community. RABs provide an opportunity for stakeholders to have a voice and actively participate in the review of technical documents, to review restoration progress, and to provide individual advice to decision makers regarding restoration activities at FUDS Properties and Projects.
RAGS	Risk Assessment Guide for Superfund – USEPA guidance for performing
RI	Remedial Investigation – An in-depth study designed to gather the data necessary to determine the nature and extent of known contamination at a site, assess risk to human health and the environment, and establish criteria for cleaning up the site.
SADVA	Schenectady Army Depot – Voorheesville Area
SLERA	screening-level ecological risk assessment – an abbreviated form of an ecological risk assessment that assesses the health of plants and animals at a site.
TAGM	Technical and Administrative Guidance Memorandum – a series of guidance documents published by NYSDEC.
TCE	trichloroethene – a volatile organic compound, typically used as a degreaser.
µg/L	micrograms per liter - unit of measure for contaminants in water.
USACE	United States Army Corps of Engineers - The USACE has day-to-day program management and execution responsibilities for the FUDS Program.
USEPA	United States Environmental Protection Agency - The mission of the Environmental Protection Agency is to protect human health and the environment.
UU/UE	unlimited use and unrestricted exposure
VC	vinyl chloride – a volatile organic compound.
VOCs	volatile organic compounds – compounds that are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, and office equipment.

SECTION 1

DECLARATION

1.1 SITE NAME AND LOCATION

The former Schenectady Army Depot-Voorheesville Area (SADVA) is located one-quarter mile southeast of the Village of Guilderland Center, New York (Figure 1). The Department of Defense (DoD) used the SADVA property from 1941 through 1969. The site was originally constructed as a regulating station and a holding and reconsignment point, and later became a general Army depot. The principal mission of the installation was the receipt, storage, maintenance, and distribution of supply items for the U.S. Department of the Army. The SADVA site is now privately owned and known as the Northeastern Industrial Park.

Area of Concern (AOCs) 1 and 7 consist of two adjacent areas, the U.S. Army Landfill and the Triangular Disposal Area (Figure 2). AOC 1 is a former U.S. Army landfill located in the southern portion of SADVA. AOC 7 is a triangular-shaped area located on dry, open ground between existing and former railroad tracks at the south end of SADVA.

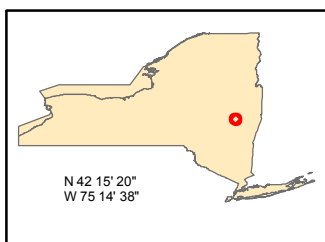
1.2 STATEMENT OF BASIS AND PURPOSE

United States Army Corps of Engineers (USACE) performs response actions for hazardous substances at Formerly Used Defense Site (FUDS) pursuant to: the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

AOCs 1 and 7 were included in a remedial investigation (RI) for the SADVA conducted by Parsons under contract to the USACE during the period 1999-2007. In addition, the AOC 1 Southern Landfill was the subject of a separate RI completed in 1996 by Malcolm Pirnie and URS, Inc under contract to the USACE.

A feasibility study (FS) for AOCs 1 and 7 was completed by Parsons in 2010. The FS evaluated a range of options for addressing the human health and environmental risks posed by the sites. In February 2011, a Proposed Plan was issued for AOCs 1 and 7, with a selected alternative of no further action for AOC 7 and a Containment Presumptive Remedy and groundwater monitoring for AOC 1. The Proposed Plan provided for a public comment period and public meeting, to give the public an opportunity to voice their comments, and/or to provide them in writing.

The Administrative Record, which concerns information relevant to our decision making for this site, may be reviewed at the Guilderland Public Library, 2228 Western Avenue, Guilderland New York, or at the Voorheesville Public Library, 51 School Road, Voorheesville, New York.



The photo mosaic above, downloaded from the New York State Geospatial Clearinghouse, is a false color infrared image. One characteristic of this type of image is that most healthy vegetation (with the exclusion of many conifer species) appears in red instead of green. The "redness" indicates vegetation density, type and whether growing on dry land or in a swamp. Grasslands appear light red, deciduous trees and croplands appear red, and coniferous forests appear dark red or maroon. Paved areas and buildings can appear bluish green.



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Feet

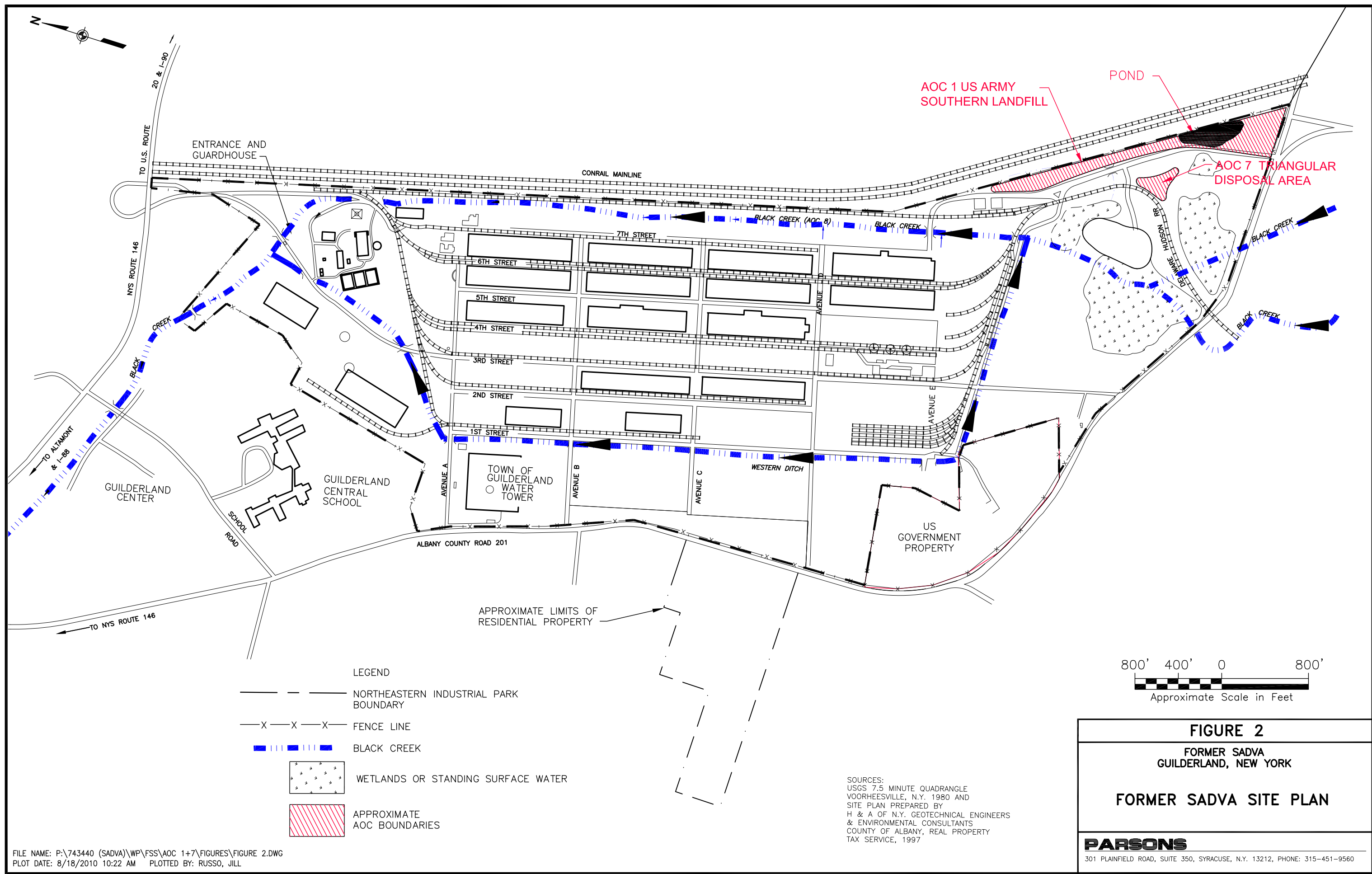
FIGURE 1

SADVA
Guilderland, New York

SITE AND VICINITY

PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 PHONE: (315) 451-9560



FILE NAME: P:\743440 (SADVA)\WP\FSS\AOC 1+7\FIGURES\FIGURE 2.DWG
PLOT DATE: 8/18/2010 10:22 AM PLOTTED BY: RUSSO, JILL

SOURCES:
USGS 7.5 MINUTE QUADRANGLE
VOORHEESVILLE, N.Y. 1980 AND
SITE PLAN PREPARED BY
H & A OF N.Y. GEOTECHNICAL ENGINEERS
& ENVIRONMENTAL CONSULTANTS
COUNTY OF ALBANY, REAL PROPERTY
TAX SERVICE, 1997

FIGURE 2
FORMER SADVA
GUILDERLAND, NEW YORK

FORMER SADVA SITE PLAN

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

1.3 ASSESSMENT OF THE SITE

Based on the RI conducted in 1997 (Malcolm-Pirnie) and 2007 (Parsons), the primary contaminants of concern (COCs) identified in soil at AOC 1 were polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, and arsenic. It should be noted that soils and wastes in the landfill were not fully characterized. Meeting groundwater ARARs is the primary driver in the remedial action. COCs in groundwater at AOC 1 are trichloroethene (TCE), 1,2-dichloroethene (total), vinyl chloride (VC) and 1,2-dichloroethane..

The primary objective of the human health risk assessment (HHRA) performed during the RI was to quantitatively characterize the human health risk associated with current and potential future exposure to contaminated media at AOCs 1 and 7. All potentially complete exposure pathways for the site were evaluated based on more protective exposure scenarios (*e.g.*, the residential scenarios provide very conservative (health-protective) estimates for standard site worker scenarios). The HHRA concluded the following:

- There are no unacceptable health risks calculated for soils at AOCs 1 and 7. It should be noted that the soils/wastes in the AOC 1 landfill were not fully characterized by the remedial investigation. Contaminated soils/wastes in the center of the AOC 1 landfill may pose an unacceptable risk.
- Unacceptable health risks are posed by the VOCs and metals in groundwater at AOC 1, if groundwater is used as a drinking water source. Therefore, the remedial action objectives include addressing groundwater at AOC 1.
- No unacceptable risks were calculated for sediment at AOCs 1 and 7.
- An unacceptable risk was calculated for surface water at AOC 1, if the pond water were to be used as a residential drinking water source. However, the pond water is not presently nor planned to be used as a drinking water source, so no unacceptable risk is considered to be present given the present New York State Department of Environmental Conservation (NYSDEC) classification (Class C) of the pond. Class C waters are suitable for fishing and fish propagation. There is no surface water associated with AOC 7.

After the HHRA was completed, NYSDEC promulgated new risk-based soil cleanup objectives under Title 6 New York Codes, Rules and Regulations. Subsequent to the HHRA, NYSDEC requested that soil concentrations at AOC 1 be compared with the soil cleanup objectives. The concentrations of PAHs and/or arsenic were above the Part 375 industrial land use cleanup objectives for seven grab soil samples collected within the limits of AOC 1. Even though concentrations reported from some grab samples exceeded the Part 375 decision limits/cleanup goals, it is unknown whether a significant portion of the landfill exceeds these decision limits; the volume of material in the landfill that exceeds the cleanup goals was not quantified.

No buildings currently exist at AOC 1 or AOC 7; however, a vapor intrusion screening was completed to assess the potential for a vapor intrusion health risk should a building be constructed in the area in the future. The screening suggested that vapor intrusion could pose a

risk if new buildings will be constructed within the lateral limits of the VOC groundwater plume in southern portion of the AOC 1 landfill.

The RI characterization found no contamination at AOC 7 that requires remedial action.

1.4 DESCRIPTION OF THE SELECTED REMEDY

Based on the evaluation presented in the FS and the Proposed Plan, the selected alternative for AOC 1 is Alternative 3 – Landfill Cover and Cap / Groundwater Monitored Natural Attenuation (MNA) / Land Use Controls (LUCs).

This alternative will institute the Containment Presumptive Remedy for the landfill, will provide the best balance of the threshold, primary balancing and modifying criteria, and will satisfy the remedial action objectives for this site, which are:

- Eliminate or minimize the human health risks posed by trichloroethene, VC, 1,2-dichloroethane, and total-1,2-dichloroethene in groundwater within the landfill by satisfying the Class GA groundwater standards applicable or relevant and appropriate requirements (ARARs) for these analytes. This remedial action objective will be satisfied by prohibiting potable use of groundwater in the vicinity of AOCs 1 & 7 (the VOC ARARs will be satisfied with a groundwater use easement granted by the property owner; the easement is considered an institutional control), and supplemented with groundwater MNA (and monitoring of VOC concentrations). Metals (arsenic, vanadium, selenium and antimony) also pose an unacceptable risk in groundwater. The presence of these metals will be addressed by the environmental easement prohibiting potable use of groundwater at AOC 1. Metals are not included as COCs for groundwater because the concentrations are not expected to be treated by MNA and therefore will not be monitored over time, as will be the case with VOCs;
- Although soils have not been completely characterized, the remedial action will eliminate the soil exposure pathway;
- Mitigate the potential for future releases of contaminants in the landfill to groundwater. This remedial action objective will be satisfied with the landfill cap over the groundwater plume.
- Mitigate the potential for movement and offsite migration of trichloroethene, VC, 1,2-dichloroethane, and total-1,2-dichloroethene from the groundwater plume within the landfill. This remedial action objective will be satisfied with the landfill cap over the groundwater plume.

1.5 STATUTORY DETERMINATIONS

1.5.1 Statutory Requirements

The Selected Remedy complies with Federal and State requirements that are ARAR to the remedial action; the action is cost-effective, and utilizes the Presumptive Remedy for military landfills. The ARARs for AOC 1 are presented in Table 1.

Table 1
Former Schenectady Army Depot - Voorheesville Area, AOC 1
Summary of ARARs

Groundwater ARARs	
Chemical Parameter	6 NYCRR §703.5(f), Table 1
1,2-Dichloroethane (DCA)	0.6
1,2-Dichloroethene (total)	5
	Federal MCL - 40 CFR §141.61
Trichloroethene (TCE)	5
Vinyl Chloride (VC)	2

Soil ARARs	
Chemical Parameter	6 NYCRR §375-6.8, Table 375-6.8(b)
Benzo(a)pyrene (PAH)*	1,100
Total PAHs	1,000,000
Arsenic	16,000

Other ARARs	
Landfill Requirements for Closure/Post-Closure Care	U.S. Environmental Protection Agency 40 CFR §264.310

Note: all concentrations are in:

ug/L - micrograms per liter (groundwater)

ug/kg - micrograms per kilogram (soil)

MCL - maximum contaminant level

* PAHs - polycyclic aromatic hydrocarbons

1.5.2 Statutory Preference for Treatment

MNA will reduce groundwater toxicity though not through treatment. Soil toxicity would not be reduced. However, the Presumptive Remedy for military landfills is being applied, which precludes the need for treatment of soil toxicity.

1.5.3 Recurring (a.k.a. “Five-Year”) Review Requirement

In accordance with CERCLA and the NCP, remedial actions that do not allow unlimited use and unrestricted exposure (UU/UE) must be reviewed no less than every five years after the start of the remedial action, or more frequently if required by the Decision Document. The reviews are conducted to ensure that the remedial actions remain protective of human health, safety, and the environment. The Selected Remedy for AOC 1 will require periodic reviews to ensure the MNA and landfill cap/cover are operating as planned. Five-year reviews will be conducted for AOC 7 focusing specifically on any changes in land use. All measured soil concentrations at AOC 7 were below the Part 375 industrial land use cleanup objectives.

1.5.4 Ongoing Responsibility

In accordance with FUDS Program Policy, if future conditions or new information suggests a response action is necessary, the property may be reactivated.

1.6 DECISION DOCUMENT DATA CERTIFICATION CHECKLIST

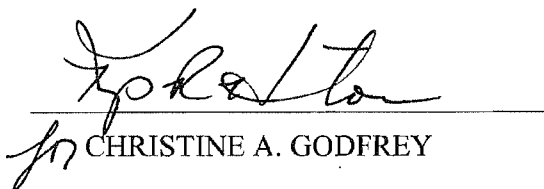
The following information is included in the Decision Summary section of this Decision Document. Additional information may be found in the Administrative Record for this site.

**Decision Document Data Checklist
Former Schenectady Army Depot, AOCs #1 and 7**

Decision Document Data Checklist Item	Decision Document Section Number Reference
The contaminants of concern (COCs) and their respective concentrations (Sources, Types and Extent of Contamination)	Sections 2.4, 2.5.3
The land use resulting from the implementation of the Selected Remedy	Section 2.6
The estimate of potential risk (Summary of Human Health Risk Assessment)	Section 2.7.1
The cleanup levels established for the COCs and their basis	Section 2.8
The principal threat source materials (Principal-Threat Waste)	Section 2.11
The key factors that led to the selection of the Remedy	Sections 2.12, 2.13
The estimated costs of the Selected Remedy	Section 2.13.7

1.7 AUTHORIZING SIGNATURE

This Decision Document presents the selected response action at the former Schenectady Army Depot, Albany County, Guilderland, New York. The U.S. Army Corps of Engineers is the lead agency under the Defense Environmental Restoration Program (DERP) at the former Schenectady Army Depot, Formerly Used Defense Site, and has developed this Decision Document consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document will be incorporated into the larger Administrative Record file for the former Schenectady Army Depot, which is available for public view. This document, presenting a selected remedy with a present worth cost estimate of \$2,400,000, is approved by the undersigned, pursuant to Memorandum, DAIM-ZA, September 9, 2003, subject: Policies for Staffing and Approving Decision Documents (DD), and to Engineer Regulation 200-3-1, Formerly Used Defense Sites (FUDS) Program Policy.


for CHRISTINE A. GODFREY

11 Oct 2011
Date

Acting Chief, Environmental Community of Practice
Directorate of Military Programs

SECTION 2

DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

SADVA is located one-quarter mile southeast of the Village of Guilderland Center, New York (Figure 1). The DoD held ownership of the SADVA property from 1941 through 1969. The site was originally constructed as a regulating station and a holding and reconsignment point, and later became a general Army depot. The principal mission of the installation was the receipt, storage, maintenance, and distribution of supply items for the U.S. Department of the Army.

AOCs 1 and 7 consist of two adjacent areas, the U.S. Army Landfill and the Triangular Disposal Area (Figure 2). AOC 1 is a former U.S. Army landfill located in the southern portion of SADVA. AOC 7 is a triangular-shaped area located on dry, open ground between existing and former railroad tracks at the south end of SADVA.

In accordance with the provisions of the Defense Environmental Restoration Program (DERP) Management Guidance, the Department of the Army (DA) serves as the DoD Executive Agent for execution of the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS).

The DA further delegated the responsibility of the DERP-FUDS program management and execution to the USACE. All plans and activities conducted by USACE at Former Schenectady Army Depot Voorheesville Area (FSADVA) are coordinated with the NYSDEC, the New York State Department of Health (NYSDOH), the Albany County Department of Health, and the current owner of the SADVA property.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.2.1 Activities Leading to Current Problems

There is no record of any enforcement activities taken at this site.

An archive search, commencing in 1999, was conducted by USACE to examine records pertaining to the operations of the former Depot. The U.S. Army Southern Landfill (AOC 1) and the Triangular Disposal Area (AOC 7) were indicated as areas of interest, where there was evidence of disturbance and disposal activities.

The AOC 1 U.S. Army Southern Landfill site is listed on the New York State Registry of Inactive Hazardous Waste Sites as a Class 2 site (i.e., a property that may present a significant threat to human health and the environment). NYSDEC has *not* listed the AOC 7 parcel as a “Class 2” site on its *Registry of Inactive Hazardous Waste Disposal Sites in New York*.

2.2.2 Site Investigations

A 1980 report by the Albany County Environmental Management Council (ACEMC) prompted environmental concern at the SADVA (ACEMC, 1980). This report described aerial

photographs showing excavation and disposal activities that occurred in the southeastern areas of the SADVA. The aerial photos indicated activity prior to 1942 and extending through 1968, based on 1942, 1952, 1963, and 1968 aerial photographs. The landfill appeared to be inactive between 1973 and 1995, based on 1973, 1978, 1982, 1986, and 1995 aerial photographs. It is not possible to document activities conducted at the U.S. Southern Landfill during time gaps in the aerial photograph coverage. Most excavation and disposal activities occurred during the time SADVA was operated by DoD. However, according to a report by the U.S. Army Toxic and Materials Agency (1980), no written records were found that would indicate that disposal of wastes occurred at the former depot. Written waste disposal records are important for helping to assess responsibility for an AOC. However, it is not unusual for there to be few, if any, written records of waste disposal for sites of this age and type. For this reason, historical aerial photos are an important tool to help identify periods of site disturbance that could correspond to waste disposal activities.

The Final Archival Search Report (EAEST, 2003) and the ACEMC report (ACEMC, 1980) described AOC 7 based upon the interpretation of aerial photographs. The aerial photograph analysis completed by Albany County included a small area described by the County as a 2-acre dump just west of the U.S. Army Southern Landfill, in the southern portion of SADVA. Based on a review of a 1940s aerial photograph, the County noted that a 2-acre disposal area was located in a triangular junction of railroad tracks in this area. No storage containers or debris were noted in this area. A 1952 aerial photograph showed the area was inactive and partially vegetated. A review of aerial photographs from 1963, 1968, and 1974 found some of the tracks had been removed and the site was partially vegetated open space. The site was inactive in the 1977 aerial photograph, but the tracks along the southern and eastern sides of the triangular area had been removed and the area was surrounded by woods on all sides. No storage containers or debris were noted. An August 1941 drawing, last revised December 1952, noted two borrow pits in the vicinity of this area which may have provided soil cover for the dumping area, or for the U.S. Army Southern Landfill.

The site background and previous investigations were discussed in detail in the Remedial Investigation Report for SADVA (Parsons, 2007). The following reports describe investigations that have previously characterized AOCs 1 and 7, prior to the Parsons RI that was completed in 2007:

1. "Report of Findings Environmental Liability Review Northeastern Industrial Park" for the Galesi Group (ERM-Northeast, 1990).
2. Phase II Investigation for the U.S. Army Corps of Engineers (OHM Remediation Services, 1991).
3. "Final Limited Remedial Investigation Report, Former Voorheesville Army Depot, U.S. Army Southern Disposal Landfill, Guilderland, New York" (Malcolm-Pirnie, 1997).
4. Preliminary Contamination Evaluation (Metcalf and Eddy, Inc. 1988).
5. Geophysical Investigation of AOC 7 (Quantum Geophysics, 1997).

2.2.3 Site Actions

Other than the site investigations noted above, there have been no site actions at AOCs 1 and 7.

2.3 COMMUNITY PARTICIPATION

Community participation activities provide the public with an opportunity to express its views on the selected remedial action. USACE considered state (NYSDEC and NYSDOH), Albany County Health Department (ACHD) and public input from the community participation activities during the FS phase of work in selecting the Selected Remedy for AOCs 1 and 7.

Two public meetings were held to specifically discuss the alternatives and selected remedy for AOCs 1 and 7; the meetings were held on December 9, 2008 and March 29, 2011.

Notices announcing the meetings were published in the *Altamont Enterprise*, the *Schenectady Gazette*, and the *Albany Times-Union*, all newspapers of general circulation in the area of the former Schenectady Army Depot. Subsequently, comments from the public (including the Restoration Advisory Board membership for the site), and NYSDEC were received. It should be noted that there was consensus that the landfill cap and cover, groundwater monitored natural attenuation, along with land use controls specified as Alternative 3 be the selected remedy. A responsiveness summary, based on public comments received both at the meeting and via mail, is provided in Section 3.0 of this *Decision Document*. The administrative record for the site, which includes the Proposed Plan, is available for public review at the Guiderland and Voorheesville, New York Public Libraries.

2.4 SCOPE AND ROLE OF THE RESPONSE ACTION

The site is currently a privately-owned industrial park known as the Northeastern Industrial Park (NEIP). This response action addresses AOC 1 – U.S. Army Southern Landfill only. It does not include or apply to any other sites at SADVA, including AOC 7. No response action is necessary at AOC 7; however, the groundwater potable use restriction in the easement to be granted by the property owner will extend to AOC 7, due to its proximity to AOC 1. The need for the response action at AOC 1 is driven by the risks to human health posed by contaminants in groundwater. The response action at AOC 1 will protect current site workers/users and the local public from human health risks posed by contaminants in groundwater by applying the Presumptive Remedy for military landfills and applying monitored natural attenuation to the groundwater plume. For soils, the landfill has not been completely characterized; however, the presumptive remedy will eliminate the soil exposure pathway.

2.5 SITE CHARACTERISTICS

2.5.1 Conceptual Site Model

The possible pathways for exposure to contamination at AOC 1 include:

- Direct contact with soils;
 - Incidental ingestion of groundwater;
 - Inhalation of groundwater vapors from use of groundwater (i.e., showering, laundering, and dish washing); and
-

- Inhalation of volatiles due to vapor intrusion of VOCs from shallow groundwater into indoor air.

Possible receptors are persons visiting or working on the property.

The results of the RI indicated the sediments in the main pond at AOC 1 have concentrations of some contaminants above NYSDEC sediment screening criteria, which are based on ecological impacts. NYSDEC sediment criteria are “non-promulgated guidance criteria considered.” Further a 2004 qualitative assessment of the diversity and condition of aquatic life in the pond found that the observed species composition seemed appropriate for the habitat and all species present appeared active. The HHRA indicated that no unacceptable human health risk occurs from the sediment. Therefore, sediment remediation is not considered necessary.

Soil at AOC 1 was shown in the HHRA, based on limited sampling and the CSM, to not pose an unacceptable risk to human health. After the HHRA was completed, NYSDEC promulgated new risk-based “soil cleanup objectives” under Title 6 New York Codes Rules and Regulations Part 375. Subsequent to the HHRA, NYSDEC requested that soil concentrations at AOC 1 be compared with the Part 375 “soil cleanup objectives.” The concentrations reported from seven grab samples exceeded the Part 375 industrial land use cleanup objectives for PAHs and/or arsenic. An in-depth evaluation to determine if AOC 1 as a whole significantly exceeds these thresholds was not done because the soils inside the landfill were not fully characterized in accordance with application of the United States Environmental Protection Agency (USEPA’s) *CERCLA Municipal Landfill Presumptive Remedy to Military Landfills*. The presumptive remedy provides guidance for when source containment technology can be applied without considering alternate technologies (such as source removal or remediation), and without fully characterizing the landfill wastes (USEPA, 1996a). The containment presumptive remedy includes landfill material covering and containment (to eliminate the soil direct contact exposure pathway) and source area groundwater control. Applicability of the containment presumptive remedy includes the following landfill characteristics:

- Heterogeneity of materials which often makes treatment impractical;
- Waste types include household, commercial, non-hazardous sludge, and industrial solid wastes;
- Lesser quantities of hazardous wastes compared to non-hazardous wastes; and
- Lack of injection wells, surface impoundments, or waste piles.

The landfill at AOC 1 meets requirements for the USEPA’s containment presumptive remedy. Any portion of AOC 1 that may contain contaminated soil above the Part 375 industrial land-use cleanup objectives is within the limits of the landfill and will be addressed by the presumptive remedy.

AOC 7 poses no unacceptable risk with respect to soil and groundwater exposures. The HHRA determined there was no unacceptable soil exposure risk. There is no unacceptable risk associated with groundwater at AOC 7. In addition, the vegetative cover over AOC 7 is intact, and all measured soil sample concentrations within the limits of AOC 7 are below the Part 375 industrial land use cleanup objectives. Therefore, AOC 7 is not considered as requiring remedial action, but will be subject to five year reviews focusing specifically on any changes in land use.

2.5.2 Sampling Strategy

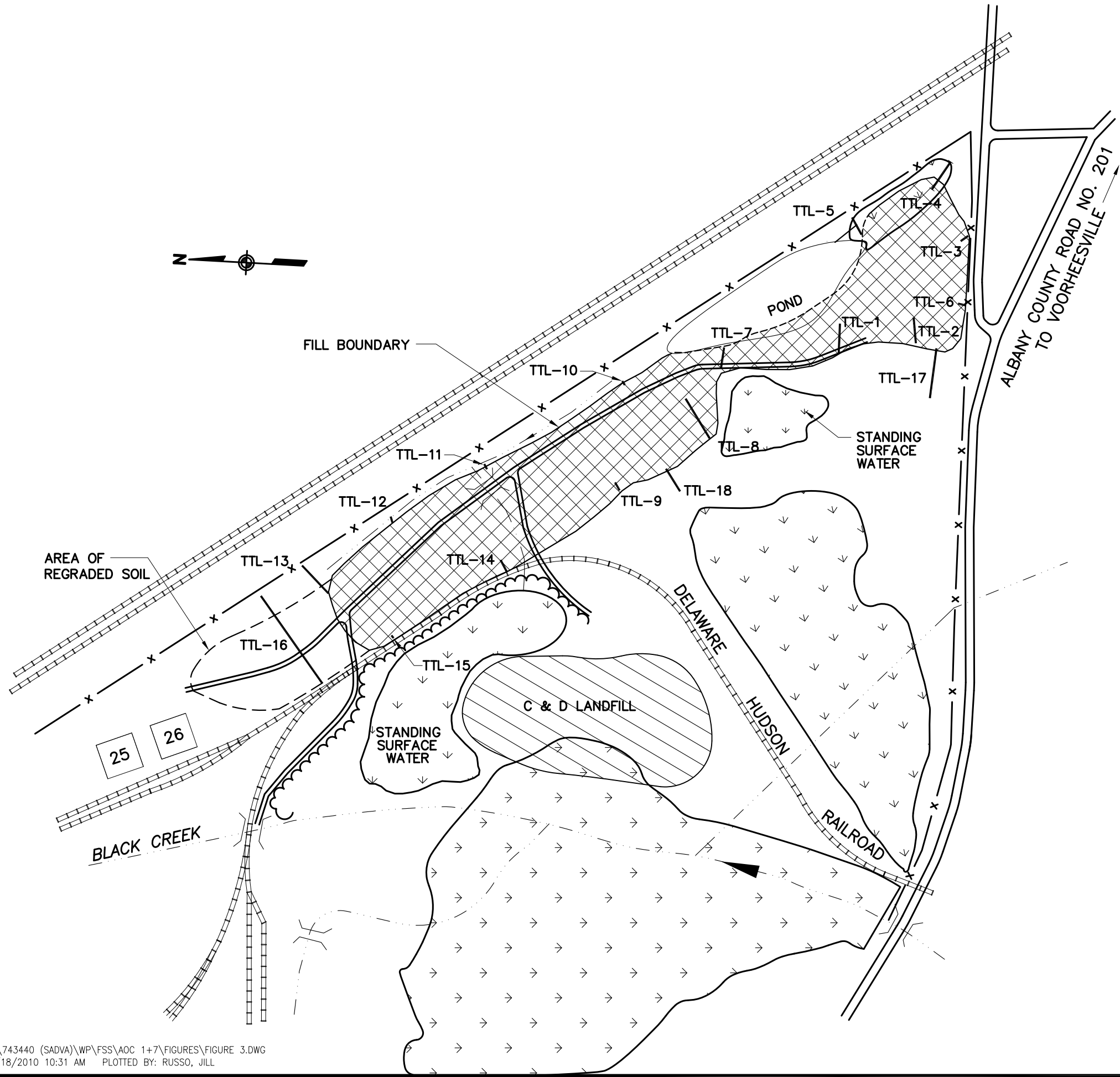
Soils, groundwater, sediments and surface water were sampled at AOCs 1 and 7 during remedial investigation at SADVA that began in 2000. Monitoring wells were installed to allow groundwater sampling. Test pits were conducted in the 2000 investigation, to assess the presence of buried wastes and to collect soil samples. The sampling focused on delineating the extent of site impacts, and used historical information developed and aerial photography included in the *Archive Search Report* (prepared by EA, 2003). Surface water and sediments in the pond at AOC 1 were characterized. The RI also used data collected during the previous RI conducted at AOC 1 in 1996.

2.5.3 Sources, Types and Extent of Contamination

Eighteen test trenches were excavated to determine the areal extent of fill at AOC 1 (Figure 3). Analysis of soil samples indicated concentrations of total PAHs, benzo(a)pyrene and/or arsenic exceeded the 2010 Part 375 industrial land use soil cleanup objectives. It should be noted that soils and wastes in the landfill were not fully characterized (due to safety concerns related to drilling into drums of unknown wastes), and it is assumed that additional soil concentrations in the center of the landfill exceed the NYSDEC Part 375 industrial land use cleanup objectives.

The landfill creates a groundwater mound in which groundwater flows laterally away from the center of the landfill, toward the east and west. There is an upward hydraulic gradient at this location. The upward hydraulic gradients indicate the potential for groundwater movement is from the bedrock upward to the overburden, and therefore downward migration of contaminants is not likely.

Eleven groundwater monitoring wells in the vicinity of AOC 1 were sampled in June 2006 to provide an updated characterization of the volatile organic compound (VOC) plume at AOC 1. Results indicate that the 2006 VOC concentrations decreased as compared to the VOC concentrations in 2000, as seen in Figure 4. The source area measured concentrations of chlorinated VOCs at ACE-2 were lower in the second round of sampling, from 1,560 µg/L to 734 µg/L, suggesting that the chlorinated VOCs may be naturally attenuating. However, there are only two sampling events and therefore insufficient data to conduct a statistical analysis of the concentration trend. Groundwater concentrations of TCE, 1,2-dichloroethene (total), 1,2-dichloroethane, and VC exceed the NYSDEC Class GA groundwater standards (Figure 4). Three monitoring wells were installed along the east fence line (GW12, GW13 and GW14) to determine whether there was contaminant migration to the east that might be leaving the property in the direction of offsite groundwater users. Samples from those wells showed no evidence of contaminant migration offsite, toward the east.



LEGEND:

- TTL-1 — TEST TRENCH LINE (URS, 1996)
- WETLANDS OR STANDING SURFACE WATER
- APPROXIMATE AREA OF FILL
- x — FENCELINE

FIGURE 3

U.S. ARMY SOUTHERN DISPOSAL LANDFILL
AREAL EXTENT OF FILL

URS
CONSULTANTS, INC.

US Army Corps
of Engineers

**MALCOLM
PIRNIE**

Surface and subsurface soil samples were collected at AOC 7. All soil concentrations from the AOC 7 area were below the NYSDEC Part 375 industrial land use soil cleanup objectives.

Groundwater flow is generally to the west-southwest toward Black Creek and the adjoining wetlands. A groundwater sampling plan was designed to assess groundwater quality upgradient and downgradient of AOC 7. No VOCs, pesticides or polychlorinated biphenyls (PCBs) were detected above NYSDEC Class GA groundwater standards in downgradient wells. In the most recent (2004) samples from monitoring wells, the only metal that exceeded Class GA criteria and upgradient concentrations was iron in one well.

Sampling and analysis data are included in Section 3.2.3.6 of the Parsons 2007 *Remedial Investigation Report*, which is part of the administrative record for the site.

2.5.4 Materials to be Remediated

The waste materials in the landfill and the associated contaminated groundwater will be remediated by implementing the Presumptive Remedy for military landfills. The Selected Remedy consists of groundwater MNA, LUCs, and an impermeable cap and soil cover at AOC 1; this satisfies the application of the Containment Presumptive Remedy at the AOC 1 site. An impermeable landfill cap will be installed for the approximately 2.5-acre area covering the groundwater plume. The landfill cap is more protective than a soil cover and will minimize water infiltration through the most contaminated soil/fill area into the groundwater plume. A permeable soil cover will be placed over the approximately 8-acres of landfill area that is not affecting groundwater conditions. The soil cover will be provided to improve the current soil cover at the landfill and mitigate the direct contact exposure pathway.

2.6 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

According to the 2000 census, the Town of Guilderland has a population of 32,688. The main portion of SADVA, now operated as Northeastern Industrial Park, is currently zoned industrial, while most properties adjacent to the site are zoned agricultural. According to the 1983 census of agriculture, about 27.2 percent of the area in Albany County was farmed.

AOCs 1 and 7 are currently vacant and located in a remote area of NEIP that has limited access. Current land use includes infrequent visits to the site, such as those that would be performed during site sampling investigations. Based on future land use plans at NEIP as described in the NEIP Generic Environmental Impact Statement (EIS) dated June 2005, future land use may include commercial development of this portion of the property. The Master Plan discussed in the NEIP EIS indicates that office buildings and parking lots are proposed in the area of AOCs 1 and 7. The plan identifies eight 20,000-square foot (ft²) offices and three parking areas with a total of 1,300 parking spaces. The AOC 1 and 7 areas will not be converted to residential use, based on the Master Plan. The EIS was prepared in response to a request by the Town of Guilderland Zoning Board.

2.7 SUMMARY OF SITE RISKS

2.7.1 Findings of the Human Health Risk Assessment

A quantitative HHRA was prepared by Parsons for the USACE as part of the RI for AOCs 1 and 7. The specific objective of the HHRA was to provide a quantitative risk assessment of the soil, groundwater, sediment and surface water at the site. The HHRA determines if there is potential risk to human health associated with exposure to these environmental media. Techniques and methodology developed by the USEPA were used for this quantitative HHRA.

The primary objective of the HHRA was to quantitatively characterize the human health risk associated with current and potential future exposure to contaminated media at AOCs 1 and 7. All potentially complete exposure pathways for the site were evaluated based on more protective exposure scenarios (*e.g.*, the residential scenarios provide very conservative (health-protective) estimates for standard site worker scenarios). Table 1 presents a summary of the key risk assessment considerations and results.

The HHRA concluded the following:

- There are no unacceptable health risks calculated for soils at AOCs 1 and 7. It should be noted that the soils/wastes in the AOC 1 landfill were not fully characterized by the remedial investigation (due to safety concerns related to drilling into drums of unknown wastes). Contaminated soils/wastes in the center of the AOC 1 landfill may pose a human health risk. Therefore, the remedial action objectives include addressing soils at AOC 1.
- Unacceptable health risks are posed by the groundwater at AOC 1, if groundwater is used as a drinking water source. Therefore, the remedial action objectives include addressing groundwater at AOC 1.
- No unacceptable risks were calculated for sediment at AOCs 1 and 7.
- An unacceptable risk was calculated for surface water at AOC 1, if the pond water were to be used as a residential drinking water source. However, the pond water is not presently nor planned to be used as a drinking water source, so no unacceptable risk is considered to be present given the present NYSDEC classification (Class C) of the pond. Class C waters are suitable for fishing and fish propagation. There is no surface water associated with AOC 7.

Table 2
Summary of Human Health Risk Assessment For AOCs 1 and 7 at SADVA

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Summary of Calculated Risks
Soil (Surface and/or Mixed Soil)	<ul style="list-style-type: none"> Incidental ingestion of surface/mixed soil Inhalation of volatiles from surface/mixed soil Dermal contact with surface/mixed soil 	<ul style="list-style-type: none"> Current outdoor worker Future outdoor worker Future indoor worker Current/future resident 	<p>Surface Soil: No unacceptable risk for AOCs 1 and 7.</p> <ul style="list-style-type: none"> No unacceptable risks were calculated for the non-carcinogenic chemicals detected in the surface soils at AOCs 1 and 7. The cumulative non-carcinogenic risk ratio results were 0.94 and 0.26 for the residential and industrial receptors, respectively. These results are below the cumulative risk ratio of 1.0, indicating no unacceptable risk is expected. For the carcinogenic chemicals detected in surface soils, the cumulative carcinogenic risk results were 3.1×10^{-5} and 1.0×10^{-5} for the residential and industrial receptors, respectively. These values are within USEPA's acceptable risk range of 10^{-6} to 10^{-4}, therefore, no unacceptable risk is expected. <p>Mixed Soil: No unacceptable risk for AOCs 1 and 7.</p> <ul style="list-style-type: none"> No unacceptable risks were calculated for the non-carcinogenic chemicals detected in the mixed soils at the site. The cumulative non-carcinogenic risk ratio results were 0.72 and 0.16 for the residential and industrial receptors, respectively. These results are well below the cumulative risk ratio of 1.0, indicating no unacceptable risk occurs for the mixed soil exposure pathways. For the carcinogenic chemicals detected in mixed soils, the cumulative carcinogenic risk results were 1.7×10^{-5} and 6.4×10^{-6} for the residential and industrial receptors, respectively. These values are within USEPA's acceptable risk range of 10^{-6} to 10^{-4}, therefore, no unacceptable risk is expected.

Table 2 (Continued)
Summary of Human Health Risk Assessment For AOCs 1 and 7 at SADVA

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Summary of Calculated Risks
Groundwater	<ul style="list-style-type: none"> • Ingestion of onsite groundwater as drinking water • Inhalation of groundwater from use of groundwater in the home (<i>e.g.</i>, showering, laundering, and dish washing) • Inhalation of volatiles due to vapor intrusion of VOCs from shallow groundwater into indoor air 	<ul style="list-style-type: none"> • Current outdoor worker • Future outdoor worker • Future indoor worker • Current/future resident 	<p>AOC 1 Groundwater: Unacceptable risk exists for groundwater used as a drinking water source.</p> <ul style="list-style-type: none"> • The carcinogenic chemicals driving the unacceptable carcinogenic risks were arsenic (1.7×10^{-2}), trichloroethene (6×10^{-3}) and vinyl chloride (1.5×10^{-3}), which were detected in wells at AOC 1. • The non-carcinogenic risk was related to cis-1,2-dichloroethene (1.6) and metals vanadium, selenium and antimony (cumulative hazard index of 1.6). <p>AOC 7 Groundwater: No unacceptable risk exists.</p>

Table 2 (Continued)
Summary of Human Health Risk Assessment For AOCs 1 and 7 at SADVA

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Summary of Calculated Risks
Sediment	<ul style="list-style-type: none"> Incidental ingestion of sediment Dermal contact with sediment 	<ul style="list-style-type: none"> Current outdoor worker Future outdoor worker Future indoor worker Current/future resident 	<p>Sediment: No unacceptable risk at AOCs 1 and 7.</p> <ul style="list-style-type: none"> There are no unacceptable non-carcinogenic or carcinogenic risks associated with the sediments at the AOC 1 and 7 sites. The non-carcinogenic risk ratio result for the site is 0.73 and the carcinogenic risk result is 7.8×10^{-6}. These values are below the target hazard index for non-carcinogens and within USEPA's target cancer risk range; thus, there is no unacceptable risk due to exposure to sediments.
Surface Water (samples from pond and surrounding wetland areas)	<ul style="list-style-type: none"> Ingestion of surface water as drinking water Inhalation of surface water from use of surface water in the home (e.g., showering, laundering, and dish washing) 	<ul style="list-style-type: none"> Current outdoor worker Future outdoor worker Future indoor worker Current/future resident 	<p>Surface Water: No unacceptable risk exists at AOCs 1 and 7.</p> <ul style="list-style-type: none"> Risk calculations indicate that there may be potential for non-carcinogenic and carcinogenic risk if the surface water in the pond were to be used as a residential drinking water source. The non-carcinogenic risk was 1.7 and was primarily due to exposure to cadmium in pond water. The carcinogenic risk was 2.8×10^{-4} and was primarily due to exposure to trichloroethene, bis(2-ethylhexyl)phthalate (BEHP), and arsenic in pond water. These results are very conservative and only apply if the pond is used for drinking water, which it is not and is not planned to be used as such. More importantly, of the analytes detected in pond samples collected in 2000, only BEHP exceeded the NYSDEC Class C surface water quality standard. Subsequent resampling of the pond in 2010 found that BEHP was not detected. Therefore, because the pond water samples meet the NYSDEC Class C standards and the pond is not used as a drinking water source, an unacceptable risk does not exist.

The remedial action objective of capping the landfill is to reduce risk owing to contamination in groundwater. Landfill soils were not sufficiently characterized, but the landfill cap and cover will be eliminated the soil exposure pathway.

No buildings currently exist at AOC 1 or AOC 7; however, a vapor intrusion screening was completed to assess the potential for a vapor intrusion health risk should a building be constructed in the area in the future. The screening suggested that vapor intrusion could pose a risk if new buildings will be constructed within the lateral limits of the VOC groundwater plume in southern portion of the AOC 1 landfill.

Note that a separate HHRA has been conducted for AOC 8 (Black Creek) and those results show that no potential risk exists, based on the chemicals found in Black Creek water and sediment. A Proposed Plan for AOC 8 – Black Creek is being completed.

2.7.2 Findings of the Screening Level Ecological Risk Assessment

A screening-level ecological risk assessment (SLERA) was conducted to evaluate potential adverse impacts to the ecological receptors at SADVA due to the presence of hazardous contaminants in soil, sediment, and surface water. The objective of the SLERA was to evaluate whether unacceptable adverse risks may be present, or if risks may be posed to ecological receptors in the future. This objective was met by characterizing ecological plant and animal communities at or near the site, defining and describing the contaminants that may affect the environmental media at the site, and identifying the potential pathways for exposure to contaminants at the site. The information used in the SLERA was largely taken from the Generic EIS prepared for the NEIP (Galesi Group, 2005).

The qualitative ecological risk assessment concluded that although there are chemicals in various media onsite that could pose a risk to aquatic and terrestrial wildlife, the SADVA site appears to support wildlife typical for the area and for the commercial/industrial setting that the site has retained for over 60 years. These conclusions are reinforced by two other ecological assessments conducted at AOC 1. The 2004 qualitative assessment of the diversity and condition of aquatic life in the pond found that the observed species composition seemed appropriate for the habitat and all species present appeared active. The 2004 macroinvertebrate community analysis of the pond found the sampling stations were slightly impaired, primarily due to the monotonous (uniform) nature of the man-made pond.

The results of the ecological risk assessment indicate there is no unacceptable risk to the environment and that remedial action is not warranted.

2.8 REMEDIAL ACTION OBJECTIVES

Remedial action objectives were developed for the purpose of evaluating the applicability of remedial technologies and the effectiveness of remedial alternatives. These objectives consist of media-specific goals for protecting human health and the environment, and for meeting ARARs in a cost-effective manner.

AOC 7 poses no unacceptable health risk with respect to soil, groundwater, surface water and sediment exposures. In addition, the vegetative cover over AOC 7 is intact, and all soil sample concentrations within the limits of AOC 7 are below the Part 375 industrial land use cleanup objectives. Therefore, AOC 7 is not considered in the remedial action objectives.

AOC 1 poses no unacceptable health risks with respect to surface water and sediment exposures. AOC 1 does not meet the minimum criteria for established ARARs with respect to groundwater, if used as a drinking water source. The calculated health risk for soils at AOC 1 was within the acceptable range; however, the soils/wastes in the center of the landfill were not fully characterized. In addition, soils at AOC 1 may exceed the NYSDEC Part 375 industrial land use criteria. Therefore, soils and groundwater at AOC 1 have been considered in the remedial action objectives.

The remedial action objectives are established herein based on site-specific information, including the nature and extent of chemical constituents, existing site conditions, and future land use plans. Remedial action objectives typically focus on controlling exposure of receptors (for example, workers at AOC 1) to chemicals of concern via exposure routes such as dermal contact, ingestion, and inhalation. The remedial action objectives also focus on controlling the release of hazardous substances into the environment.

Remedial action objectives for AOC 1 are as follows:

- Eliminate or minimize the human health risks posed by trichloroethene, VC, 1,2-dichloroethane and total-1,2-dichloroethene in groundwater within the landfill by satisfying the Class GA groundwater standards ARAR for these analytes;
- Although soils have not been completely characterized, the remedial action will eliminate the soil exposure pathway;
- Mitigate the potential for future releases of contaminants in the landfill to groundwater; and
- Mitigate the potential for movement and offsite migration of trichloroethene, VC, and cis-1,2-dichloroethene from the groundwater plume within the landfill.

2.9 DESCRIPTION OF ALTERNATIVES

Four remedial action alternatives were developed and evaluated based on the following CERCLA criteria: protection of human health and the environment; compliance with ARARs; long-term effectiveness and permanence; implementability; reduction of toxicity, mobility, or volume; short-term effectiveness; and cost. The four alternatives are:

- Alternative 1: No Action;
- Alternative 2: Groundwater Monitored Natural Attenuation (MNA)/Land Use Controls (LUCs);
- Alternative 3: Groundwater MNA/LUCs/Landfill Cap-Cover; and
- Alternative 4: Chemical Oxidation of Groundwater/Landfill Cap-Cover/ LUCs.

2.10 COMPARISON OF ALTERNATIVES

The four alternatives have been evaluated using the nine evaluation criteria outlined in the National Contingency Plan, 40 Code of Federal Regulations (CFR) Section 300.430, and the United States Environmental Protection Agency *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988), and the NYSDEC Technical and Administrative Guidance Memorandum 4030 *Selection of Remedial Actions at Inactive Hazardous Waste Sites* (NYSDEC, 1990). The criteria include:

Threshold Criteria

- Overall protection of human health and the environment
- Compliance with ARARs

Primary Balancing Criteria

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost

Modifying Criteria

- State Acceptance
- Community Acceptance

The criterion of cost is assessed by estimating relative costs for the alternatives. For an alternative to be eligible for selection, it must meet the threshold criteria. If these criteria are met, the primary balancing criteria are evaluated to provide the best balance of trade-offs among alternatives.

Table 3 presents a summary of the alternatives, how well they satisfy the evaluation criteria, and how they compare to one another.

2.11 PRINCIPAL THREAT WASTES

The NCP establishes an expectation that treatment that reduces the toxicity, mobility, or volume of the principal threat wastes will be utilized by a remedy to the extent practicable. Although treatment was not part of the principal remedy at AOC 1 the selected response action does apply the Presumptive Remedy for military landfills.

Table 3 Summary of Remedial Alternatives Evaluation

Description of Alternative	Alternative 1 No Action	Alternative 2 Groundwater MNA and LUCs	Alternative 3 –Landfill Cover and Cap / Groundwater MNA / LUCs (the Preferred Alternative)	Alternative 4 In Situ Chemical Oxidation of Groundwater/Landfill Cover and Cap/ LUCs	Alternatives That Best Satisfy Evaluation Criterion
Key Elements of Alternative	No action will be taken.	<ul style="list-style-type: none"> Prohibit potable use of groundwater near AOCs 1 and 7 onsite. Monitor groundwater until Class GA standards are met for vinyl chloride, trichloroethene and cis-1,2-dichloroethene. 	<ul style="list-style-type: none"> Prohibit potable use of groundwater near AOCs 1 and 7 onsite. Monitor groundwater until Class GA standards are met for vinyl chloride, trichloroethene and cis-1,2-dichloroethene. Place a cover over entire landfill and a cap over the groundwater plume area. 	<ul style="list-style-type: none"> Prohibit potable use of groundwater near AOCs 1 and 7 onsite. Place a cover over entire landfill and a cap over the groundwater plume area. Treat the VOC plume with in situ chemical oxidation until Class GA standards are met for vinyl chloride, trichloroethene and cis-1,2-dichloroethene. 	
Overall Protection of Human Health and the Environment	No additional protection will be provided.	<p>Direct contact with soil will be reduced somewhat with LUCs.</p> <p>Groundwater use will be prohibited with LUCs and VOC concentrations will diminish over time with MNA.</p>	<p>Direct contact with soil will be mitigated with the landfill cover.</p> <p>Groundwater use will be prohibited with LUCs and VOC concentrations will diminish slowly over time with the cap and MNA.</p>	<p>Direct contact with soil will be mitigated with the landfill cover.</p> <p>Groundwater use will be prohibited with LUCs and VOC concentrations will be rapidly reduced to meet Class GA standards with chemical oxidation.</p>	3 and 4
Compliance with ARARs	ARARs will not be satisfied.	Meeting 6 NYCRR §375-6.8, Table 375-6.8(b) (soil ARAR) cannot be determined. LUCs will eliminate the groundwater exposure pathway, so the Class GA ARAR will be satisfied.	The landfill cover will eliminate the soil direct contact exposure pathway, so the 6 NYCRR §375-6.8, Table 375-6.8(b) soil industrial land use ARAR will be satisfied. Alternative 3 complies with 6 NYCRR §375-6.8, Table 375-6.8(b) because according to § 375-6.5(a)(1)(iii), the groundwater protection standards are not applicable to alternatives with migration controls. LUCs will eliminate the groundwater exposure pathway, so the Class GA ARAR (6 NYCRR §703.5(f), Table 1) will be satisfied.	The landfill cover will eliminate the soil direct contact exposure pathway, so the 6 NYCRR §375-6.8, Table 375-6.8(b) soil industrial land use ARAR will be satisfied. Alternative 3 complies with 6 NYCRR §375-6.8, Table 375-6.8(b) because according to §375-6.5(a)(1)(iii), the groundwater protection standards are not applicable to alternatives with migration controls. LUCs will eliminate the groundwater exposure pathway, so the Class GA ARAR will be satisfied. Chemical oxidation will remove VOCs, but not metals.	3 and 4

Table 3 (Continued)
Summary of Remedial Alternatives Evaluation

Description of Alternative	Alternative 1 No Action	Alternative 2 Groundwater MNA and LUCs	Alternative 3 – Landfill Cover and Cap / Groundwater MNA / LUCs (the Preferred Alternative)	Alternative 4 In Situ Chemical Oxidation of Groundwater/Landfill Cover and Cap/ LUCs	Alternatives That Best Satisfy Evaluation Criterion
Long-term Effectiveness and Permanence	No additional protection will be provided.	LUCs for soil are not a permanent remedy. MNA will eventually reduce VOC concentrations permanently.	Landfill cover provides additional effectiveness for soil. MNA will eventually reduce VOC concentrations permanently. Landfill cap will help reduce VOC concentrations.	Landfill cover provides additional effectiveness for soil. MNA will eventually reduce VOC concentrations permanently. Chemical oxidation will rapidly reduce VOC concentrations permanently.	3 and 4
Reduction of Toxicity, Mobility, or Volume Through Treatment	No additional protection will be provided.	MNA would reduce groundwater toxicity though not through treatment. Soil toxicity would not be reduced.	MNA would reduce groundwater toxicity though not through treatment. Soil toxicity would not be reduced.	Chemical oxidation would reduce groundwater toxicity through treatment. Soil toxicity would not be reduced.	3 and 4
Short-term Effectiveness	No additional protection will be provided.	MNA is already ongoing, but will require years more. LUCs could be implemented immediately.	MNA is already ongoing, but will require years more. LUCs could be implemented immediately.	Chemical oxidation could be conducted within approximately six months and is considered instantaneous remediation.	3 and 4
Implementability	Easily implemented.	Easily implemented	Easily implemented	Easily implemented, but chemical oxidation would require a pilot test and installation of injection wells.	1, 2 and 3
Cost	\$0	\$0.31 million	\$2.4 million	\$2.67 million	
State Acceptance			New York State has accepted this alternative.		
Community Acceptance	The community has reviewed the Proposed Plan and made comments as addressed in Section 3.	The community has reviewed the Proposed Plan and made comments as addressed in Section 3.	The community has reviewed the Proposed Plan and made comments as addressed in Section 3.	The community has reviewed the Proposed Plan and made comments as addressed in Section 3.	

2.12 THE SELECTED RESPONSE ACTION

2.12.1 Summary of the Rationale for the Response Action.

The selected alternative (Alternative 3) will provide more overall protection of human health and the environment than Alternatives 1 and 2. Alternative 4 provides more rapid reduction of VOC concentrations, but Alternative 3 will provide VOC reductions over time with MNA. This alternative will institute the Containment Presumptive Remedy for the landfill, will provide the best balance of the threshold, primary balancing and modifying criteria, and will satisfy the remedial action objectives for this site.

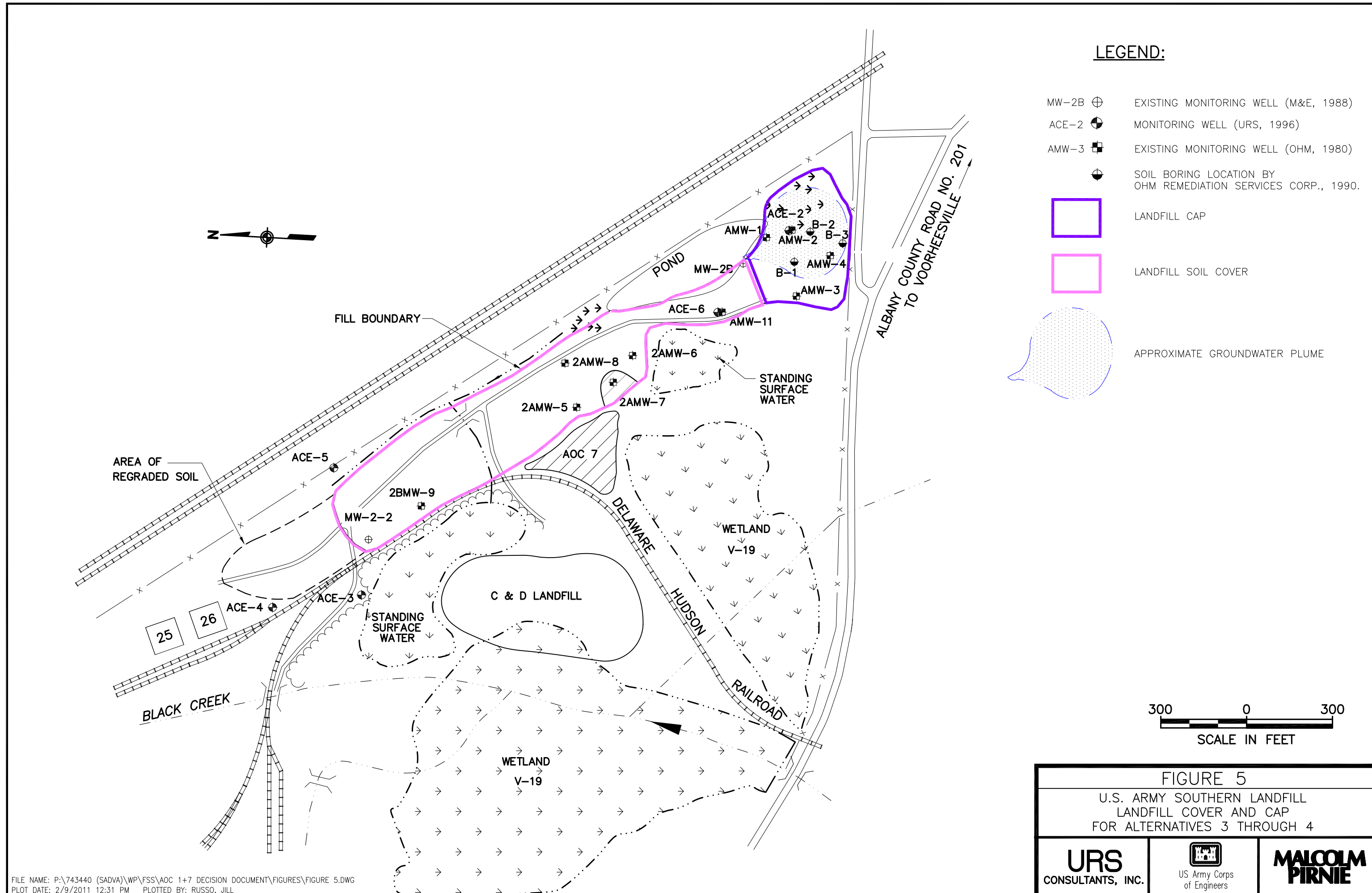
2.12.2 Description of the Response Action

The selected alternative for AOC 1 is Alternative 3 –Landfill Cover and Cap / Groundwater MNA / LUCs (the Selected Alternative), which includes the following elements:

- The Landfill Cap is intended to mitigate the potential for continued release of contaminants to groundwater and to mitigate the potential for offsite migration of the VOC groundwater plume within the landfill.

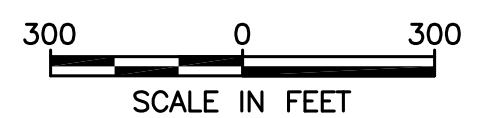
The impermeable landfill cap would be applied to the approximately 2.5-acre area covering the groundwater plume (Figure 5). The landfill cap is more protective than a soil cover and was chosen for this area to minimize water infiltration through the most contaminated soil/fill area and into the groundwater plume. The landfill source for the groundwater plume was not fully characterized in accordance with application of the presumptive remedy. Any landfill cap constructed on-site would meet 40 CFR § 264.310 requirements, which include cap specifications. Note that areas are denoted for evaluation and estimating purposes and may be changed in the field according to actual conditions and landfill boundaries:

- Lay 6-inch sub-base over approximately 110,250 square feet (approximately 2,000 cubic yards).
- Install geocomposite gas vent layer over the sub-base and a 40-mil linear low density polyethylene (LLDPE) textured geomembrane over the gas vent layer (approximately 110,250 square feet each).
- Install geocomposite drainage layer over the geomembrane.
- Cover drainage layer with a 2-foot barrier protection layer (approximately 8,200 cubic yards).
- Cover barrier layer with 6 inches of topsoil (approximately 2,000 cubic yards). Grade for restoration and proper drainage and seed for appropriate vegetation for erosion control based on the site conditions.
- Periodic inspection and operation-maintenance.
- Conduct five-year reviews until all remedial action goals are met.



LEGEND:

- MW-2B ⊕ EXISTING MONITORING WELL (M&E, 1988)
- ACE-2 ⊕ MONITORING WELL (URS, 1996)
- AMW-3 ⊕ EXISTING MONITORING WELL (OHM, 1980)
- ⊕ SOIL BORING LOCATION BY OHM REMEDIATION SERVICES CORP., 1990.
- LANDFILL CAP
- LANDFILL SOIL COVER
- ⬤ APPROXIMATE GROUNDWATER PLUME



<p>FIGURE 5</p> <p>U.S. ARMY SOUTHERN LANDFILL LANDFILL COVER AND CAP FOR ALTERNATIVES 3 THROUGH 4</p>		
<p>URS CONSULTANTS, INC.</p>	<p> US Army Corps of Engineers</p>	<p>MALCOLM PIRNIE</p>

- The Soil Cover is intended to address the health risks posed by direct contact with contaminated soils in the landfill.

The permeable soil cover is estimated for the approximately 8-acre landfill area in Figure 5 that is not affecting groundwater conditions. The soil cover would be provided to improve the current soil cover at the landfill and to minimize human and animal contact with the soil. Note that areas are denoted for evaluation and estimating purposes and could be changed in the field according to actual conditions and landfill boundaries:

- Cover approximately 355,700 square feet (shown in Figure 5) with 1 foot of soil (approximately 13,200 cubic yards). Cover the soil layer with a 6-inch layer of topsoil (approximately 6,600 cubic yards).
 - Grade for restoration and proper drainage, and seed the area with appropriate vegetation for erosion control based on the site conditions.
 - Periodic inspection and operation-maintenance.
 - Groundwater MNA is intended to address the health risks related to groundwater exposure:
 - Perform annual groundwater sampling of groundwater plume at AOC 1 to evaluate and monitor attenuation of contaminants. Analyze samples for VOCs and natural attenuation parameters.
 - Provide annual report to NYSDEC including sample locations, analyses performed, analytical results, comparison to baseline and previous sampling events, and projected time for all contaminants to reach remedial goals.
 - Continue monitoring until volatile COCs meet the NYSDEC Class GA standards, which are trichloroethene (5 micrograms per liter (µg/l)), cis-1,2-dichloroethene (5 µg/l) and VC (2 µg/l).
 - Implement LUCs that are intended to address the health risks posed by soil and groundwater exposure:
 - Grant an Environmental Easement to the State of New York by the Property owner, with periodic certification that terms of easement are effectively implemented.
 - Vapor intrusion risks must be considered during planning for any new (future) construction of buildings in the near vicinity of the VOC groundwater plume at AOC 1 (see Figure 4). A vapor intrusion barrier, and/or other vapor mitigation technologies, if needed, will prevent incidental inhalation of VOCs from groundwater in buildings that may be built in the future. Construction of buildings over the plume area will be prohibited.
 - Prohibit use of site groundwater for drinking purposes. A review will be conducted every five years to ensure that the use controls remain in place and are effective.
 - Prohibit construction of buildings in the capped/covered areas at AOC 1.
 - Post “No Trespassing” signs to minimize/prevent unauthorized access to the site.
-

- Prepare a Site Management Plan, to include an Institutional and Engineering Control Plan, a Site Monitoring Plan, and a section on Inspections, Reporting and Certifications.

2.12.3 Summary of the Estimated Response Costs

The recommended Alternative 3 will cost approximately \$2.4 million. This is a significant difference over Alternative 2 (\$310,000), but the Containment Presumptive Remedy provides additional soil and groundwater exposure protection and satisfies the soil and groundwater ARARs. Alternative 4 costs approximately \$2.67 million, but the additional groundwater treatment does not provide additional health protection.

2.12.4 Outcome of the Removal Action

It is expected that the selected response action will mitigate the risks to human health. Further, it is expected that the future use of the site will be industrial.

2.13 STATUTORY DETERMINATIONS

2.13.1 Protection of Human Health and the Environment

Definition: This criterion determines whether an alternative eliminates, reduces, or controls exposure to the site COCs to a level that protects public health and the environment.

Analysis: The selected alternative (Alternative # 3) will provide more overall protection of human health and the environment than Alternatives 1 and 2. Alternative 4 provides more rapid reduction of VOC concentrations, but Alternative 3 will provide VOC reductions over time with MNA.

2.13.2 Compliance with Applicable, Relevant and Appropriate Regulations (ARARs)

Definition: Applicable requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.

Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

Analysis: The recommended Alternative 3 will satisfy the soil and groundwater ARARs. Alternatives 1 and 2 do not satisfy the soil ARAR. Alternative 4 will satisfy the soil and groundwater ARARs, but will not provide any significant advantage in meeting the ARARs over Alternative 3.

The recommended Alternative 3 will include a prohibition on using site groundwater for drinking purposes, eliminating the groundwater exposure pathway. Therefore, the groundwater Class GA standards ARAR will be satisfied. In addition, Alternative 3 will reduce VOC concentrations over time with groundwater MNA. The landfill cap and cover will eliminate the soil direct contact exposure pathway. Therefore, soil ARARs will be satisfied. Alternative 3 complies with Part 375 because according to 6 NYCRR § 375-6.5(a)(1)(iii), the groundwater protection standards are not applicable to alternatives with migration controls.

2.13.3 Long Term Effectiveness and Permanence

Definition: This criterion considers the capacity of an alternative to maintain long-term protection of human health and the environment over time.

Analysis: The recommended Alternative 3 will provide an adequate balance of long-term effectiveness and permanence. Alternatives 1 and 2 are not effective for addressing health risk from soil exposures. Although engineered landfill covers can typically have a design life of more than 50 years assuming good maintenance practices, LUCs would be needed to ensure future activities on the site do not disrupt the cover or the underlying material.

Alternative 4 provides a more permanent remedy for VOCs in groundwater (via chemical oxidation), but the MNA component of Alternative 3 can achieve similar results, though over a longer time frame. By implementing LUCs in Alternatives 3 and 4, the groundwater pathway is eliminated and there is no significant advantage to Alternative 4 over Alternative 3.

2.13.4 Reduction of Toxicity, Mobility, or Volume Through Treatment

Definition: The NCP establishes an expectation that treatment that reduces the toxicity, mobility, or volume of the principal threat wastes will be utilized by a remedy to the extent practicable. This criterion evaluates the capacity of treatment associated with a given alternative to reduce the harmful effects of the principal contaminants, their capacity to move in the environment, and the amount of contamination present.

Analysis: The recommended Alternative 3 will provide adequate reduction of toxicity, mobility or volume. Alternatives 1 and 2 will not reduce soil toxicity. Alternative 3 includes a cap and cover; containment will not reduce the soil toxicity or the volume of the impacted materials, but mobility of contaminants in soil will be reduced.

Alternative 4 provides rapid reduction of VOCs in groundwater (via chemical oxidation), but the MNA component of Alternative 3 can achieve similar results, though over a longer time frame. Metals in groundwater will not be reduced by either Alternative 3 or 4. By implementing LUCs in Alternatives 3 and 4, the groundwater pathway is eliminated and there is no significant advantage to Alternative 4 over Alternative 3.

2.13.5 Short-Term Effectiveness

Definition: This criterion considers the length of time required to implement the alternative, and the risks posed to workers, residents, and the environment during implementation.

Analysis: The recommended Alternative 3 will provide some short-term effectiveness. Alternatives 1 and 2 are also effective in the short term, but the health protection they provide is less. Alternative 4 will take six months for the chemical oxidation pilot-scale test and full-scale implementation, but remediation of VOCs is considered instantaneous once implemented. However, there will be no reduction in metals concentrations.

Assuming 20-cubic yard trucks are used to bring soil and topsoil on-site, containment of the impacted material could be conducted within a time period of approximately four months. LUCs could be implemented within a time period of a few weeks to a few months.

Short-term risks to site workers include working near heavy machinery, dust inhalation, and handling of chemical oxidants. Risks could be minimized with the use of controls, such as personal protective equipment, dust suppression (e.g., watering of soils), and proper handling of the oxidants. All site risks would be detailed in a site Health and Safety Plan; compliance with the Health and Safety Plan would be required by all site workers.

2.13.6 Implementability

Definition: This criterion considers the technical and administrative feasibility of implementing the alternative, including the factors of relative availability of goods and services.

Analysis: Alternatives 1, 2 and 3 are easily implemented. Alternative 4 is less easily implemented due to the chemical oxidation pilot-scale test. Containment of soils is commonly used and would be easily implemented. Chemical oxidation can be readily implemented, but the pilot demonstration must indicate the site conditions are amenable to this technology before fully implementing Alternative 4. Alternative 3 involves the application of LUCs to the site, and the property owner has expressed their willingness to accept an environmental easement in a letter to USACE dated September 10, 2009.

2.13.7 Cost

Definition: This criterion includes an estimate of the capital, annual operations, and present-worth costs. Present-worth cost is the total cost of an alternative over time in terms of today's dollars. Cost estimates are expected to be accurate within a range of +50% to -30%.

Analysis: The recommended Alternative 3 will cost approximately \$2.4 million. This is a significant difference over Alternative 2 (\$310,000), but the Containment Presumptive Remedy provides additional soil and groundwater exposure protection and satisfies the soil and groundwater ARARs. Alternative 2 does not satisfy the soil ARAR. Alternative 4 costs approximately \$2.67 million, but the additional groundwater treatment does not provide additional health protection.

2.13.8 State Acceptance

Definition: This criterion considers whether the State agrees with, opposes, or has no comment on the Selected Alternative.

Analysis: New York State (NYS) has noted acceptance of the selected response action in their letter of February 25, 2011 (see letter included in Section 3.0, Responsiveness Summary).

2.13.9 Community Acceptance

Definition: This criterion considers whether the local community agrees with the Selected Alternative. Comments received during the Public Comment Period are an important indicator of community acceptance.

Analysis: In the Altamont Enterprise newspaper dated March 31, 2011, the Restoration Advisory Board Co-Chair is quoted as saying "the cap and cover approach was reasonable." The article is provided in Section 3.

SECTION 3

RESPONSIVENESS SUMMARY

A draft proposed plan issued December 2008 for public comment. On March 3, 2011, a Draft Final Proposed Plan was issued for public comment. The public notice of the availability of the Draft Final Proposed Plan was placed in following newspapers on March 3, 2011: Schenectady Gazette, Albany Times Union, Altamont Enterprise. The public comment period ended on April 3, 2011. Other than verbal comments received at the March 29, 2011 public meeting, there were no further written comments from the public on the draft final proposed plan.

The following pages include these documents:

- Comments received from the public and responses provided by the USACE on the Draft Proposed Plan for AOCs 1 and 7 (issued December 2008)
- December 9, 2008 Public Meeting Minutes (in this document the term “institutional controls” is used; these are a subset of Land Use Controls as referenced in the Decision Document. Institutional controls are legal mechanisms to control land use, such as environmental easements, groundwater use restrictions, etc).
- March 29, 2011 Public Meeting Minutes
- March 31, 2011 Altamont Enterprise Article
- Letter from NYSDEC dated February 25, 2011 accepting the Proposed Remedy for AOC 1 at SADVA and NYSDEC e-mail (item 5 below) regarding AOC 7.

Following are comments received from the public and responses provided by the U.S. Army Corps of Engineers (USACE) on the Proposed Plan for AOCs 1 and 7, within the property currently known as Northeastern Industrial Park, Guilderland, New York:

1. Letter from Ms. Ellen Howie (letter dated Dec. 30, 2008), Altamont, New York:

“We appreciate your efforts to secure funds for the most thorough option for clean-up of Area of Concern 1 on lands here in Guilderland and New Scotland, NY in order to contain the chemicals, provide a landfill cap and soil cover, treatment of the groundwater, carbon treatment of surface water and land-use controls. Here in Altamont where my husband and I live, we are also appreciative of the reporting to the community by the Altamont Enterprise. Our tax funds will be well spent to accomplish this most important project.”

RESPONSE: Thank you for your comments, Ms. Howie. After some reconsideration of the alternatives previously presented, we will not be treating groundwater, as the property owner has agreed to provide an easement to refrain from using groundwater for potable purposes at the site. In addition, the natural biodegradation processes currently ongoing will continue to reduce the concentration of volatile organic compounds (VOCs) in groundwater just as effectively as the chemical

oxidation treatment, although not instantaneously. We expect this approach will be protective of human health and the environment. We will be monitoring the groundwater, in order to measure the natural degradation of landfill contaminants over time. Further, the nearby pond was sampled in 2010, and the compound bis (2-Ethylhexyl) phthalate (BEHP) was not detected, therefore, eliminating the necessity for carbon treatment of the surface water. Our preferred alternative will also include the installation of an impermeable landfill cap and a permeable soil cover over a portion of the landfill that is not affecting groundwater conditions.

2. Letter from R. Allan Sholtes (dated December 31, 2008), Guilderland, NY:

“I am a resident of the village of Guilderland, living on Foundry Road. As a young boy I lived in the village of Guilderland Center during the construction of the Voorheesville Army Depot. Guilderland Center became a boom town and I remember watching with fascination the widening and deepening of the Black Creek. The excitement of that part of my past has been replaced by the unsettling revelation of the pollutants left by the Army at the location of the Depot. As a resident of the area whose drinking water comes from the Watervliet Reservoir, I urge you to do all in your power to implement: the installation of a landfill cap and soil cover; a chemical oxidation of groundwater; and a carbon treatment of surface water. I am concerned for the health of my wife and me and for the entire area of Guilderland affected by the thoughtlessness of our government, whose responsibility it is to correct the situation.”

RESPONSE: Thank you. We understand that responsibility, and we share your concern for the health of your wife, yourself, and the people of Guilderland. Consequently, we are recommending the installation of a landfill cap and placement of a soil cover, and will implement this remedy as soon as funding becomes available. As stated previously, the property owner’s agreement to an environmental easement will preclude the use of groundwater for drinking at the site, and eliminate the need for chemical oxidation of groundwater. Also, recent test results show there is no need to treat the pond water using a carbon treatment system. Monitoring of groundwater at the site will also be a component of our remedy, to insure that these actions result in an improvement to the environment.

3. Letter from Ms. Deborah Goetz (dated January 7, 2009), Voorheesville, NY:

“This letter is written in reference to a former Army depot site located near the Black Creek in the Voorheesville/New Scotland area of the state. I’m concerned about the very serious health risks it presents. As you’ve done a thorough study and devised a set of recommendations specifically for the clean-up of this particular site, you’ve made a convincing argument for a landfill cap and soil cover, chemical oxidation treatment of the groundwater, carbon treatment of surface water and land use controls. Yours is the method our community wants. Thank you for your efforts and may you prevail.”

RESPONSE: Thank you for your letter. The landfill cap and soil cover remain as part of our recommendation, as do land use controls in the form of an environmental

easement which the property owner has agreed to grant. However, we recently removed the chemical oxidation of groundwater recommendation, as the land use control will stipulate a prohibition on the potable use of groundwater at AOC 1, and recent test results show no detection of BEHP, a compound of previous concern; thereby eliminating the need for treating the pond (surface) water at the site. We will also monitor groundwater on an annual basis at AOC 1 to assure that the landfill cap and soil cover remedy is proven effective.

4. Letter from Robert and Mary Lou Shedd (dated December 30, 2008), Voorheesville, NY:

“We live about 2 miles from the Former Schenectady Army Depot, so are concerned about the toxic pollution that is there. We are told that the highest concentration of health risks is in the Area of Concern 1. Black Creek flows near this area and into the Watervliet Reservoir which is a source of Guilderland’s drinking water. This does not effect us because we have a private well. But it may effect us if the poisons get into the ground water. So for the health of everyone in this area, we would urge you to do all you can to get this particular area cleaned up. The Altamont Enterprise is environmentally minded and has written about this Area of Concern as well as many other concerns.”

RESPONSE: Thank you for your thoughts at AOC 1. Our recommended remedy of an impermeable landfill cover and soil cap is expected to be protective of the environment. In fact, our approach is consistent with a “presumptive remedy” for landfills remaining on formerly used military installations. By implementing this remedy, we reduce the possibility of making matters worse by not disturbing (by removal) containers of contaminants that may be secured within the landfill boundary, while at the same time enhancing the ability for contaminants to achieve natural degradation (or “attenuation”), and reducing the movement of contaminants into groundwater by minimizing the impact of contact with precipitation (such as rain and snow).

5. E-mail from Heather Bishop, New York State Department of Environmental Conservation (dated April 14, 2011), with respect to AOC # 7:

“We have reviewed the AOC7 PRAP at the Former Schenectady Army Depot. We will wait until the ROD document is submitted to send our concurrence letter since changes will be made to groundwater use and 5 year review of AOC7 in the draft ROD. We foresee no problem with approving the ROD if the changes appear in the document.”

RESPONSE: The record of decision (ROD) notes the easement the Northeast Industrial Park landowner intends on granting, which will restrict groundwater from potable use from any well in the vicinity of AOC 1 & 7 in the industrial park. Due to its proximity to AOC 1, we have included AOC 7 in the five-year review.

SECTION 4

REFERENCES

- ACEMC, 1980. Albany County Environmental Management Council, “Northeastern Industrial Park (Voorheesville Depot) and Vicinity, Closed Landfill Study”, June 25, 1980.
- EA, 2003. Archive Search Report.
- EAEST, 2003. EA Engineering, Science and Technology “Final Investigation Report. Archival Search Former Schenectady Army Depot – Voorheesville Area”, dated May 2003.
- ERM-Northeast, 1990. “Report of Findings Environmental Liability Review Northeastern Industrial Park” dated March 15, 1990.
- Galesi Group 2005. Draft Generic Environmental Impact Statement, Northeastern Industrial Park, June 2005.
- Malcolm-Pirnie, 1997 “Final Limited Remedial Investigation Report, Former Voorheesville Army Depot, U.S. Army Southern Disposal Landfill, Guilderland, New York”, prepared for USACE-Baltimore District, April 97.
- Metcalf and Eddy, Inc., 1988. Engineering Final Report Site Investigation. Contamination Evaluation at the Former Schenectady Army Depot, New York by Metcalf & Eddy, Inc. February 1988.
- NYSDEC, 1990. TAGM 4030 – Selection of Remedial Actions at Inactive Hazardous Waste Sites. May 15, 1990.
- OHM Remediation Services Corp, 1991. Phase II Draft Report, Schenectady Army Depot Site, Voorheesville, Guilderland, New York. April 1991.
- Parsons, 2007. Remedial Investigation Report, Former Schenectady Army Depot Voorheesville Area. May 2007.
- Quantum Geophysics, Inc., 1997. Geophysical Investigation. April 1997.
- USEPA, 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (interim final). OSWER Directive 9355.3.01. October 1988.
- USEPA, 1996a. Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills. December 1996