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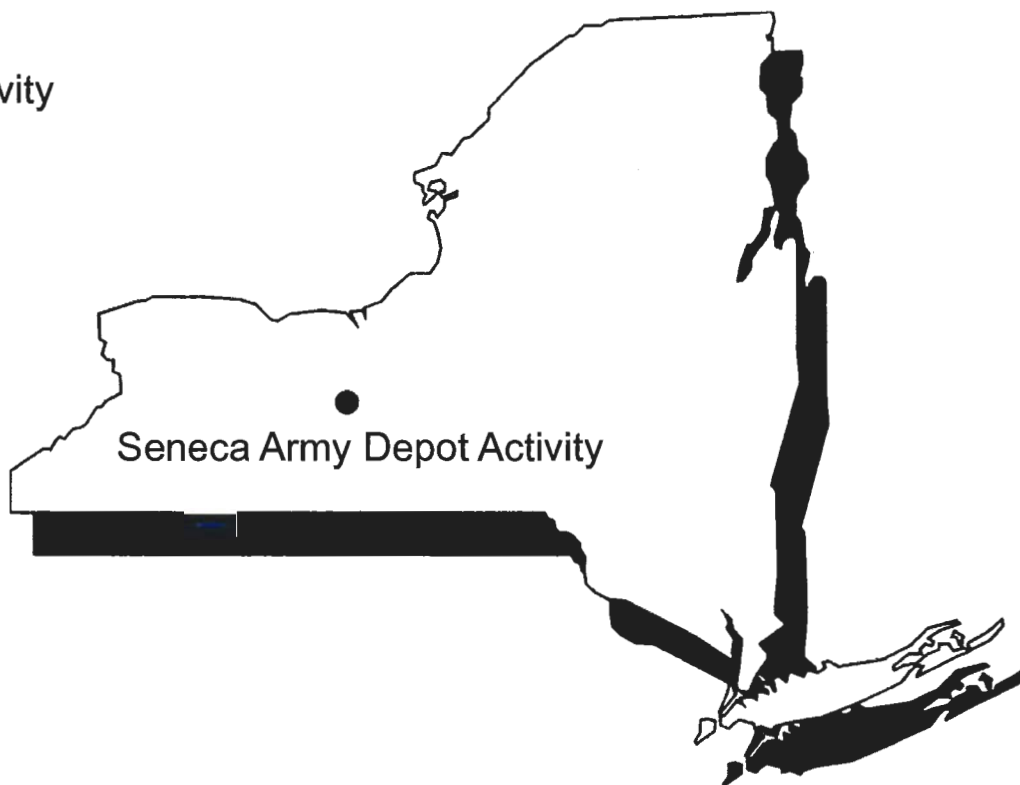


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US Army, Engineering & Support Center
Huntsville, AL



Seneca Army Depot Activity
Romulus, NY



FINAL FIVE-YEAR REVIEW, SENECA ARMY DEPOT

SEAD 1, 2, 5, 12, 13, 16, 17, 25, 26, 27, 39, 40, 41, 43, 44A, 44B, 52, 56, 59, 62, 64A, 64B, 64C, 64D, 66, 67, 69, 71, 121C, 121I, 122E, AND THE ASH LANDFILL OPERABLE UNIT (SEADs 3, 6, 8, 14, and 15) SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Contract No. W912DY-08-D-0003
Task Order No. 0015
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS
NOVEMBER 2017

FIVE-YEAR REVIEW, SENECA ARMY DEPOT
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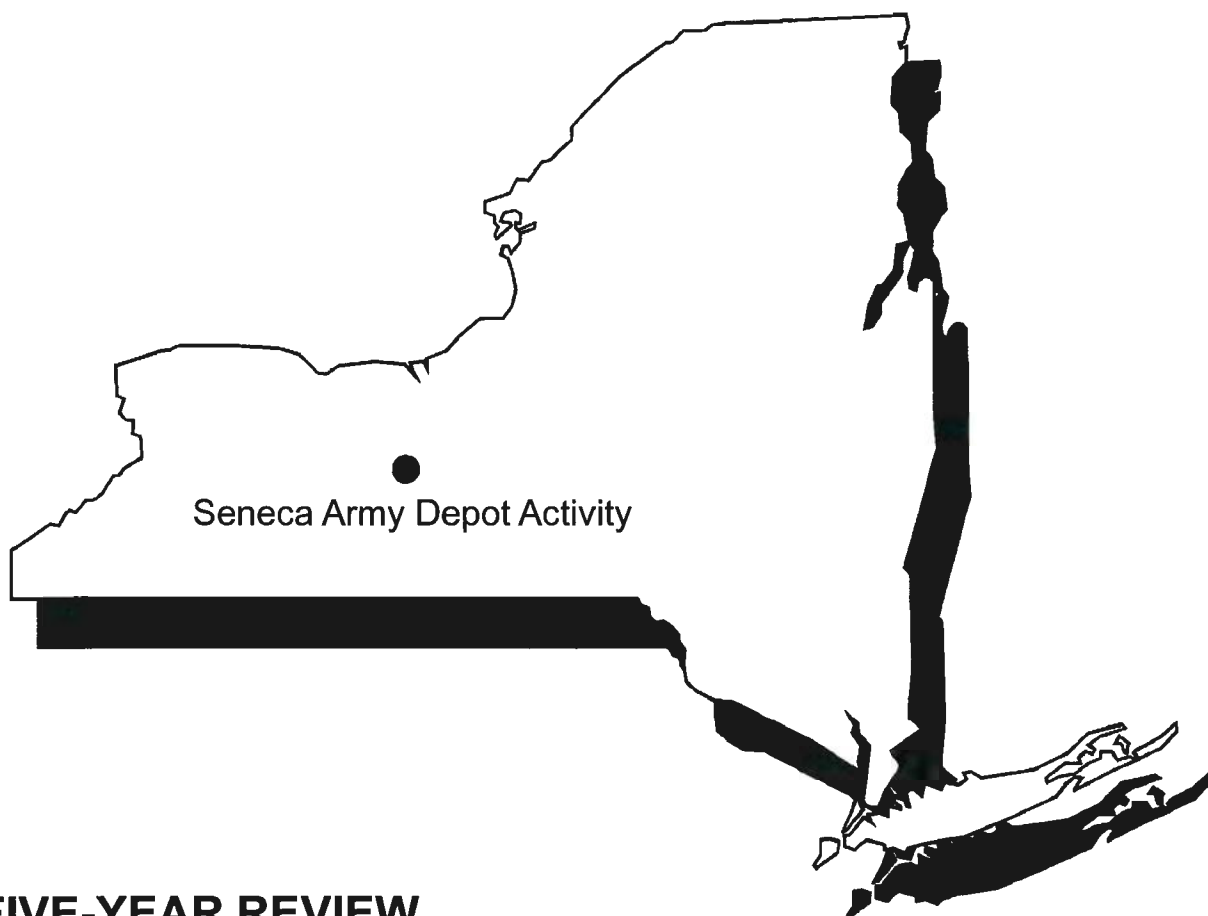
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Seneca Army Depot Activity
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FIVE-YEAR REVIEW

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AND THE ASH LANDFILL OPERABLE UNIT (SEADs 3, 6, 8, 14, and 15)**

SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY CORPS OF ENGINEERS

NEW YORK DISTRICT (CENAN)

**ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA**

and

**SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

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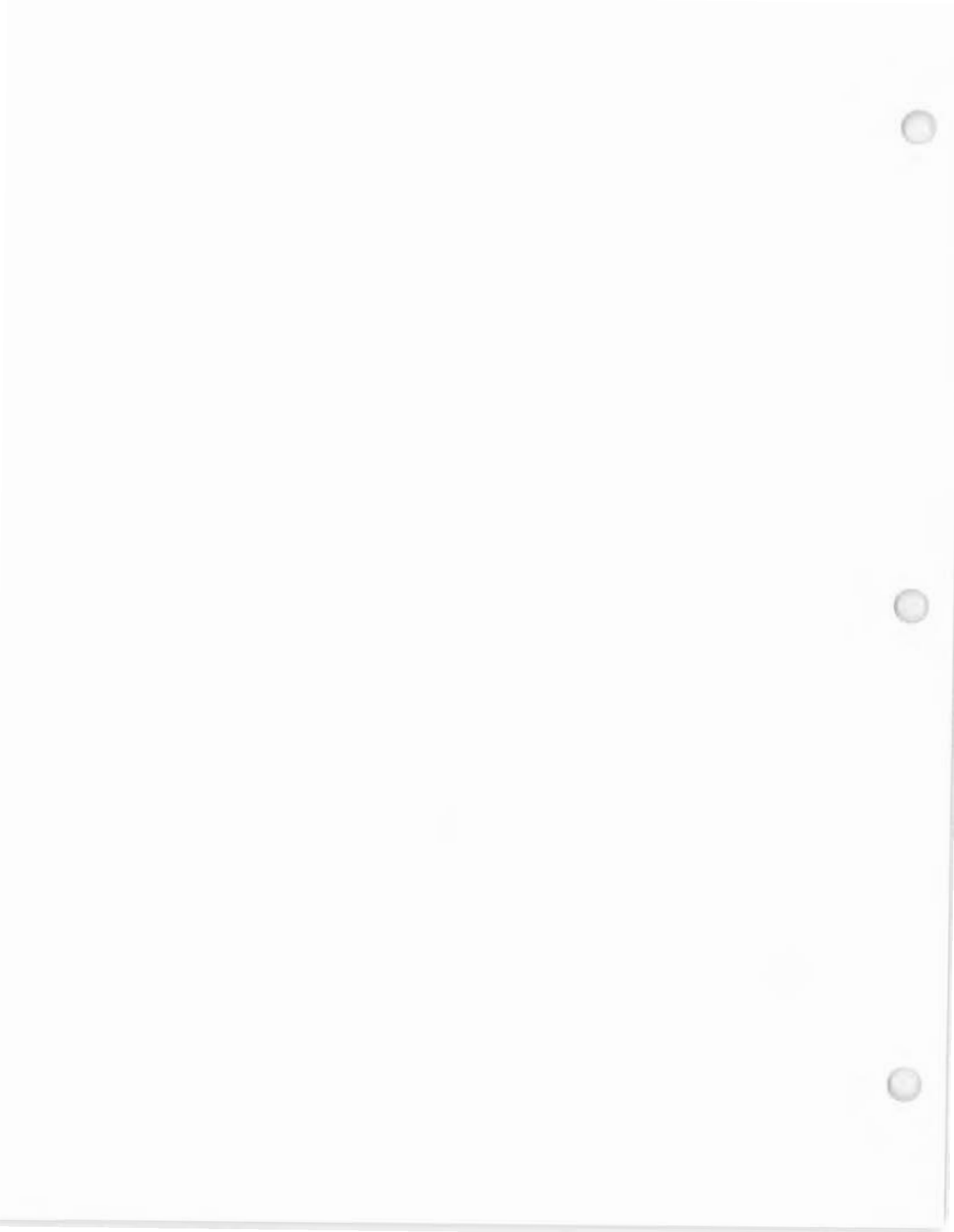
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Task Order No. 0015

USEPA Site ID# NY0213820830

NY Site ID# 8-50-006

November 2017



Certification

I certify under penalty of perjury that the controls employed at the Controlled Property are unchanged from the time of implementation or that any changes to the controls employed at the Controlled Property were approved by USEPA and NYSDEC or otherwise documented in this report, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with the intent of the Remedial Design for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

Shane Blauvelt, P.E.
NYPE # 087673-1



11/8/2017
Date

Approved for Submittal

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cn=BATTAGLIA.RANDALL.W.1228816724
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Randy Battaglia, PMP
Seneca AD BRAC Environmental Coordinator
USACE – New York District

Date

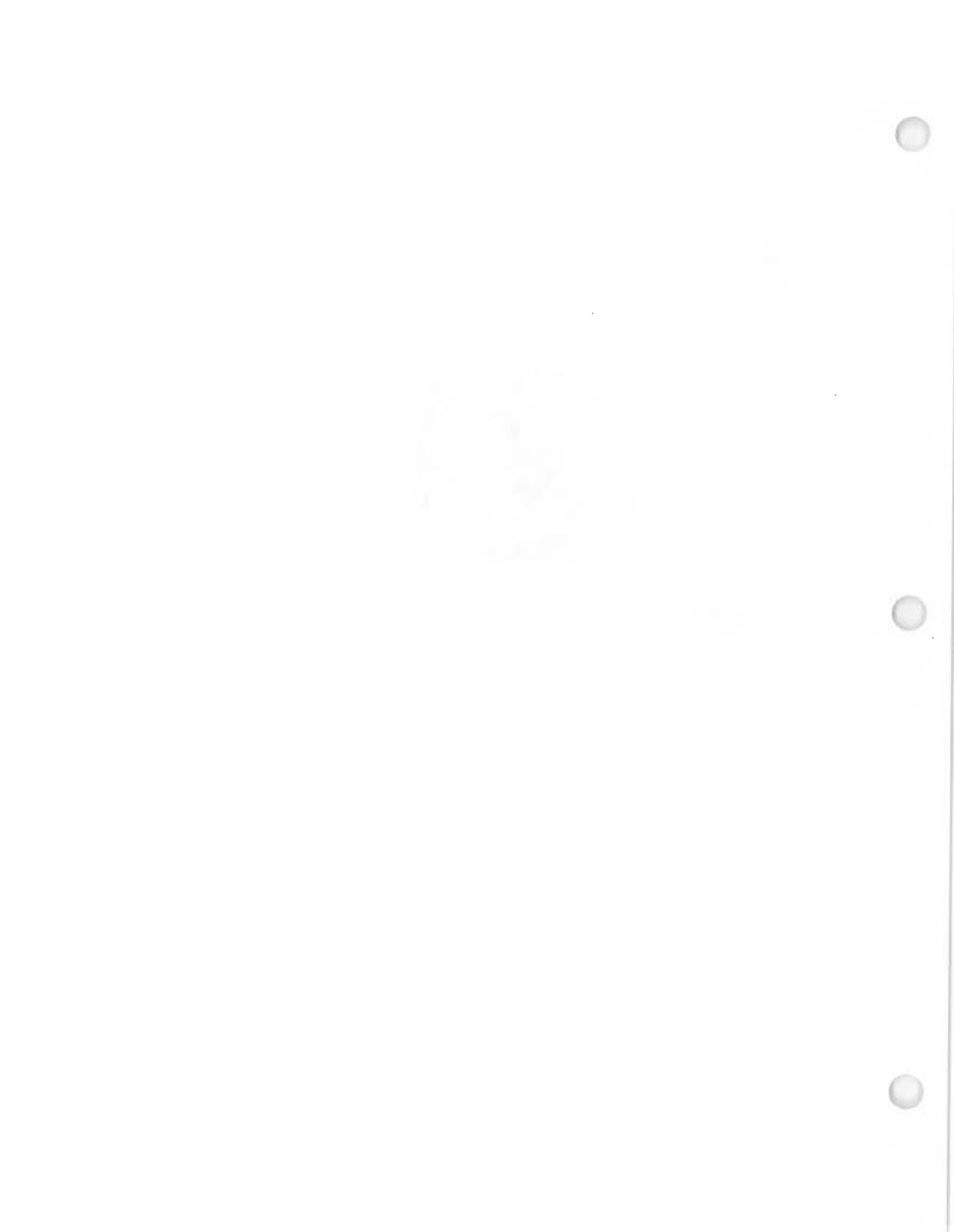


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Attachment 2 Site Inspection Checklist (Site-specific and included in each Appendix)

Attachment 3 Cleanup Levels, Toxicity and Risk Evaluation

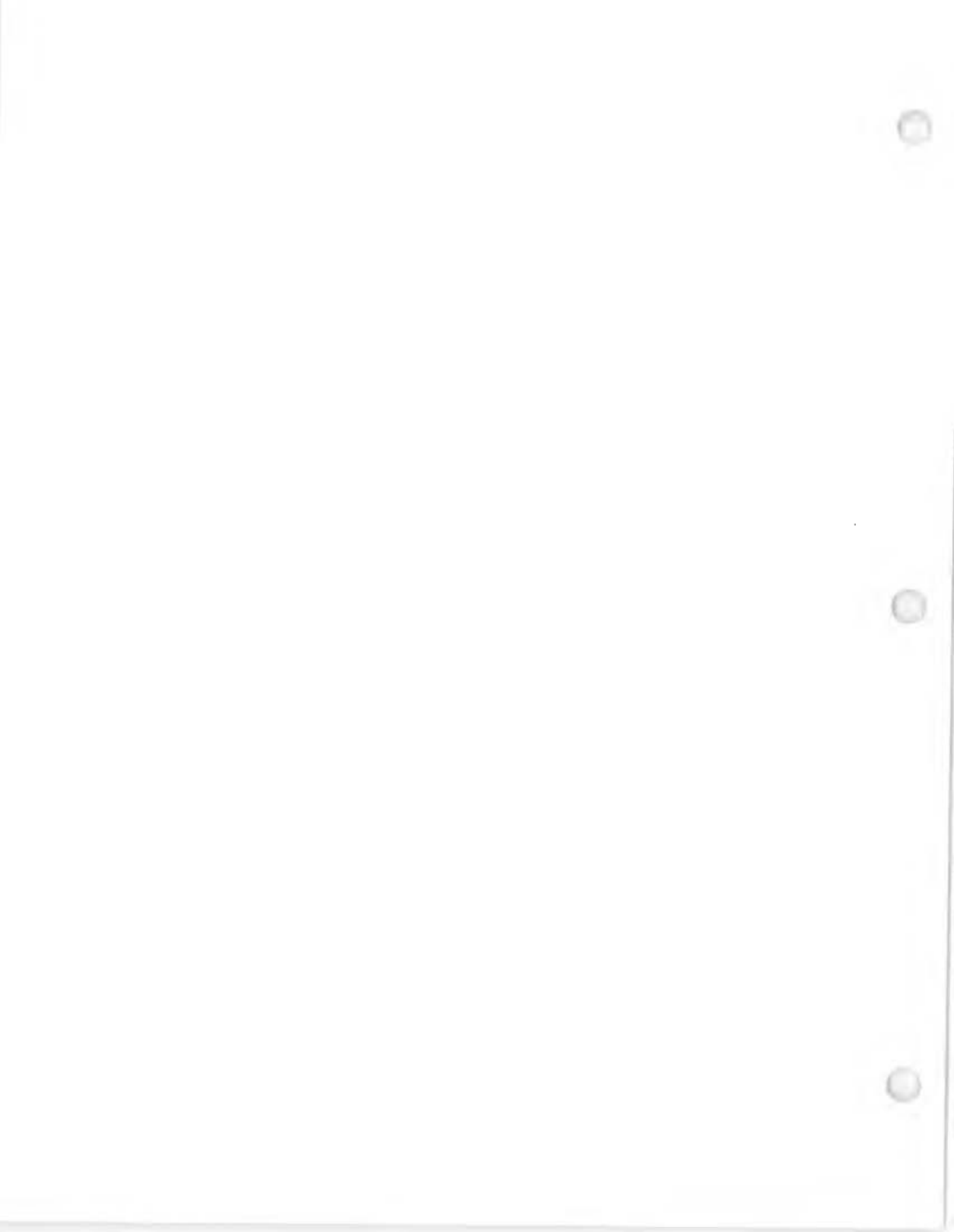
Attachment 4 Response to Comments

ACRONYMS AND ABBREVIATIONS

AOC	Areas of Concern
AQCR	Air Quality Control Region
APCD	Air Pollution Control Device
ARAR	Applicable or Relevant and Appropriate Requirement
Army	U.S. Army
AWQS	Ambient Water Quality Standards
BRA	Baseline risk assessment
BRAC	Base Realignment and Closure
BTEX	benzene, toluene, ethylbenzene, and xylene
CCR	Construction Completion Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
cis-DCE	cis-dichloroethylene
CLP	Contract Laboratory Program
COC	Contaminant of Concern
COPCs	Contaminant of Potential Concern
cPAH	Carcinogenic Polycyclic Aromatic Hydrocarbons
CTE	Central tendency exposure
DoD	Department of Defense
DPW	Department of Public Works
DRMO	Defense Reutilization and Marketing Office
EBS	Environmental Baseline Survey
EPC	Exposure point concentration
ESI	Expanded site investigation
FFA	Federal Facilities Agreement
FS	feasibility study
Ft.	feet
FYR	Five-Year Review
HI	Hazard Index
IC	Institutional controls
IRFNA	Inhibited Red-Fuming Nitric Acid
LDR	Landfill Disposal Restrictions
LRA	Local Redevelopment Authority
LSP	Limited Sampling Program
LTM	Long Term Monitoring
LTTD	Low Temperature Thermal Desorption
LUC	Land Use Control
MCL	Maximum contaminant level

NA	No Action
NFA	No Further Action
NGVD 1929	National Geodetic Vertical Datum
NCP	National Contingency Plan
NCFL	Non-Combustible Fill Landfill
NTCRA	Non-Time Critical Removal Action
NPL	National Priorities List
NY	New York
NYCRR	New York State Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OB	Open Burning
OE	Ordnance and Explosives
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
Parsons	Parsons Government Services
PCB	Polychlorinated biphenyl
PFAS	Perfluoroalkyl substances
PID	Planned Industrial/Office Development Warehousing Area
QA	quality assurance
RA	Remedial action
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDR	Remedial Design Report
RI	Remedial investigation
RME	Reasonable maximum exposure
ROD	Record of Decision
RSL	Regional Screening Level
SAR	Small Arms Range
SEDA	Seneca Army Depot Activity
SCIDA	Seneca County Industrial Development Agency
SCO	Soil Cleanup Objective
SI	Site Investigation
SLERA	Screening level ecological risk assessment
SRI	Supplemental Remedial Investigation
SWMUs	Solid Waste Management Units
SOW	Statement of work

SVOC	Semi Volatile Organic Compounds
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target analyte list
TCE	Trichloroethylene
TCL	Target compound list
TCLP	Toxicity Characteristic Leaching Procedure
TCRA	Time critical removal action
TPH	total petroleum hydrocarbons
TSDF	Treatment, storage, and disposal facility
UCL	Upper Confidence Limit
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UXO	unexploded ordnance
VC	Vinyl Chloride
VOC	Volatile Organic Compounds
ZVI	Zero-Valence Iron



Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Seneca Army Depot		
EPA ID: NY0213820830		
Region: 2	State: NY	City/County: Romulus/Seneca
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? N/A	
REVIEW STATUS		
Lead agency: Other Federal Agency <i>[If "Other Federal Agency", enter Agency name]:</i> U.S. Army		
Author name (Federal or State Project Manager): U.S. Army Corps of Engineers		
Author affiliation:		
Review period: 9/1/2011 to 9/1/2016		
Date of site inspection: 6/1/2015 and 6/2/2015		
Type of review: Post-SARA		
Review number: 2(second)		
Triggering action date: N/A		
Due date (five years after triggering action date): N/A		

Seneca Army Depot Activity (SEDA) is organized into six areas which have common or similar land use and Land Use Controls (LUC). The LUC objectives are summarized in each section below as defined in the applicable Record of Decision (ROD) for each AOC. The six areas and the AOCs within them are organized as follows:

- Planned Industrial/Office Development (PID) and Warehousing Area: SEADs 1, 2, 5, 16, 17, 25, 26, 27, 39, 40, 59, 64A, 66, 67, 71, 121C, and 121I
- Prison Area: SEADs 43, 44A, 44B, 52, 56, 62, 64C, and 69;
- Airfield Parcel: SEADs 122B and 122E;

- Ash Landfill Operable Unit: SEADs 3, 6, 8, 14, and 15;
- North End Institutional Area: SEAD-41; and
- Other Areas: SEADs 12, 13, 64B and 64D.

SEDA consists of 22 Operable Units (OU) and 84 SEADs or Areas of Concern (AOCs). Historically, the remedial approach was targeted at individual or groups of AOCs and not by the OU designation. Each AOCs OU is shown in Table 3 of the Five-Year Review. For consistency with the historical designations used throughout the site and remedial investigation documents, construction completion reports, and RODs, the issues/recommendations and protectiveness statements are per AOC instead of per OU.

Issues/Recommendations

OU(s) without Issues/Recommendations Identified in the Five-Year Review:

No issues were identified for AOCs within the PID/Warehousing Area, Prison Area, Airfield Parcel, Ash Landfill, North End Institutional Area, and SEADs 12, 13, 64B and 64D during this Five-Year Review that would affect the protectiveness of the remedy.

The Army has the following recommendations:

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

In addition, the following are recommendations that impact monitoring, but do not affect current protectiveness and were identified during the five-year review:

- At SEAD-16/17, the Army proposes to conclude annual groundwater LTM. The wells will not be decommissioned at this time in the event that sampling of emergent contaminants is necessary or reevaluation of the site during the 2021 five-year review.
- At SEAD-25, the Army proposes to conclude annual groundwater LTM. The wells will not be decommissioned at this time in the event that sampling of emergent contaminants is necessary or reevaluation of the site during the 2021 five-year review.
- At SEAD-23 (OB Grounds), the Army proposes to terminate annual groundwater LTM. The wells will not be decommissioned at this time in the event that sampling of emergent contaminants is necessary or reevaluation of the site during the 2021 five-year review. Soil cover inspections will continue and be performed as part of annual LUC inspections. A review of the continued soil cover inspections will be provided in the third Five-Year Review in 2021.
- At SEAD-25, SEAD-26, and SEAD-122E, the EPA requested that the Army sample for

emerging contaminants. The Army has agreed to sample for perfluorinated chemicals at these three AOCs within SEDA where former fire training activities were conducted.

Protectiveness Statement(s)		
<i>Operable Unit:</i> See Appendices	<i>Protectiveness Determination:</i> See Appendices	<i>Addendum Due Date (if applicable):</i> See Appendices
<p><i>Protectiveness Statement:</i> Based upon the review of the CERCLA sites at the former SEDA conducted by the Army, it has been determined that the remedies selected for the LUC/IC and LTM sites at the former SEDA remain protective of human health and the environment.</p> <p>The remedy implemented for the AOCs included in the PID Warehousing Areas, Prison Area, Airfield Parcel, Ash Landfill Operable Unit, North End Institutional Area, and SEAD-12, SEAD-13, SEAD-64B, and SEAD-64D is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.</p>		

Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> N/A	<i>Addendum Due Date (if applicable):</i> N/A
<p><i>Protectiveness Statement:</i> N/A</p>	

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1.0 EXECUTIVE SUMMARY

This is the second Five-Year Review (FYR) for the former Seneca Army Depot Activity (SEDA) Site located in Romulus, New York (Figure 1). The purpose of this FYR is to review information to determine if the remedies are and will continue to be protective of human health and the environment. The triggering action for this statutory FYR was the completion of the first FYR in September 2011.

This review found that the Operable Units (OUs) remedies are functioning as intended by the Decision Documents, and are protective of human health and the environment. The exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the signature of the Record of Decision (ROD) are still valid. There have been no changes in the exposure pathway, in the physical conditions of the site since completion of the remedial action activities, and in the implementation of LUCs that would affect the protectiveness of the remedies. In addition, as of June 2016, future land use has changed in the town of Varick. North of County Road 132 (Colonel's road on the Depot and between B block and C block of igloos) will be designated as Conservation. The primary planned use for the area south of County Road 132, in the "Conservation/Recreation" area, will be farming.

2.0 INTRODUCTION

Parsons Government Services (Parsons), in consultation with the U.S. Army (Army), conducted this FYR pursuant to Section 121 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, Section 300.430 (f) (4) (ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-03B-P (June 2001). The purpose of a FYR is to evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment. Protectiveness is generally defined in the NCP by the risk range and the hazard index (HI). The risk range and HI are estimated to determine the incremental probability of an individual developing health effects (carcinogenic or non-carcinogenic) over a lifetime because of exposure to a chemical of concern. Evaluation of the remedy and the determination of protectiveness should be based on and sufficiently supported by the data and observations. The FYR is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. This document will become part of the Administrative Record for the former SEDA Site.

The CERCLA sites will be reviewed individually within subgroups organized as follows:

- Land-Use Control (LUC)/Institutional Control (IC) and Long-Term Monitoring and Maintenance (LTMM) Sites, and
- Pre-ROD Sites: Sites with RODs pending or planned.

In 1995, SEDA was designated for closure under the Department of Defense's (DoD's) Base Realignment and Closure (BRAC) process. To address employment and economic impacts associated with the SEDA's closure, the Seneca County Board of Supervisors established the Seneca Army Depot Local

Redevelopment Authority (LRA) in October 1995. The primary responsibility assigned to the LRA was to prepare a plan for redevelopment of the SEDA property. Following a comprehensive planning process, a Reuse Plan and Implementation Strategy for Seneca Army Depot was completed and adopted by the LRA on October 8, 1996. The Seneca County Board of Supervisors subsequently approved this Reuse Plan on October 22, 1996. In 2005, after it had acquired portions of the former Depot from the Army, the Seneca County Industrial Development Agency (SCIDA) changed the planned use of land in many portions of the Depot. **Figure 2** depicts the intended future land uses for SEDA, as modified by the SCIDA.

The CERCLA Sites requiring a FYR are provided in **Table 1** and a site chronology is presented in **Table 2**. A listing of all historic areas of concern (AOCs) that have been subject of CERCLA investigations at the Depot and their current disposition is provided in **Table 3**.

SEDA consists of 22 OUs and 84 SEADs or Areas of Concern (AOCs). Historically, the RODs generally combined AOCs by OU and added NA/NFA Sites based on timing; however, the remedial approach was targeted at individual or groups of AOCs and not by the OU designation. Each AOCs OU is shown in **Table 3** of the FYR. For consistency with the historical designations used throughout the site and remedial investigation documents, Construction Completion Reports (CCR), and RODs, the issues/recommendations and protectiveness statements are per AOC instead of per OU.

As of the date of this Report, RODs have been signed for 76 out of 84 AOCs at SEDA. AOCs with signed RODs are listed in **Table 1**. Consistent with CERCLA requirements, a five-year statutory review is required for a site with a ROD signed on or after October 17, 1986 if upon completion of the remedial action, hazardous substances, pollutants, or contaminants will remain on site. Of the 76 AOCs, four AOCs were delisted from the NPL in 1998 to due reuse initiatives; SEAD-50 and SEAD-54 were delisted for a sheriff's office, and SEAD-24 and SEAD-58 were delisted for a planned ethanol plant. As such, this document provides a FYR for the 38 AOCs listed in **Table 1** that require a FYR. Of the remaining 44 AOCs, 38 (40 sites, SEAD-65A, B, and C) AOCs have been closed with a No Action (NA) or No Further Action (NFA) determination and are not addressed in this review (Parsons, 2003). There are six OUs that currently are under assessment and do not have signed RODs as of the date of this FYR. Although the signed ROD for SEAD-23 does not have established LUCs, the ROD specifies Operations and Maintenance requirements, and therefore, SEAD-23 was inspected as part of this FYR.

3.0 REPORT STRUCTURE

The report is organized such that general information and summary statements common to all the AOCs are contained in the main body of the report. Each AOC with LUC requirements is detailed in a dedicated appendix. The appendices are organized into six areas which have common or similar land use and LUCs. The six areas and the AOCs within them are organized as follows:

- Appendices A through O - Planned Industrial/Office Development (PID) and Warehousing Area: SEADs 1, 2, 5, 16, 17, 25, 26, 27, 39, 40, 59, 64A, 66, 67, 71, 121C, and 121I;
- Appendices P through U - Prison Area: SEADs 43, 44A, 44B, 52, 56, 62, 64C, and 69;
- Appendix V, X, Y, and AB - Other Areas: SEADs 13, 64B and 64D, 23, and 12;

- Appendix W - North End Institutional Area: SEAD-41;
- Appendix Z - Ash Landfill Operable Unit: SEADs 3, 6, 8, 14, and 15; and
- Appendix AA - Airfield Parcel: SEADs 122B and 122E.

Each appendix reviews the area-specific background information, basis for taking action, summary of remedial actions, and technical assessment for the applicable AOC(s). The structure of the appendices are as follows:

1.0 Area Specific Background Information

1.1 History of Contamination

1.2 Initial Response

1.3 Basis for Taking Action

1.3.1 Contaminants of Concern

1.3.2 Human Health and Ecological Risk Assessment

2.0 Remedial Actions

2.1 Remedy Selection

2.2 Remedy Implementation

2.3 System Operations/Operation and Maintenance

3.0 Progress Since Last Five-Year Review

3.1 Recommendations

3.2 Progress on Recommendations

4.0 Five-Year Review Process

4.1 Document Review

4.2 Data Review

4.3 Site Inspection

4.4 Interviews

4.5 Institutional Controls Verification

5.0 Technical Assessment

5.1 Question A: Is the remedy functioning as intended by the decision documents?

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

5.4 Issues, Recommendations and Follow-Up Actions

5.5 Protectiveness Statement

In each appendix, the FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**. **Table 4** presents the photo log captions briefly describing the subject of the photographs, and if there have been any changes to the site as documented in the photo that would affect the protectiveness of the remedy. **Figure 3** identifies the CERCLA sites

reviewed in the FYR with the corresponding LUCs or ICs required by the RODs or are expected to be required (for sites currently awaiting ROD issuance).

4.0 GENERAL BACKGROUND

4.1 Physical Characteristics

SEDA is located approximately 40 miles south of Lake Ontario, near Romulus, New York (NY) as shown in Figure 1. The Depot lies immediately west of the Town of Romulus, NY, 12 miles south of the villages of Waterloo and Seneca Falls, and 2.5 miles north of the Town of Ovid, NY. The two closest major cities are Rochester, NY, which is located approximately 60 miles northwest, and Syracuse, NY, which is located approximately 60 miles northeast. Prior to the acquisition of the land by SEDA in 1941, the property was privately owned and was used principally as homesteads and for agriculture.

SEDA is located in an uplands area, where the elevation ranges from approximately 600 feet (ft.) National Geodetic Vertical Datum (NGVD 1929) along the western boundary of the Depot to nearly 760 feet NGVD 1929 in the central portion of the eastern boundary. The uplands area where SEDA is located forms a divide separating two of the New York Finger Lakes: Cayuga Lake on the east and Seneca Lake on the west. Sparsely populated farmland covers most of the surrounding area. New York State Highways 96 and 96A border SEDA to the east and west, respectively. Figure 4 presents an aerial view of SEDA.

Pleistocene age (Wisconsin event, 20,000 years ago) glacial till deposits overlies the shale. SEDA lies on the western edge of a large glacial till plain between Seneca Lake and Cayuga Lake. The till matrix, the result of glaciations, varies locally but generally consists of horizons of unsorted silt, clay, sand, and gravel. The soils at SEDA contain varying amounts of inorganic clays, inorganic silts, and silty sands. In the central and eastern portions of SEDA, the till is thin and bedrock is exposed or within 3 feet of the surface. The thickness of the glacial till deposits at SEDA generally ranges from 1 to 15 feet.

Darien silt-loam soils, 0 to 18 inches thick, have developed over Wisconsin age glacial tills. These soils are developed on glacial till where they overlie the shale. In general, the topographic relief associated with these soils is from 3 to 8 percent (%).

A cool climate exists at SEDA with temperatures ranging from an average of 23°F in January to 69°F in July. Marked temperature differences are found between daytime highs and nighttime lows during the summer and portions of the transitional seasons. Precipitation is well distributed, averaging approximately 3 inches per month. This precipitation is derived principally from cyclonic storms, which pass from the interior of the county through the St. Lawrence Valley. Seneca, Cayuga, and Ontario Lakes provide a significant amount of the winter precipitation and moderate the local climate. The annual average snowfall is approximately 100 inches. Wind velocities are moderate, but during the winter months, there are numerous days with sufficient winds to cause blowing and drifting snow. The most frequently occurring wind directions are westerly and west southwesterly.

SEDA is located in the Genesee-Finger Lakes Air Quality Control Region (AQCR). The AQCR is designated as non-attainment for ozone and attainment or unclassified for all other criteria pollutants. Data for the existing air quality in the area that surrounds the SEDA cannot be obtained since the nearest state air

quality stations (Rochester of Monroe County or Syracuse of Onondaga County) are 40 to 50 miles away from the Depot and are not representative of the conditions at SEDA. A review of the data for Rochester, which is in the same AQCR as the SEDA, indicates that all monitored pollutants (sulfur dioxide, particulates, carbon monoxide, lead, and ozone) are below state and federal limits, with the exception of ozone. In 1987, the maximum ozone concentration observed in Rochester was 0.127 parts per million (ppm); however, this value is not representative of the SEDA area which is a more rural environment.

4.2 Site Geology/Hydrogeology

The Finger Lakes uplands area is underlain by a broad north-to-south trending series of rock terraces mantled by glacial till. As part of the Appalachian Plateau, the region is underlain by a tectonically undisturbed sequence of Paleozoic rocks consisting of shale, sandstone, conglomerate, limestone, and dolostone. In the vicinity of SEDA, Devonian age (approximately 385 million years ago) rocks of the Hamilton Group are monoclinally folded and dip gently to the south. The Hamilton Group is a sequence of limestone, calcareous shale, siltstone, and sandstone.

SEDA geology is characterized by gray Devonian shale with a thin weathered zone where it contacts the overlying mantle of Pleistocene glacial till. This stratigraphy is consistent over the entire SEDA facility. The predominant surficial geologic unit present at the site is dense glacial till. The till is distributed across the entire facility and ranges in thickness from less than 2 feet to as much as 15 feet although it is generally only a few feet thick. The till is generally characterized by brown to gray-brown silt, clay and fine sand with few fine-to-coarse gravel-sized inclusions of weathered shale. Larger diameter weathered shale clasts (as large as 6-inches in diameter) are more prevalent in basal portions of the till.

The bedrock underlying the Site is composed of the Ludlowville Formation of the Devonian age, Hamilton Group. Regionally, the bedrock is vertically jointed in three predominant directions: northeast, north-northwest, and east-northeast (Mozola, 1951; Merin, 1992). The Hamilton Group is a gray-black, calcareous shale that is fissile and exhibits parting (or separation) along bedding planes.

Regionally, four distinct hydrologic units have been identified within Seneca County (Mozola, 1951). These include two distinct shale formations, a series of limestone units, and unconsolidated beds of Pleistocene glacial drift. Overall, the groundwater in the county is very hard, and therefore, the quality is minimally acceptable for use as potable water.

Regionally, the water table aquifer of the unconsolidated surficial glacial deposits of the region would be expected to flow in a direction consistent with the ground surface elevations. Geologic cross-sections from Seneca Lake and Cayuga Lake have been constructed by the State of New York, (Mozola, 1951, and Crain, 1974). The geologic cross-sections suggest that a groundwater divide exists approximately half way between the two Finger Lakes. SEDA is located on the western slope of this divide and therefore regional groundwater flow is expected to be primarily westward towards Seneca Lake. Local hydrogeology is overall consistent with the regional hydrogeology.

Surface drainage from SEDA flows to five primary creeks (see **Figure 2**). In the southern portion of the Depot, the surface drainage flows through man-made drainage ditches and streams into Indian and Silver Creeks. These creeks then merge and flow into Seneca Lake just south of the SEDA airfield. The central

part and the administration area of the SEDA drain into Kendaia Creek. Kendaia Creek flows in a predominant westerly direction, and discharges into Seneca Lake at a location north of Pontius Point and the SEDA's former Lake Shore Housing Area. The majority of the northwestern and north-central portion of the SEDA drains into Reeder Creek. Reeder Creek flows predominantly northwesterly and leaves the Depot at a point that is north of the Open Detonation Area (i.e., SEAD-45) and west of the former Weapons Storage Area or the "Q" before it turns to the west and flows into Seneca Lake. The northeastern portion of the Depot, which includes a marshy area called the Duck Pond, drains into Kendig Creek and then flows north into the Cayuga-Seneca Canal and to Cayuga Lake. Other minor creeks are also present and drain portions of the Depot.

4.3 Land and Resource Use

In October 1995, the SEDA was designated for closure under the DoD's 1995 BRAC process. As part of the BRAC process, the Army commissioned an Environmental Baseline Survey (EBS) of the Depot. Under the EBS, all of the property identified as subject to transfer or lease at the facility was classified into one of the seven standard environmental conditions of property area types as defined by the Community Environmental Response Facilitation Act (CERFA) guidance and the DoD BRAC Cleanup Plan Guidebook. This was achieved by identifying, characterizing, and documenting the obviousness of the presence or likely presence of a release or a threatened release of a hazardous substance or petroleum product associated with the historical and current use of SEDA. Areas that were designated as Category 1, 2, 3, or 4 under the CERFA process were suitable for transfer or lease, subject to consideration of the qualifiers. Areas that were designated as Category 5, 6, or 7 were not suitable for transfer, pending further investigation and remediation, as may be needed. The complete details of the EBS are summarized in the document U.S. Army Base Realignment and Closure 95 Program; Environmental Baseline Survey Report, Seneca Army Depot Activity, New York (Woodward-Clyde Federal Services, 1997).

At the completion of the EBS, 113 BRAC parcels of land were identified and classified within the 10,634 acre Depot. Of the total area, approximately 8,690 acres were found to be suitable for lease or transfer (as designated by Categories 1 through 4), while the remaining areas (approximately 1,945 acres) were designated as Categories 5 through 7 and were not deemed suitable for immediate transfer for reuse. Once SEDA was added to the 1995 BRAC list, the Army's primary objective expanded from performing remedial investigations and completing necessary remedial actions to include the release of non-affected portions of the Depot to the surrounding community for their reuse for other, non-military purposes (i.e., industrial, municipal, and residential). The designated future use of land within the SEDA was first defined and approved by the Seneca County LRA in 1996. The planned use for portions of the SEDA was modified by SCIDA in 2005.

Ecological site characterizations conducted at the Depot were based on compilation of existing ecological information and on-site reconnaissance activities. The methods used to characterize the ecological resources included site-walkovers for the evaluation of existing wildlife and vegetative communities; interviews with local, state, and SEDA resource personnel; and review of environmental data obtained from previous Army reports. Ecological communities identified at SEDA included successional old-field areas, successional shrub areas, and successional hardwoods areas. Animals that have been identified at

the Depot during various ecological surveys include beaver, eastern coyote, white-tailed deer, red and gray fox, eastern cottontail rabbit, muskrat, raccoon, gray squirrel, striped skunk, and the woodchuck. Bird species that have been identified include the blue jay, black-capped chickadee, American crow, mourning dove, northern flicker, ruffed grouse, ring-billed gull, red-tailed hawk, northern junco, American kestrel, white breasted nuthatch, ring-necked pheasant, American robin, eastern starling, turkey vulture, and pileated woodpecker. Vegetation across the Depot consists of successional old field, successional shrub, and successional hardwoods.

SEDA has a strong wildlife management program that is reviewed by the New York State Department of Environmental Conservation (NYSDEC). The Army manages an annual white-tailed deer (*Odocoileus virginiana*) harvest and has constructed a large wetland called the "Duck Pond" in the northeastern portion of the facility to provide a habitat for migrating waterfowl.

4.4 History of Contamination

Between 1941 and 2000, SEDA was owned by the United States Government and operated by the Department of the Army. The Depot began its primary mission of receipt, maintenance and supply of ammunition in 1943. After the end of World War II, the Depot's mission shifted from supply to storage, maintenance, and disposal of ammunition. SEDA was selected for closure by the DoD in 1995; its military mission terminated in September 1999, and the installation was closed in September 2000.

History of contamination for each AOC is described in further detail in the individual appendices.

4.5 Initial Response

SEDA was proposed for the National Priorities List (NPL) in July 1989. In August 1990, the listing of SEDA as a NPL site was finalized in Group 14 on the Federal Section. After SEDA was listed on the NPL; the Army, U.S. Environmental Protection Agency (USEPA) Region II, and NYSDEC identified 57 Solid Waste Management Units (SWMU) where data or information suggested, or evidence existed to support, that hazardous substances or hazardous wastes had been handled, and where releases to the environment may have occurred. Additionally, the USEPA, NYSDEC, and the Army negotiated and finalized a Federal Facilities Agreement (FFA) for the Site in 1993.

The FFA established if SWMUs required action or not. If no action was required at a SWMU it was closed out under a ROD. If the SWMU required action, it became designated as an AOC. The number of SWMUs (identified with the acronym SEAD and a unique number, SEAD-25) was subsequently expanded to include 72 AOCs once the Army finalized the SWMU Classification Report (Parsons, 1994) for the Depot in 1994.

The SEDA was a generator and a treatment, storage, and disposal facility (TSDF) for hazardous wastes and thus, subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under the RCRA permit system, corrective action is required at all SWMUs, as needed. Remedial goals are the same for CERCLA and RCRA; thus, once the 72 AOCs were listed, the Army recommended that they be identified as either areas requiring No Action or as AOCs under CERCLA and the FFA, where additional investigation, study, or actions were needed. SWMUs listed as AOCs were then scheduled for

investigations based upon data and potential risks to the environment. The 72 AOCs included four areas (SEAD-12 A and B; SEAD-44 A and B; SEAD-64 A, B, C, and D; and SEAD-65 A, B, and C) that consisted of multiple sites (for a total of 79 sites to be investigated).

Once SEDA was selected and approved for closure as part of the BRAC 1995 process, the Army commissioned an EBS to assess the condition of all property relative to its status under CERFA guidance and the DoD BRAC Cleanup Plan guidebook. At the conclusion of this effort, approximately 1,945 of the 10,634 acres of land within the Depot including all of the land previously designated as SWMUs and several additional properties not previously designated as sites of interest were classified as CERFA Category 5, 6 or 7 sites (i.e., not suitable for transfer, pending further investigation and remediation). Subsequently in 1998, the Army authorized and conducted site inspections and limited site investigations (SI) of 32 additional potential sites identified as CERFA Category 5 – 7 properties, and because of these efforts an additional four sites (SEADs 121C, 121I, 122B, and 122E) were classified as AOCs requiring further assessment and actions under CERCLA.

Per the requirements of BRAC properties, where ordnance had been located, the Army also commissioned an Ordnance and Explosives (OE) Archives Search and conducted site inspections to: 1) identify all areas where ordnance activities occurred; 2) assess the likelihood that ordnances remained due to historic activities; and 3) make recommendations regarding the areas that required further action or investigation. Based on these assessments and evaluations, two additional SWMUs (SEAD-007-R-01, and SEAD-002-R-01 that consisted of two separate areas, EOD-2 and EOD-3) were added to the list of sites that were to be assessed under CERCLA. Additionally, the DOD Munitions Response program required the Army to rename and regroup sites that involved munitions (e.g., SEAD xxxx-R-01 designation). Any site with a prior SEAD –XX number is called an “alias” in the DOD reporting system.

Finally, in 1998, once the Army had completed its initial investigations of SEAD-12 (Radiological Waste Burial Sites), and begun a more comprehensive remedial investigation (RI). As part of this effort, SEAD-12A and SEAD-12B were consolidated into SEAD-12, an area encompassing more than 350 acres at the north end of the Depot and subject to continuing CERCLA investigations. Based on these additions, sites investigated under CERCLA rose from the 72 listed in the FFA to 78, the four EBS sites (SEADs 121C, 121I, 122B, and 122E), and the two OE SWMUs (SEADs 002-R-01, including EOD-2) resulting in 84 sites (refer to Table 3).

4.6 Basis for Taking Action

The basis for taking action for each AOC is described in further detail in the individual appendices. Generally, an action was required at the AOCs to ensure the remedy or land use remains protective of site users. The contaminants of concern (COC) and results of the human health and ecological risk assessments at each AOC are summarized in the individual appendices. Risk assessments were performed to determine if the human health cancer risks were below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and if the calculated non-cancer hazard indexes (HI) were less than 1.0.

5.0 NEW LANGUAGE ON CLIMATE CHANGE

Potential site impacts from climate change were assessed and the performance of the remedies at SEDA

currently are not at risk due to the expected effects of climate change in the region and near the site.

6.0 SUMMARY OF REMEDIAL ACTIONS LUC OBJECTIVES

The specific elements that composed the remedy for each AOC are discussed in further detail in the individual AOC appendices. The RODs for each AOC require the implementation of LUCs that will continue until the concentrations of hazardous substances in the soil and groundwater are reduced to levels that allow for unlimited use and unrestricted exposure. A summary of the LUCs for the AOCs is presented in this section. **Figure 3** identifies the CERCLA sites reviewed in the FYR with the corresponding LUCs or ICs required by the RODs or are expected to be required (for sites currently awaiting ROD issuance). For real estate parcels that have been transferred, LUC/ICs have been implemented as deed restrictions and environmental easements. Since the last Five Year Review, the ROD was signed for SEAD-12 and SEAD-72 in March 2015. SEAD-72 was NFA and the remedy for SEAD-12 requires the implementation of LUCs as discussed further in Section 6.6.

6.1 Summary of PID/Warehouse Area LUC Objectives and Restrictions

Seventeen AOCs (SEADs 1, 2, 5, 16, 17, 25, 26, 27, 39, 40, 59, 64A, 66, 67, 71, 121C, and 121I) located within the PID/Warehousing Area are subject to LUC inspection. Based on the planned reuse of the PID/Warehousing Area by the Seneca County Industrial Development Authority (SCIDA), the entirety of the PID/Warehousing Area and the AOCs within this area are subject to institutional controls in the form of two common LUC objectives (Parsons, 2004a; 2004b; 2005b; 2006f; 2007a; 2008; 2009a; 2009b):

- Prohibit the development and use of property for residential housing, elementary and secondary schools, childcare facilities and playground activities.
- Prevent access to or use of the groundwater until New York State (NYS) Class GA Groundwater Standards are met.

An additional LUC is required at SEAD-5 and SEAD-64A where unauthorized excavation is prohibited.

6.2 Summary of Prison Area LUC Objectives and Restrictions

The "Prison Area" consists of eight Solid Waste Management Units [(SWMUs) SEADs 43, 44A, 44B, 52, 56, 62, 64C, and 69] that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility.

Provisions of the deed apply to the following Solid Waste Management Units (SWMUs), which were transferred prior to a ROD being prepared and which currently are located within the bounds of the State of New York's Five Points Correctional Facility Parcel. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a). The Prison Area LUC requires:

- The continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

6.3 Summary of the Airfield Parcel LUC Objectives and Restrictions

Two AOCs within the Airfield Parcel were subject to LUCs. SEAD-122B: Small Arms Range, Airfield Parcel and SEAD-122E: Plane Deicing Area. A residential activities LUC was instituted on both AOCs as follows:

- The development and use of property for residential housing, elementary or secondary schools, child care facilities, and playgrounds will be prohibited.

6.4 Summary of the Ash Landfill Operable Unit LUC Objectives and Restrictions

Five AOCs (SEADs 3, 6, 8, 14, and 15) are located within the Ash Landfill OU and are subject to institutional controls including LUCs. The LUC performance objectives include:

- Preventing access to or use of groundwater until cleanup levels are met.
- Maintaining the integrity of any current or future remedial or monitoring system such as monitoring wells and permeable reactive barriers.
- Prohibiting excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume.
- Maintain the vegetative soil layer over the ash fill areas and the Non-Combustible Fill Landfill (NCFL) to limit ecological contact (Parsons, 2005c).

6.5 Summary of the North End Institutional Area LUC Objectives and Restrictions

One AOC (SEAD-41) within the North End Institutional Area is subject to LUCs. Historical groundwater data led the Army to impose a restriction on groundwater use for SEAD-41 and all of the properties within the North End Institutional Area as follows:

- Prohibit access to or use of groundwater at SEAD-41 until concentrations of hazardous substances contained are reduced to levels that allow unrestricted use.

6.6 Summary of the LUC Objectives and Restrictions of AOCs in Other Areas

Three AOCs (SEAD 13, 64B, and 64D) were inspected within the SEDA former ammunition storage area. A summary of the LUCs implemented at these three areas of concern are as follows:

- Prevent access to or use of the groundwater until New York State (NYS) Class GA Groundwater Standards are met (SEAD-13 and SEAD-64D).
- Restriction on unauthorized excavation or digging within SEAD-64B and SEAD-64D (Parsons, 2007a).

SEAD-12 was inspected within the high security area. A summary of the LUCs implemented at SEAD-12 are as follows:

- Restrict access to and use of the existing vacant Buildings 813/814 and the construction of inhabitable structures (temporary or permanent) above the area and within a fifty foot perimeter

of Buildings 813/814 and fifty foot radius from MW12-37 where TCE-contaminated soil was previously identified, and where contaminated groundwater may exist; and

- Prohibit access to and use of groundwater in the vicinity of Buildings 813/814.
- Prohibit the development and use of the property for residential housing, elementary and secondary schools, child care facilities and playgrounds until soil and groundwater standards for unrestricted use and unlimited exposure are achieved.

7.0 PROGRESS SINCE LAST FYR

In general, for AOCs that had recommendations in the previous FYR, the LUC recommendations were implemented as intended. Where an inspection was not permitted (Prison Area), the continued implementation of LUCs were confirmed via interview. Annual LUC inspections were conducted yearly except in the cases of 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

Annual groundwater monitoring continued at Ash Landfill (SEADs -3,- 6, -8, -14, and -15), SEAD-16/17 (except 2011), Open Burning (OB) Grounds (SEAD-23), and SEAD-25 based on comments from USEPA on the LTM annual reports for these AOCs summarizing groundwater monitoring trends. At the time of the annual reports there was not sufficient justification to terminate groundwater monitoring, and sampling was performed on an annual basis through this second FYR. Recommendations on groundwater monitoring frequency are further discussed in Section 5.0 of each individual appendix.

8.0 FIVE-YEAR REVIEW PROCESS

8.1 Administrative Components

Parsons in consultation with the U.S. Army (Army) conducted this FYR.

8.2 Community Involvement

The Army relies on public input to ensure that community concerns are considered during the FYR. This document was made available to the public for a public comment period, which began on 17 January 2017 and concluded on 28 February 2017. These documents were made available to the public at the AOC repository:

Seneca Army Depot Activity
Building 125
Romulus, New York 14541
(607) 869-1309
Hours are Mon-Thurs 9:00 am to 3:00 pm

The following notice by the USEPA serves as notification to the community that the five-year review is

being conducted by the regulatory agency. On November 19, 2015, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 32 Superfund sites and four federal facilities in New York and New Jersey, including the Seneca Army Depot Activity site. The announcement can be found at the following web address:

http://www2.epa.gov/sites/production/files/2015-11/documents/fy_16_fyr_public_website_summary.pdf.

Once the FYR is completed, the results will be made available at the local site repository which is at the Seneca Army Depot Activity at the address above. In addition, efforts will be made to reach out to local public officials to inform them of the results.

8.3 Document Review

This FYR includes a review of relevant information contained in a variety of the multi-site related documents. The documents, data and information reviewed to complete this second FYR are summarized in Section 14.0 References. The information reviewed primarily focused on documents produced after signature of the RODs, but also included information from pre-ROD documents to provide historical Site information and contaminant extent.

8.4 Data Review

No data were reviewed as part of the FYR Process, except for the AOCs with ongoing LTM. Discussions of the LTM groundwater data reviewed for the Ash Landfill (SEADs -3, -6, -8, -14, and -15), SEAD-16/17, OB Grounds (SEAD-23), and SEAD-25 are presented in the individual AOC appendices.

8.5 Site Inspection

The AOCs included as part of the FYR Process were inspected in April 22-23, 2014, June 1-2, 2015, and June 13th, 2016 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs from the 2015 inspection are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2** of each appendix. Specific observations made during AOC site inspections are presented in the individual AOC appendices

8.6 Interviews

No interviews were conducted during the FYR process for those AOCs that are uninhabited and unoccupied. Interviews were conducted at the Prison Area to confirm that the property is operating as state maximum security correctional facility. During the SEAD-41 site inspection, the Hillside Children's Center maintenance manager confirmed that the facility was using the public water supply.

8.7 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place for each AOC included in this second FYR. The LUC performance objectives are listed in Section 2.0 of each appendix.

9.0 TECHNICAL ASSESSMENT

9.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs at SEDA have been completed and

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documented. No continuing active remediation is required at the AOCs. Based on a review of Closure Reports, LUC RD, LTM reports, Environmental Easements, transfer deeds (as applicable) and the FYR site visit conducted between June 1 and 3, 2015 all remedies are functioning as intended by the decisions documents.

The selected remedies are still protective of human health and the environment. Additional details on the current protectiveness of the remedies at each AOC that are a part of this second FYR are presented in each AOCs individual appendix.

No opportunities for optimization or early indicators of potential issues have been identified at the AOCs as part of the FYR.

9.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAO used at the time of the remedies are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedies selected for the AOCs included as part of the second FYR.

9.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs. The exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy are still valid. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. Applicable or Relevant and Appropriate Requirement (ARARs) cited in the RODs remain protective of human health and the environment.

9.3.1 Change in Standards

Soil investigations used NYS Soil Cleanup Objectives (SCO) values contained in Technical and Administrative Guidance Memorandum (TAGM) #4046 (NYSDEC, 1996) or Title 6 New York Codes, Rules and Regulations (6 NYCRR) Part 375-6 (NYSDEC, 2006) values. Groundwater investigations used NYSDEC Ambient Water Quality Standards (AWQS) and Guidance Values (NYSDEC, 2000).

The NYS SCO values contained in TAGM #4046 used in RODs prior to 2006 were compared to 6 NYCRR Part 375-6 Remedial Program SCO values (**Attachment 3**). TAGM #4046 SCO were found to be lower than the restricted commercial cleanup objectives contained in Table 375-6.8(b) and for many contaminants lower than unrestricted cleanup objectives contained in Table 375-6.8(a).

An Addendum to NYSDEC AWQ Standard and Guidance Values was issued by NYSDEC in 2004 and amended the standards for three contaminants, none of which are COCs at SEDA. There have not been any additional addendums to the AWQS and Guidance Values issued by NYSDEC since the last FYR report.

As a result, the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

10.0 ISSUES, RECOMMENDATIONS, AND FOLLOW-UP ACTIONS

No issues were identified for AOCs within the PID/Warehousing Area, Prison Area, Airfield Parcel, Ash Landfill, North End Institutional Area, and SEADs 12, 13, 64B and 64D during this FYR that would affect the protectiveness of the remedy.

The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

In addition, the following are recommendations that impact monitoring but do not affect current protectiveness and were identified during the FYR:

- Based on EPA request, the Army has agreed to sample for perfluoroalkyl substances [PFAS] at Sites within SEDA where former fire training activities were conducted. These Sites include SEAD-25, SEAD-26, and SEAD-122E.

11.0 FIVE-YEAR REVIEW CONCLUSIONS

Based on a review of LUC Remedial Design (RD), environmental easements, property transfer deeds, closure reports, LTM reports, and a site inspection conducted on June 1 and June 3, 2015, the Army has made the following conclusions:

- LUCs employed at the Controlled Property are unchanged from the time of implementation;
- NYSDEC and USEPA were notified of any changes to the LTM employed at the Site as a result of contractual requirements;
- Nothing has occurred that would impair the ability of the LUCs to protect the public health and environment; and
- Nothing has occurred that would constitute a violation or failure to comply with the Remedial Design for the LUCs and giving access to such Controlled Property to evaluate continued maintenance of such controls.
- Engineering controls, including necessary treatment and/or mitigation systems and associated institutional controls are in place, are performing properly and remain effective;
- LTM requirements are being implemented at applicable AOCs;
- Operation and Maintenance activities are being conducted properly; and
- Based on this review, the remedy continues to be protective of public health and the environment and is compliant with the decision documents.

12.0 PROTECTIVENESS STATEMENT

Based upon the review of the CERCLA sites at the former Seneca Army Depot conducted by the Army, it has been determined that the remedies selected for the LUC/IC and LTM sites at the former SEDA remain protective of human health and the environment.

The remedy implemented for the AOCs included in the PID Warehousing Areas, Prison Area, Airfield Parcel, Ash Landfill OU, North End Institutional Area, and SEAD-12, SEAD-13, SEAD-64B, and SEAD-64D is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

Evaluation of the remedies will be included in the next FYR.

13.0 NEXT REVIEW

The next FYR for the SEDA should be completed before 30 September 2021.

14.0 REFERENCES

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NYSDEC, 1996 - Technical and Administrative Guidance Memorandum #4046 Determination of Soil Cleanup Objectives and Cleanup Levels, January 1994.

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NYSDEC, 2006 - 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375- 4 & 375-6, December 2006.

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Parsons ES, 1994a - Final SWMU Classification Report, Seneca Army Depot Activity, September 1994.

Parsons ES, 1994b - Remedial Investigation Report Ash Landfill Seneca Army Depot Romulus, New York, July 1994.

Parsons, 1995a - Expanded Site Investigation – Eight moderately Low Priority AOCs SEADs 5,9,12 (A and B), (43, 56, 69), 44 (A and B), 50, 58, and 59 Seneca Army Depot Activity, December 1995.

Parsons ES, 1998 - Remedial Investigation Report at the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), Final, May, 1998.

- Parsons ES, 1999a - Remedial Investigation Report at the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, March 1999.
- Parsons ES, 1999b - Final Investigation of Environmental Baseline Survey Non-Evaluated Sites [SEAD 119A, SEAD 122 (A, B, C, D, E), SEAD 123 (A, B, C, D, E, F), SEAD 46, SEAD 68, SEAD 120 (A, B, C, D, E, F, G, H, I, J), and SEAD 121 (A, B, C, D, E, F, G, H, I)], May 1999.
- Parsons ES, 1999c - Final Record of Decision (ROD) Former Open Burning (OB) Grounds Site, June 1999.
- Parsons, 2001 - Phase I Remedial Investigation (RI) at the Fill Area West of Building 135 (SEAD-59), and the Alleged Paint Disposal Area (SEAD-71), Seneca Arm Depot Activity (FINAL), November 2001.
- Parsons, 2002a - Decision Document, Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B, Seneca Army Depot Activity, Final, May 2002.
- Parsons, 2004a. Record of Decision (ROD) for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas, Final, September 2004.
- Parsons, 2002b - Action Memorandum and Decision Document, Time-Critical Removal Actions, Three VOC Sites (SEADs 38, 39, & 40), Seneca Army Depot Activity, Final, August 2002.
- Parsons, 2002c - Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67), Seneca Army Depot Activity, Final, August 2002.
- Parsons, 2002d - Revised Final Remedial Investigation (RI) Report at the Radioactive Waste Burial Sites (SEAD-12), August 2002.
- Parsons, 2003 - Record of Decision (ROD) Twenty No-Action SWMUs (SEADs 7, 9,10,18,19, 20, 21, 22, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 65, and 68) and Eight No-Further-Action SWMUs (SEADs 28, 29,30,31, 32, 34, 60 and 61), Final, September 2003.
- Parsons, 2004a - Record of Decision (ROD) for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas, Final, September 2004.
- Parsons, 2004b - Record of Decision for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), Final, July 2004.
- Parsons, 2004c - Record of Decision for the Ash Landfill Operable Unit, Final, July 2004.
- Parsons, 2004d -Decision Document - Mini Risk Assessment SEAD-13 Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site, Final, July 2004.
- Parsons, 2004e - Characterization Report, Small Arms Range - Airfield (SEAD-122B), Revised Final, October 2004.
- Parsons, 2005a - Remedial Design Work Plan and Design Report for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), Final, June 2005.

- Parsons, 2005b - Record of Decision for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, July 2005.
- Parsons, 2006a - Construction Completion Report for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), Final, November 2006.
- Parsons, 2006b - Remedial Design Work Plan for the Ash Landfill Site at Seneca Army Depot Activity, July 2006.
- Parsons, 2006c - Remedial Design Report for the Ash Landfill Operable Unit, August 2006.
- Parsons, 2006d - Phase II Remedial Investigation Report for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71), Draft Final, April 2006.
- Parsons, 2006e - Remedial Investigation Report for Two EBS Sites in the Planned Industrial Development Area (SEAD 121C and SEAD-121I), Final, April 2006.
- Parsons, 2007a - Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13,39,40,41,43/56/69,44A,44B,52,62,64B, 64C, 64D, 67, 122B and 122E, Final, March 2007.
- Parsons, 2007b - SEAD-25 & SEAD-26 Annual Report, February 2007.
- Parsons, 2007c - Remedial Design Work Plan and Design Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, July 2007.
- Parsons, 2007d -Long-Term Monitoring Plan for the Open Burning (OB) Grounds, Final, January 2007.
- Parsons, 2008a - Draft Final Completion Report for Building Cleaning and Building Demolition Seneca Army Depot Activity, Romulus, New York, November 2008.
- Parsons, 2008b - Record of Decision the Defense Reutilization and Marketing Office Yard (SEAD-121C) and the Rumored Cosmoline Oil Disposal Area (SEAD-121I) Seneca Army Depot Activity, Final, June 2008.
- Parsons, 2008c - Final Construction Completion Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17) Seneca Army Depot Activity, Romulus, NY, September 2008.
- Parsons 2009a - Record Of Decision for Five Former Solid Waste Management Units (SWMUs) SEAD-1, Hazardous Waste Container Storage Facility; SEAD-2, PCB Transformer Storage Facility; SEAD-5, Sewage Sludge Waste Piles; SEAD-24, Abandoned Powder Burn Pit; and, SEAD-48, Row E0800 Pitchblende Storage Igloos, Final, April 2009
- Parsons, 2009b - Annual Report and Year Two Review for the Ash Landfill Operable Unit, June 2009.
- Parsons, 2009c - Record of Decision for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71) Seneca Army Depot Activity, March 2009.
- Parsons, 2009d - Annual Report - Year 2 for the Abandoned Deactivation Furnace (SEAD-16) and the

- Active Deactivation Furnace (SEAD-17), Final, September 2009.
- Parsons, 2010a - Annual Report – Year 3 for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Draft Final, December 2010.
- Parsons, 2010b - Annual Report and Year Three Review for the Ash Landfill Operable Unit, Draft, April 2010.
- Parsons, 2010c - Construction Completion Report for the Former Sewage Sludge Waste Piles (SEAD-5), Final, July 2010.
- Parsons, 2011a - Long-Term Monitoring Report for the Fire Training and Demonstration Pad (SEAD-25), Final, January 2011.
- Parsons, 2011b - Annual Report 2010 – Year 4 for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Draft, April 2011.
- Parsons, 2011c - Long-Term Monitoring Annual Report 2010 Open Burning Grounds Draft Final, March 2011.
- Parsons, 2011d - Long-Term Monitoring and Site Assessment Report for the Fire Training and Demonstration Pad (SEAD-25), Draft, May 2011.
- Parsons, 2011e – Annual Report and Year 4 Review, Ash Landfill Operable Unit, Seneca Army Depot Activity, Draft, May 2011.
- Parsons, 2011f – Five-Year Review Report, Seneca Army Depot Activity, Draft, July 2011.
- Parsons, 2012 - Annual Report and Year 5 Review, Ash Landfill Operable Unit, Seneca Army Depot Activity, Draft, May 2012.
- Parsons, 2013a – 2012 Long-Term Monitoring Report for the Fire Training and Demonstration Pad (SEAD-25), Final, April 2013.
- Parsons, 2013b – 2013 Long-Term Monitoring Report for the Fire Training and Demonstration Pad (SEAD-25), Final, April 2013.
- Parsons, 2014a - Long-Term Monitoring Annual Report 2012 Open Burning Grounds Final, January 2014.
- Parsons, 2014b - Annual Report 2012 – Year 5 for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Draft, February 2014.
- Parsons, 2014c - Annual Report and Year 6 Review, Ash Landfill Operable Unit, Seneca Army Depot Activity, Final, April 2014.
- Parsons, 2014d - Annual Report and Year 7 Review, Ash Landfill Operable Unit, Seneca Army Depot Activity, Draft, April 2014.
- Parsons, 2014e - Long-Term Monitoring Annual Report 2013 Open Burning Grounds Final, August 2015.

- Parsons, 2014f - 2014 Land Use Controls Inspection Report, Ash Landfill Operable Unit, Seneca Army Depot Activity, Draft, August 2014.
- Parsons, 2015a - Annual Report 2013 – Year 6 for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Draft, April 2015.
- Parsons, 2015b – 2015 Long-Term Monitoring Report for the Fire Training and Demonstration Pad (SEAD-25), Draft, August 2015.
- Parsons, 2015c - Annual Report and Year 8 Review, Ash Landfill Operable Unit, Seneca Army Depot Activity, Draft, August 2015.
- Parsons, 2015d - Long-Term Monitoring Annual Report 2014 Open Burning Grounds Draft, September 2015.
- Parsons, 2015e - Annual Report 2014 – Year 7 for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, November 2015.
- Parsons, 2015f – 2014 Long-Term Monitoring Report for the Fire Training and Demonstration Pad (SEAD-25), Final, February 2015.
- Parsons, 2015g – Final Record of Decision for the Radioactive Waste Burial Site (SEAD-12 and the Mixed Waste Storage Facility (SEAD-72). Final, March 2015.
- Parsons, 2016a – Long-Term Monitoring Annual Report 2015 Open Burning Grounds Draft, January 2016.
- USACE, 2006 - Land Use Control Remedial Design for SEAD-27, 66, and 64A, Final, December 2006.
- USACE, 2007 - Addendum 1 - SEAD 25 and SEAD 26, Land Use Control Remedial Design for SEAD 27, 66, and 64A, Final, May 2007.
- USACE, 2008a - Addendum 2 - SEAD 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E, Land Use Control Remedial Design for SEAD 27, 66, and 64A, Final, March 2008.
- USACE, 2008b - Addendum # 3 to Land Use Control Remedial Design for Seneca Army Depot Activity Romulus, New York, Addressing SEADs 3, 6, 8, 14, and 15 (Ash Landfill), November 2008.
- USACE, 2009 - Addendum #4 to Land Use Control Remedial Design for Seneca Army Depot Activity Romulus, New York, Addressing SEADs 1, 2, 5, 16, 17, 59, 71, 121C, and 121I, July 2009.
- USEPA, Army, and NYSDEC, 1993 - Federal Facility Agreement under CERCLA Section 120, Docket Number: II-CERCLA-FFA-00202, January 1993.
- USEPA, 2002 - Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites, USEPA 540-R-003, OSWER 9285.7-41, September 2002.
- Weston, 2004 - Seneca Army Depot VOC Sites – SEADs 39 and 40, Time-Critical Removal Action, Seneca County, Romulus, New York, October 2004.

Weston, 2005a - Seneca Army Depot Activity Time-Critical Removal Action Metal Sites – SEAD 67,
Seneca County, Romulus, New York, February, 2005.

Weston, 2005b - Soil and Sediment Remediation Open Burning Grounds Completion Report, June 2005.

**Table 1 - SEDA CERCLA Sites Summary
Five-Year Review
Seneca Army Depot Activity**

AOC
Planned Industrial Development (PID) Warehouse Area
SEAD-1 Hazardous Waste Container Storage Facility (Building 307)
SEAD-2 PCB Transformer Storage Facility (Building 301)
SEAD-5 Sewage Sludge Piles
SEAD-16 Building S311, (former) Abandoned Deactivation Furnace
SEAD-17 Building 367, (former) Active Deactivation Furnace
SEAD-25 Fire Training and Demonstration Pad
SEAD-26 Fire Training Pit
SEAD-27 Building 360 Steam Cleaning Waste Tank
SEAD-39 Building 121 Boiler Plant Blowdown Leach Pit
SEAD-40 Building 319 Boiler Plant Blowdown Leach Pit
SEAD-59 Fill Area West of Building 135
SEAD-64A Garbage Disposal Area, Debris Landfill south of Storage Pad
SEAD-66 Pesticide Storage Area near Buildings 5 and 6
SEAD-67 Dump Site east of Sewage Treatment Plant No. 4
SEAD-71 Alleged Paint Disposal Area
SEAD-121C Defense Reutilization and Marketing Office (DRMO) Yard
SEAD-121I Rumored Cosmoline Disposal Area
Prison Area
SEAD-43 Old Missile Propellant Test Lab
SEAD-44A: Quality Assurance Test Laboratory
SEAD-44B: Quality Assurance Test Laboratory
SEAD-52: Buildings 608 and 612 – Ammunition Breakdown Area
SEAD-56 Herbicide and Pesticide Storage
SEAD-62: Nicotine Sulfate Disposal Area near Buildings 606 and 612
SEAD-64C: Garbage Disposal Area
SEAD-69 Building 606 Disposal Area
Other SEADs with LUC Requirements
SEAD-12 Radioactive Waste Burial Sites
SEAD-13 Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site
SEAD-23 Open Burning Ground
SEAD-64B Garbage Disposal Area, Disposal Area South of Classification Area
SEAD-64D Garbage Disposal Area West of Building 2203
<i>North End Barracks Area</i>
SEAD-41 Building 718 Boiler Plant Blowdown Leach Pit
<i>Airfield Parcel</i>
SEAD-122B Small Arms Range, Airfield
SEAD-122E Plane Deicing Areas
<i>Ash Landfill Operable Unit</i>
SEAD 3 Incinerator Cooling Water Pond
SEAD-6 Abandoned Ash Landfill
SEAD-8 Non-Combustible Landfill
SEAD-14 Refuse Burning Pits
SEAD-15 Building 2207 – Abandoned Solid Waste Incinerator

Table 2 - Chronology of Site Events
Five-Year Review
Seneca Army Depot Activity

Site Chronology Events	Date
U.S. Army announced decision to build depot and acquires land (~10,600 acres).	June 11, 1941
U.S. Army begins construction of the Seneca Ordnance Depot	July 9, 1941
SEDA proposed for the National Priorities List (NPL)	July 14, 1989
SEDA was finalized and listed in Group 14 on the Federal Section of the NPL.	August 30, 1990
The Federal Facility Agreement signed between EPA, NYSDEC, and the Army.	January 1, 1993
SEDA was approved for closure under BRAC.	October 1, 1995
Seneca Army Depot Local Redevelopment Authority (LRA) created by Seneca County Board of Supervisors.	October 1, 1995
The Reuse Plan was approved by the LRA and Seneca County Board of Supervisors.	October 22, 1996
The Environmental Baseline Study was completed (Nov 13 - Dec 12, 1995) and reported.	October 29, 1996
ROD signed for Former Open Burning Grounds Site.	June 14, 1999
Institutional use at the former administration area in the northern end of the former depot property.	July 1, 2000
Depot transfers Prison Parcel to New York State.	September 26, 2000
SEDA was officially closed.	September 30, 2000
Seneca County Industrial Development Agency were transferred 9,500 acres (7,000 acres from conservation area, 900 acres from Planned Industrial Development/Warehouse Area (PID Area), and 500 acres from airfield parcel).	September 30, 2003
ROD signed for Twenty No Action SWMUs and Eight No Further Action SWMUs.	November 12, 2003
26 acres of former depot property was transferred for creation of a county jail.	December 31, 2003
ROD signed for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas (SEADs 27, 64A, and 66).	September 28, 2004
ROD signed for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26).	September 29, 2004
ROD signed for the Ash Landfill Operable Unit Including Sites (SEADs 3, 6, 8, 14, 15).	January 21, 2005
ROD signed for No Further Actions for SWMUs SEAD 50/54	September 28, 2005
ROD signed for Debris Area Near Booster Station 2131 (SEAD-58) and Miscellaneous Components Burial Site (SEAD-63)	September 28, 2006
ROD signed for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)	September 29, 2006
ROD signed for the 17 SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)	July 3, 2007
SEAD-24, SEAD-50, SEAD-54, and SEAD-58 delisted from NPL.	April 28, 2008
ROD signed for the Defense Reutilization and Marketing Office (DRMO) Yard (SEAD-121C) and the Rumored Cosmoline Oil Disposal Area (SEAD-121I).	August 7, 2008
ROD signed for the Munitions Washout Facility (SEAD-4) and the Building 2079 Boiler Blowdown Pit (SEAD-38).	September 22, 2008
ROD signed for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71).	March 31, 2009
ROD signed for Five Former SWMUs (SEAD 1, 2, 5, 24, 48)	May 6, 2009
ROD signed for the Old Construction Debris Landfill (SEAD-11)	September 25, 2009
A total of 9,808 acres transferred as of FY2009 with 878 acres remaining.	February 1, 2010
First Five Year Review (Draft)	July 20, 2011
ROD signed for Radioactive Waste Burial Sites (SEAD-12) and Mixed Waste Storage Facility (SEAD-72)	March 30, 2015

TABLES



**Table 3 - Summary of Areas of Concern (AOC) Subject to CERCLA Investigations, LUC Requirements and Disposition Status at SEDA
Five-Year Review
Seneca Army Depot Activity**

Site Status	Site Number	Site Name	Operable Unit (OU)	Subject to Five-Year Review	LUC Reference	LUC Requirements							Other Information			
						Prohibit Residential, Schools, Childcare Facilities, & Playgrounds	Prohibit construction of inhabitable structures (temporary or permanent)	GW Use Restriction (Prohibit Access or Use of)	GW LTM Required	Unauthorized Excavation Restriction	Maintain Soil Cap and/or Vegetative Cover	Maintain Remedial & Monitoring Wells System	Army Sites Not Ready For Transfer	GW Use Deed Restriction	Prison Parcel Reversionary Deed	Environmental Easement
Planned Industrial/Office Development (PID)/Warehouse Area																
	SEAD 1	Hazardous Waste Container Storage Facility (Building 307)	OU13	X	Addendum #4	X		X								X
	SEAD 2	PCB Transformer Storage Facility (Building 301)	OU13	X	Addendum #4	X		X								X
	SEAD 5	Sewage Sludge Storage Piles	OU13	X	Addendum #4	X		X		X	X					X
NA	SEAD 9	Old Scrap Wood Site	OU14		PID Area-Wide LUC	X		X								X
NA	SEAD 10	Present Scrap Wood Site	OU14		PID Area-Wide LUC	X		X								X
	SEAD 16	Building S311, Abandoned Deactivation Furnace	OU4	X	Addendum #4	X		X	X							X
	SEAD 17	Building 367, Active Deactivation Furnace	OU4	X	Addendum #4	X		X	X							X
NA	SEAD 20	Sewage Treatment Plant No. 4	OU14		PID Area-Wide LUC	X		X								X
NA	SEAD 22	Sewage Treatment Plant No. 314	OU14		PID Area-Wide LUC	X		X								X
	SEAD 25	Fire Training and Demonstration Pad	OU3	X	Addendum #1	X		X	X			X				X
	SEAD 26	Fire Training Pit	OU3	X	Addendum #1	X		X	X ¹							X
	SEAD 27	Steam Cleaning Waste Tank (Building 360)	OU12	X	Remedial Design LUC	X		X								X
NFA	SEAD 28	Building 360, Underground Waste Oil Tanks (2)	OU14		Remedial Design LUC	X		X								X
NFA	SEAD 30	Building 118, Underground Waste Oil Tank	OU14		Remedial Design LUC	X		X								X
NFA	SEAD 31	Building 117, Underground Waste Oil Tank	OU14		Remedial Design LUC	X		X								X
NA	SEAD 33	Building 121, Underground Waste Oil Tank	OU14		Remedial Design LUC	X		X								X
NFA	SEAD 34	Building 319, Underground Waste Oil Tank	OU14		Remedial Design LUC	X		X								X
NA	SEAD 36	Building 121, Waste Oil Burning Boilers (2 units)	OU14		Remedial Design LUC	X		X								X
NA	SEAD 37	Building 319, Waste Oil Burning Boilers (2 units)	OU14		Remedial Design LUC	X		X								X
	SEAD 39	Building 121 Boiler Plant Blowdown Leach Pit	OU17	X	Addendum #2	X		X								X
	SEAD 40	Building 319 Boiler Plant Blowdown Leach Pit	OU17	X	Addendum #2	X		X								X
NA	SEAD 42	Building 106, Preventive Medicine Laboratory	OU14		PID Area-Wide LUC	X		X								X
NA	SEAD 47	Building 321 and 806, Radiation Calibration Source Storage	OU14		PID Area-Wide LUC	X		X								X
NA	SEAD 49	Building 356, Columbite Ore Storage	OU14		PID Area-Wide LUC	X		X								X
NFA	SEAD 50	Tank Farm	OU15		PID Area-Wide LUC	X		X								X
NFA	SEAD 54	Asbestos Storage	OU15		PID Area-Wide LUC	X		X								X
NA	SEAD 55	Building 357, Tannin Storage	OU14		PID Area-Wide LUC	X		X								X
	SEAD 59	Fill Area West of Building 135	OU6	X	PID Area-Wide LUC	X		X								X
	SEAD 64A	Garbage Disposal Area, South of Storage Pad	OU12	X	Remedial Design LUC	X		X		X						X
	SEAD 66	Pesticide Storage Area near Buildings 5 and 6	OU12	X	Remedial Design LUC	X		X								X
	SEAD 67	Dump Site east of Sewage Treatment Plant No. 4	OU16 & OU17	X	Addendum #2	X		X								X
NA	SEAD 68	Building S-355, Old Pest Control Shop	OU14		PID Area-Wide LUC	X		X								X
	SEAD 71	Alleged Paint Disposal Area	OU6	X	Addendum #4	X		X								X
	SEAD 121C	Defense Reutilization and Marketing Office (DRMO) Yard	OU21	X	Addendum #4	X		X								X
	SEAD 121I	Rumored Cosmoline Disposal Area	OU21	X	Addendum #4	X		X								X

**Table 3 - Summary of Areas of Concern (AOC) Subject to CERCLA Investigations, LUC Requirements and Disposition Status at SEDA
Five-Year Review
Seneca Army Depot Activity**

Site Status	Site Number	Site Name	Operable Unit (OU)	Subject to Five-Year Review	LUC Reference	LUC Requirements							Other Information			
						Prohibit Residential, Schools, Childcare Facilities, & Playgrounds	Prohibit construction of inhabitable structures (temporary or permanent)	GW Use Restriction (Prohibit Access or Use of)	GW LTM Required	Unauthorized Excavation Restriction	Maintain Soil Cap and/or Vegetative Cover	Maintain Remedial & Monitoring Wells System	Army Sites Not Ready For Transfer	GW Use Deed Restriction	Prison Parcel Reversionary Deed	Environmental Easement
Prison Area																
	SEAD 43	Building 606 Old Missile Propellant Test Laboratory	OU17	X	Addendum #2									X		
	SEAD 44A	Quality Assurance Test Laboratory, West of Building 616	OU17	X	Addendum #2									X		
	SEAD 44B	Quality Assurance Test laboratory, Brady Road	OU17	X	Addendum #2									X		
	SEAD 52	Building 608 and 612 Ammunition Breakdown Area	OU10 & OU17	X	Addendum #2									X		
	SEAD 56	Building 606 Herbicide and Pesticide Storage	OU17	X	Addendum #2									X		
NFA	SEAD 60	Oil Discharge adjacent to Building 609	OU10 & OU14		None - NFA Site										#	
	SEAD 62	Nicotine Sulfate Disposal Area near Building 606 and 612	OU17	X	Addendum #2									X		
	SEAD 64C	Garbage Disposal Area	OU17	X	Addendum #2									X		
	SEAD 69	Building 606 Disposal Area	OU17	X	Addendum #2									X		
Other SEADs with LUC Requirements																
	SEAD 12	Radiological Waste Burial Sites	OU5	X	Addendum #5	X	X	X								
	SEAD 13	Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site	OU9 & OU17	X	Addendum #2			X				X ²	X			
NFA	SEAD 24	Abandoned Powder Burning Pit	OU13 & OU16		None - NFA Site	X		X								
	SEAD 64B	Garbage Disposal Area, South of Classification Area	OU17	X	Addendum #2					X	X				X	
	SEAD 64D	Garbage Disposal Area, West of Building 2203	OU17	X	Addendum #2			X		X	X				X	
North End Barracks Area																
NA	SEAD 7	Shale Pit	OU14		None - NA Site											
NA	SEAD 18	Building 709, Classified Document Incinerator	OU14		None - NA Site											
NA	SEAD 19	Building 801, Classified Document Incinerator	OU14		None - NA Site											
NA	SEAD 21	Sewage Treatment Plant No. 715	OU14		None - NA Site											
NFA	SEAD 32	Building 718, Underground Waste Oil Tanks (2)	OU14		None - NFA Site											
NA	SEAD 35	Building 718, Waste Oil Burning Boilers (3 units)	OU14		None - NA Site											
	SEAD 41	Building 718 Boiler Plant Blowdown Leach Pit	OU17	X	Addendum #2			X						X ³	X	
NFA	SEAD 61	Building 718, Underground Waste Oil Tank	OU14		None - NA Site											
Airfield Parcel																
	SEAD 122B	Small Arms Range, Airfield	OU17	X	Addendum #2	X									X	
	SEAD 122E	Plane Deicing Area	OU17	X	Addendum #2	X									X	
Ash Landfill Operable Unit																
	SEAD 3	Incinerator Cooling Water Pond	OU1	X	Addendum #3		X	X	X	X	X				X	
	SEAD 6	Abandoned Ash Landfill	OU1	X	Addendum #3		X	X	X	X	X				X	
	SEAD 8	Non-Combustible Fill Area	OU1	X	Addendum #3		X	X	X	X	X				X	
	SEAD 14	Refuse Burning Pits (2 units)	OU1	X	Addendum #3		X	X	X	X	X				X	
	SEAD 15	Abandoned Solid Waste Incinerator (Building 2207)	OU1	X	Addendum #3		X	X	X	X	X				X	
Ongoing Remedial Action/ Pre-RODs																
	SEAD 45	Open Detonation Area	OU22	X	Pre-ROD								X			
	SEAD 46	Small Arms Range (aka 3.5-inch Rocket Range)	OU11	X	Pre-ROD								X			
	SEAD 57	Explosive Ordnance Disposal Area (#1)	OU11	X	Pre-ROD								X			
	SEAD 007-R-01	Grenade Range	OU19	X	Pre-ROD								X			
	SEAD 002-R-01	Explosive Ordnance Disposal Areas #2 and #3	OU19	X	Pre-ROD								X			
	SEAD 70	Building 2110, Fill Area	OU11 & OU20	X	Pre-ROD								X			

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Five-Year Review
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						Prohibit Residential, Schools, Childcare Facilities, & Playgrounds	Prohibit construction of inhabitable structures (temporary or permanent)	GW Use Restriction (Prohibit Access or Use of)	GW LTM Required	Unauthorized Excavation Restriction	Maintain Soil Cap and/or Vegetative Cover	Maintain Remedial & Monitoring Wells System	Army Sites Not Ready For Transfer	GW Use Deed Restriction	Prison Parcel Reversionary Deed	Environmental Easement
Other SEADs with RODS, but no LUC Requirements																
	SEAD 23	Open Burning Ground	OU2	X	No LUC Requirements				X ⁴	X ⁴						
Other No Action/No Further Action Sites																
NFA	SEAD 4	Munitions Washout Facility Leach Field			None - NFA Site											
NFA	SEAD 11	Old Construction Debris Landfill			None - NFA Site											
NFA	SEAD 29	Building 732, Underground Waste Oil Tank			None - NFA Site											
NFA	SEAD 38	Building 2079, Boiler Plant Blowdown Leach Pit			None - NFA Site											
NFA	SEAD 48	Pichblende Ore Storage Igloos			None - NFA Site											
NA	SEAD 51	Herbicide Usage, Perimeter of High Security Area			None - NA Site											
NA	SEAD 53	Munitions Storage Igloos			None - NA Site											
NA	SEAD 58	Debris Area near Booster Station 2131			None - NA Site											
NFA	SEAD 63	Miscellaneous Components Burial Area			None - NFA Site											
NA	SEAD 65A	Acid Storage Area			None - NA Site											
NA	SEAD 65B	Acid Storage Area			None - NA Site											
NA	SEAD 65C	Acid Storage Area			None - NA Site											
NA	SEAD 72	Building 803, Mixed Waste Storage Area			None - NFA Site											

Note: For the majority of the AOCs, their respective ROD required implementation of specific LUCs which are summarized above.

X¹ – Long Term Groundwater monitoring was initially required at SEAD-26 as a condition of the ROD. Groundwater monitoring at SEAD-26 was terminated by the Army, with the approval of the EPA and the NYSDEC after the first year of sampling (2006) after analysis indicated that no COCs were present in the groundwater at concentrations above defined cleanup goals.

X² – At SEAD-13, the ROD requires that the integrity of any current or future remedial or monitoring system is maintained. All the monitoring wells at SEAD-13 were decommissioned.

X³ – GW Use Deed Restriction was placed on the deed because this area was transferred before environmental easements were required.

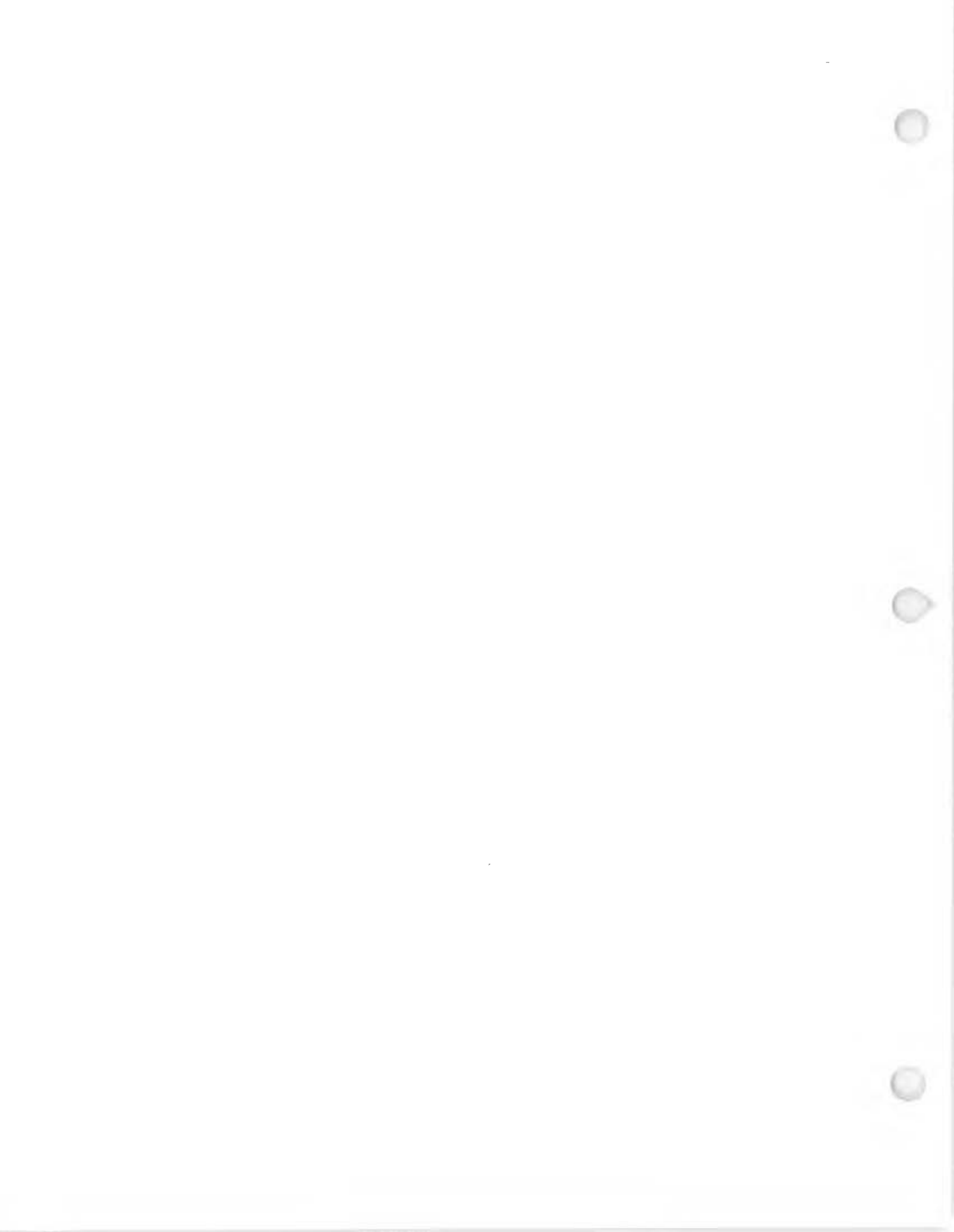
X⁴ – SEAD 23, Open Burning Grounds has Operations and Maintenance requirements per the ROD signed in February 1999. However, no LUCs have been established for the site.

– SEAD-60 was not included in the ROD associated with the Prison Parcel Reversionary Deed.

**Table 4 - Photographic Log Descriptions
Five-Year Review
Seneca Army Depot Activity**

Attachment #	SEAD Name	Photo #	Photo Description
Attachment A-1	SEAD-1, Hazardous Waste Container Storage Facility (Building 307)	Photo 1, 2, 3	Views of Building 307 with native grass growing adjacent to building. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment B-1	SEAD-2 PCB Transformer Storage Facility (Building 301)	Photo 1	View of Building 301 from north. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment C-1	SEAD-5 Sewage Sludge Piles	Photo 1, 2	No unauthorized excavations or activities that might compromise the integrity of the engineered soil cover were observed. The site inspection confirmed that no access to or use of groundwater was evident; and that no no residential, schools, childcare and playgrounds were constructed.
Attachment D-1	SEAD-16 Building S311, (former) Abandoned Deactivation Furnace	Photo 1, 2, 3	Overlooking excavated area. Ponding observed in excavated area, but did not appear to reduce the effectiveness of the remedy. SEDA had received heavy rainfall during site visit. The site inspection confirmed that no access to or use of groundwater was evident.
Attachment D-1	SEAD-17 Building 367, (former) Active Deactivation Furnace	Photo 1	Ponding observed in excavated area but did not appear to reduce the effectiveness of the remedy. SEDA had received heavy rainfall during the site visit.
Attachment E-1	SEAD-59 Fill Area West of Building 135	Photo 1,2	The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment F-1	SEAD-71 Alleged Paint Disposal Area	Photo 1	View of roadway on-site. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment G-1	SEAD-121C Defense Reutilization and Marketing Office (DRMO) Yard	Photo 1, 2, 3	Ponding observed, SEDA had received heavy rainfall during site visit. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment G-1	SEAD-121I Rumored Cosmoline Disposal Area	Photo 1, 2	There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment H-1	SEAD-25 Fire Training and Demonstration Pad	Photo 1, 2	View of gravel covered excavation area. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed. Heavy Rainfall during Site visit did not appear to reduce the effectiveness of the remedy.
Attachment I-1	SEAD-26 Fire Training Pit	Photo 1, 2	Fire Training Pit and Area. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment J-1	SEAD-27 Building 360, Steam Jenny Pit	Photo 1, 2	The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment K-1	SEAD-64A Garbage Disposal Area, Debris Landfill south of Storage Pad	Photo 1, 2, 3	The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment L-1	SEAD-66 Pesticide Storage Area near Buildings 5 and 6	Photo 1, 2	Building 5 on the north side and Building 6 on the south side are suspected to be located near the former pesticide storage area.
Attachment M-1	SEAD-39 Building 121 Boiler Plant Blowdown Leach Pit	Photo 1, 2	View toward former boiler plant leach pit from north and south. The excavated area was backfilled and returned to its original grade. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment N-1	SEAD-40 Building 319 Boiler Plant Blowdown Leach Pit	Photo 1	View of leach pit toward boiler plant. The ground surface to the north of Building 319 and to the south of the drainage ditch was covered with asphalt. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment O-1	SEAD-67 Dump Site east of Sewage Treatment Plant No. 4	Photo 1, 2	Undeveloped site areas, heavily vegetated with low brush and deciduous trees. The site inspection confirmed that no access to or use of groundwater was evident. The site inspection confirmed that no prohibited facilities have been constructed.
Attachment P-1	Prison Area Parcel	N/A	Photos not allowed. The site inspection confirmed that the facility is still operating as a state prison. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy.
Attachment V-1	SEAD-13 Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site	Photo 50, 49, 51	The site inspection confirmed no access to or use of groundwater was evident.
Attachment W-1	SEAD-41 Building 718 Boiler Plant Blowdown Leach Pit	Photo 1, 2	This view is of the property currently occupied by the Hillside Children's Center. During the site inspection, the Hillside Children's Center maintenance manager confirmed that the facility was using the public water supply. The site inspection confirmed that no access to or use of groundwater was evident.
Attachment X-1	SEAD-64B Garbage Disposal Area, Disposal Area South of Classification Area	Photo 1,2	The cover is vegetated with no signs of erosion evident. The site inspection confirmed that no prohibited excavation has taken place and the vegetative cover is being maintained.
Attachment Y-1	SEAD-64D Garbage Disposal Area West of Building 2203	Photo 1, 2, 3	The cover is vegetated with no signs of erosion evident. The site inspection confirmed that no prohibited excavation has taken place and no access to or use of groundwater was evident.
Attachment Z-1	Ash Landfill Operable Unit including SEADs 3, 6, 8, 14 and 15	Photo 1,2	The integrity of the LTM monitoring wells and biowall C is intact, and no maintenance is required.

FIGURES





©2011 Google
 Image ©2011 New York GIS
 ©2011 Europa Technologies

©2010 Google

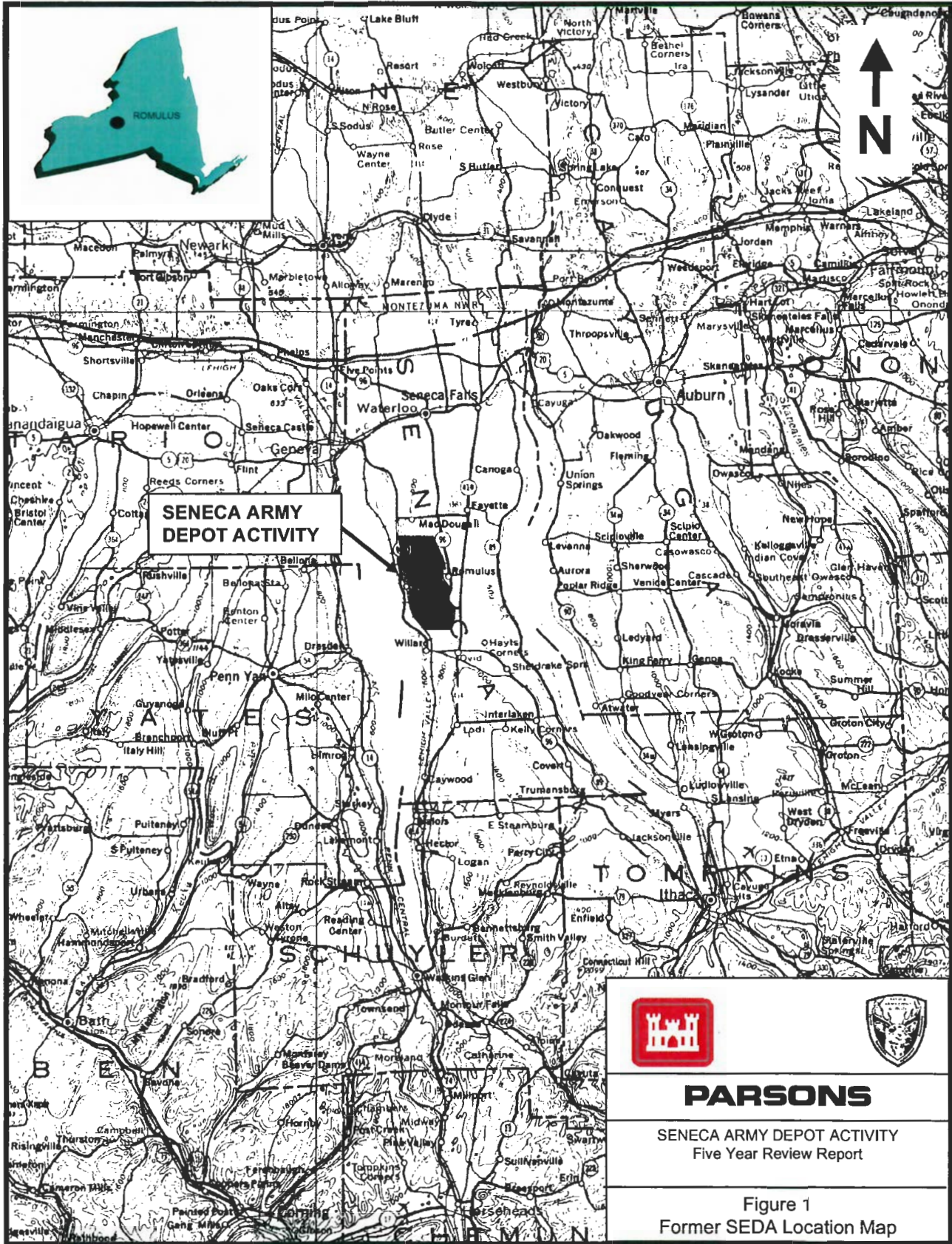
- Approximate Creek Path
- - - - - Approximate Depot Boundary



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SENECA ARMY DEPOT ACTIVITY
 Five Year Review Report

Figure 4
 Aerial View of Former Depot

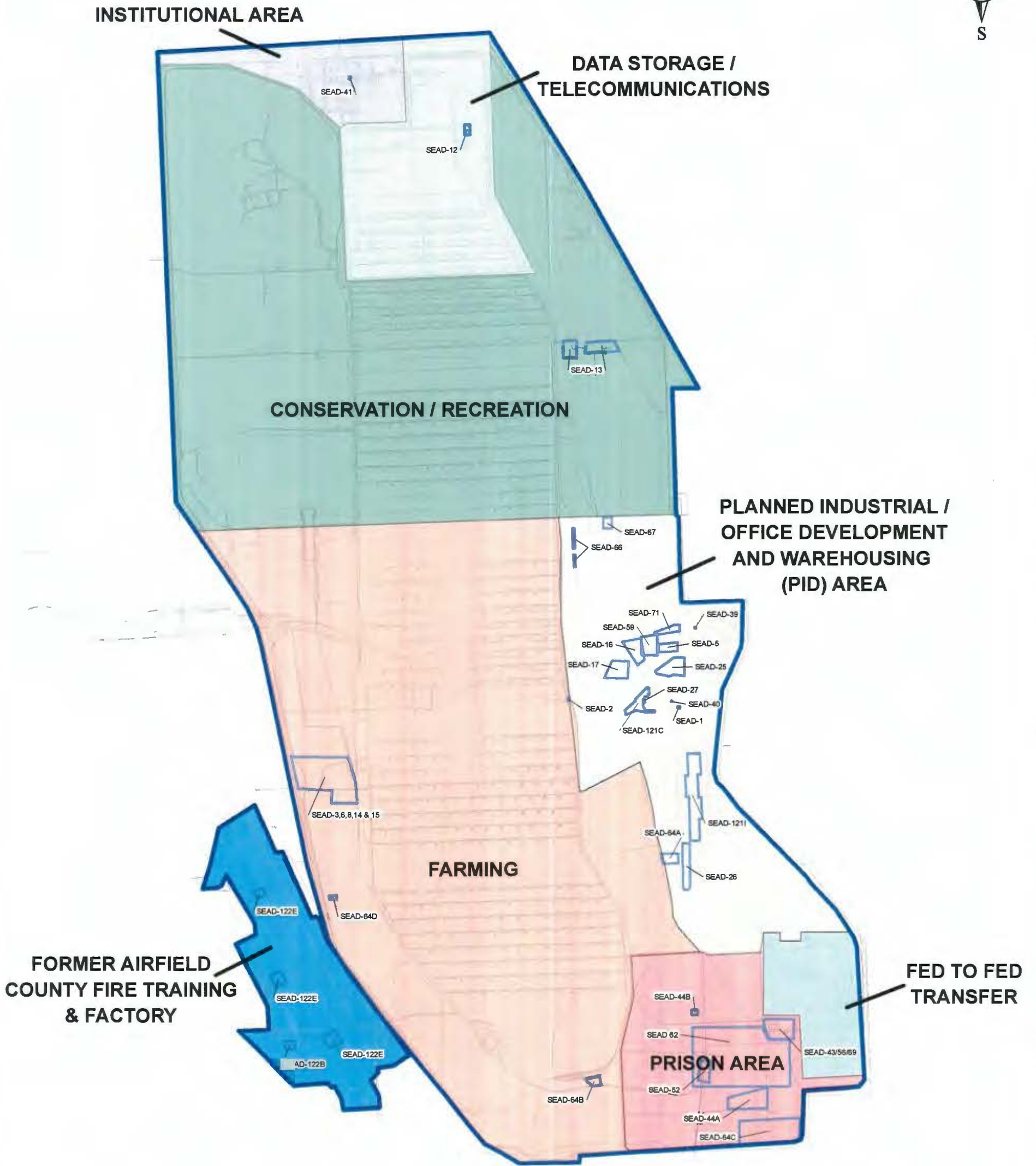
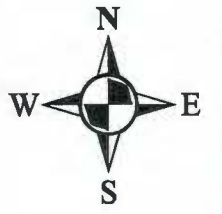


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SENECA ARMY DEPOT ACTIVITY
Five Year Review Report




Figure 1
Former SEDA Location Map



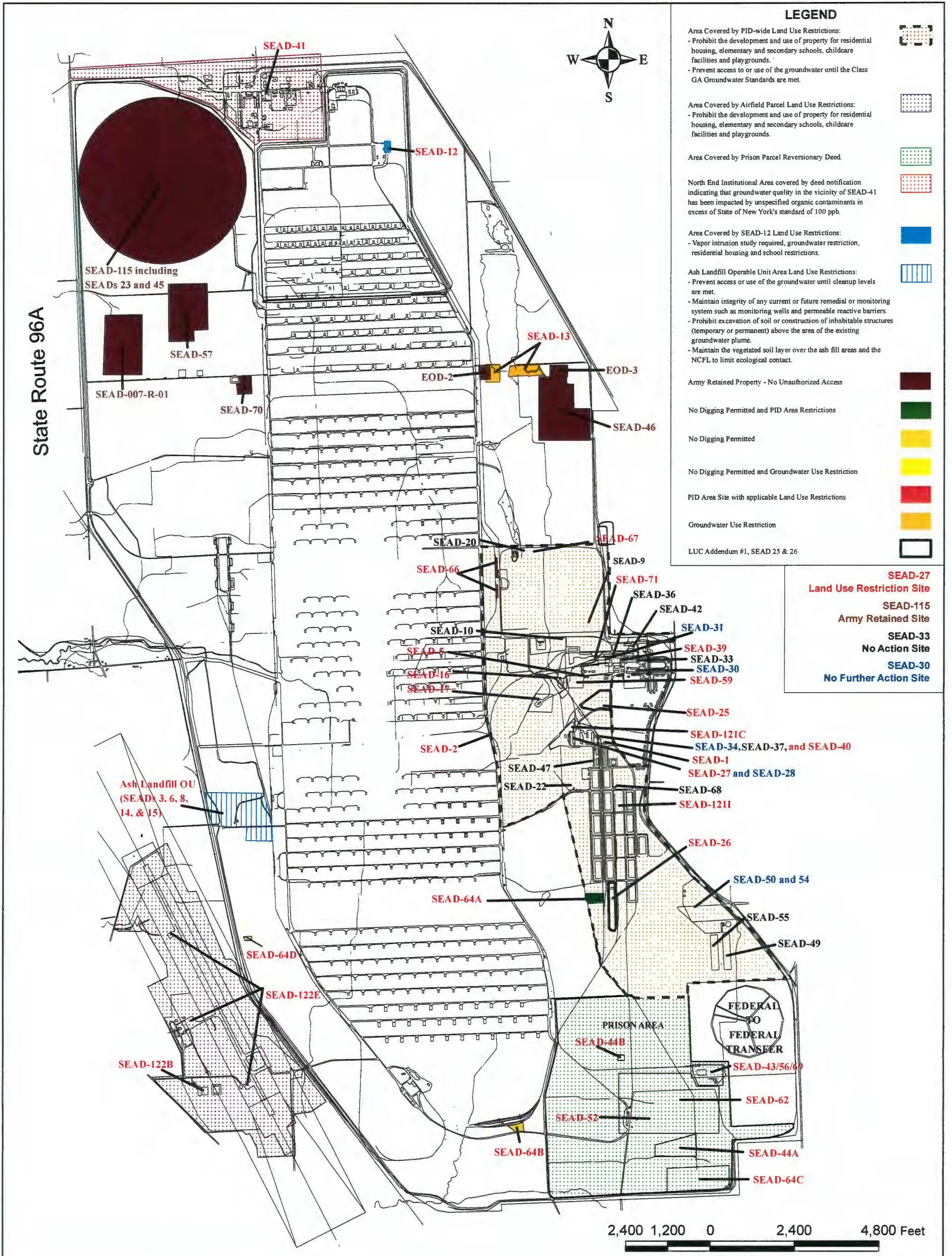


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	PARSONS	
SENECA ARMY DEPOT ACTIVITY Five-Year Review		
FIGURE 2 Future Land Use and Location of IC Sites		
October 2016		

- Legend**
-  SEADs Inspected
 -  SEDA Boundary
 -  Location of AOCs





Land Use Control, Remedial Design, Version

- PID Area LUC Sites, SEADs 27, 64A, and 66
- LUC Addendum #1, SEADs 25 and 26
- LUC Addendum #2, SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E
- LUC Addendum #3, Ash Landfill Operable Unit SEADs 3, 6, 8, 14 and 15
- LUC Addendum #4, SEADs 1, 2, 5, 16, 17, 59, 71, 121C, and 121I
- LUC Addendum #5, SEAD 12



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SENECA ARMY DEPOT ACTIVITY
FIVE YEAR REVIEW REPORT

FIGURE 3
EXTENT OF SEDA
LAND USE RESTRICTION

BBO February 2016

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APPENDICES



APPENDIX A
SEAD-1: HAZARDOUS WASTE CONTAINER STORAGE FACILITY (BUILDING 307)



APPENDIX A: SEAD-1 Hazardous Waste Container Storage Facility (Building 307)

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-1 (Building 307, the former Hazardous Waste Container Storage Facility) is located approximately 3,500 feet southwest of the Depot's main entrance off State Route 96. Building 307 was constructed in 1981 and was used for temporary storage of containerized hazardous wastes prior to their shipment offsite for disposal. During Building 307's active life, the ground surrounding the building was kept clear of vegetation.

Hazardous wastes stored at SEAD-1 included spent solvents; still bottoms; sludge from oil/grease separations; cleaning compounds; paper filters; waste polychlorinated biphenyls (PCBs); and, spent battery acids. The storage of hazardous waste in Building 307 was subject to regulations promulgated under RCRA, 42 U.S.C. §§6901-63992k (Parsons, 2009a).

1.2 Initial Response

On December 30, 1991, the Army submitted a RCRA Part A and Part B Permit Application for the Depot that included storage operations at Building 307. The Army's permit application was not processed or approved, and operations performed at Building 307 continued under Interim Status until September 2005 when NYSDEC accepted the Army's Closure Certificate for SEAD-1. A RCRA Closure was implemented and completed for Building 307 (SEAD-1). The NYSDEC approved the RCRA Closure of the building in September of 2005, and indicated that the existing building should only be used for industrial operations in the future. However, the NYSDEC deferred comment or determination on the acceptability of the exterior soils to the CERCLA program.

1.3 Basis for Taking Action

An action was required at SEAD-1 to ensure land use remains protective of site users. SEAD-1 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas. The potential future hazards or risks identified at SEAD-1 is either suitable for the defined use, or associated with compounds that are present at concentrations that are equal to or less than naturally occurring levels.

1.3.1 Contaminants of Concern

A review of soil sample results indicated that 66 chemicals were detected in one or more of the individual soil samples characterized at SEAD-1. Information and data presented in the ROD (Parsons, 2009a) summarized that hazardous constituents are present in the soil at SEAD-1 at levels that exceeded Federal and State guidance values and thus, may pose a threat to selected future populations (e.g., future residents) that could use the land.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-1 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker (HI=1.56) are less than 1.0. The results of the risk assessment performed using the maximum detected concentrations for contaminants in soil and the reasonable maximum exposure

(RME) scenario indicate that the cancer risks calculated at SEAD-1 for all receptors (i.e., industrial worker, construction worker, and adolescent trespasser) are 1×10^{-6} or less, which is consistent with USEPA guidelines. Aluminum, iron, manganese, vanadium, and zinc in soil contribute significantly to the construction worker's elevated HI.

The risk assessment was recalculated using recommended Upper Confidence Limit (UCL) values in place of maximum concentrations as the Exposure Point Concentrations (EPCs) for aluminum, iron, manganese, vanadium, and zinc, and maximum concentrations for all of the other identified COCs. The results of this recalculation indicated that the estimated cancer risks for all potential future human receptors at SEAD-1 were consistent with, and less than USEPA's preferred upper limits, and that the HIs for the industrial worker and adolescent trespasser were below 1.0. The construction worker's HI was reduced to 1.08.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Five Former Solid Waste Management Units (SWMUs), SEAD-1 (Hazardous Waste Container Storage Facility), SEAD-2 (PCB Transformer Storage Facility), SEAD-5 (Sewage Sludge Waste Piles), SEAD-24 (Abandoned Powder Burn Pit) and SEAD-48 (Row E0800 Pitchblende Storage Igloos)" (Parsons, 2009a) requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehousing Area. Addendum 4 to the SEAD LUC RD added SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehouse Area including properties that had been previously retained (including SEAD-1) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-1 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehousing Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with

Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-1 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-1 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved ROD are being maintained. FYR site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-1.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-1 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-1.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed ROD for SEAD-1 within the PID/Warehousing Area have been completed and documented. No continuing active remediation is required in the PID/Warehousing Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015, all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-1 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the AOCs within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds ,and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-1.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-1 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

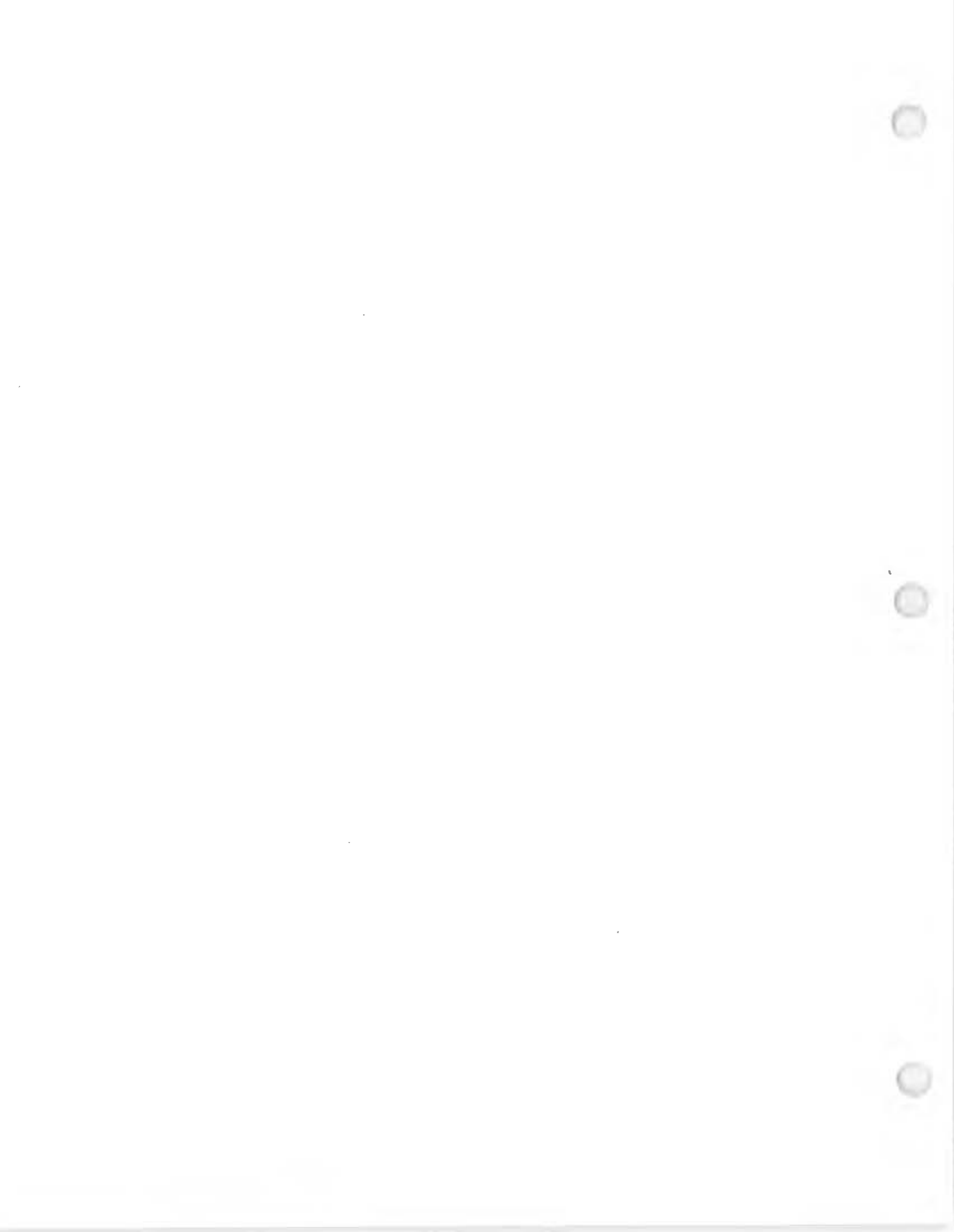
ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment A-1
5 Year Review - Site Visit Photo Log
SEAD-1 Hazardous Waste Container Storage Facility (Building 307)

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-1, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

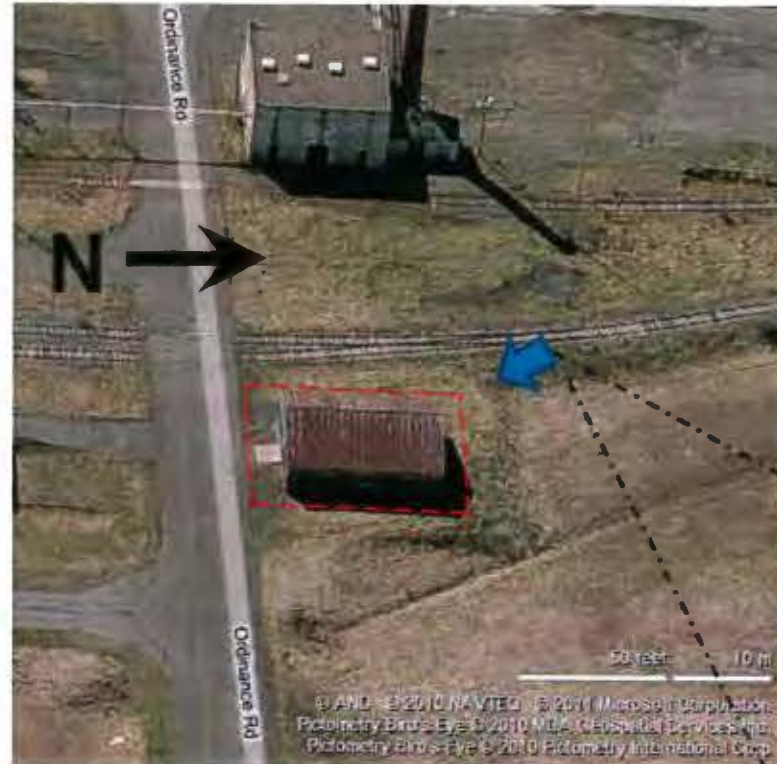
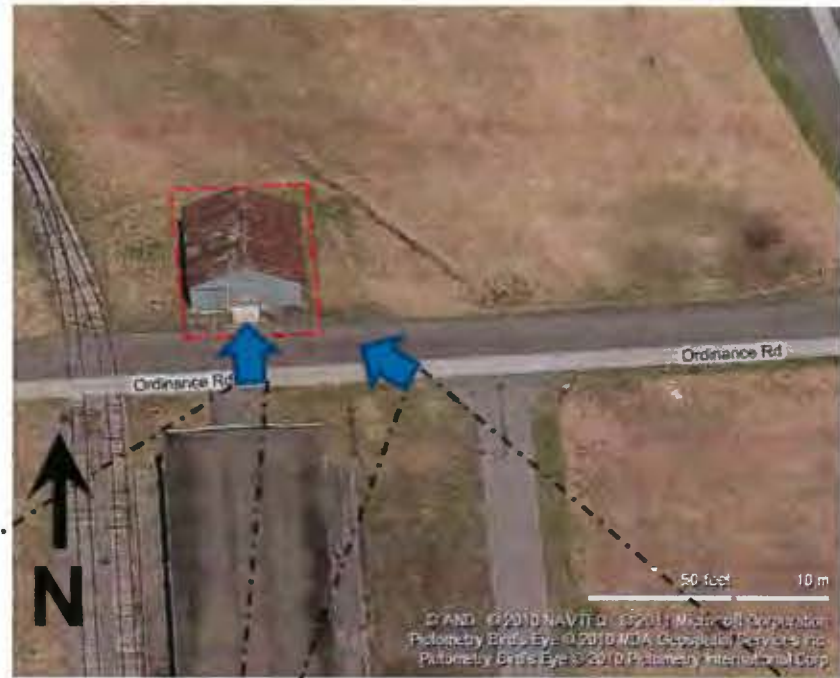
Bing.com (Microsoft) Birds Eye Aerial of SEAD-1; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.



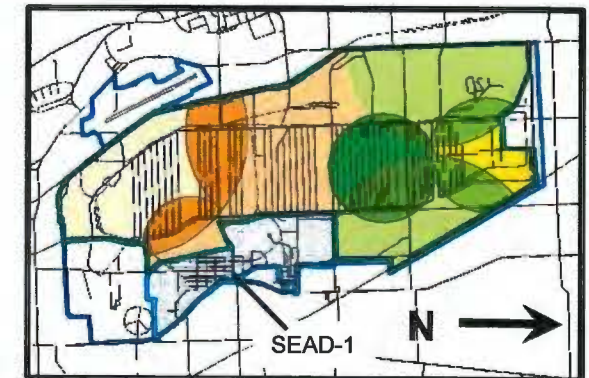
Approximate Site Boundary



Photo Viewing Direction



SEDA Overall Map (no scale)



SEAD-1 is located within the PID/
 Warehouse Area Parcel.

2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: Building 307

Photo ID: IMG_66541.JPG

2015 Site Visit Photo 2



Status as of: 6/1/15
 Description: Building 307

Photo ID: IMG_6555.JPG

2015 Site Visit Photo 3



Status as of: 6/1/15
 Description: Building 307

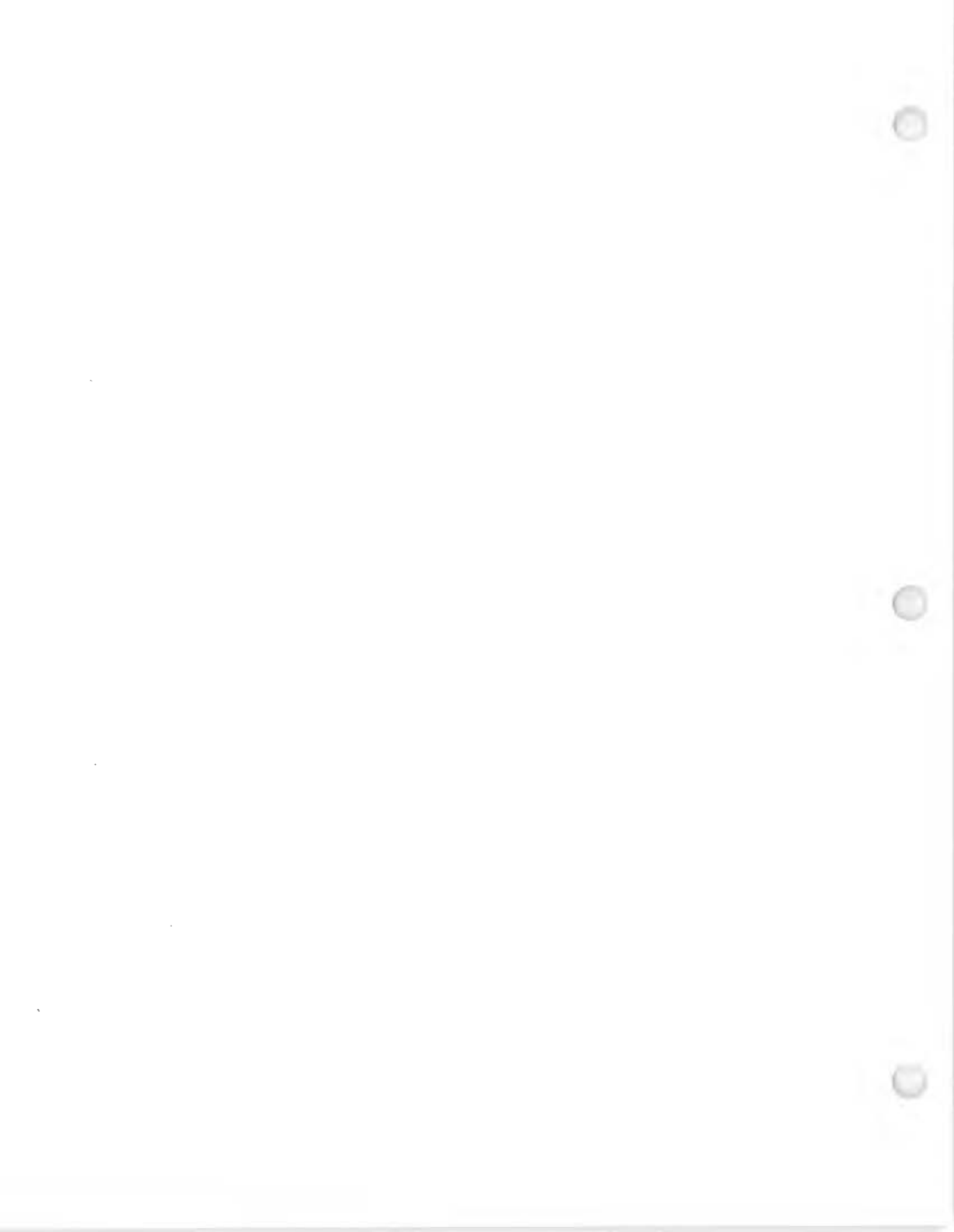
Photo ID: IMG_6556.JPG

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																					
Site name: SEAD -1	Date of inspection: June 1, 2015																				
Location and Region: PID ana	EPA ID: NY0213820830																				
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain																				
Inspector: Dave Babcock, PE	Signature: <i>DB Babcock</i>																				
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other									
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation																				
<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment																				
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls																				
<input type="checkbox"/> Groundwater pump and treatment																					
<input type="checkbox"/> Surface water collection and treatment																					
<input type="checkbox"/> Other																					
<i>No evidence of recent development activity or groundwater use.</i>																					
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BBC.</i>																					
II. INTERVIEWS (Check all that apply)																					
1. O&M site manager <u>None</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 30%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____													
Name	Title	Date																			
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Problems, suggestions; <input type="checkbox"/> Report attached _____																					
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APPENDIX B
SEAD-2: PCB TRANSFORMER STORAGE FACILITY (BUILDING 301)

November 2017



APPENDIX B: SEAD-2 PCB Transformer Storage Facility (Building 301)

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Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-2, Building 301, is located in the east-central portion of SEDA, roughly 6,000 feet west, southwest of the Depot's main entrance off State Route 96. The building is located on the eastern side of Fayette Road, which separates the PID/Warehousing Area from the former munitions igloo storage area, which occupies the inner core of the former Depot.

Building 301 was originally constructed in 1942. It was upgraded in 1986 to meet hazardous waste storage requirements required by RCRA. The exterior of Building 301 measures approximately 35 feet 4 inches long by 23 feet 4 inches wide. The structure is partially bounded on its east and west sides, and completely on its north side, by a raised concrete loading dock, and access ramp and stairway assembly. Building 301 was used as a PCB Transformer Storage Facility beginning in 1980 and continuing until the Depot closed in 2000.

1.2 Initial Response

A RCRA Closure was implemented and completed for Building 301 (SEAD-2). The NYSDEC approved the RCRA Closure of the building in September of 2005, and indicated that the existing building should only be used for industrial operations in the future. However, the NYSDEC deferred comment or determination on the acceptability of the exterior soils to the CERCLA program.

1.3 Basis for Taking Action

An action was required at SEAD-2 to ensure land use remains protective of site users. SEAD-2 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas. The potential future hazards or risks identified at SEAD-2 is either suitable for the defined use, or associated with compounds that are present at concentrations that are equal to or less than naturally occurring levels.

1.3.1 Contaminants of Concern

Information and data presented in the ROD (Parsons, 2009a) summarized that hazardous constituents are present in the soil at SEAD-2 at levels that exceeded Federal and State guidance values and thus, may pose a threat to selected future populations (e.g., future residents) that could use the land. A review of the soil sample results for SEAD-2 indicated that 64 chemicals were detected in one or more of the individual soil samples characterized, and 20 were found in individual samples at concentrations that exceeded New York's Unrestricted Use SCO values. However, comparisons between 95th UCL concentrations and their SCO values indicated that only four compounds were found at concentrations above New York's Unrestricted Use SCOs, while six compounds were found at a 95th UCL concentration in excess of its respective USEPA's Industrial Soil Regional Screening Level (RSL) value.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-2 there the human health cancer risks were below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for all receptors except for the industrial worker. The calculated non-cancer HI for all receptors except for the construction worker are less than 1.0.

The human health risk assessment was initially conducted using the maximum observed concentration as the EPC; subsequent determination used the 95th UCL values for selected metal COCs.

The risk assessment based on an RME scenario and maximum detected concentrations indicated that non-cancer risks for the industrial worker and the adolescent trespasser were less than 1. The HI computed for the construction worker was 1.48. This elevated HI was driven by the ingestion of soil and the inhalation of dusts containing metals. The predominant contributing metal is manganese, followed by iron, arsenic, aluminum and vanadium. Data indicated that each of these metals, exclusive of arsenic, was found at levels that are lower than Federal and State cleanup guidance values. The construction worker's HI decreased to 9E-011 when the UCL values for aluminum, arsenic, iron, manganese, and vanadium were substituted for the maximum detected levels.

The cancer risk calculated at SEAD-2 for the construction worker and adolescent trespasser were found to be within the USEPA's recommended range (1×10^{-4} to 1×10^{-6}) based on the maximum detected concentration of the COCs and a RME exposure scenario. The cancer risk identified for the industrial worker at SEAD-2 was 5×10^{-4} , which exceeds the USEPA's recommended range. The identified cancer risk for the industrial worker results were primarily due to dermal contact with, and ingestion of soil containing carcinogenic polycyclic aromatic hydrocarbons (cPAHs). The risk assessment and the conclusions of the AOC investigations were reviewed and approved by the USEPA.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The RODs titled "Five Former Solid Waste Management Units (SWMUs), SEAD 1 (Hazardous Waste Container Storage Facility), SEAD 2 (PCB Transformer Storage Facility), SEAD 5 (Sewage Sludge Waste Piles), SEAD 24 (Abandoned Powder Burn Pit) and SEAD 48 (Row E0800 Pitchblende Storage Igloos)" (Parsons, 2009a) require the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 4 to the SEAD LUC RD added SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-2) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-2 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-2 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

3.3 Progress on Recommendations

Based on this FYR, the Army makes the following recommendations;

- LUCs continued to be implemented and inspected on an annual basis.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 15.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR process.

4.3 Site Inspection

SEAD-2 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-2.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-2 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-2.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for SEAD-2 within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-2 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the AOCs within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and,
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-2.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehousing Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-2 and the PID Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

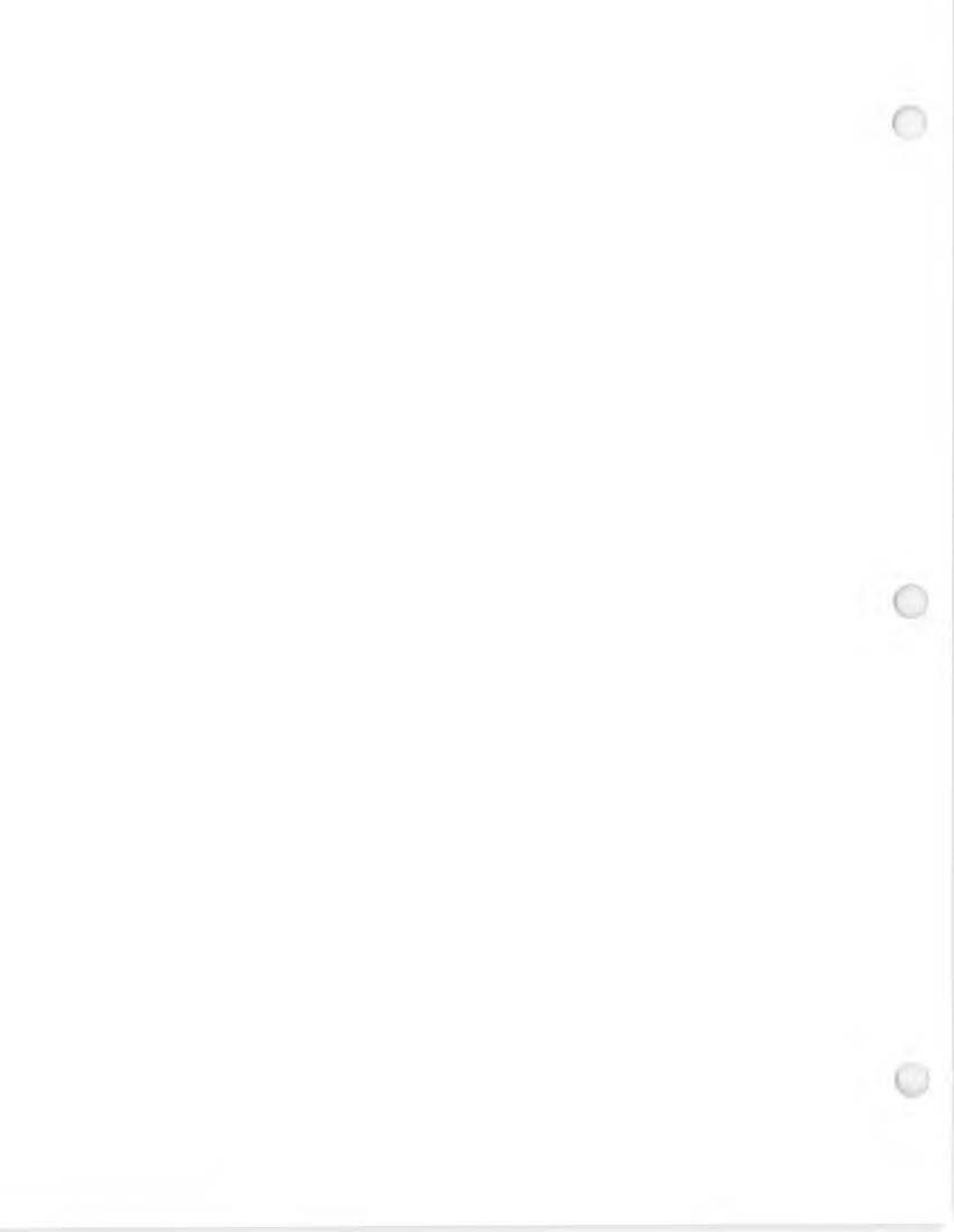
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment B-1
Five Year Review - Site Visit Photo Log
SEAD-2 PCB Transformer Storage Facility (Building 301)

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-2, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEAD-2 is located within the PID/
 Warehouse Area Parcel.


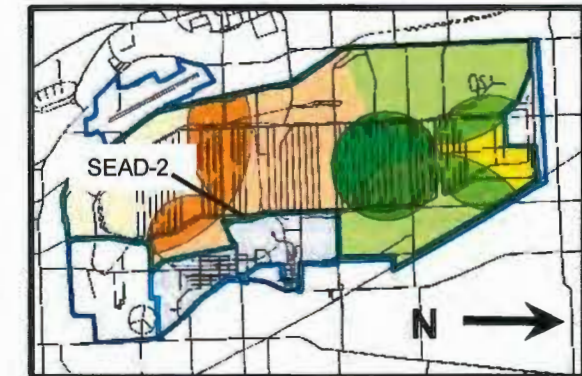
 Approximate Site Boundary

 Photo Viewing Direction

Bing.com (Microsoft) Birds Eye Aerial of SEAD-2; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.



SEDA Overall Map (no scale)



2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: Building 307

Photo ID: IMG_6585.JPG



ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION			
Site name: SEAD -2 ^{Federal} P&S Storage	Date of inspection: June 1, 2015		
Location and Region: PID area	EPA ID: NY0213820830		
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F Light rain		
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent development activity or groundwater use.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent development activity or groundwater use.</i>
<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent development activity or groundwater use.</i>		
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>photos by BBO</i>			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____ Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____			
4. Other interviews (optional) <input type="checkbox"/> Report attached.			

APPENDIX C
SEAD-5: SEWAGE SLUDGE WASTE PILES



APPENDIX C: SEAD-5 Sewage Sludge Waste Piles

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-5 is located in the east-central portion of SEDA, approximately 3,000 ft. west-southwest of the Depot's main entrance off State Route 96. SEAD-5 encompasses an area measuring approximately 150 ft. by 250 ft. in size. Between 1980 and roughly June 1992, sewage sludge from two Army wastewater treatment plants was stockpiled at this AOC. This area was also used as a location where the Depot's Department of Public Works (DPW) type storage and staging area for heavy equipment, materials and supplies was located.

1.2 Initial Response

The historic sewage sludge waste piles were removed from SEAD-5, and disposed at off-site landfills, in accordance with prevailing environmental requirements. A TCRA was performed at SEAD-5 between 2003 and 2006 to address hazardous substance contamination that remained in soil underlying and surrounding the location of the historic sludge piles.

1.3 Basis for Taking Action

An action was required at SEAD-5 to ensure land use remains protective of site users. SEAD-5 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Data presented in the ROD (Parsons, 2009a) for SEAD-5 summarized that hazardous substances and constituents were present at levels that exceed Federal and State soil guidance values and at levels that pose potential risks to future industrial and commercial users or occupants of the land.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-5 the human health cancer risks were less than the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for all receptors except for the industrial worker. The calculated non-cancer HI for all receptors are less than 1.0. The calculated cancer risk for the industrial worker was slightly above the USEPA's recommended range at a level of 1.3×10^{-4} .

The human health risk assessment was computed using the 95th UCL of the mean as the EPC for each of the COCs. The elevated RME cancer risk was largely driven by concentrations of a single hazardous substance (benzo[a]pyrene) that were found at a few isolated, non-contiguous locations within the soil at the AOC. These elevated concentrations may be associated with asphalt pieces that have become intermixed with the soil at the AOC due to its historic use as a DPW-type storage and staging area (Parsons ES, 1995; Parsons, 2009a).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The RODs titled “Five Former Solid Waste Management Units (SWMUs), SEAD 1 (Hazardous Waste Container Storage Facility), SEAD 2 (PCB Transformer Storage Facility), SEAD 5 (Sewage Sludge Waste Piles), SEAD 24 (Abandoned Powder Burn Pit) and SEAD 48 (Row E0800 Pitchblende Storage Igloos)” (Parsons, 2009a) require the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

In addition, at SEAD-5, the selected remedy required:

- Covering of contaminated soils (including those originating at SEADs-59 and 71) with at least one foot of clean fill that meets New York’s Restricted Commercial Use SCO;
- Placing demarcation fabric (e.g., colored “snow” or safety fence) between the contaminated soil and the clean fill; and
- Establishing, maintaining, monitoring, and reporting on a third LUC that prohibits unauthorized excavations or activities that might compromise the integrity of the engineered cover.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 4 to the SEAD LUC RD added SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehouse Area including properties that had been previously retained (including SEAD-5) by the Army in 2008 was recorded in the Seneca County Clerk’s office on June 10, 2011.

SEAD-5 as part of the “PID Retained Parcels” was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

In June through July 2009, construction activities were undertaken at SEAD-5 to construct a soil cover to inter a portion of SEAD-5 where analytical results from soil samples indicated that elevated levels of certain hazardous substances were present at concentrations that posed potential human health risks to future industrial occupants and users of the land. The initial cover layer soil consisted of approximately 5,620 cubic yards of SEAD-59/71 stockpile soil. This soil covered approximately 1.57 acres of land. A layer of demarcation fabric was placed atop the initial layer of spread stockpile soil to delineate the lateral extent of the covered soil. One foot of borrow material of quality that meets Restricted Commercial Use SCOs defined by the NYSDEC was then placed as a protective barrier layer (Parsons, 2009a).

The CCR for the Former Sewage Sludge Waste Piles (Parsons, 2010c) provided record documentation of the completed remedial action construction activities and that accessible soil remaining in the area of the former sludge pile locations met the remedial goals defined in the ROD for AOC. The unauthorized excavation LUC for SEAD-5 is implemented only at that location where the protective cover is established over SEAD-5 soils.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-5 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-5 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-5.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-5 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-5.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for SEAD-5 within the PID/Warehousing Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-5 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the two identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically;
- At SEAD-5, contaminated soils were covered with at least one foot of clean fill, and demarcation fabric was placed between the contaminated soil and clean fill.

The selected remedy is still protective of human health and the environment. No opportunities for

optimization or early indicators of potential issues have been identified for SEAD-5.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehousing Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-5 and the PID/Warehousing Areas. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

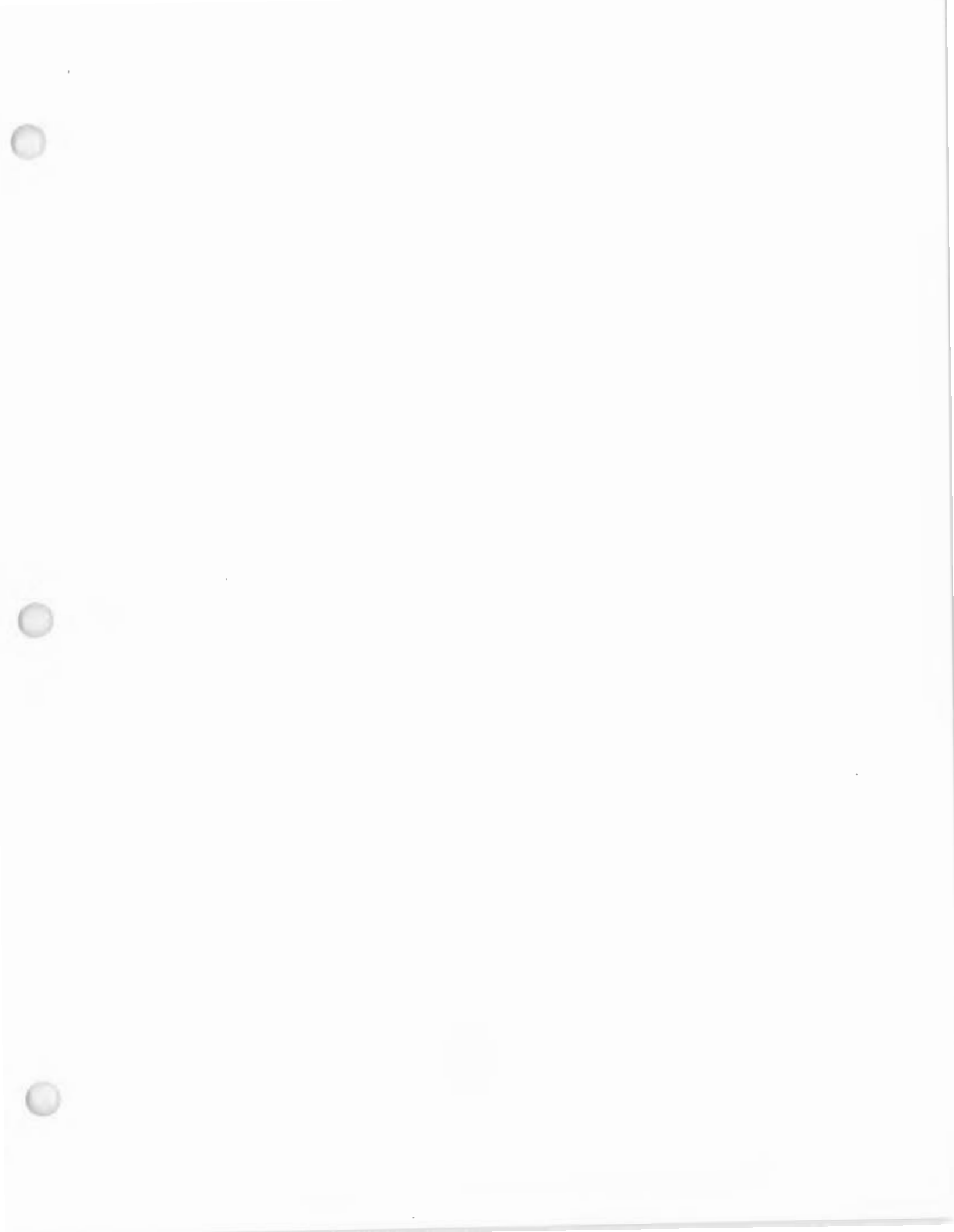
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment C-1
 Five Year Review - Site Visit Photo Log
 SEAD-5 Sewage Sludge Waste Piles

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-5, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1



Status as of 6/1/15
 Description: SEAD-5.

Photo ID: IMG_6546.JPG



Google Earth Aerial of SEAD-5; aerial taken 9/24/2013

© 2014 Google

Imagery Date: 9/24/2013 42°44'32.44" N 76°50'33.29" W elev 745 ft

2015 Site Visit Photo 2



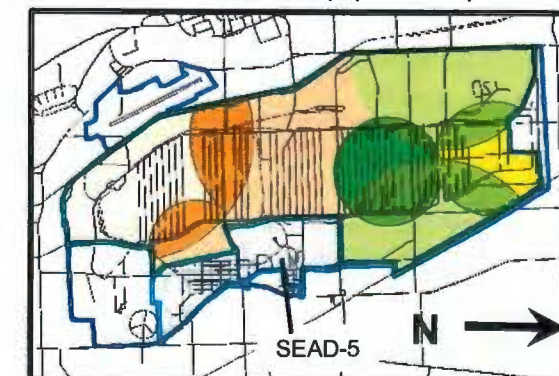
Status as of:6/1/15
 Description: SEAD-5 cap

Photo ID: IMG_6543.JPG

SEAD-5 is located within the PID/Warehouse Area Parcel.



SEDA Overall Map (no scale)



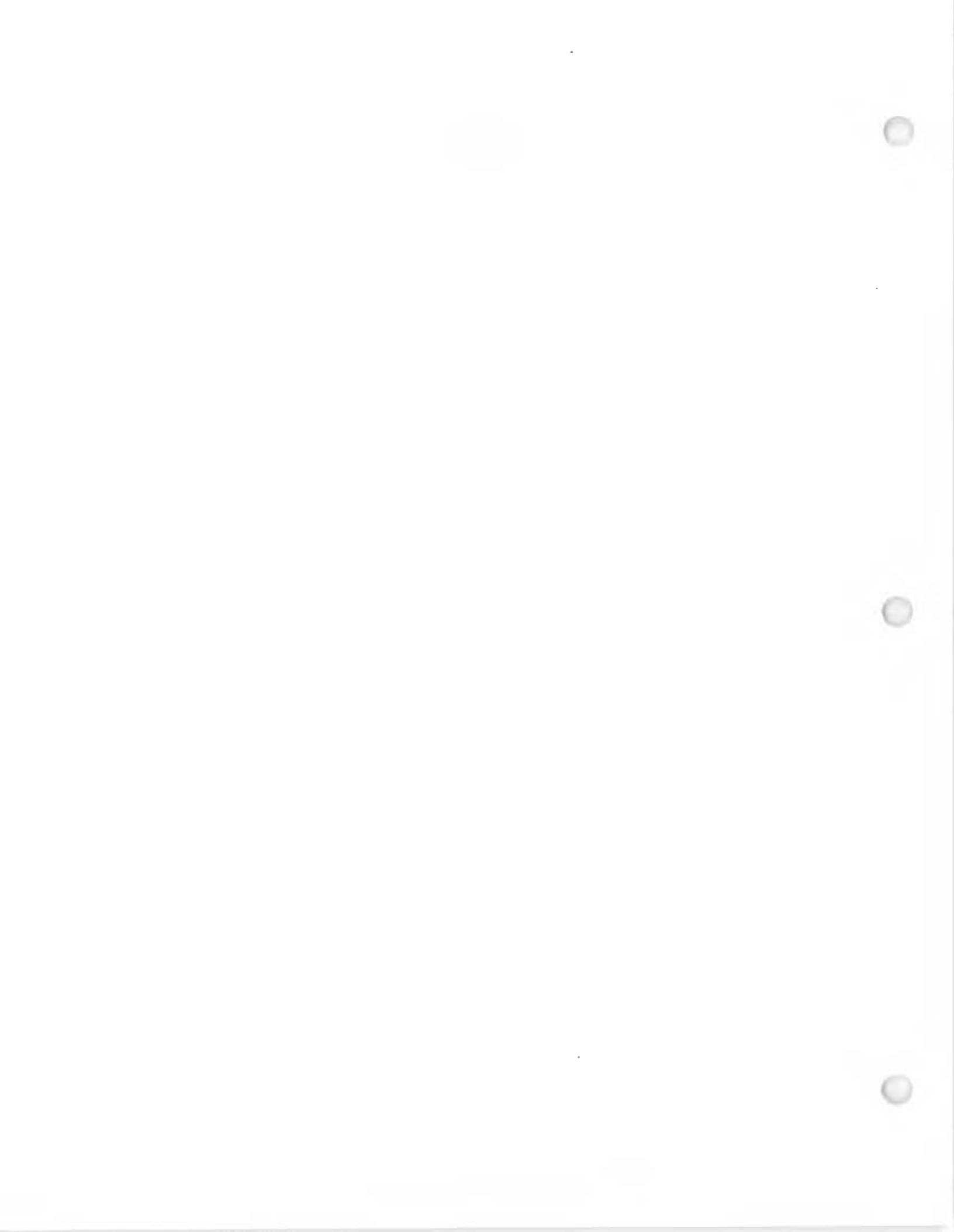
ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD ^{SD}	Date of inspection: June 1, 2015																								
Location and Region: PID area	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature:																								
Inspector: Dave Babcock, PE	Signature: <i>DB Babcock</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____													
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<input type="checkbox"/> Surface water collection and treatment																									
<input type="checkbox"/> Other _____																									
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BCO</i>																									
II. INTERVIEWS (Check all that apply)																									
1. O&M site manager <u>None</u> <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 60%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																	
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Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____																									
Problems, suggestions; <input type="checkbox"/> Report attached _____																									
2. O&M staff _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 60%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																	
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Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____																									
Problems, suggestions; <input type="checkbox"/> Report attached _____																									
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 60%;">Agency _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>Contact _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Problems; suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table> <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 60%;">Agency _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>Contact _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Problems; suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Agency _____			Contact _____			Name	Title	Date	Problems; suggestions; <input type="checkbox"/> Report attached _____			Agency _____			Contact _____			Name	Title	Date	Problems; suggestions; <input type="checkbox"/> Report attached _____		
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Agency _____																									
Contact _____																									
Name	Title	Date																							
Problems; suggestions; <input type="checkbox"/> Report attached _____																									
4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

No evidence of recent activities; cover in good shape; a few bushes could be cut back.

APPENDIX D
SEAD-16/17: THE FORMER ABANDONED DEACTIVATION FURNACE (SEAD-16)
AND THE FORMER ACTIVE DEACTIVATION FURNACE (SEAD-17)



APPENDIX D: SEAD-16 Abandoned Deactivation Furnaces and SEAD-17 Active Deactivation Furnaces

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Attachment 1 Photo Log

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1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The former Abandoned Deactivation Furnace (SEAD-16) is located in the east-central portion of SEDA. SEAD-16 consists of 2.6 acres of fenced land with grasslands in the north, east, and west, a former storage area for empty boxes and wooden debris, and an unpaved roadway in the south. Also previously located onsite was the building that housed the deactivation furnace, a smaller abandoned building known as the Process Support Building, two sets of SEDA railroad tracks, and some utilities. Two underground storage tanks previously existed at SEAD-16 but were removed.

SEAD-16 was used for the demilitarization of various small arms munitions. The process of deactivation of munitions involved heating the munitions within a rotating steel kiln, which caused the munitions to detonate. The byproducts produced during this detonation were then swept out of the kiln through the stack. SEAD-16 has been inactive and abandoned since the 1960s.

The former Active Deactivation Furnace (SEAD-17) is located in the east-central portion of SEDA. SEAD-17 consisted of a deactivation furnace building that was surrounded by a crushed shale road. Beyond the perimeter of the crushed shale road was grassland. Two small sheds are located in the eastern portion of SEAD-17, and there is vehicular access to SEAD-17 from an unpaved road to the north. Access to SEAD-17 is restricted because it is located in the former ammunition storage area.

SEAD-17 was constructed to replace the operation of SEAD-16 and was also used for the demilitarization of various small arms munitions. The process of deactivation of munitions involved heating the munitions within a rotating steel kiln, which caused the munitions to detonate. The byproducts produced during this detonation were then swept out of the kiln through the stack. SEAD-17 has been inactive since 1989 because of RCRA permitting issues (Parsons, 2005b).

1.2 Initial Response

SEAD-16 has been inactive and abandoned since the 1960s. SEAD-17 was constructed to replace the operation of the deactivation furnace at SEAD-16. However, SEAD-17 has been inactive since 1989 because of RCRA permitting issues.

All facilities that engage in the treatment, storage, and/or disposal of hazardous wastes are required to obtain a RCRA permit. The deactivation furnace at SEAD-17, which operated until 1989, was used to incinerate and deactivate or destroy small munitions and other materials associated with munitions or explosives. With the enactment of RCRA in 1976, waste explosives were classified as hazardous wastes, and thus the deactivation unit was classified as a hazardous waste treatment process. Because of the historical ongoing operations at the deactivation furnace at SEAD-17, the furnace at SEAD-17 was subject to RCRA permitting and is subject to RCRA closure requirements. The former deactivation furnace at SEAD-16 was not subject to RCRA requirements since it was not active subsequent to the enactment of RCRA in 1976. The State of New York has been delegated the RCRA program by the USEPA for oversight and closure of the RCRA unit.

SEAD-17 consisted of two distinct units: (1) contamination in the surrounding soils and groundwater, and (2) contamination of the deactivation furnace, building, and equipment. Contamination in the soil and groundwater is being addressed under CERCLA, and remediation of these media was covered in the ROD (Parsons, 2005b). The FFA details the relationship between CERCLA and RCRA, and under the FFA, remediation of releases under CERCLA “obviate the need for further corrective actions under RCRA for those releases (i.e. no further corrective action shall be required) and RCRA shall be considered an applicable or relevant and appropriate requirement.” Therefore, in performing the remedy outlined in the ROD in a manner approved by USEPA and NYSDEC, the substantive requirements of RCRA would be met for the soil and groundwater at SEAD-17.

The deactivation furnace, building, and equipment at SEAD-17 have been addressed during RCRA interim closure actions as outlined below.

The following summarizes the regulatory history of the deactivation furnace at SEAD-17:

- 1962-1980 - Deactivation Furnace operated to destroy small arms ammunition.
- 1976 – RCRA enacted; legislation allowed owners and operators of hazardous waste TSDFs that were in existence as of November 19, 1980 to operate under Interim Status until their RCRA permit was issued or their request was denied.
- 1980-1989 - The Army submitted a Title 6 NYCRR Part 373 Part A and a Part B permit application to permit the Seneca Army Depot as a TSDF. The Deactivation Furnace at SEAD-17 was listed as a hazardous waste incinerator for small arms ammunition. As was customary at the time, all facilities that submitted Part A permit applications were allowed to continue to operate under Interim Status.
- 1980-1989 - Deactivation Furnace continued to operate under Interim Status.
- 1989 - Deactivation Furnace was shutdown to allow for the addition of a new air pollution control device (APCD) system. As part of the upgrade, NYSDEC required that the furnace be closed in accordance with RCRA Interim Status requirements.
- November 6, 1989 - RCRA Interim Closure Plan for the deactivation furnace was approved by NYSDEC.
- 1989-1991 - The Army undertook interim closure actions at SEAD-17, which included the following:
 - Removal of all hazardous waste residues, containers, and removal of the baghouse filters, and dust.
 - Sampled the building, equipment, drains, and soils and subsequent decontamination and removal of releases.
- August 21, 1991 - Interim Closure of the Deactivation Furnace was approved by NYSDEC in a letter, pending an independent certification by NYS Professional Engineer. The letter noted the following:

- Interim closure measures were completed and accepted for equipment, drains, walls, and concrete.
- The soil sampling determined contamination existed in and around the facility because of past operations. The Army, USEPA, and NYSDEC agreed to address this contamination as an AOC under the FFA. Because of the potential of recontamination of the building, the fact that contamination in soils will remain, and wipe samples of walls and floors failed to meet the criteria that was set, clean closure could not be achieved.
- March 3, 1992 - Independent certification by NYS Professional Engineer submitted to NYSDEC, on behalf of the Army, stated that the deactivation furnace was “dirty closed”.
- 1995 - Base closure was announced; Army withdrew its RCRA permit application.
- 1989-2005 - The furnace was not used for wastes, test material was processed for the upgrade equipment prove-out, and a pilot study was performed to evaluate its use as a Low Temperature Thermal Desorption (LTTD) system for lightly contaminated soil, which was not considered hazardous.

At SEAD-16, debris was removed from inside Building S-311 (the Abandoned Deactivation Furnace), Building 366, and both of these buildings were demolished and removed from the site due to safety concerns. At SEAD-17, Building 367, the Deactivation Furnace assembly and the supporting air pollution control device system were demolished. The detailed discussion of the building demolition actions can be found in the Building Demolition and Cleaning Report (Parsons, 2008a).

1.3 Basis for Taking Action

An action was required at SEAD-16/17 to ensure land use remains protective of site users. SEAD-16/17 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas. The potential future hazards or risks identified at SEAD-16/17 is either suitable for the defined use, or associated with compounds that are present at concentrations that are equal to or less than naturally occurring levels.

1.3.1 Contaminants of Concern

The primary COC at SEAD-16 were four metals (i.e., arsenic, copper, lead, and zinc), PAHs, and nitroaromatics. The most impacted soils were those adjacent to the abandoned deactivation furnace. Many of these compounds were present in concentrations that exceeded their respective NYSDEC guidelines. The COC are believed to have been released to the environment during the former deactivation furnace’s period of operation (approximately 1945 to the mid-1960s). Seven metals (i.e., aluminum, antimony, iron, lead, manganese, sodium, and thallium) were detected in groundwater samples at concentrations that exceeded the NYSDEC Ambient Water Quality Standards (AWQS) Class GA groundwater quality standards or Federal Maximum Contaminant Level (MCL) standards. Additional sampling of the groundwater indicated that elevated thallium concentrations may have been the result of high turbidity in the samples. PAHs, pesticides, antimony, cadmium, copper, lead, and nickel were found at elevated concentrations in all of the drainage ditches that were investigated at SEAD-16 (Parsons ES, 1999a).

At SEAD-16, explosives analyzed in surface soil included tetryl, 2,4,6-trinitrotoluene (TNT); 2-amino-4,6-dinitrotoluene (2-A-4,6-DNT); and 2,4-dinitrotoluene (DNT). Tetryl, 2,4,6-TNT, 2-A-4,6-DNT, and 2,4-DNT were detected in a limited number of samples. Although no NYSDEC TAGM or SCO values are available for these compounds, all of the detections were well below the current EPA Industrial RSL (7400 µg/kg). Groundwater was analyzed for 2,4-DNT. One estimated detection of 2,4-DNT was detected at a concentration below the MCL.

At SEAD-17, the primary COC were six metals (i.e., antimony, arsenic, copper, lead, mercury, and zinc), PAHs and pesticide compounds. All of these compounds were likely to have been released to the environment during the active deactivation furnace's period of operation (approximately 1962 to 1989). Low concentrations of Semi Volatile Organic Compounds (SVOCs) and metals were detected in groundwater. Those that exceeded their respective MCL criteria were either essential nutrients (e.g., sodium) or a result of high turbidity in the samples. No VOCs, pesticides, PCBs, or nitroaromatics were detected in the samples (Parsons ES, 1999a).

At SEAD-17, 2,4-DNT was analyzed in soil and tetryl was analyzed groundwater. A limited number of detections of 2,4-DNT were found in soil; however, all of the detections were well below the current EPA Industrial RSL (7400 µg/kg). An estimated detection of tetryl was observed in groundwater; however, the detection was below the MDL.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-16, the human health cancer risks were within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for all receptors except the future industrial worker (5×10^{-3}). The calculated non-cancer HI for all receptors were greater than or equal to 1.0. The results of the BRA at SEAD-16 indicated that the HI was above the USEPA target of 1.0 for the future industrial worker (HI=20), future on-site construction worker (HI=1), future day care center child (HI=6), and future day care center worker (HI=2). The risk assessment was conducted using data collected during the RI.

The risk assessment concluded that at SEAD-17, the human health cancer risks were within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for all receptors. The calculated non-cancer hazard indexes (HI) for all receptors except for the future day care center child (HI=1.0) were less than 1.0.

The reasonable maximum ecological exposure was also evaluated. The results of the ecological risk assessment presented in the RI report (Parsons ES, 1999a) concluded that there was negligible risk to the ecosystems of the SEAD-16 and SEAD-17 study areas. The quantitative ecological risk evaluation initially suggested that a possibility existed for the contaminants of potential concern (COPCs) to present a small potential for environmental effects because of soil, surface water, and ditch sediment/soils at both SEAD-16 and SEAD-17. However, given the conservative nature of the assessment, the poor quality of the SEAD-16 and SEAD-17 habitat, and the future land use designation as industrial, it was not likely that SEAD-16 and SEAD-17 supported or would support a significant portion of the community of species that occupy the area surrounding and including these areas.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “The Abandoned Deactivation Furnace SEAD 16 and the Active Deactivation Furnace SEAD 17” (Parsons, 2005b) require the establishment of ICs. The elements that composed the remedy included:

- Conduct additional sampling as part of the pre-design sampling program to further delineate the areas of excavation;
- Remove, test, and dispose of the SEAD-16 building debris off-site;
- Excavate approximately 275 cy of ditch soil with lead concentrations greater than 1250 mg/Kg until cleanup standards are achieved;
- Excavate approximately 1760 cy of surface soils at SEAD-16 with lead concentrations greater than 1250 mg/Kg, and polycyclic aromatic hydrocarbon (PAH) and metal concentrations greater than risk-based derived cleanup standards;
- Excavate approximately 67 cy of subsurface soils at SEAD-16 (areas around SB16-2, SB16-4, and SB16-5) with lead concentrations greater than 1250 mg/Kg, and PAH and metal concentrations greater than risk-based derived cleanup standards;
- Excavate approximately 2590 cy of surface soils at SEAD-17 with lead concentrations greater than 1250 mg/Kg and metal concentrations greater than risk-based derived cleanup standards;
- Stabilize soils from SEAD-16 and SEAD-17 and building debris from SEAD-16 exceeding the Toxicity Characteristic Leaching Procedure (TCLP) criteria in order to attain Land Disposal Restrictions (LDR);
- Dispose of the excavated material in an off-site landfill;
- Backfill the excavated areas with clean backfill;
- Conduct groundwater monitoring at SEAD-16 and SEAD-17 until concentrations are below the GA criteria;
- Submit a Completion Report following the remedial action;
- Establish and maintain LUCs to:
 - Prevent access to or use of the groundwater until cleanup levels are met; and
 - Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities.
- Complete a review of the selected remedy every five years (at minimum), in accordance with Section 121(c) of the CERCLA.

To complete RCRA closure of the deactivation furnace at SEAD-17, the Army further decontaminated or demolished and disposed offsite the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).

2.2 Remedy Implementation

The CCR (Parsons, 2008c) for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17) provides documentation of the removal action construction activities addressing contaminated soil, building debris, and groundwater completed at the two historic AOCs. The CCR provides documentation that all soil exceeding cleanup goals were removed and NFA is required for soil at the AOCs.

The selected remedy at SEAD-16 and SEAD-17 resulted in the removal of soil and groundwater as a pathway for potential receptors. At SEAD-16, approximately 2,100 cubic yards of impacted soil were removed and disposed of at an off-site landfill. At SEAD-17, approximately 2,590 cubic yards of lead impacted soil were removed and disposed of at an off-site landfill and the excavated areas were backfilled with clean backfill. Soil was excavated from both SEAD-16 and SEAD-17 until confirmatory soil samples collected from the sidewalls (when appropriate), the excavation floor, and the perimeter yielded analytical results below site-specific cleanup standards. The depth of excavation completed at SEAD-16 varied from approximately 1 to 3 feet below ground surface (bgs) and the excavation depth at SEAD-17 varied from approximately 1 to 2 feet bgs. Deeper excavations at SEAD-16 and SEAD-17, including excavation areas surrounding the railroad tracks, were backfilled with clean bank-run gravel. SEAD-16 and SEAD-17 were graded to promote positive drainage. The areas at SEAD-17 that were vegetated prior to the RA were seeded to restore the vegetation. SEAD-16 was not seeded since it was not previously vegetated.

SEAD-16/17 Soil Removal Cleanup Goals		
Analyte	Cleanup Goal (mg/Kg)	Goal Met?
Antimony	41	Yes
Arsenic	21.5	Yes
Cadmium	60	Yes
Copper	10,000	Yes
Lead	1250	Yes
Mercury	5.7	Yes
Thallium	6.7	Yes
Zinc	10,000	Yes
cPAHs (BTE)*	10	Yes

*cPAHs were only sampled at SEAD-16 and were compared to the Benzo(a)pyrene Toxicity Equivalence.

NYSDEC. 2006. Remedial Program Soil Cleanup Objectives. 6 NYCRR Subpart 375-6. NYSDEC Restricted Use Soil Cleanup Objective for Industrial Use

Groundwater was monitored to ensure that soil contamination left on-site did not further degrade groundwater quality. SEAD-16 and SEAD-17 were placed under a long-term monitoring (LTM) program for groundwater monitoring until concentrations are below the NYS Class GA groundwater quality standards (Parsons, 2005b; 2007c). LTM began in 2007 and is currently on-going at the site (Parsons, 2014b). Post-remediation groundwater sampling results indicate that groundwater has not been significantly

impacted by site activities and are further discussed in Section 5.0. Groundwater use restriction continues until groundwater constituent concentrations have been reduced to levels that allow for unlimited exposure and unrestricted use. With USEPA approval, once groundwater cleanup standards are achieved, the groundwater use restrictions may be eliminated.

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 4 to the SEAD LUC RD added SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehouse Area including properties that had been previously retained (including SEAD-16 and SEAD-17) by the Army in 2008 was recorded in the Seneca County Clerk’s office on June 10, 2011.

SEAD-16 and SEAD-17 as part of the “PID Retained Parcels” was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews, and
- Discontinue the annual groundwater monitoring at SEAD-16 and SEAD-17 after 2011.

3.2 Progress on Recommendations

In general, the SEAD-16/17 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

Annual groundwater monitoring continued at SEAD-16 or SEAD-17 based on comments from USEPA on the annual reports summarizing groundwater monitoring trends. At the time of the annual reports there was not sufficient justification to terminate groundwater monitoring, and sampling was performed on an annual basis at SEAD-16 and SEAD-17 through this 2016 FYR. No LTM sampling event was conducted in 2011 due to budgetary constraints; however, LTM was conducted from 2012 and demonstrated similar trends as in previous years. Recommendations on groundwater monitoring frequency are further discussed in Section 5.0

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

An evaluation of all pre- and post-Remedial Action (RA) groundwater results from SEAD-16 and SEAD-17 is provided for each AOC independently in the Year 7 Report (Parsons, 2015). Summaries of the Year for groundwater monitoring exceedances reported for SEAD-16 and SEAD-17 are provided in Table 6A and Table 6B of the Year 7 Report, respectively. The complete dataset for the Year 1, Year 2, Year 3, and Year 4 events are provided for SEAD-16 and SEAD-17 in Appendix D Table 1 and Appendix D Table 2, respectively of the report.

The long-term groundwater monitoring performed over seven years following the completion of the 2007 RA shows that the soil removal remedy has been effective in minimizing the migration of select metals from soil to groundwater. Pre-RA groundwater quality concerns associated with arsenic, barium, beryllium, chromium, copper, iron, lead, mercury, nickel and thallium have been eliminated, as each of these metals, with the exception of iron and lead, have not been detected in the groundwater at SEAD-16 in excess of the applicable NYS Class GA or USEPA MCL standards since the RA was completed. Lead was found twice at levels in excess of the applicable USEPA MCL, but these exceedances were confined to a single well (MW16-7) during the Year 1 and Year 2 post-RA LTM sampling events; lead exceedances in MW16-7 have not been detected during subsequent sampling events. While iron and manganese concentrations in excess of NYS Class GA groundwater quality standards are still present, these results appear to be partially affected by turbidity issues or are attributable to the regional groundwater quality, and are not attributable to site activities. Noted sodium exceedances found in the groundwater at SEAD-16 may originate from the salt storage area located upgradient of SEAD-16 which is operated by the Seneca County Highway Department and are not attributable to site activities. Antimony continues to be detected at concentrations above the applicable NYS Class GA standard, but these exceedances are predominantly limited to two wells (MW16-2 and MW16-7) where concentrations have remained generally consistent since the RA was completed.

The groundwater quality at SEAD-17 has improved since the completion of the RA. There are a few noted exceedances of metals, but most occurrences are considered unrelated to site activities based on regional groundwater quality, limited locations and low frequency of exceedances, and/or turbidity impacts. Concentrations of iron were identified at concentrations above the applicable NYS Class GA standards and

the results are greater than what has been observed historically at the site; however, there is not sufficient trend information to indicate that there a significant change in groundwater conditions. Iron exceedances reported for SEAD-17 are isolated and are most likely attributable to regional groundwater quality and are not attributable to site activities. Historically (Events 1, 3, 5, and 7) within SEAD-17, antimony has exceeded the NYS Class GA standard in one well (MW17-2) in both unfiltered and filtered samples. All of the exceedances have been less than 1.5 µg/L over the NYS Class GA standard and the last two exceedances, in Events 5 and 7, the concentrations were estimated. Although antimony has limited exceedances over the NYS Class GA standard, there is no trend in these data or evidence to suggest that these concentrations are different than background.

The following conclusions were made in the 2014 Year 7 Annual Report for SEAD-16 and SEAD-17:

- The soil excavation remedy at SEAD-16 and SEAD-17 was an effective method for controlling, and in some cases eliminating, the migration of select metals from soil to groundwater based on the evaluation of the results of the seven post-RA LTM sampling events.
- The historical results (Events 3-7) from the LTM data demonstrates that the concentrations of field filtered samples (dissolved) are similar to unfiltered (total) groundwater analytical data. The elevated concentrations of metals observed in earlier events were in some cases the result of elevated turbidity; however, turbidities have been below 10 NTU and total (unfiltered) results are representative of groundwater conditions.
- Post-remediation groundwater monitoring results indicate that there was a limited impact on the groundwater at SEAD-16/17. Iron, lead, and sodium were detected above groundwater standards in a limited number of wells; however, they currently are not considered COCs as they are below SEDA background levels and/or have not been detected above guidance values in the past several events.
- Antimony is a COC in one well, MW16-7; the concentrations at this well are not increasing or spreading to other wells.
- The land use and groundwater use restrictions imposed at SEAD-16 and SEAD-17 are maintained as part of both the approved RODs for SEAD 16/17 and the larger Planned Industrial/Office or Warehousing Area ("PID Area") (Parsons, 2004; 2006). There are no signs of unauthorized use or access to the AOCs.

The 2015 Year 8 Annual Report for SEAD-16 and SEAD-17 is currently in preparation, and has not yet been submitted to the regulatory agencies. However, based on groundwater concentrations in Event 8, the conclusions made in the 2015 Year 8 Annual Report will be similar to the conclusions presented in the 2014 Year 7 Annual Report.

4.3 Site Inspection

SEAD-16 and SEAD-17 were inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-16/17.
- Observations of the monitoring wells at SEAD-16/17 indicate that the wells located on the site are in acceptable condition.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-16/17 are uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-16/17.

4.5 Institutional Controls Verification

The LUCS, environmental easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LTM Reports, LUC RD, environmental easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-16/17 currently protects human health and the environment because:

- Previously contaminated soils containing lead at concentrations in excess of 1250 mg/Kg, and other metals and PAHs above risk-based derived cleanup standards at SEAD-16, have been excavated, stabilized to prevent potential leaching, and disposed at an off-site landfill.
- Previously contaminated soils containing lead at concentrations in excess of 1250 mg/Kg and other metals above risk-based derived cleanup standards at SEAD-17, have been excavated, stabilized to prevent potential leaching, and disposed at an off-site landfill.
- An Unexploded Ordnance (UXO) technician witnessed the excavation of contaminated soil materials from SEAD-16 and SEAD-17, the dismantling of process equipment, and the cleaning of the basement of Building S-311 (former Abandoned Deactivation Furnace) to assess whether materials presenting potential explosive hazard (MPPEH) were present. No MPPEH was found in the excavated soil or debris removed during these operations, and the process equipment was safely dismantled and transported to the OB Grounds (SEAD-23) where it was heat treated to remove any propellant residues. Treated process equipment was subsequently disposed at an off-site landfill.
- LUCs that prohibit access to, and use of, groundwater and prevents residential housing, elementary or secondary schools, childcare facilities, or playground activities until cleanup standards have been

met have been implemented and continue to be monitored by the Army.

The selected remedy is still protective of human health and the environment. No early indicators of potential issues have been identified for SEAD-16/17. Recommendations for optimization of the LTM program are discussed further in Section 5.4.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document and **Attachment 3**, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and Remedial Action objectives from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-16/17 and PID/Warehousing Area. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

Based on the current area-wide LUC prohibiting the use of groundwater within the PID/Warehousing Area (including SEAD-16/17), the Army recommends concluding LTM because of the following:

- Groundwater use is prohibited by the area-wide LUC and an alternate potable water source is available;
- There is no ongoing treatment process at either site to continue monitoring for concentration reductions;
- Trends demonstrate that the remedial action performed did not adversely impact groundwater;
- The COCs concentrations are not increasing; and,

- Antimony is not migrating, as evidenced by absence of increasing antimony concentrations in other wells.

Upon acceptance of these recommendations, the SEAD-16/17 wells will not be decommissioned at this time and sampling at these sites may take place in the future if the need arises (e.g., emerging contaminants, decisions during the 2021 5 Year Review). Annual LUC inspections will continue to insure that the groundwater is not accessed.

5.5 Protectiveness Statement

The remedy implemented for the SEAD-16, SEAD-17, and PID/Warehousing Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years. Additionally, SEAD-16 and SEAD-17 are located within the PID area, within which an environmental easement and deed restriction prohibit both residential use and the use of groundwater.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

**Attachment D-1
Five Year Review - Site Visit Photo Log
SEAD-16 Abandoned Deactivation Furnaces**

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-16, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1



Status as of: 6/1/15
Description: SEAD-16

Photo ID: IMG_6592.JPG

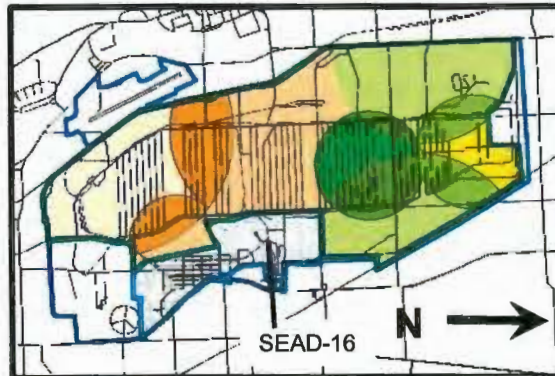
2015 Site Visit Photo 2



Status as of: 6/1/15
Description: SEAD-16

Photo ID: IMG_6589.JPG

SEDA Overall Map (no scale)



SEAD-16 is located within the
PID/Warehouse Area Parcel.


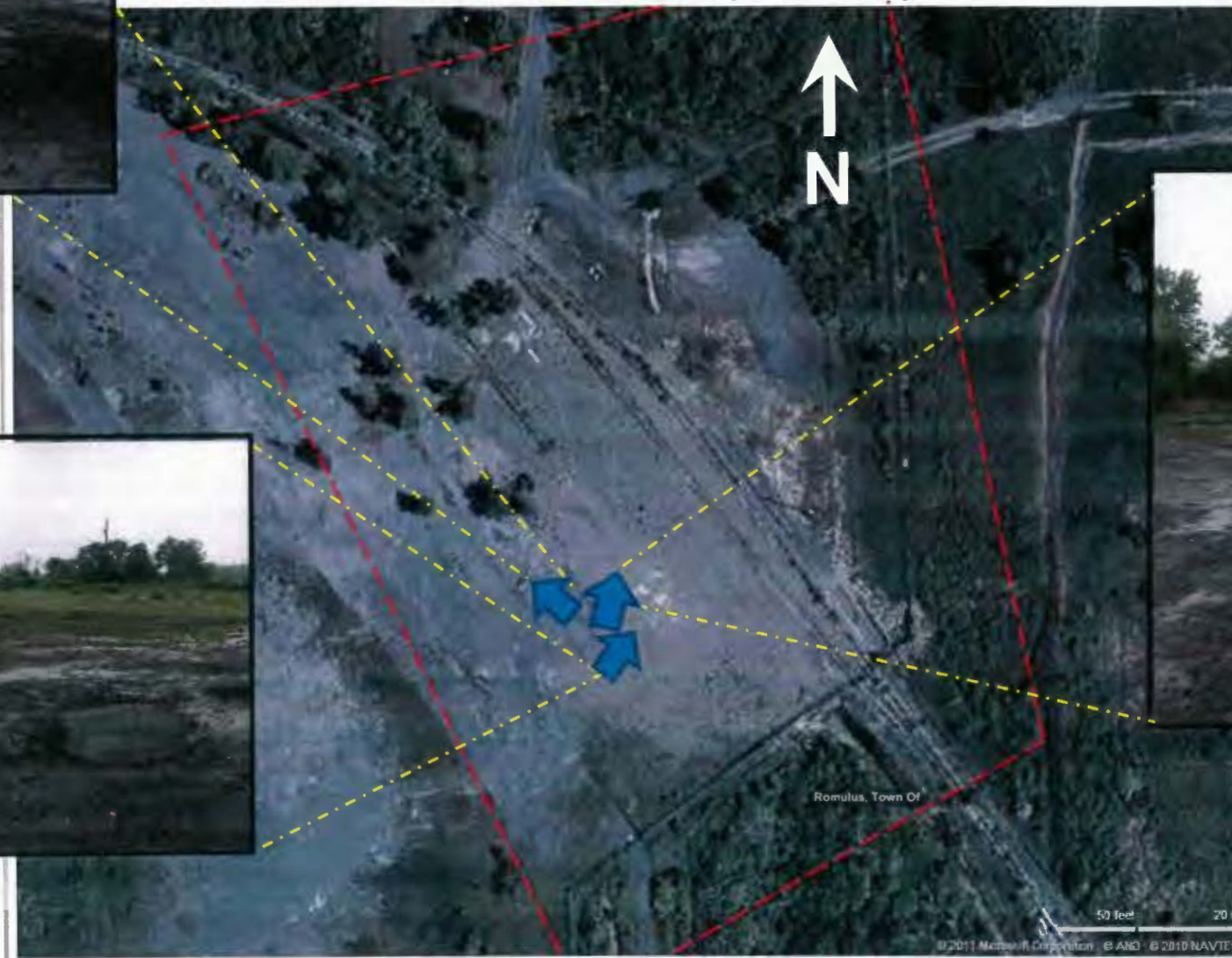
 Approximate Site
Boundary

 Photo Viewing
Direction

2014 Site Visit Photo 3

Bing.com (Microsoft) Aerial of SEAD-16; actual date of aerial photo is unknown
but based on observable features at SEDA it may be from Spring 2010.



2015 Site Visit Photo 3



Status as of: 6/1/15
Description: SEAD-16

Photo ID: IMG_6591.JPG





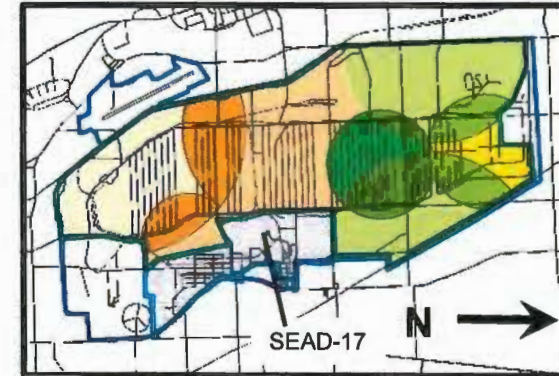
Attachment D-1
Five Year Review - Site Visit Photo Log
SEAD-17 Active Deactivation Furnace

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-17, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

SEAD-17 is located within the
PID/Warehouse Area Parcel.

-  Approximate Site Boundary
-  Photo Viewing Direction



Google Earth Aerial of SEAD-17; aerial taken 9/24/2013.



2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6588.JPG
Description: SEAD-17, Building 367 foundation.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD -16	Date of inspection: June 1, 2015																								
Location and Region: PID area	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F Light rain.																								
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other: <i>MW's last sampled in December 2014 - each MW was saved at that time per Brandon.</i> </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <i>(Visual)</i> <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent development activity or groundwater use.</i> <i>Groundwater will be sampled again in late 2015.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other: <i>MW's last sampled in December 2014 - each MW was saved at that time per Brandon.</i>	<input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <i>(Visual)</i> <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent development activity or groundwater use.</i> <i>Groundwater will be sampled again in late 2015.</i>																						
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APPENDIX E
SEAD-59: FILL AREA WEST OF BUILDING 135

November 2017

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APPENDIX E: SEAD-59 Fill Area West of Building 135

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-59 (Fill Area West of Building 135) is approximately 6.2 acres in size and encompasses an area located along both sides of an unnamed east-west dirt road that runs from the intersection of 4th Avenue, Administration Avenue, and South Street in the Depot's former Administration Area to the former location of Building 311 in SEAD-16. SEAD-59 was used for the disposal of construction debris and oily sludge. SEDA personnel have also indicated the area of SEAD-59 was used as the Army's version of a local "Department of Public Works" yard where vehicles and materials were staged, and as a result a large quantity of miscellaneous "roads and grounds" debris remains, and has become intermixed with the native soils (Parsons, 2009c).

1.2 Initial Response

Work performed at SEAD-59 includes the ESI in 1994, a Phase I RI in 1997, a TCRA conducted in 2002, and a Phase II RI completed in 2006. A TCRA performed in 2002 included excavation and staging of impacted soils, sampling and analysis of excavated areas and stockpiled excavated soils, disposal of approximately 3,805 tons of contaminated soil (total from SEAD-59 and SEAD-71) at an approved off-site landfill, installation of groundwater monitoring wells, and backfilling and grading of open excavations with acceptable soil from the stockpiles (Parsons, 2002d; 2006d). The CCR for the Former Sewage Sludge Waste Piles (SEAD-5) (Parsons, 2010c) provided record documentation of the completed remedial action construction activities for SEADs 59 and 71. Stockpiled soil generated during the SEAD-59/71 remedial actions was used as the initial cover layer at SEAD-5.

1.3 Basis for Taking Action

An action was required at SEAD-59 to ensure land use remains protective of site users. SEAD-59 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

The SEAD-59 soil and groundwater sample summary results and data evaluated for SEAD-59 are provided in the ROD (Parsons, 2009c). Results of test pitting operations completed during site investigation activities indicated that full and empty 15- and 55-gallon drums, one-, two- and five-gallon paint cans, 20-gallon waste cans, and chain-linked fence were found buried at the site. No COCs were identified for SEAD-59 soil or SEAD-59 stockpiled soil.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-59 the human health cancer risks were less than the CERCLA cancer risk management upper limit of 1×10^{-4} for all receptors. The calculated non-cancer HI for the adolescent trespasser receptor was less than 1.0. The non-cancer HIs determined for the industrial worker and construction worker were $1E+00$ (HI=1.2) and $9E+00$ (HI=8.9), respectively.

It was determined that the elevated risks associated with exposure to metals in SEAD-59 groundwater result from metals that are associated with the native soils and waters in the geologic formation at the Depot and

were not associated with a release from the AOC. When the hazard index contribution from SEAD-59 groundwater is removed, the HI levels computed for the industrial worker and the construction worker both fall to less than 1.

A Screening Level Ecological Risk Assessment (SLERA) was conducted and the results indicate that soil at SEAD-59 and in SEAD-59 stockpiled soil does not significantly impact ecological receptors in the area. No COCs were identified for SEAD-59 soil or SEAD-59 stockpiled soil.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The RODs titled the "Fill Area West of Building 135 (SEAD 59)" (Parsons, 2009c) requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") (USACE, 2006) implemented land use controls for the "PID/Warehouse Area. This SEAD LUC RD exempted 14 sites, or parcels, identified as Army Retained Sites. Addendum 4 to the SEAD LUC RD (USACE, 2009) included SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-59) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-59 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-59 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-59 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-59.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-59 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-59.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehousing Area have been completed and documented. No continuing active remediation is required in the PID/Warehousing Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-59 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the AOCs within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and,
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds ,and which also has been expanded to include all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-59.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-59 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

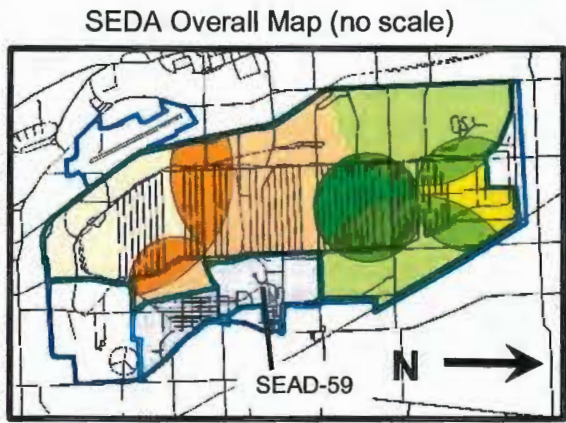
Photo Log



Attachment E-1
Five Year Review - Site Visit Photo Log
SEAD-59 Fill Area West of Building 135

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-59, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers



 Approximate Site Boundary
 Photo Viewing Direction

SEAD-59 is located within the PID/Warehouse Area Parcel.

Bing.com (Microsoft)
 Aerial of SEAD-59;
 actual date of aerial
 photo is unknown, but
 based on observable
 features at SEDA it may
 be from Spring 2010.



2015 Site Visit Photo 1



Status as of: 6/1/15
 Photo ID: IMG_6547.JPG
 Description: SEAD-59

2015 Site Visit Photo 2



Status as of: 6/1/15
 Photo ID: IMG_6542.JPG
 Description: SEAD-59

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION			
Site name: SEAD <u>59</u>	Date of inspection: June 1, 2015		
Location and Region: <u>P10 area</u>	EPA ID: NY0213820830		
Agency, office, or company leading the five-year review: <u>Parsons</u>	Weather/temperature: <u>55°F Light rain</u>		
Inspector: <u>Dave Babcock, PE</u>	Signature: <u>[Signature]</u>		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>no evidence of recent development activity or groundwater use.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>no evidence of recent development activity or groundwater use.</i>
<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>no evidence of recent development activity or groundwater use.</i>		
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____ Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____			
4. Other interviews (optional) <input type="checkbox"/> Report attached.			

APPENDIX F
SEAD-71: ALLEGED PAINT DISPOSAL AREA



APPENDIX F: SEAD-71 Alleged Paint Disposal Area

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Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-71 (the Alleged Paint Disposal Area) is wedge shaped and is located west of 4th Avenue near Buildings 114 and 127. The entire AOC is approximately 2.4 acres in size and bounded on the north and south by railroad tracks serving Buildings 114 and 127.

Prior to the 2001 RI, rumors suggested that paints and/or solvents were disposed at SEAD-71 in burial pits (Parsons, 2001). The results of the RI test pitting operations failed to confirm the paint and oil disposal rumors, but did indicate that the area had been used for the disposal of construction debris, including sheet metal, asphalt, chain link fencing, sand and stone, piping, railroad ties, wood and cinders. No dates of disposal are available nor is there any information on the number of suspected disposal pits that may have been used.

1.2 Initial Response

An ESI, consisting of geophysical investigations, soil investigations (including soil boring and test pitting), and groundwater monitoring well installation and sampling was performed. A Phase I RI included a ground penetrating radar survey, a surface soil investigation, and a test pitting program. The TCRA performed in 2002 included excavation and staging of impacted soils, sampling and analysis of excavated areas and stockpiled excavated soils, disposal of approximately 3,805 tons of contaminated soil (total from SEAD-59 and SEAD-71) at an approved off-site landfill, installation of groundwater monitoring wells, and backfilling and grading of open excavations with acceptable soil from the stockpiles. For both AOCs, the Phase II RIs included validating and evaluating the soil data generated during the 2002 TCRAs, conducting groundwater monitoring, and performing risk assessments to characterize potential residual risks to human health and the environment. The CCR for the Former Sewage Sludge Waste Piles (SEAD-5) (Parsons, 2010c) provided record documentation of the completed remedial action construction activities for SEADs 59 and 71. Stockpiled soil generated during the SEAD-59/71 remedial actions was used as the initial cover layer at SEAD-5.

1.3 Basis for Taking Action

An action was required at SEAD-71 to ensure land use remains protective of site users. SEAD-71 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Summary results of chemical analyses performed on all SEAD-71 soil and groundwater samples, and a complete copy of the analytical data for the all SEAD-71 surface and subsurface soil and groundwater evaluated during the investigation are provided in the ROD (Parsons, 2009c). The results of the RI test pitting operations indicated that the area had been used for the disposal of construction debris as mentioned in Section 1.1.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that the human health cancer risks associated with all soil (i.e., inside and outside of Fenced Area) and groundwater at SEAD-71 were less than the CERCLA cancer risk management upper limit of 1×10^{-4} for both the construction worker and the adolescent trespasser. The potential cancer risk determined for the industrial worker is 2×10^{-4} . Results for two RME scenarios are presented in the ROD (Parsons, 2009c); one including all SEAD-71 soil (i.e., inside and outside of the Fenced Area) and one considering only soil located exterior to the Fenced Area.

Based on discussion, it was concluded that the elevated cPAH concentrations in surface soil within the Fenced Area at SEAD-71 are not associated with any release at the site, but are directly associated with the pavement and crushed rock pad that is still in place at the AOC. Therefore, a risk assessment was conducted for SEAD-71 in which all soil data from the Fenced Area was excluded from the risk evaluation.

For exposure to SEAD-71 soil and groundwater outside the Fenced Area, the cancer risks for all receptors are below the USEPA upper limit of 1×10^{-4} . The total non-cancer hazard index for the adolescent trespasser is below the USEPA target limit of 1. The non-cancer hazard indices for the industrial worker and construction worker are 3.5 and 13, respectively. The risk associated with groundwater intake contributes a significant portion of the total non-cancer hazard indices for the receptors. However, it was noted that elevated concentrations in SEAD-71 groundwater are generally comparable with the SEDA background, and may have been overstated in upgradient wells due to limited volume and potentially elevated turbidity.

A SLERA was conducted and the results indicate that soil at SEAD-71 does not significantly impact ecological receptors in the area. No COCs were identified for SEAD-71 soil for ecological receptors.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Alleged Paint Disposal Area (SEAD 71)" (Parsons, 2009c) requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") (USACE, 2006) implemented land use controls for the "PID/Warehouse Area. Addendum 4 to the SEAD LUC RD (USACE, 2009) included SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-59) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-71 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-71 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-71 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-71.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-71 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-71.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-71 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the AOCs within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and,
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds ,and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-71.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-71 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



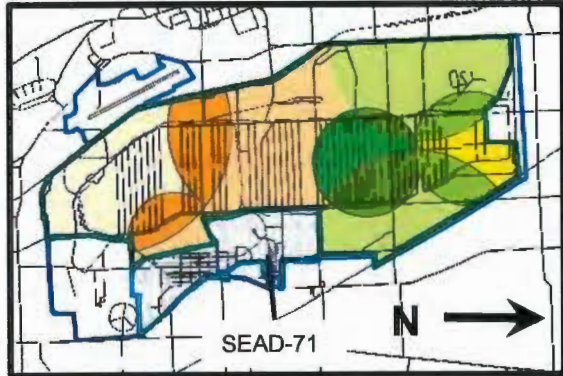
Attachment F-1
Five Year Review - Site Visit Photo Log
SEAD-71 Alleged Paint Disposal Area

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-71, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1

SEDA Overall Map (no scale)



Status as of: 6/1/15
Photo ID: IMG_6549.JPG
Description: SEAD-71


 Approximate Site Boundary

 Photo Viewing Direction

SEAD-71 is located within the PID/Warehouse Area Parcel.



Bing.com (Microsoft) Aerial of SEAD-71; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2010.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION									
Site name: SEAD -71	Date of inspection: June 1, 2015								
Location and Region: P10 area	EPA ID: NY0213820830								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F, light rain								
Inspector: Dave Babcock, PE	Signature: <i>[Handwritten Signature]</i>								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table> <p style="text-align: right; margin-top: 10px;"><i>No evidence of recent development activity or groundwater use.</i></p>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls						
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached									
II. INTERVIEWS (Check all that apply)									
1. O&M site manager _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date					
Name	Title	Date							
2. O&M staff _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date					
Name	Title	Date							
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> <td style="width: 20%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____ Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> <td style="width: 20%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date	Phone no.	Name	Title	Date	Phone no.
Name	Title	Date	Phone no.						
Name	Title	Date	Phone no.						
4. Other interviews (optional) <input type="checkbox"/> Report attached.									

APPENDIX G
SEAD-121C: DEFENSE REUTILIZATION AND MARKETING OFFICE (DRMO)



APPENDIX G: SEAD-121C Defense Reutilization and Marketing Office Yard and 121I Rumored Cosmoline Oil Disposal Area

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-121C, the Defense Reutilization and Marketing Office (DRMO) Yard, is a triangular-shaped gravel lot, approximately 8.75 acres in size, located roughly 4,000 ft. southwest of the former Depot's main entrance off State Route 96. The DRMO Yard was used by the Army to store scrap metal, vehicles, and other items that were no longer needed for national defense, or that did not comply with legislative and regulatory requirements. The group using the yard was responsible for property reuse (including resale), hazardous property disposal (off site, at licensed/permitted facilities), precious metals recovery and recycling program support (Parsons ES, 1999b; Parsons, 2008).

SEAD-121I, the Rumored Cosmoline Oil Disposal Area, encompasses four rectangular-shaped, open grass and dirt covered areas that are bounded by 3rd and 7th Streets (north and south ends, respectively) and Avenues C and D (west and east sides, respectively). The overall size of the AOC is approximately 16.8 acres. Approximately 1.2 acres of this area were previously used for the staging of strategic stockpiles of ferromanganese ore (Parsons, 2008).

1.2 Initial Response

Two environmental investigations were conducted to document the environmental conditions present at SEAD-121C, the DRMO Yard. In addition, a removal action WAS also performed independently at SEAD-121C, and confirmatory soil sample data were developed as part of the removal action activities.

Sampling was performed in 1998 (limited EBS) to determine if hazardous substances were present, and between 2002 and 2003 (RI) to more thoroughly investigate Site conditions; the results of this effort were reported in the RI Report (Parsons, 2006e). Additional data pertinent to the existing environmental conditions remaining at the AOC was subsequently developed during the lead interim removal action in 2007 and are provided in the CCR. The sampling and analysis conducted during the cleanup action are presented in the Completion Report for SEAD-121C, and are summarized in Section 3 of the ROD (Parsons, 2008b).

Two environmental investigations were conducted to document the environmental conditions present at SEAD-121I, the Rumored Cosmoline Oil Disposal Area. In addition, removal actions were also performed at SEAD-121I, and confirmatory soil sample data were developed as part of the removal action efforts.

Sampling was performed in performed in 1998 (EBS) to determine if hazardous substances were present, and between 2002 and 2003 (RI) to more thoroughly investigate Site conditions; the results of this effort were reported in the RI Report (Parsons, 2006e). The sampling and analysis conducted during the cleanup action are presented in the Completion Report for SEAD-121I, and are summarized in the ROD (Parsons, 2008b). Additional data pertinent to the existing environmental conditions remaining at the AOC was subsequently developed during the interim removal actions that were performed at the former stockpile locations in 2007 at SEAD-121I to address manganese residuals, and summarized in the Removal Action Letter for SEAD-121I.

1.3 Basis for Taking Action

An action was required at SEAD-121I and SEAD-121C to ensure land use remains protective of site users. SEAD-121I and SEAD-121C are part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Conditions present at SEAD-121C were thoroughly investigated during a multimedia RI conducted in 2002 and 2003 (Parsons, 2006e). Samples of surface and subsurface soil, groundwater, surface water, and “ditch soil” found in man-made culverts adjacent to the AOC were collected and analyzed for TCL/TAL compounds (Parsons, 2006e). The only analytes found at concentrations in excess of NYSDEC’s TAGM Industrial Use Soil Cleanup Objectives were two cPAHs [(carcinogenic Polycyclic Aromatic Hydrocarbons (benzo[a] pyrene and benzo[b] fluoranthene)] and lead. Additional data pertinent to the existing environmental conditions remaining at the AOC was subsequently developed during the interim removal action that was performed at the site (Parsons, 2008f). These data are provided in the CCR for SEAD-121C that describes and summarizes the results of the interim removal action that was performed for the elevated levels of lead.

The U.S. Government historically staged strategic stockpiles of ferromanganese ore in portions of SEAD-121I, and these stockpiles were present during the EBS and RI sampling events and into the early part of 2007. The Army indicated that the rail spur and sidings were used for delivery of equipment and machinery that was frequently packed in Cosmoline (oil). Cosmoline oil is a commonly used substance that prevents corrosion on metal parts and components. During delivery and unpacking of the equipment and machinery, oil from the packing may have been deposited on the ground.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-121C the human health cancer risks are within or below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0. For SEAD-121C, complete details of the human health risk assessment for each exposure route evaluated are presented in Appendix E of the Final RI report (Parsons, 2006e) for soil, ditch soil, groundwater, and surface water exposure.

An ecological risk assessment was performed for SEAD-121C. Preliminary screening level HQs were computed, and the Army applied the USEPA’s recommended refinement of COC process to the results of the SLERA to determine if evaluation of ecological risks was warranted. After application of the refinement of COC process, no COCs were identified for SEAD-121C soil, SEAD-121C ditch soil, or SEAD-121C surface water and the rationales are summarized below. Specific details of the Refinement of COC Process are presented in the Final RI Report (Parsons, 2006f) Section 7.6.2 through 7.6.4. Based on the discussion, soil, ditch soil, surface water, and groundwater at SEAD-121C are not expected to significantly impact ecological receptors and no further action is warranted at SEAD-121C based on the ecological risk assessment.

The risk assessment concluded that at SEAD-121I the human health cancer risks are within or below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all

receptors except for the construction worker (1.5) are less than 1.0. For SEAD-121I, the post-cleanup action non-carcinogenic hazard indices and carcinogenic risk results for the scenarios evaluated are summarized in Table 7-9 of the ROD (Parsons, 2008b). Details of the revised human health risk assessment for each exposure route are presented in Appendix E of the ROD for soil, ditch soil, and surface water exposure. Since this calculation, the ore piles were removed and the former staging areas cleaned up. The most significant contributing COPC (i.e., manganese) was reduced to levels below commercial and industrial cleanup objective levels, and the associated risk at SEAD-121I is considered suitable for its continuing use as industrial or commercial property.

An ecological risk assessment was performed for SEAD-121I. Preliminary screening level HQs were computed, and the Army applied the USEPA's recommended refinement of COC process to the results of the SLERA to determine if evaluation of ecological risks was warranted. After application of the refinement of COC process, no COCs were identified for SEAD-121I soil, ditch soil, or surface water and the rationales are summarized below. The reader is referred to the Final RI Report (Parsons, 2006f) Section 7.6.5 through 7.6.7 for specific details of the Refinement of COC Process. The source of the metal contamination at SEAD-121I was the strategic stockpiles of ferrous-manganese ore previously stored at the AOC. These stockpiles were removed in 2007, and a post-mission cleanup action was taken to remove residues associated with the historic stockpiling activities. Based on the above discussion, soil, ditch soil, and surface water at SEAD-121I are not expected to significantly impact ecological receptors and no further action is warranted at SEAD-121I based on the ecological risk assessment.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

Lead concentrations in surface soil were the focus of the remedial action at SEAD-121C. Approximately, 776 cubic yards of lead-impacted soil was excavated and disposed of off-site as non-hazardous waste. Confirmatory sampling concluded that no further remediation was required at SEAD-121C (Parsons, 2008f).

Samples of surface and subsurface soil, surface water and "ditch soil" found in man-made culverts adjacent to the AOC were collected and analyzed for TCL/TAL compounds. No final COCs were identified for any medium at SEAD-121I.

The RODs titled "Defense Reutilization and Marketing Office (DRMO) Yard (SEAD 121C) and the Rumored Cosmoline Oil Disposal Area (SEAD-121I)" (Parsons, 2008b) require the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained at the two AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 4 to the SEAD LUC RD added SEADs 1, 2, 5, 16, 17, 59, 71, 121C and 121I in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehouse Area including properties that had been previously retained (including SEAD-121C and SEAD-121I) by the Army in 2008 was recorded in the Seneca County Clerk’s office on June 10, 2011.

SEAD-121C and SEAD-121I as part of the “PID Retained Parcels” was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-121I and SEAD121C recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-121C and SEAD-121I was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-121C and 121I.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-121C and SEAD-121I is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-121C and SEAD-121I.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-121I and SEAD-121C is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the two identified AOCs, and which has been expanded to encompass all land within the PID Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-121C and SEAD-121I.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and Remedial Action objectives from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-121C, SEAD-121I, and the PID Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

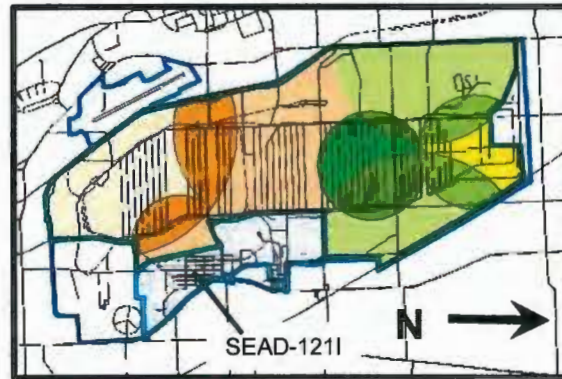
Photo Log

Attachment G-1
Five Year Review - Site Visit Photo Log
SEAD-121I Rumored Cosmoline Oil Disposal Area

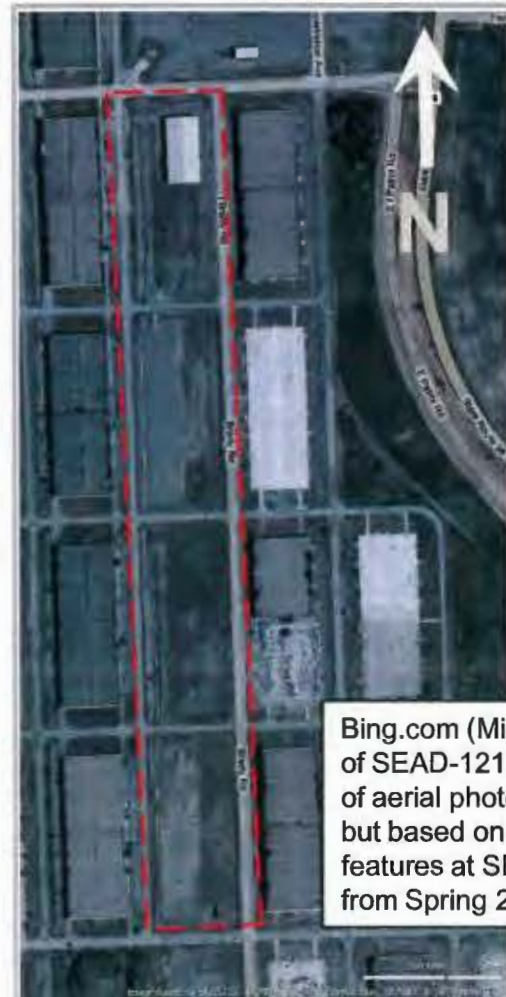
PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-121I, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEDA Overall Map (no scale)



 Approximate Site Boundary
 Photo Viewing Direction



Bing.com (Microsoft) Aerial of SEAD-121I; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2010.

2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: SEAD-121I

Photo ID: IMG_6570.JPG

2015 Site Visit Photo 2



Status as of: 4/6/15
 Description: SEAD-121I

Photo ID: img_6569.JPG



SEAD-121I is located within the PID/Warehouse Area Parcel.

Bing.com (Microsoft) Birds Eye Aerial of SEAD-121I; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.



Attachment G-1
Five Year Review- Site Visit Photo Log
SEAD-121C Defense Reutilization and Marketing Office (DRMO) Yard

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

2015 Site Visit Photo 3

LOCATION: SEAD-121C, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEAD-121C is located within the PID/
 Warehouse Area Parcel.

2015 Site Visit Photo 1



Status as of: 6/1/15
 Photo ID: IMG_6562.JPG
 Description: SEAD-121C

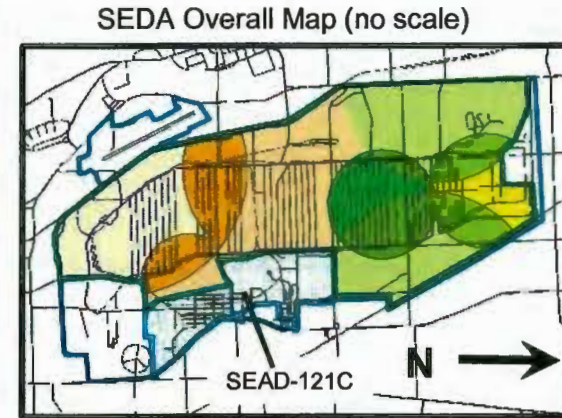
2015 Site Visit Photo 2



Status as of: 6/1/15
 Photo ID: IMG_6566.JPG
 Description: SEAD-121C





Status as of: 6/1/15
 Photo ID: IMG_6564.JPG
 Description: SEAD-121C



Bing.com (Microsoft) Aerial of SEAD-121C; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2010.



Bing.com (Microsoft) Birds Eye Aerial of SEAD-121C; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.

-  Approximate Site Boundary
-  Photo Viewing Direction

Attachment G-1
Five Year Review- Site Visit Photo Log
SEAD-121C Defense Reutilization and Marketing Office (DRMO) Yard

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

2015 Site Visit Photo 3

LOCATION: SEAD-121C, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEAD-121C is located within the PID/
 Warehouse Area Parcel.

2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: SEAD-121C

Photo ID: IMG_6562.JPG

2015 Site Visit Photo 2



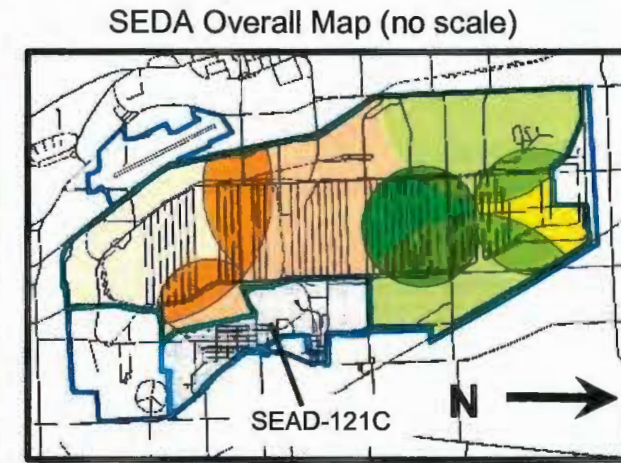
Status as of: 6/1/15
 Description: SEAD-121C

Photo ID: IMG_6566.JPG



Status as of: 6/1/15
 Description: SEAD-121C

Photo ID: IMG_6564.JPG



Bing.com (Microsoft) Birds Eye Aerial of SEAD-121C;
 actual date of aerial photo is unknown but based on
 observable features at SEDA it may be from Spring 2007.



Bing.com (Microsoft) Aerial of SEAD-121C; actual
 date of aerial photo is unknown, but based on
 observable features at SEDA it may be from Spring
 2010.

 Approximate Site
 Boundary

 Photo Viewing
 Direction

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																															
Site name: SEAD -121C	Date of inspection: June 1, 2015																														
Location and Region: P10 area	EPA ID: NY0213820830																														
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain																														
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																														
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____																			
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos</i>																															
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Area mowed; no other visual evidence of recent activity or groundwater use.

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																															
Site name: SEAD -126T	Date of inspection: June 1, 2015																														
Location and Region: PID area	EPA ID: NY0213820830																														
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain																														
Inspector: Dave Babcock, PE	Signature: <i>[Handwritten Signature]</i>																														
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <p style="text-align: center;"><i>No visual evidence of recent development activity or groundwater use.</i></p> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <p style="text-align: center;"><i>No visual evidence of recent development activity or groundwater use.</i></p>																												
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II. INTERVIEWS (Check all that apply)																															
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APPENDIX H
SEAD-25: FIRE TRAINING AND DEMONSTRATION PAD



APPENDIX H: SEAD-25 Fire Training and Demonstration Pad

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Fire Training and Demonstration Pad (SEAD-25) site is located in the east-central portion of SEDA. The site is bounded to the east by Administration Avenue beyond which is undeveloped land covered by deciduous trees; to the south by Ordnance Drive beyond which is an open grassy field and a stand of coniferous trees; to the west by grassland, brush and conifers; and to the north by grassland and a baseball field.

SEAD-25 was in use from the late 1960s to the late 1980s. The pad was used for fire control training. During the 1980s, the pad was used twice for firefighting demonstrations, once in 1982 or 1983 and in 1987. For additional area specific background information for SEAD-25, please refer to the Draft 2015 Long-Term Monitoring Annual Report (Parsons, 2015).

1.2 Initial Response

SEAD-25 is described in three reports issued prior to the RI. The first report was the Work Plan for CERCLA ESI of Ten SWMUs written by Parsons Main, Inc. in January 1993. This report detailed the site work and sampling performed under the ESI. The second report was a SWMU Classification Report (Parsons ES, 1994a), which was undertaken to describe and evaluate the SWMU at SEDA. The third was an ESI Report (Parsons ES, 1995), which described a more detailed investigation of SEAD-25. The fieldwork for the ESI was conducted according to the Work Plan for CERCLA ESI of Ten SWMUs. Based on the results of the ESI, a RI Work Plan was prepared and the RI field program was conducted. A RI and Feasibility Study (FS) were completed for SEAD-25/26 in May 1998 and October 1998, respectively.

1.3 Basis for Taking Action

An action was required at SEAD-25 to ensure land use remains protective of site users. SEAD-25 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

The primary COCs at SEAD-25 are VOCs, specifically benzene, toluene, ethylbenzene, and xylene (BTEX) compounds in both soil and groundwater, as well as lesser amounts of chlorinated ethene compounds in groundwater. The VOC contaminants were believed to have been released to the environment during fire training activities at the Pad. In addition, varying concentrations of SVOCs were also detected in the soil and sediment, mainly in the drainage ditches on the periphery of the site. The primary impact to the groundwater resulted from two overlapping VOC plumes that both originated at the southwestern portion of SEAD-25 pad, neither of which extended beyond Ordnance Drive. The primary plume was approximately 200 feet long and composed of BTEX which is typically associated with gasoline. Results of groundwater contour mapping indicated that groundwater flow is radial below the pad, with a strong horizontal gradient to the south and west. The radial groundwater flow that has developed below the pad at SEAD-25 is believed to be a local phenomenon that is present because of the influence of the

anthropomorphic bedrock topographic mound located below the pad. Less significant impacts from other contaminants were also detected at the site.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-25 there are human health cancer risks were within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for the current and future on-site construction worker, but above for the future on-site resident (1×10^{-3}). The calculated non-cancer HI for the construction worker (HI=4) and resident (HI=10) for child and HI-5 for adult) were greater than 1.0, but less than 1.0 for the current site worker. These risks are mainly due to inhalation of VOCs in the ambient air and potential exposure of receptors to on-site groundwater containing benzene as their sole drinking water source.

The results of the ecological risk assessment presented in the RI report (Parsons ES, 1998) concluded that there was negligible risk to the ecosystems of the SEAD-25 study area. During the field evaluation, no overt acute toxic impacts were noted. The quantitative ecological risk evaluation determined that a possibility exists for the COPCs to present a small potential for environmental effects due to sediment at SEAD-25.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "The Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26) (Parsons, 2004b) required the following remedy and establishment of ICs. The elements that composed the remedy included:

- Excavate soil at the source in an area approximately 60 feet by 100 feet to a depth of 6 feet (approximately 1,350 cubic yards);
- Excavate a volume of sediment approximately 780 feet long, 3 feet wide and 2 feet deep (approximately 175 cubic yards) from the northwest ditch;
- Dispose of excavated soils in an appropriate off-site facility;
- Dewater the excavation pit;
- Treat groundwater that is recovered during excavation and during dewatering of excavation pit with an on-site air stripper;
- Replace excavated soil with clean backfill and establish a ground cover to avoid soil erosion;
- Conduct groundwater monitoring of the plume until NYSDEC Class GA groundwater standards are achieved (approximately 10 years);
- Establish and maintain land use controls to prevent access to or use of groundwater until cleanup standards are met. LUCs include to:
 - Prohibit the development and use of property for residential housing, elementary and secondary schools, childcare facilities and playground activities.

- Prevent access to or use of the groundwater until NYS Class GA Groundwater Standards are met.
- Maintain the integrity of any current or future remedial or monitoring system at SEAD-25.
- Complete a review of the selected remedy every five-years (at minimum), in accordance with Section 121(c) of the CERCLA;
- Prepare a contingency plan that may include additional monitoring and air sparging of the plume, as necessary; and
- Once NYSDEC Class GA groundwater cleanup standards are achieved, the groundwater use restriction may be eliminated.

2.2 Remedy Implementation

The CCR (Parsons, 2006a) for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), describes remedial action activities at SEAD-25 and SEAD-26 and presents sample collection and laboratory test results, record survey data, record (as-built) drawings, and photo documentation to demonstrate compliance with the requirements set forth by the ROD (Parsons, 2004b) and the Remedial Design Work plan and Design Report (Parsons, 2005a).

The excavation of the BTEX impacted soil at the pad at SEAD-25 began on November 15, 2005 and was completed on December 1, 2005, with soil removal totaling 961 cubic yards (cy). All confirmatory soil samples collected from the sidewalls of the excavation area and analyzed for VOCs and SVOCs representative of soil remaining onsite at the pad achieved the site-specific cleanup goals, and the soils at SEAD-25 do not require further action. The excavation of the soil at the pad removed the source of groundwater contamination.

Excavation of the SVOC impacted swale at SEAD-25 began on November 7, 2005 and was completed on November 8, 2005. The excavation extended from the toe of slope on one bank to the toe of slope on the other bank, resulting in the removal and off-site disposal of the swale soil (761 cy) at SEAD-25. Since the swale bottom consisted of exposed competent bedrock following excavation, no native material remained in the swale and confirmatory samples were not collected.

A total of 1,722 cubic yards (approximately 2,600 tons) of soil were excavated from the pad and the swale at SEAD-25 and disposed off-site at Ontario County Landfill. The pad excavation was backfilled and restored to the existing grade. LTM is currently on-going at SEAD-25 and has been conducted since 2007 (Parsons, 2007b; 2014).

SEAD-25 and SEAD-26 Soil Removal Cleanup Goals		
Analyte	Cleanup Goal (µg/Kg)	Goal Met?
Volatile Organic Compounds		
1,1,1-Trichloroethane	800	Yes
1,1-Dichloroethane	200	Yes
Benzene	60	Yes

Chloroform	300	Yes
Ethyl Benzene	5,500	Yes
Toluene	1,500	Yes
Trichloroethene	700	Yes
Xylene (total)	1,200	Yes
Semivolatile Organic Compounds		
2-Methylnaphthalene	36,400	Yes
Naphthalene	13,000	Yes
Phenol	30	Yes
cPAHs (SEAD-26 only)		
cPAHs (BTE)*	10	Yes

*cPAHs were only sampled at SEAD-26 and were compared to the Benzo(a)pyrene Toxicity Equivalence.

NYSDEC TAGM values from Technical and Administrative Guidance Memorandum HWR-92-4046, January 24, 1994

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 1 to the SEAD LUC RD (USACE, 2007) added SEAD 25, and 26 in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-25) by the Army in 2008 was recorded in the Seneca County Clerk’s office on June 10, 2011.

SEAD-25 as part of the “PID Retained Parcels” was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.
- Continue groundwater monitoring on a semi-annual basis at SEAD-25 until the 2010 – 2011 (Fourth Year) sampling cycle is completed. It was recommended that groundwater monitoring continue on an annual basis, and be conducted during a season (e.g., winter – early to mid-spring)

when an adequate quantity of water is likely to be present in the overburden aquifer to support the required sampling

3.2 Progress on Recommendations

In general, the SEAD-25 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

The frequency of groundwater monitoring was reduced from semi-annual to an annual basis at SEAD-25 through this 2016 FYR. Recommendations on groundwater monitoring frequency are further discussed in Section 5.0

3.3 Issues, Recommendations and Follow-Up Actions

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.
- Continue groundwater monitoring on an annual basis at SEAD-25.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

In accordance with the ROD for the Fire Training and Demonstration Pad (SEAD-25) and the Final Remedial Design Report [(RDR) (Parsons, 2005a)], long-term groundwater monitoring is being performed at SEAD-25 as part of the continuing PCMM operations.

There have been twelve groundwater monitoring events conducted at SEAD-25, which have been documented in eight LTM reports. Groundwater monitoring was initially required as a condition of the ROD since contaminant concentrations found in the groundwater at the AOCs prior to the remedial action exceeded applicable groundwater standards. Semi-annual (i.e., twice each year) groundwater monitoring was performed at SEAD-25 from 2006 through 2011, and annual groundwater monitoring has been performed from 2011 to 2015 (present). A summary of the groundwater trends based on the RI results, post-remedial action to date is summarized in the Eighth Year Long-Term Monitoring Report for SEAD-25 (Parsons, 2015).

Based on the post-RA monitoring event results for SEAD-25 the Army currently reports that:

- The concentrations of BTEX in the groundwater at SEAD-25 have decreased by up to two orders of magnitude since 1994;
- Volatile organic compounds COCs were not detected above cleanup goals in the five wells sampled during the 2015 LTM event;
- Groundwater impacts are not noted beyond the immediate area of the former Fire Training and Demonstration Pad, and downgradient wells (MW25-8, MW25-13, MW25-15 and MW25-19) have not shown evidence of BTEX or VOC contamination since the removal action was completed;
- The general trends of the field indicator parameters results for most of the LTM wells are inconclusive due to the historic lack of VOC contamination at these wells and the lack of an upgradient or background well for comparison; however, typically low DO and negative ORP values at MW25-2 suggests an environment conducive to anaerobic degradation;
- With the exception of MW25-2, VOC concentrations at SEAD-25 have generally decreased to levels close to or below the applicable groundwater standards;
- COCs are limited in concentration and are not migrating outside the vicinity of MW25-2. In general, any remaining contamination is restricted to the area in the vicinity of MW25-2;
- The soil excavation remedy at SEAD-25 has been effective;
- Land and groundwater restrictions imposed at SEAD-25 continue to be maintained as part of both the approved ROD for SEAD-25 and the larger Planned Industrial/Office or Warehousing Area ("PID Area") (Parsons, 2004; 2006). No residential housing, elementary and secondary schools, childcare facilities and playground activities have been constructed in this area, and there are no signs of unauthorized groundwater use or access; and
- Based on the information and discussion provided above, it appears that BTEX concentrations observed at MW25-2 fluctuate in correlation with changes in saturated thickness of the groundwater table, indicating that the increase is not due to the release of additional contaminants. The removal of the source area present at SEAD-25, and the verification that soils left at the site achieved cleanup objectives, supports the interpretation that a continuous release of contaminants at SEAD-25 is no longer occurring.

4.3 Site Inspection

SEAD-25 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-25. The 12 LTM groundwater monitoring wells were identified at SEAD-25 during the site visit. As discussed previously, many of the wells on the SEAD-25 site were decommissioned in September 2010.

- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-25 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-25.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LTM Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-25 currently protects human health and the environment because:

- Contaminated soils and sediments previously identified at SEAD-25 to contain aromatic volatile organic compound and cPAHs have been excavated and disposed at licensed and approved off-site landfills where they are being managed in controlled and monitored environments;
- The open excavations were allowed to backfill with contaminated groundwater from the immediate vicinity of the excavation sites, and then this water was pumped from the excavation site, placed into storage vessels, sampled and analyzed, approved for disposal and then disposed at a wastewater treatment plant where treatment was performed in accordance with applicable environmental limitations;
- The open excavations were then backfilled with approved soil meeting required cleanup goals, and then a vegetative cover over the disturbed site was re-established;
- A post-remedial action groundwater monitoring program was also implemented at SEAD-25, and data collected from the monitoring program indicates that concentrations of groundwater contaminants identified prior to the remedial action have fallen to levels significantly below pre-remedial action concentrations, but continue to show periodic evidence of being above identified groundwater quality criteria. However, the data collected from the ongoing monitoring program show no expansion in the size of the apparent plume, and no indication that the suggest that it is only present in the immediate of the excavated source area;
- Access to and use of groundwater continues to be restricted; and
- The integrity of the monitoring well network present at SEAD-25, where the LTM continues, is

being monitored and maintained; and

- The results of the continuing LTM must not provide evidence that volatile organic compound concentrations are increasing back toward pre-removal action levels, or that the existing groundwater plume is expanding in size, or migrating into previously unaffected areas.

The selected remedy is still protective of human health and the environment. No early indicators of potential issues have been identified for SEAD-25. Recommendations for optimization of the LTM program are discussed further in Section 5.4.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 and **Attachment 3** of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-25 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

Based on the current area-wide LUC prohibiting the use of groundwater within the PID Area (which includes SEAD-25), the Army proposes to conclude LTM at SEAD-25 because of the following:

- Groundwater use is prohibited by the area-wide LUC and an alternate potable water source is available;
- Periodic LUC inspections will continue to insure that the groundwater is not accessed;
- Results from ten years of LTM indicate site COCs are not migrating outside the local area of MW25-2;

- Trends demonstrate that the remedial action performed did not adversely impact groundwater; and,
- Concentrations within MW25-2 are decreasing and have reached the GA Standard in the most recent round.

LTM will continue based on the latest annual report. The wells will not be decommissioned at this time and sampling at these sites may take place in the future if the need arises (e.g., emerging contaminants, decisions during the next site annual report). Annual LUC inspections will continue to insure that the groundwater is not accessed. Based on EPA request, the Army has agreed to sample for perfluoroalkyl substances [PFAS] at sites where Aqueous Film Forming Foams (AFFF) (e.g., firefighting foams) may have been used. As part of this program, future sampling for PFAS at SEAD-25 is expected.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years. Additionally, SEAD-25 is located within the PID area, within which, an environmental easement and deed restriction prohibit both residential use and the use of groundwater.

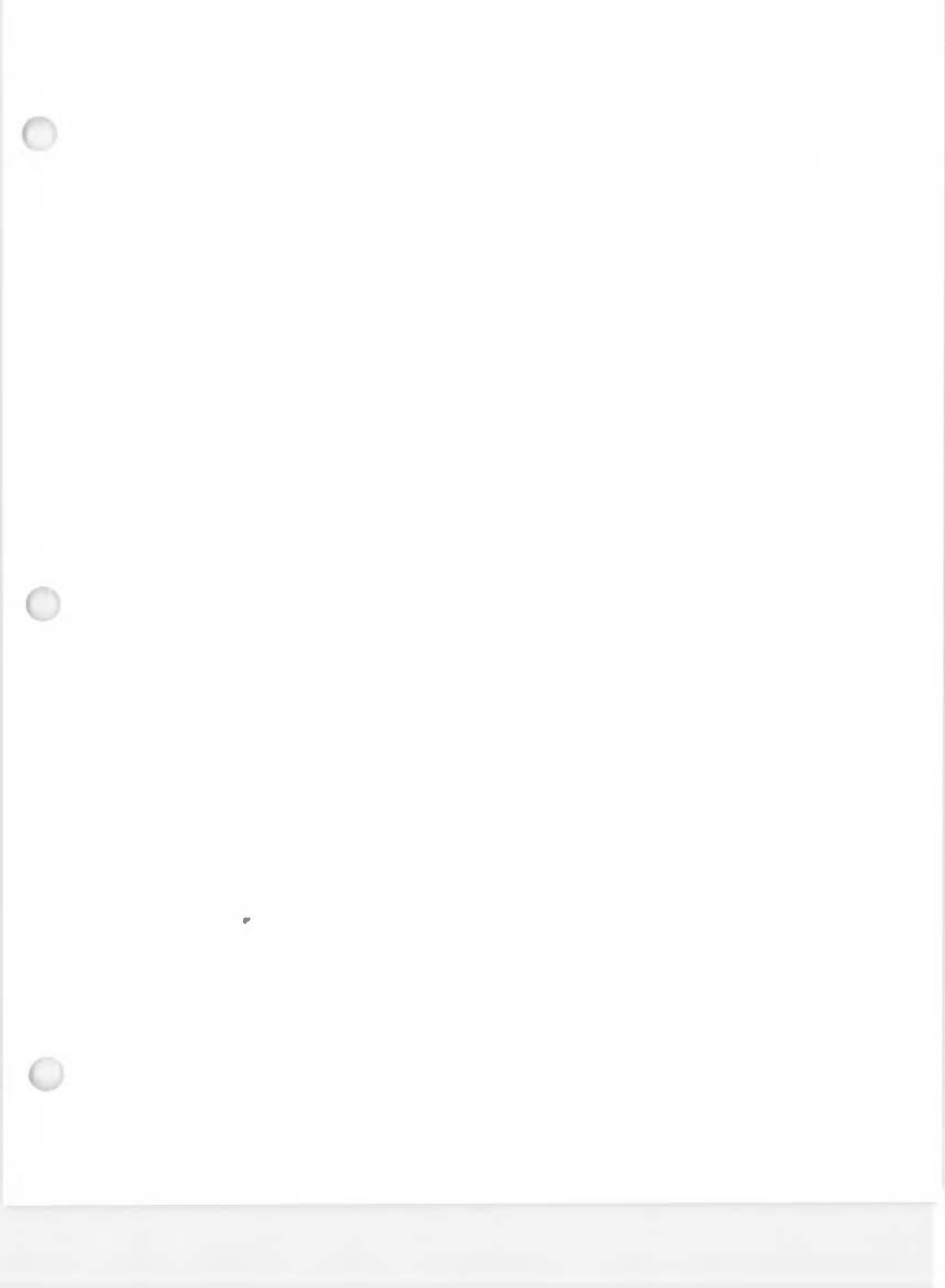
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment H-1
Five Year Review - Site Visit Photo Log
SEAD-25 Fire Training and Demonstration Pad

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-25, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6551JPG
 Description: SEAD-25 Former Pad Area

2015 Site Visit Photo 2



Status as of: 6/1/15 Photo ID: IMG_6552JPG
 Description: SEAD-25 Former Pad Area

SEAD-25 is located within the
 PID/Warehouse Area Parcel.


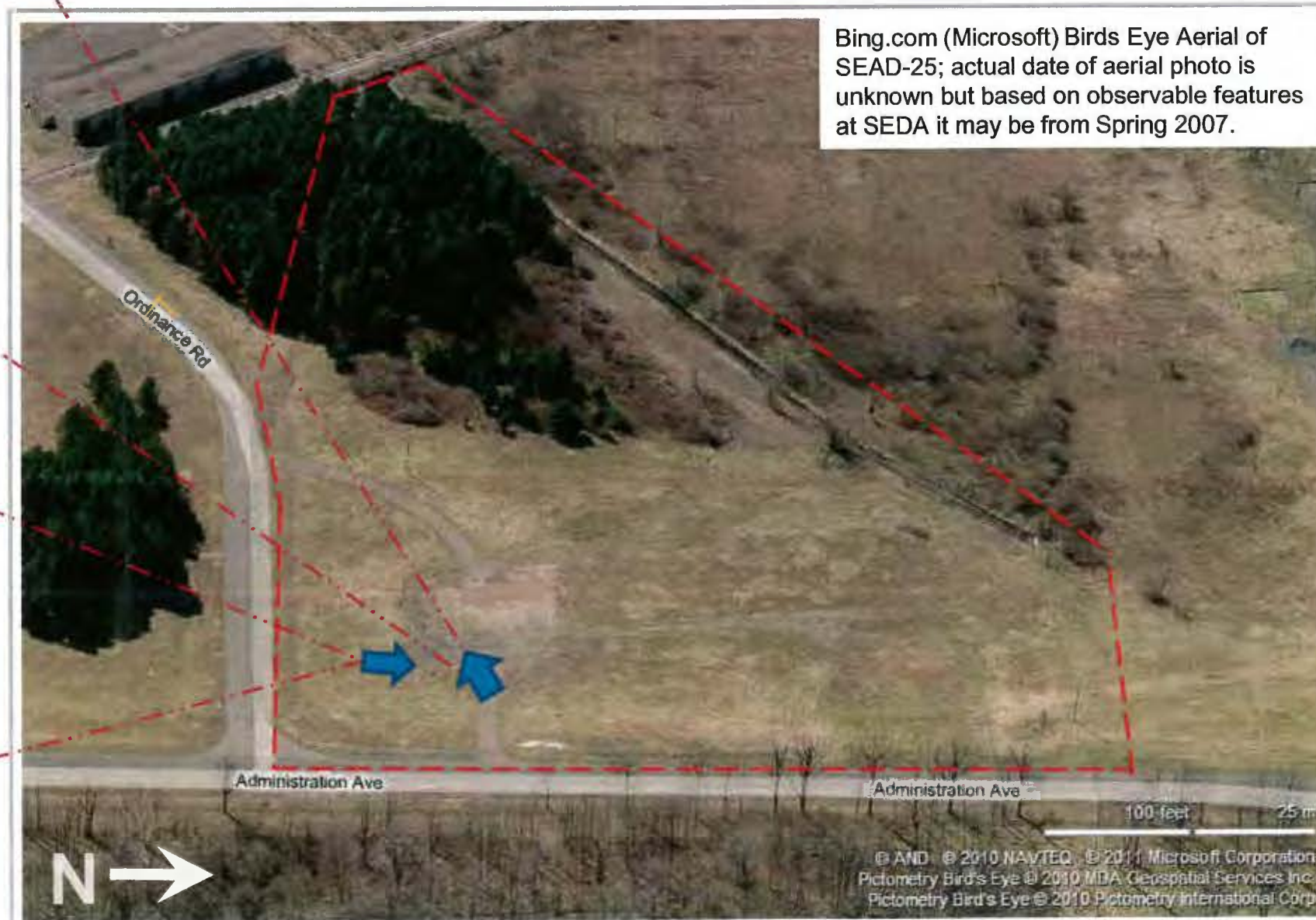
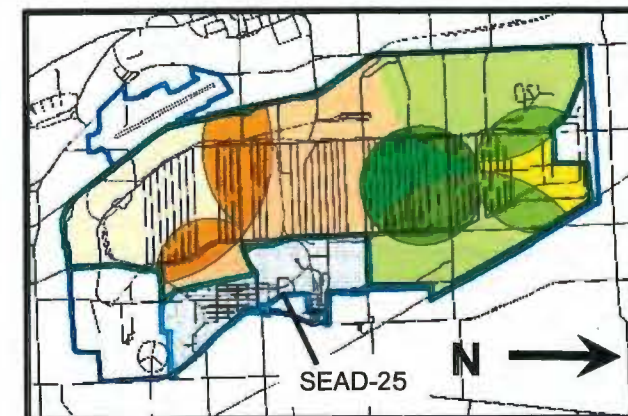
 Approximate Site Boundary

 Photo Viewing Direction

SEDA Overall Map (no scale)



Bing.com (Microsoft) Birds Eye Aerial of SEAD-25; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION			
Site name: SEAD -25	Date of inspection: June 1, 2015		
Location and Region: PID area	EPA ID: NY0213820830		
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain		
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table> <p style="font-size: small; margin-top: 10px;"> <i>No evidence of secondary or groundwater use. Recent activity of groundwater. Annual GW monitoring - mts secure in late 2014 and no evidence of access since. Mts Groundwater will be sampled again in late 2015.</i> </p>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager _____ <i>None</i> _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____			
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____			
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.			
Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____			
Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____			
4. Other interviews (optional) <input type="checkbox"/> Report attached.			

APPENDIX I
SEAD-26: FIRE TRAINING PIT AND AREA



APPENDIX I: SEAD-26 Fire Training Pit and Area

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1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Fire Training Pit (SEAD-26) site is located in the southeastern portion of SEDA. The site is bounded to the east and west by SEDA railroad tracks; on the south by grassland and low brush; and on the north by 7th Street. Vehicular access is provided to the site via a locking gate on 7th Street.

SEAD-26 was in use from 1977 to 1994. The pit was approximately 75 feet in diameter and approximately 3 feet deep. A bentonite liner was installed in the pit in 1982 or 1983. The pit was used one to four times a year for firefighting training during which time various flammable materials were floated on water, ignited, and extinguished. Prior to 1977, the fire training area surrounding the pit may have also been used for fire demonstrations (Parsons, 2004b).

1.2 Initial Response

SEAD-26 is described in three reports before the RI. The first report was the Work Plan for CERCLA ESI of Ten SWMUs written by Parsons Main, Inc. in January 1993. This report detailed the site work and sampling performed under the ESI. The second report was a SWMU Classification Report (Parsons ES, 1994a), which was undertaken to describe and evaluate the SMWU at SEDA. The third was an ESI Report (Parsons ES, 1995), which described a more detailed investigation of SEAD-26. The fieldwork for the ESI was conducted according to the Work Plan for CERCLA ESI of Ten SWMUs. Based on the results of the ESI, a RI Work Plan was prepared and the RI field program was conducted. An RI and FS were completed for SEAD-25/26 in May 1998 and October 1998, respectively.

1.3 Basis for Taking Action

An action was required at SEAD-26 to ensure land use remains protective of site users. SEAD-26 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

At SEAD-26, the primary contaminants detected included SVOCs and metals in the soil and sediments. In addition, low levels of volatiles were also detected in the groundwater at levels above NYSDEC GA Standards. However, the contaminants that exceeded NYSDEC GA Standards in the groundwater were no longer found in the soil of SEAD-26 due to attenuation of the contaminants in the soil (Parsons ES, 1998).

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-26 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the future residential child (HI=1.3) are less than 1.0. The child receptor under the future residential scenario had a HI that slightly exceeded the target value due to dermal contact with groundwater and ingestion of site soils with cPAHs and arsenic.

The results of the ecological risk assessment presented in the RI report (Parsons ES, 1998) concluded that there was negligible risk to the ecosystems of SEAD-26 study area. During the field evaluation, no overt

acute toxic impacts were noted. The quantitative ecological risk evaluation determined that a possibility exists for the COPCs to present a small potential for environmental effects due to sediment, soil, and surface water at SEAD-26. At SEAD-26, terrestrial receptors were mostly affected by COPCs in the soil.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "The Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26) (Parsons, 2004b) required the following remedies and establishment of ICs at SEAD-25 and SEAD-26. The preferred remedy consisted of the following elements:

- Excavate surface soils with total cPAH concentrations above 10 ppm, for an estimated total of 1050 cy;
- Dispose of excavated soils in an appropriate off-site facility;
- Conduct groundwater monitoring until the groundwater cleanup standards are met (approximately 20 years) in order to ensure that the VOCs present do not migrate off-site;
- Establish and maintain groundwater use controls to restrict groundwater access and use until cleanup standards are achieved;
- Complete a review of the selected remedy every five-years (at minimum), in accordance with Section 121(c) of the CERCLA;
- Prepare a contingency plan that may include additional monitoring and air sparging of the plume, as necessary, which would protect against VOC contamination migrating off-site; and
- Remove groundwater use restrictions once groundwater cleanup standards are achieved.
- Establish and maintain LUCs to:
 - Prevent access to or use of the groundwater until cleanup levels are met; and
 - Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities.
 - Maintain the integrity of any current or future remedial or monitoring system.

2.2 Remedy Implementation

The CCR (Parsons, 2006a) for the Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26), describes remedial action activities at SEAD-25 and SEAD-26 and presents sample collection and laboratory test results, record survey data, record (as-built) drawings, and photo documentation to demonstrate compliance with the requirements set forth by the ROD (Parsons, 2004b) and the Remedial Design Work plan and Design Report (Parsons, 2005a).

The initial excavation at SEAD-26 began on November 9, 2005 and was completed on November 15, 2005. Five distinct areas at SEAD-26 were excavated to a depth of 1 foot bgs, and a total of 828 cubic yards (1,248 tons) of soil was excavated and disposed off-site. Confirmatory soil samples were collected from

the perimeter and the base of each of the five excavation areas and were analyzed for cPAHs. The edges of the five excavation areas were smoothed. All confirmatory samples representative of soil remaining on-site met the soil cleanup goals. Additional remediation of soils at SEAD-26 was not required.

SEAD-25 and SEAD-26 Soil Removal Cleanup Goals		
Analyte	Cleanup Goal (µg/Kg)	Goal Met?
Volatile Organic Compounds		
1,1,1-Trichloroethane	800	Yes
1,1-Dichloroethane	200	Yes
Benzene	60	Yes
Chloroform	300	Yes
Ethyl Benzene	5,500	Yes
Toluene	1,500	Yes
Trichloroethene	700	Yes
Xylene (total)	1,200	Yes
Semivolatile Organic Compounds		
2-Methylnaphthalene	36,400	Yes
Naphthalene	13,000	Yes
Phenol	30	Yes
cPAHs (SEAD-26 only)		
cPAHs (BTE)*	10	Yes

*cPAHs were only sampled at SEAD-26 and were compared to the Benzo(a)pyrene Toxicity Equivalence.

NYSDEC TAGM values from Technical and Administrative Guidance Memorandum HWR-92-4046, January 24, 1994

LTM was conducted beginning in 2007; however, groundwater monitoring at SEAD-26 was terminated by the Army, with the approval of the USEPA and the NYSDEC, after the first year of sampling and analysis indicated that no COCs were present in the groundwater at concentrations above defined cleanup goals.

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the “PID/Warehouse Area. Addendum 1 to the SEAD LUC RD added SEAD 25, and 26 in accordance with the SEAD LUC RD Supplementation provision.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-26) by the Army in 2008 was recorded in the Seneca County Clerk’s office on June 10, 2011.

SEAD-26 as part of the “PID Retained Parcels” was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with

Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-26 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-26 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-26.
- No access to or use of groundwater.

The selected remedy is still protective of public health and the environment.

4.4 Interviews

Since SEAD-26 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-26.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-26 currently protects human health and the environment because:

- contaminated soils and sediments previously identified at SEAD-25 and SEAD-26 to contain aromatic VOCs and cPAHs have been excavated and disposed at licensed and approved off-site landfills where they are being managed in controlled and monitored environments;
- the open excavations were allowed to backfill with contaminated groundwater from the immediate vicinity of the excavation sites, and then this water was pumped from the excavation site, placed into storage vessels, sampled and analyzed, approved for disposal and then disposed at a wastewater treatment plant where treatment was performed in accordance with applicable environmental limitations;
- the open excavations were then backfilled with approved soil meeting required cleanup goals, and then a vegetative cover over the disturbed site was re-established;
- a post-remedial action groundwater monitoring program was also implemented at SEAD-26 (Fire Training Area Pit), and data collected during the first year of quarterly monitoring indicated that contaminants identified as being of concern in the groundwater prior to the remedial action were no longer present at concentrations in excess of groundwater standards. As a result of this finding, the Army requested regulatory approval to terminate groundwater monitoring at SEAD-26; this request was approved by both the USEPA and the NYSDEC; and
- access to and use of groundwater at both AOCs continues to be restricted.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-26.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 and **Attachment 3** of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-26 and the PID Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

One issue was identified during this FYR. The Army has the following recommendations:

- Continue the implementation of LUCs and the annual frequency of periodic reviews;
- Based on EPA request, the Army has agreed to sample for perfluoroalkyl substances [PFAS] at sites where Aqueous Film Forming Foams (AFFF) (e.g., firefighting foams) may have been used. As part of this program, future sampling for PFAS at SEAD-26 is expected. A sampling plan for SEAD-26 will be documented in a future report.

5.5 Protectiveness Statement

The remedy implemented for PID Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

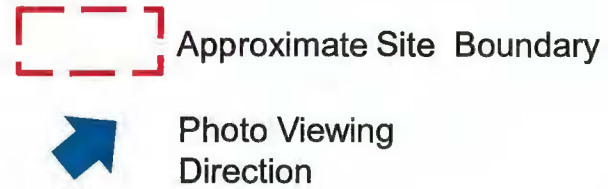
Attachment I-1
Five Year Review - Site Visit Photo Log
SEAD-26 Fire Training Pit and Area

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-26, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photos 1 and 2

SEAD-26 is located within the PID/Warehouse Area Parcel.

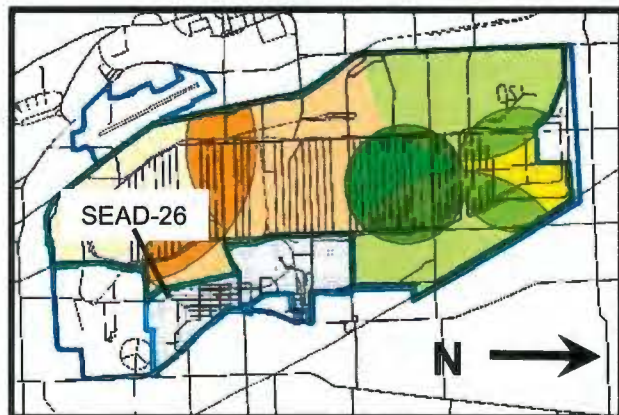


Status as of: 6/1/15
Photo ID: IMG_6572JPG
Description: SEAD-26



Status as of: 6/1/15
Photo ID: IMG_6571JPG
Description: SEAD-26

SEDA Overall Map (no scale)



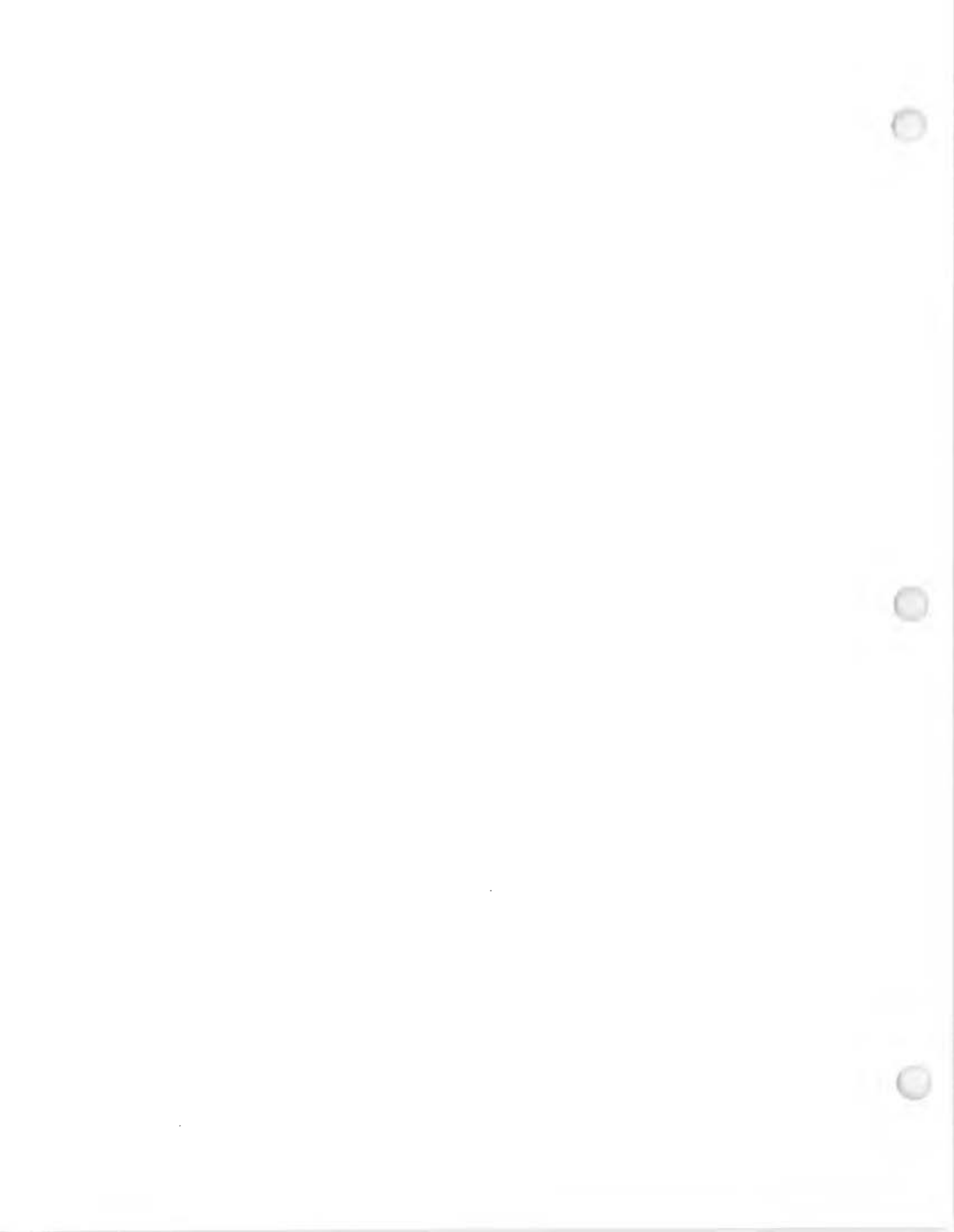
Bing.com (Microsoft) Aerial of SEAD-26; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2006.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD -260 (Former Fire Training)	Date of inspection: June 1, 2015												
Location and Region: PID area	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table> <p style="text-align: right;"><i>Gate not locked. No visual evidence of recent activity or groundwater use. (development)</i></p>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BBO.</i>													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 15%; text-align: center;">Title</td> <td style="width: 5%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			Name	Title	Date								
	Name	Title	Date										
2. O&M staff _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 15%; text-align: center;">Title</td> <td style="width: 5%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			Name	Title	Date								
	Name	Title	Date										
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 15%; text-align: center;">Title</td> <td style="width: 5%; text-align: center;">Date</td> <td style="width: 5%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____ Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 15%; text-align: center;">Title</td> <td style="width: 5%; text-align: center;">Date</td> <td style="width: 5%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____			Name	Title	Date	Phone no.		Name	Title	Date	Phone no.		
	Name	Title	Date	Phone no.									
	Name	Title	Date	Phone no.									
4. Other interviews (optional) <input type="checkbox"/> Report attached.													

APPENDIX J
SEAD-27: BUILDING 360, STEAM JENNY PIT



APPENDIX J: SEAD-27 Building 360, Steam Jenny Pit

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

Building 360 is located in the eastern-central portion of the Depot. The building was used for refurbishing and reconstructing old equipment. Lathes, presses, and metal-working machines were degreased with steam, high-pressure water and detergents in the cleaning area. No solvent materials were ever used in the cleaning operation. After steam cleaning, the equipment was moved to other portions of Building 360 for rehabilitation.

The Steam Jenny Accumulation Pit (SEAD-27) is located within a high bay area of Building 360 that is located near the north end of the building and is separated from the remainder of the building by cinder block walls. The steam cleaning waste tank is a belowground, concrete tank above which track-mounted cars loaded with equipment requiring cleaning can be positioned and steam cleaned. Use of the Steam Cleaning Waste Tank began in 1976 and cleaning operations ceased on January 2, 1990.

1.2 Initial Response

A closure investigation was performed under the RCRA program in July of 1995 and the determination was made that the accumulation pit in Building 360 satisfied the RCRA requirements for clean closure (Parsons, 2004a). More details of these activities can be found in the Building 360 Closure report. The results of the chemical analyses can be found in the Mini Risk Assessment - Appendix B, Tables B-1 and B-2 (Parsons, 2002a) for soil and groundwater, respectively. Monitoring of the water elevation in the waste tank and the removal of accumulated water (if present) ceased once RCRA closure was completed and certified.

1.3 Basis for Taking Action

An action was required at SEAD-27 to ensure land use remains protective of site users. SEAD-27 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

The RCRA Closure Work Plan required testing of all potential contaminants found at the site during the operation of the Steam Jenny Tank. Therefore, soil and groundwater samples were collected and analyzed for VOCs, PCBs, cadmium, chromium, and lead. Groundwater samples were also analyzed for SVOCs. No compounds of concern were detected in SEAD-27 soils. Acetone and naphthalene were detected in groundwater; however, at the time no NYS Class GA groundwater quality standards existed for these compounds. If the site were to be used as a residential area, the human health risk assessment determined that a LUC on groundwater use would be necessary.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-27 under an industrial scenario there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the day care center child (HI=3) are less than 1.0. Maximum site concentrations were used as the exposure EPCs for SEAD-27. The elevated HI for the day care center child

was due solely to ingestion of groundwater, with naphthalene, acetone and chromium being the significant risk contributors.

A risk assessment was also conducted for a residential scenario. The total cancer risk from all exposure routes was within or below the USEPA target range for both receptors (adult resident and child resident). The total non-cancer HI from all exposure routes exceeded one for the adult resident (HI=2) and the child resident (HI=7). The elevated HI for the adult was due solely to ingestion of groundwater and the elevated HI for the child was due to ingestion of groundwater and dermal contact of groundwater. Naphthalene and acetone were the significant risk contributors.

Based on the data, should SEAD-27 be used as a residential area, it would be necessary to place a LUC on groundwater use. This would restrict the use of groundwater as a drinking water source, preventing exposure to groundwater. This restriction results in the non-cancer HI being less than 1 for both child and adult receptors. No COCs were detected in SEAD-27 soils.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

Other than the activities related to the Closure Investigation, no remedial actions were performed at the site (International Technology Corporation, 1995; Parsons, 2004a).

The ROD titled "Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004a) required the establishment of the following ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area.

An Environmental Easement for the PID/Warehousing Area was recorded in the Seneca County Clerk's office on March 4, 2008.

SEAD-27 was transferred to the SCIDA with a Quitclaim Deed executed on September 30, 2005. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehousing Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with

Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-27 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-27 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-27.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-27 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-27

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-27 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the AOCs, within the PID Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds for all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-27.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-27 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



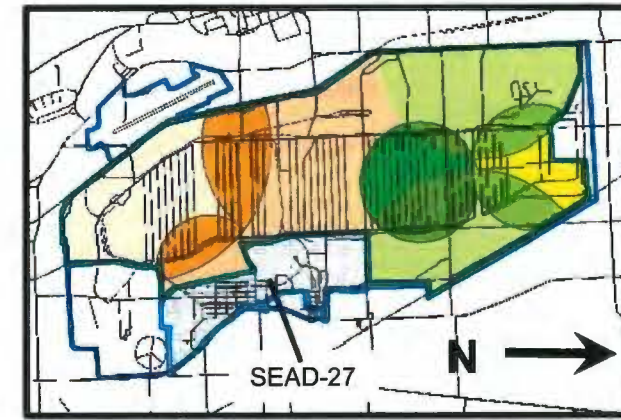
Attachment J-1
 Five Year Review - Site Visit Photo Log
 SEAD-27 Building 360, Steam Jenny Pit

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-27, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEAD-27 is located within the PID/
 Warehouse Area Parcel.

SEDA Overall Map (no scale)



Bing.com (Microsoft) Aerial of SEAD-27 actual date of aerial photo is unknown but based on observable features at SEDA its from Spring 2010.

2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6567.JPG
 Description: SEAD-27

2015 Site Visit Photo 2



Status as of: 6/1/15 Photo ID: IMG_6568.JPG
 Description: SEAD-27



Bing.com (Microsoft) Birds Eye Aerial of SEAD-27; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.

 Approximate Site Boundary

 Photo Viewing Direction

ATTACHMENT 2
Site Inspection Checklist

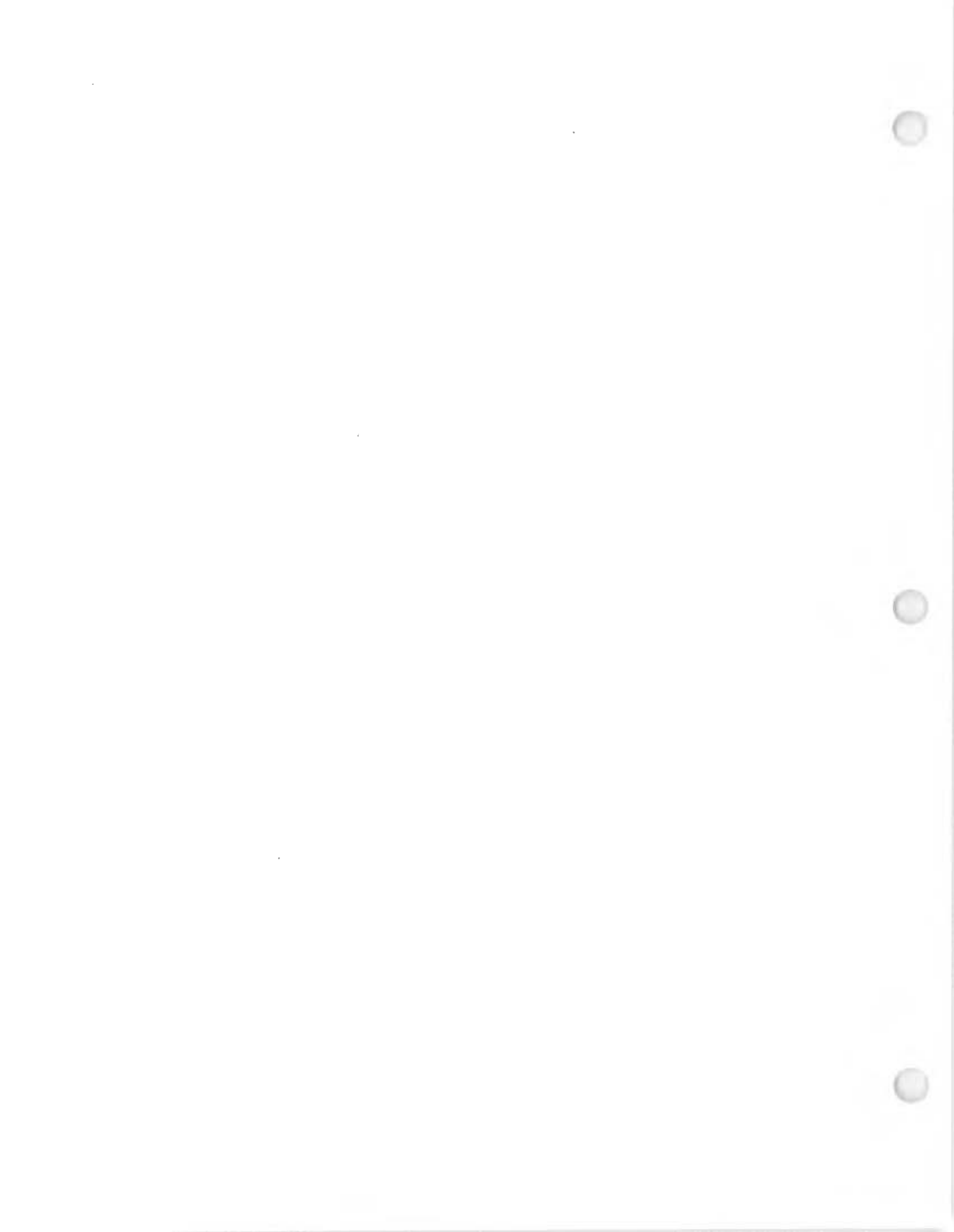
SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																																																																									
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Location and Region: <u>PID area</u>	EPA ID: NY0213820830																																																																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: <u>55°F</u> <u>light rain</u>																																																																								
Inspector: Dave Babcock, PE	Signature: <u>[Signature]</u>																																																																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <u>Two vehicles parked near Bldg 360. No visual evidence of recent development activity or groundwater use.</u> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <u>Two vehicles parked near Bldg 360. No visual evidence of recent development activity or groundwater use.</u>																																																																						
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <u>Photos by BBO</u>																																																																									
II. INTERVIEWS (Check all that apply)																																																																									
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____																																																																									
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____																																																																									
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td colspan="6">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> <tr> <td colspan="6">_____</td> </tr> <tr> <td colspan="6"> </td> </tr> <tr> <td colspan="6">Agency _____</td> </tr> <tr> <td colspan="6">Contact _____</td> </tr> <tr> <td colspan="6">Name _____</td> </tr> <tr> <td colspan="6">Title _____</td> </tr> <tr> <td colspan="6">Date _____</td> </tr> <tr> <td colspan="6">Phone no. _____</td> </tr> <tr> <td colspan="6">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> <tr> <td colspan="6">_____</td> </tr> </table>		Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone no. _____	Problems; suggestions; <input type="checkbox"/> Report attached _____						_____												Agency _____						Contact _____						Name _____						Title _____						Date _____						Phone no. _____						Problems; suggestions; <input type="checkbox"/> Report attached _____						_____					
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																																																																									

APPENDIX K
SEAD-64A: GARBAGE DISPOSAL AREA



APPENDIX K: SEAD-64A Garbage Disposal Area

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-64A is located in the east-central portion of SEDA. The site is bounded to the north by a square storage pad, to the east by the SEDA railroad tracks beyond which is the area where the Fire Training site (SEAD-26) is located, and to the south and west by undeveloped grassland. SEAD-64A was used during the period from 1974 to 1979 when the on-site solid waste incinerator was not in operation. The types of wastes disposed at the site are suspected to be primarily household items (Parsons, 2002a).

1.2 Initial Response

A field investigation was conducted at SEAD-64A beginning in February 1994 as part of the ESI for Seven Low Priority AOCs (Parsons, 1996). A geophysical survey was conducted, and soil and groundwater samples were collected and submitted for analysis.

1.3 Basis for Taking Action

An action was required at SEAD-64A to ensure land use remains protective of site users. SEAD-64A is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas. The potential future hazards or risks identified at SEAD-64A is either suitable for the defined use, or associated with compounds that are present at concentrations that are equal to or less than naturally occurring levels.

1.3.1 Contaminants of Concern

During the ESI sampling, aluminum, iron, manganese, and thallium were detected in groundwater at levels that exceeded their respective comparative criteria levels. Results are summarized in the ROD (Parsons, 2004a).

Several cPAHs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene), phenol, and several metals (aluminum, arsenic, chromium, copper, lead, potassium, and zinc) were detected at levels that exceeded applicable TAGM 4046 soil cleanup objectives in one or more soil samples. In groundwater, aluminum, iron, manganese, and thallium were detected at levels that exceeded their respective comparative criteria levels (Parsons, 2004a).

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64A under a warehouse land use scenario the human health cancer risks are below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0.

In addition, risks to residential receptors (i.e., residential adult and residential child) have been evaluated based on the 1994 soil and groundwater data. The total cancer risks are below or at the USEPA upper target limit for all receptors. The total non-cancer HI from all exposure routes are equal to or greater than 1.0 for residential receptors. Groundwater ingestion is the only exposure route that would result in significant risk to residential receptors; however, the non-cancer hazard indices are overstated as the metal concentrations in groundwater were elevated due to the elevated turbidities in the groundwater samples.

The risk assessments was conducted for SEAD-64A based on the 1994 soil and groundwater data. The results of total cancer risk and total non-cancer hazard index can be found in Table 3.5-10 of the Final Decision Document - Mini Risk Assessment, Seneca Army Depot Activity (Parsons, 2002a).

An ecological risk assessment was also conducted to evaluate potential risks to deer mice, short-tailed shrews, and American robins posed by the COPCs detected in surface soils at SEAD-64A. The hazard quotients (HQs) estimated for all COPCs found in shallow soil were found less than one with the exception of benzo(a)pyrene, bis(2-ethylhexyl)phthalate, fluoranthene, and lead. The elevated risks driven by the listed compounds were associated with one surface soil sample. As a planned warehouse development, this site would most likely not support a balanced habitat. Based on the above discussion, it is concluded that SEAD-64A would not pose significant risk to potential ecological receptors. The results of the risk assessment are presented and described in detail within the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, 2002a).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas” (Parsons, 2004a) required the establishment of the following ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.
- Establishing, maintaining, monitoring, and reporting on a third LUC prohibiting digging within the bounds of the site will be established.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area.

An Environmental Easement for the PID/Warehousing Area was recorded in the Seneca County Clerk’s office on March 4, 2008.

SEAD-66 was transferred to the SCIDA with a Quitclaim Deed executed on September 30, 2005. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehousing Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with

Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-64A recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data was reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-64A was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-64A.
- No access to or use of groundwater.
- No unauthorized digging or excavation occurred on the SEAD-64A Controlled Property.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-64A is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-64A

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-64A is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the PID Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds for all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically; and
- a third LUC that prevents unauthorized excavation at the SEAD 64A site alone has been implemented, monitored, and periodically reported upon.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-1.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to,

or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-64A and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment K-1

Five Year Review - Site Visit Photo Log
SEAD-64A Garbage Disposal Area

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-64A, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

SEAD-64A is located within the PID/Warehouse Area Parcel.

2015 Site Visit Photo 1



Status as of 6/1/15
Description: SEAD-64A

Photo ID: IMG_6575.JPG

2015 Site Visit Photo 2



Status as of: 6/1/15
Description: SEAD-64A

Photo ID: IMG_6573.JPG

2015 Site Visit Photo 3



Status as of: 6/1/15
Description: SEAD-64A

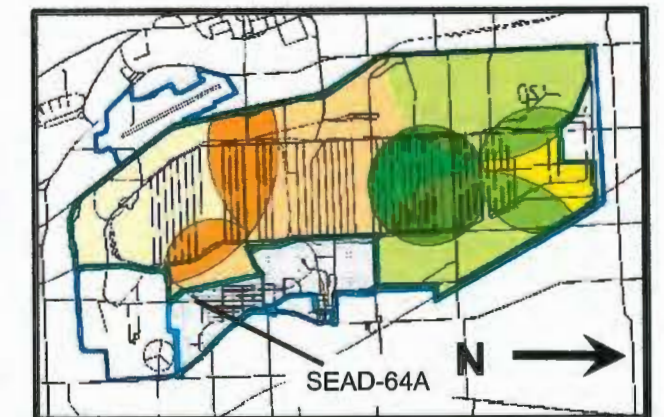
Photo ID: IMG_6574.JPG



© AND © 2010 NAVTEQ © 2011 Microsoft Corporation
Pictometry Bird's Eye © 2010 MDA Geospatial Services Inc.
Pictometry Bird's Eye © 2010 Pictometry International Corp

Bing.com (Microsoft) Birds Eye Aerial of SEAD-64A; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.

SEDA Overall Map (no scale)



 Approximate Site Boundary  Photo Viewing Direction

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD - <u>64A</u>	Date of inspection: June 1, 2015												
Location and Region: <u>PIW area</u>	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: <u>50°F</u> <u>Rain, stopped</u>												
Inspector: Dave Babcock, PE	Signature: <u>DB Babcock</u>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table> <p style="text-align: right; margin-right: 50px;"><i>No evidence of recent excavation or other activity or groundwater use. (development)</i></p>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls										
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <u>Photos by BBO,</u>													
II. INTERVIEWS (Check all that apply)													
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4. Other interviews (optional) <input type="checkbox"/> Report attached.													

APPENDIX L
SEAD-66: PESTICIDE STORAGE AREA

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

Pesticides were reportedly stored in a structure located in the vicinity of Buildings 5 and 6 during the Army's active use of the SEDA. The Pesticide Storage Area near Buildings 5 and 6 (SEAD-66 is located in the east-central portion of SEDA. The exact location of the pesticide storage area is unknown.

1.2 Initial Response

A LSP was performed at SEAD-66 in December 1993. Surface soil samples collected from SEAD-66 were analyzed for TCL pesticides according to the NYSDEC Contract Laboratory Program (CLP) Statement of Work (SOW). Results of the chemical analyses for soil can be found in the Final Decision Document – Mini Risk Assessment (Appendix Q, Table Q-1) (Parsons, 2002a).

1.3 Basis for Taking Action

An action was required at SEAD-66 to ensure land use remains protective of site users. SEAD-66 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Nine soil samples were collected from SEAD-66. Two pesticides, 4,4'-DDE and 4,4'-DDT were both detected at levels exceeding TAGMs in sample SS66-8 that was taken from a depth of 0-0.2 ft. The soil data are presented in the ROD (Parsons, 2004a). No groundwater samples were collected.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-66 under an industrial scenario the human health cancer risks are within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0.

A risk assessment was also conducted for a residential scenario. The total cancer risk from evaluated exposure routes is within or below the USEPA target range for the potential adult and child resident receptors. The total non-cancer HI exceeds 1.0 for the child resident. The elevated HI for the child receptor is due solely to ingestion of soil with 4,4'-DDT being the significant risk contributor. 4,4'-DDT is not considered a COC in soil at this site for this exposure scenario.

An ecological risk assessment, which is described and presented in Section 3.0 of the Decision Document (Parsons, 2002), was conducted at SEAD-66. No significant ecological risk was found.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004a) required the establishment of the following ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area.

An Environmental Easement for the PID/Warehousing Area was recorded in the Seneca County Clerk’s office on March 4, 2008.

SEAD-66 was transferred to the SCIDA with a Quitclaim Deed executed on September 30, 2005. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-66 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data was reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-66 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-66
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-66 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-66.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-66 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the PID/Warehousing Area of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and,

- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds for all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-66.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-66 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD - 66	Date of inspection: June 1, 2015																								
Location and Region: PID area	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F light rain																								
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No report development based on visual observations.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No report development based on visual observations.</i>																						
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

APPENDIX M
SEAD-39: BUILDING 121 BOILER BLOW DOWN PIT

November 2017

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Attachment L-1
Five Year Review - Site Visit Photo Log
SEAD-66 Pesticide Storage near Buildings 5 and 6

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-66, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: SEAD-66

Photo ID: IMG_6595.JPG

2015 Site Visit Photo 2



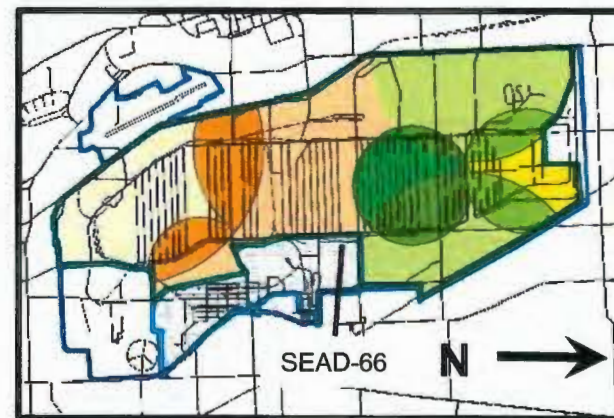
Status as of: 6/1/15
 Description: SEAD-66

Photo ID: IMG_6595.JPG

SEAD-66 is located within the PID/Warehouse Area Parcel.

 Approximate Site Boundary  Photo Viewing Direction

SEDA Overall Map (no scale)



Bing.com (Microsoft) Birds Eye Aerial of SEAD-66; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.

© AND © 2010 NAVTEQ © 2011 Microsoft Corporation
 Potometry Bird's Eye © 2010 MDA Geospatial Services Inc.
 Potometry Bird's Eye © 2010 Potometry International Corp.

APPENDIX M: SEAD-39 Building 121 Boiler Blowdown Leach Pit

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1.3.1	Contaminants of Concern	M-1
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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-39 (Building 121 Boiler Blow Down Pit) is a boiler plant located in the administrative area of the former SEDA. SEAD-39 is the historic blowdown leaching area that was located exterior to, and immediately north of, Building 121. Use of the leaching area was terminated in 1979 or 1980 when boiler blowdown points within the Depot were connected to a sanitary sewer system (Parsons, 2007a).

1.2 Initial Response

Site work performed at SEAD-39 included a LSP in 1993 and a TCRA, which included confirmatory sampling. A TCRA was completed at SEAD-39 in August 2003. The excavated area was backfilled and returned to its original grade. The north end of Building 121 and two paved roads helped define and limit the border of the excavation.

Thirty-four (34) tons of soil was excavated at SEAD-39 to a depth of 1-foot in August 2003. Following the excavation, surface soil samples were collected for chemical analysis of Volatile Organic Compounds (VOCs), PAHs, and metals, but none of the measured concentrations exceeded NYSDEC's TAGM soil cleanup objectives. Average concentrations of metals detected at this AOC were at levels consistent with SEDA site-wide background data. Based on the confirmatory and delineation samples, it was determined that further excavation would not be necessary at SEAD-39 (Parsons, 2002b).

1.3 Basis for Taking Action

An action was required at SEAD-39 to ensure land use remains protective of site users. SEAD-40 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Prior to connecting the boiler blowdown points to the sewer in 1979-1980, blowdown was reportedly released three times a day, and the discharged liquid was allowed to flow onto the ground at the blowdown point where it either infiltrated into the ground or flowed into the street. Each boiler was reported to have discharged between 400 and 800 gallons of blowdown liquids per day. The boiler blowdown was suspected to have contained water, tannins, caustic soda (sodium hydroxide), and sodium phosphate.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-39 the human health cancer risks were within or at the upper limit of the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0. The human health risk at SEAD-39 was evaluated using the 95th UCL value for each COC determined from the 15 sample confirmatory soil sample data set as the EPCs.

The Army also completed a risk assessment for SEAD-39, which evaluated the likely risks associated with all chemicals identified at this AOC based on a central tendency exposure (CTE) scenario for the likely receptors. Although the elevated levels of PAHs found in the area of Building 121's roof line drip are not associated with the former blowdown operation, they are nonetheless present at this AOC. The results of

the alternate risk assessment (industrial scenario, 95th UCL of 16 point data set, central tendency exposure) are presented in the ROD (Parsons, 2007a). The results of this evaluation again indicate that HIs for all industrial receptors were below the USEPA acceptable limits (i.e., HI of 1 or less). Similarly, the cancer risk for the industrial worker, construction worker, and adolescent trespasser were each within or less than the USEPA's preferred cancer risk levels (i.e., 10^{-4} to 10^{-6} or less). The cancer risk for the daycare center child under the CTE scenario was 4×10^{-4} .

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD (Parsons, 2007a) titled, "Seventeen No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" for seventeen sites that include LUCs as part of the remedy. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 2 to the SEAD LUC RD added SEAD 39, 40, and 67.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-39) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-39 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-39 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-39 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-39.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-39 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-39

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. Remedial Actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LTM Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-39 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically; and,
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment.

No opportunities for optimization or early indicators of potential issues have been identified for SEAD-39.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehousing Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and Remedial Action objectives from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-39 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

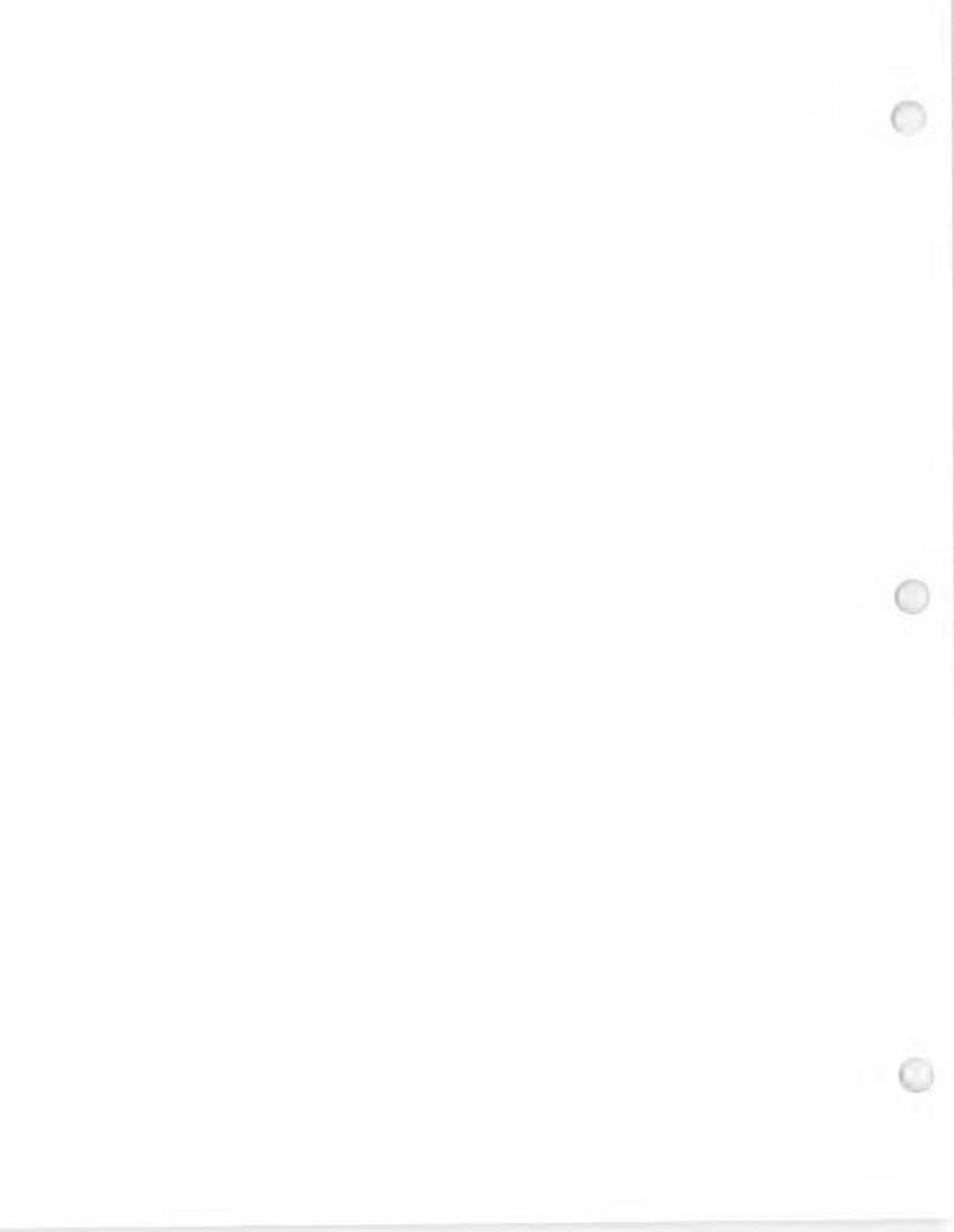
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

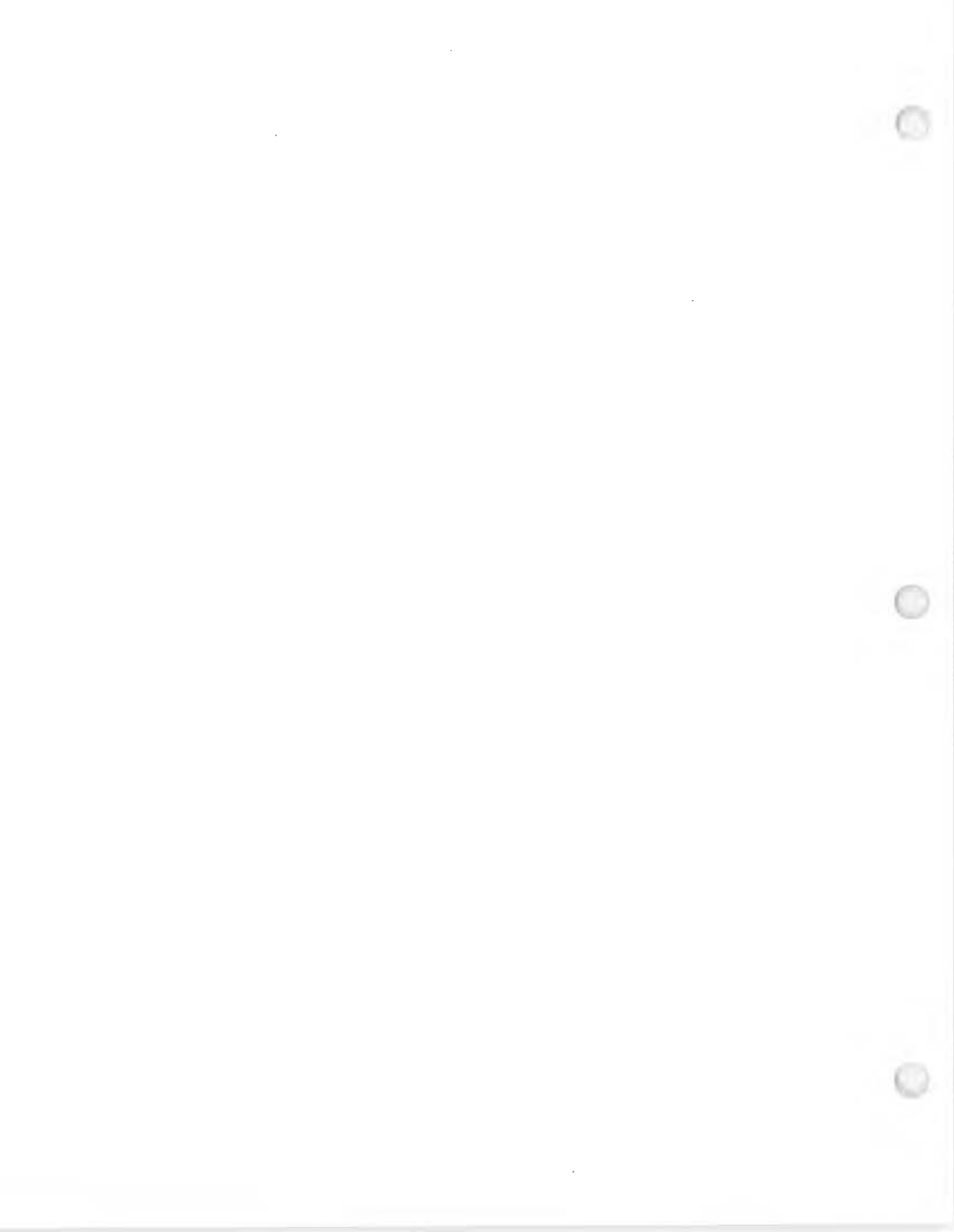
Photo Log



APPENDIX L
SEAD-66: PESTICIDE STORAGE AREA

November 2017

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APPENDIX L: SEAD-66 Pesticide Storage near Building 5 and 6

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LIST OF ATTACHMENTS

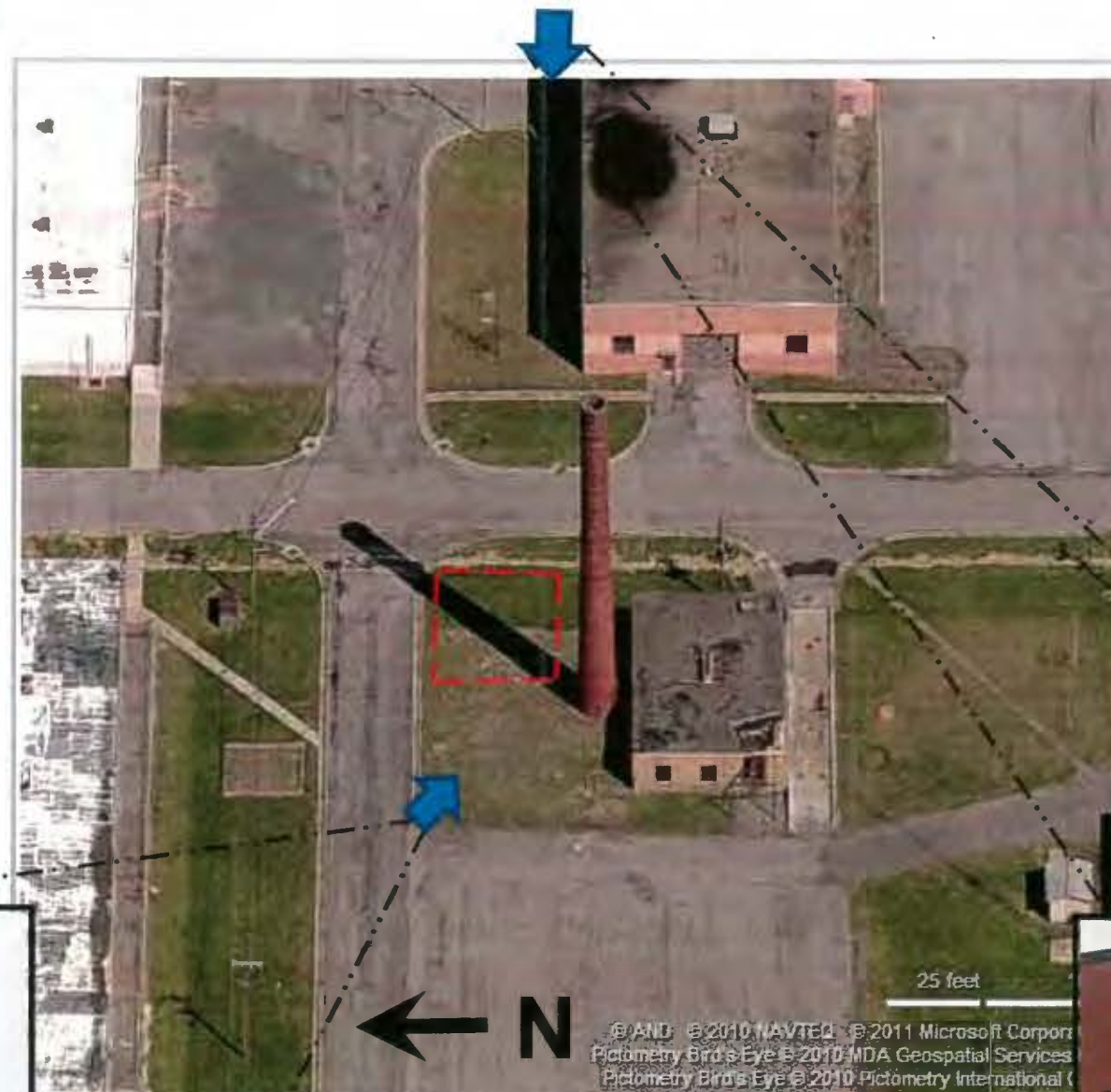
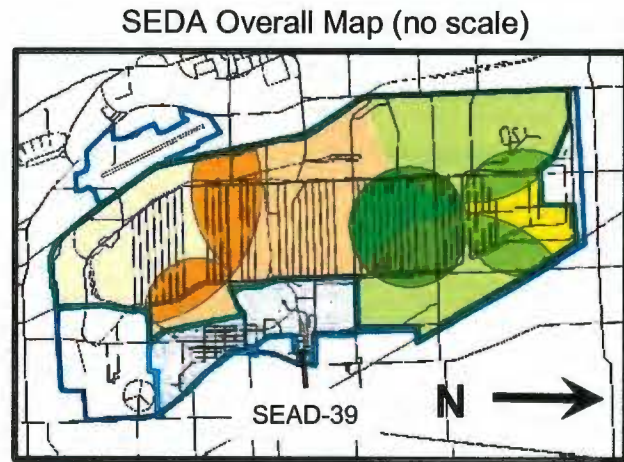
Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

Attachment M-1
Five Year Review - Site Visit Photo Log
SEAD-39 Building 121 Boiler Plant Blowdown Leach Pit

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-39, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers



SEAD-39 is located within the
 PID/Warehouse Area Parcel.


 Approximate Site Boundary

 Photo Viewing Direction

2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6538.JPG
 Description: SEAD-39 blowdown pit in foreground

2015 Site Visit Photo 2



Status as of: 6/1/15 Photo ID: img_6540.JPG
 Description: SEAD-39, area of blowdown leaching pit.

Bing.com (Microsoft) Aerial of SEAD-39; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2006.

ATTACHMENT 2
Site Inspection Checklist

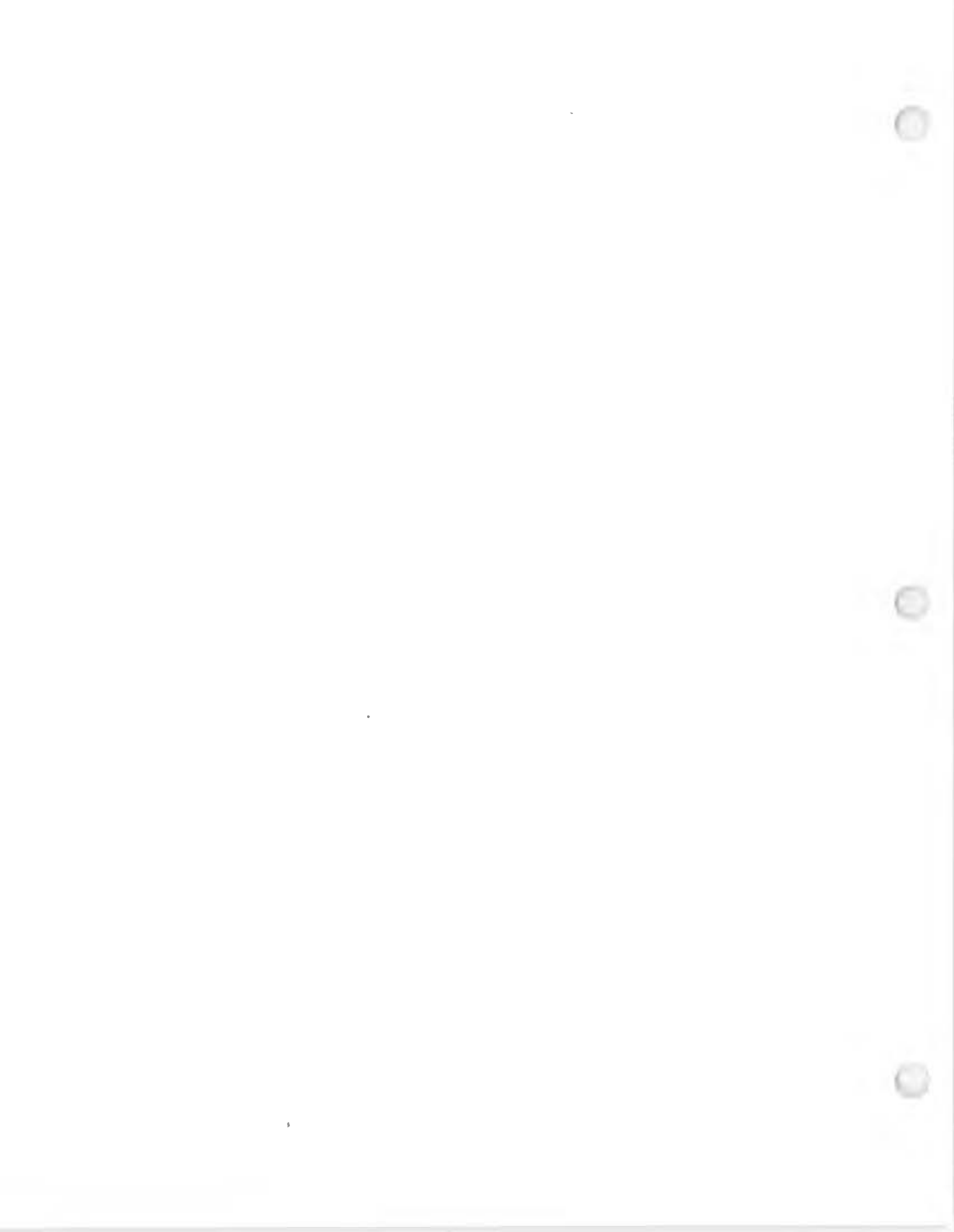
SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD -39	Date of inspection: June 1, 2015												
Location and Region: PID area	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F light rain												
Inspector: Dave Babcock, PE	Signature: <i>[Handwritten Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>None other than photos by BBO.</i>													
II. INTERVIEWS (Check all that apply) <i>None</i>													
1. O&M site manager _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date									
Name	Title	Date											
2. O&M staff _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date									
Name	Title	Date											
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> <td style="width: 20%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____ Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> <td style="width: 20%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ _____		Name	Title	Date	Phone no.	Name	Title	Date	Phone no.				
Name	Title	Date	Phone no.										
Name	Title	Date	Phone no.										
4. Other interviews (optional) <input type="checkbox"/> Report attached.													

APPENDIX N
SEAD-40: BUILDING 319 BOILER BLOWDOWN LEACH PIT

November 2017

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APPENDIX N: SEAD-40 Building 319 Boiler Blowdown Leach Pit

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-40 (Building 319 Boiler Blow Down Pit) is a boiler plant located on 1st Street in the east-central portion of the Depot. The historic blowdown leach pit that constitutes SEAD-40 was located in a drainage ditch next to the railroad tracks located north of Building 319. A drainage pipe originating in Building 319 is suspected to have carried blowdown liquids to the drainage ditch, where they were released and allowed to flow onto the ground. The drainage ditch originated at the mouth of the drainage pipe approximately 30 ft. northeast of Building 319 (Parsons, 2007a).

1.2 Initial Response

The investigative work at SEAD-40 included a LSP in 1993 and 1994 followed by a TCRA conducted in 2002 and 2003. A TCRA was completed at SEAD-40 in August 2003, and approximately 39 tons of soil were removed. Approximately 39 tons of soil were removed from SEAD-40. The impacted soil was excavated at one section to a depth of 1 foot below ground surface and at another section to a depth of 6 feet below ground surface. Eighteen post-excavation samples were analyzed for VOCs, PAHs, and metals (Weston, 2004). Additional confirmation and delineation samples were collected; the results of which determined that further excavation would not be necessary at SEAD-40 (Parsons, 2002b; 2007a).

1.3 Basis for Taking Action

An action was required at SEAD-40 to ensure land use remains protective of site users. SEAD-40 is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Prior to connecting the boiler blowdown points to the sewer in 1979-1980, blowdown was reportedly released three times a day, and the discharged liquid was allowed to flow onto the ground at the blowdown point where it either infiltrated into the ground or flowed into the nearby drainage ditch. Each boiler is reported to have discharged between 400 and 800 gallons of blowdown liquids per day. The boiler blowdown is suspected to have contained water, tannins, caustic soda (sodium hydroxide), and sodium phosphate.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-40 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0. Data from the confirmatory sampling performed for the TCRA provided the basis of a risk assessment that was performed to assess potential site risks at SEAD-40.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD (Parsons, 2007a) titled, "Seventeen No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" for seventeen sites that include LUCs as part of the remedy. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 2 to the SEAD LUC RD added SEAD 39, 40, and 67.

An Environmental Easement for the PID/Warehouse Area including properties that had been previously retained (including SEAD-40) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-40 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehousing Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-40 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-40 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-40.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-40 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-40

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. Remedial Actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LTM Reports, LUC RD, Environmental Easements, transfer deeds and FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at SEAD-40 currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically;

The selected remedy is still protective of human health and the environment.

No opportunities for optimization or early indicators of potential issues have been identified for SEAD-40.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-40 and the PID/Warehousing Areas. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

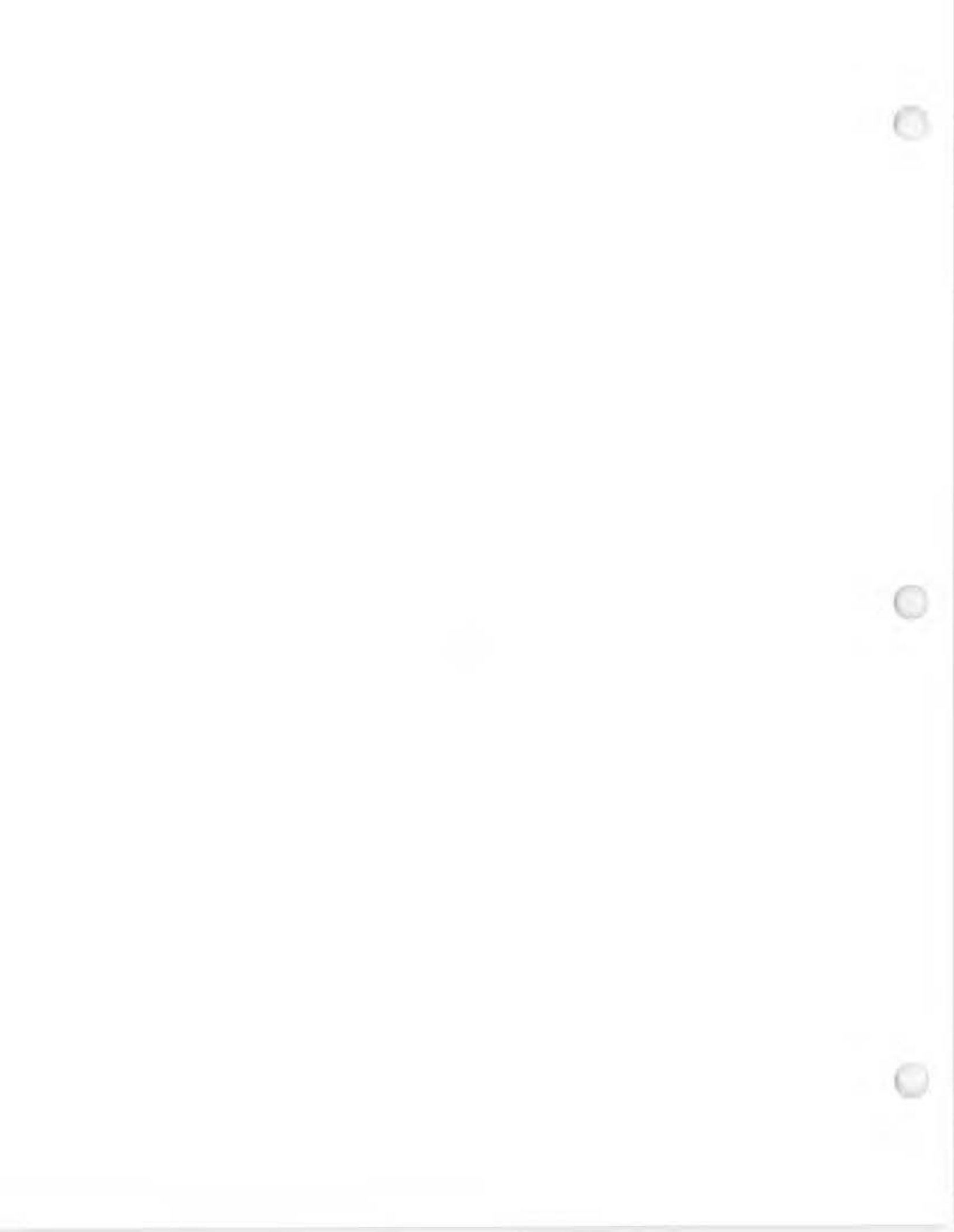
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment N-1
Five Year Review - Site Visit Photo Log
SEAD-40 Building 319 Boiler Blowdown Leach Pit

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-40, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

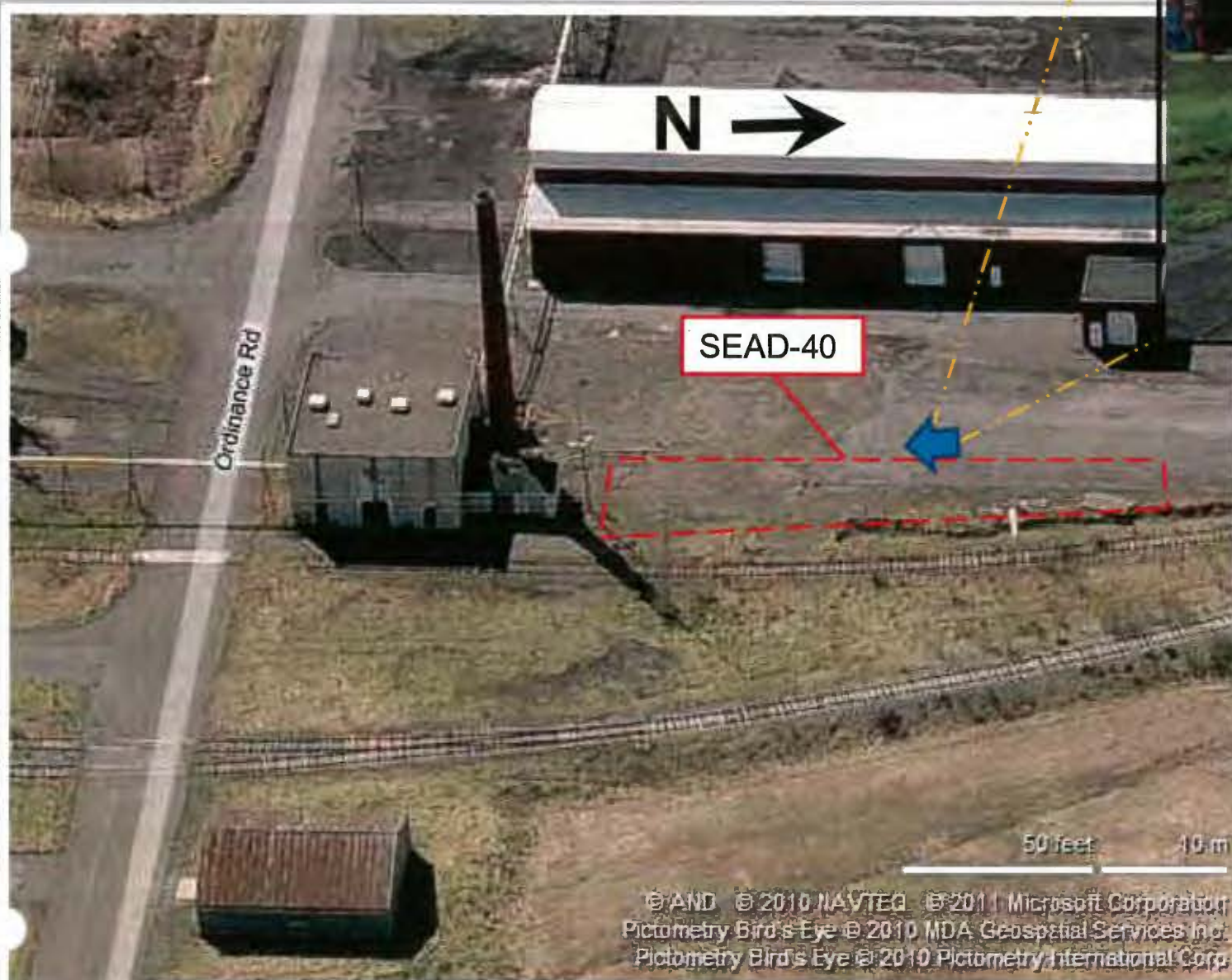
SEAD-40 is located within the PID/Warehouse Area Parcel.

 Approximate Site Boundary  Photo Viewing Direction

2015 Site Visit Photo 1

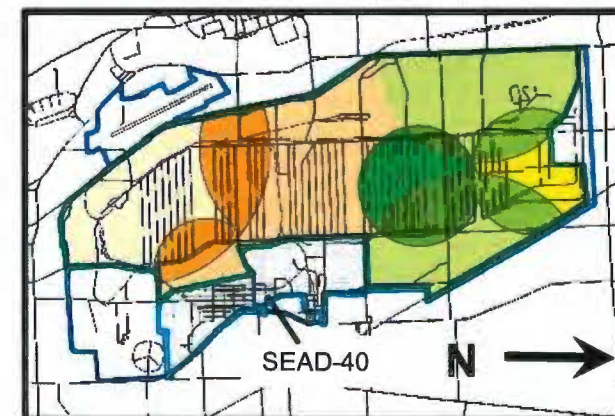


Bing.com (Microsoft) Aerial of SEAD-40; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2010.



Status as of: 6/1/15
 Description: SEAD-40
 Photo ID: IMG_6557.JPG

SEDA Overall Map (no scale)



Bing.com (Microsoft) Birds Eye Aerial of SEAD-40; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2006.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																															
Site name: SEAD -40	Date of inspection: June 1, 2015																														
Location and Region: E10 area	EPA ID: NY0213820830																														
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55°F Light rain																														
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																														
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent activity or groundwater use.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No evidence of recent activity or groundwater use.</i>																												
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II. INTERVIEWS (Check all that apply)																															
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2. O&M staff _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																							
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3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td colspan="5">Contact _____</td> </tr> <tr> <td colspan="5">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table> <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td colspan="5">Contact _____</td> </tr> <tr> <td colspan="5">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Agency _____	Name _____	Title _____	Date _____	Phone no. _____	Contact _____					Problems; suggestions; <input type="checkbox"/> Report attached _____					Agency _____	Name _____	Title _____	Date _____	Phone no. _____	Contact _____					Problems; suggestions; <input type="checkbox"/> Report attached _____				
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																															

APPENDIX O: SEAD-67 Dumpsite East of Sewage Treatment Plant No. 4

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-67 (Dump Site East of Sewage Treatment Plant No. 4) is located in the central eastern portion of SEDA, immediately south of West Romulus Road and east of Sewage Treatment Plant No. 4 (SEAD-20). Five waste soil piles and two soil berms were formerly staged at the SEAD-67 site. The origin of the berms and waste piles is unknown.

1.2 Initial Response

Previous work at SEAD-67 included an ESI in 1993 and a TCRA from 2002 to 2004. Analytical results for the samples collected can be found in "Decision Document for Removal Actions at SWMUs SEAD-24, SEAD-50, SEAD-54, and SEAD-67" (Parsons, 2002c). The analytical results of the ESI provided the basis for conducting the TCRA at SEAD-67.

A TCRA to remove the waste soil was performed between 2002 and 2004 (Weston, 2005a). The excavated soil was classified as non-hazardous soil for treatment and disposal. Subsequently, the TCRA expanded to include the removal of surface soil underlying and surrounding the locations of the former piles and berms. Surface soils were excavated to a depth of 12 in. At the end of the TCRA, more than 1,300 cubic yards of soil was removed from the SEAD-67 site. Due to the shallow nature of the final excavations, backfill was not used at SEAD-67; the sidewalls of the excavation were graded to smooth the contour differences between the original ground surface and the bottom of the excavation (Parsons, 2002c).

1.3 Basis for Taking Action

An action was required at SEAD-67 to ensure land use remains protective of site users. SEAD-40 is part of the PID/Warehousing Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

Samples collected as part of the ESI were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and cyanide. Fifty (50) TCL/TAL compounds were detected in the soil samples, and 10 compounds, including five cPAHs and five metals, were detected at concentrations that exceeded their respective TAGM cleanup objective values. Compounds found at concentrations above applicable TAGM 4046 soil cleanup objectives included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, calcium, lead, manganese, mercury, and potassium. Surface water results indicated that the unnamed stream near SEAD-67 has not been significantly impacted by contaminants. Available data indicated that the groundwater has not been significantly impacted by historic operations at SEAD-67 (Parsons, 2007a).

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-67 the human health cancer risks were within or below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0.

SVOC data from the confirmatory sampling performed for the TCRA provided the basis of the risk assessment and the 95th UCL of the mean was used as the EPC for each of the SVOC COCs.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD (Parsons, 2007a) titled, "Seventeen No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" for seventeen sites that include LUCs as part of the remedy. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 2 to the SEAD LUC RD added SEAD 39, 40, and 67.

An Environmental Easement for the PID/Warehousing Area including properties that had been previously retained (including SEAD-40) by the Army in 2008 was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-67 as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-67 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-67 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-67 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-67.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. Remedial Actions required by completed RODs for AOCs within the PID/Warehouse Area have been completed and documented. No continuing active remediation is required in the PID/Warehouse Area. Based on a review of Closure Reports, LUC RD, Environmental Easements, transfer deeds and the FYR site visit conducted between June 1 and June 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-67 is currently protective of human health and the environment because:

- a land use control that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second land use control that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically;

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-67.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

As described in Section 9.3.1 of the main FYR document, there was a change in the NY soil and groundwater standards. It was determined that the clean-up levels and RAOs from earlier RODs are considered still valid. Since the soil and groundwater cleanup standards for the remedy are equivalent to, or more stringent than human-health-based promulgated standards and cleanup criteria, the cleanup standards remain protective of human health.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-67 and the PID/Warehousing Areas. There have been no changes in the physical conditions of

the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

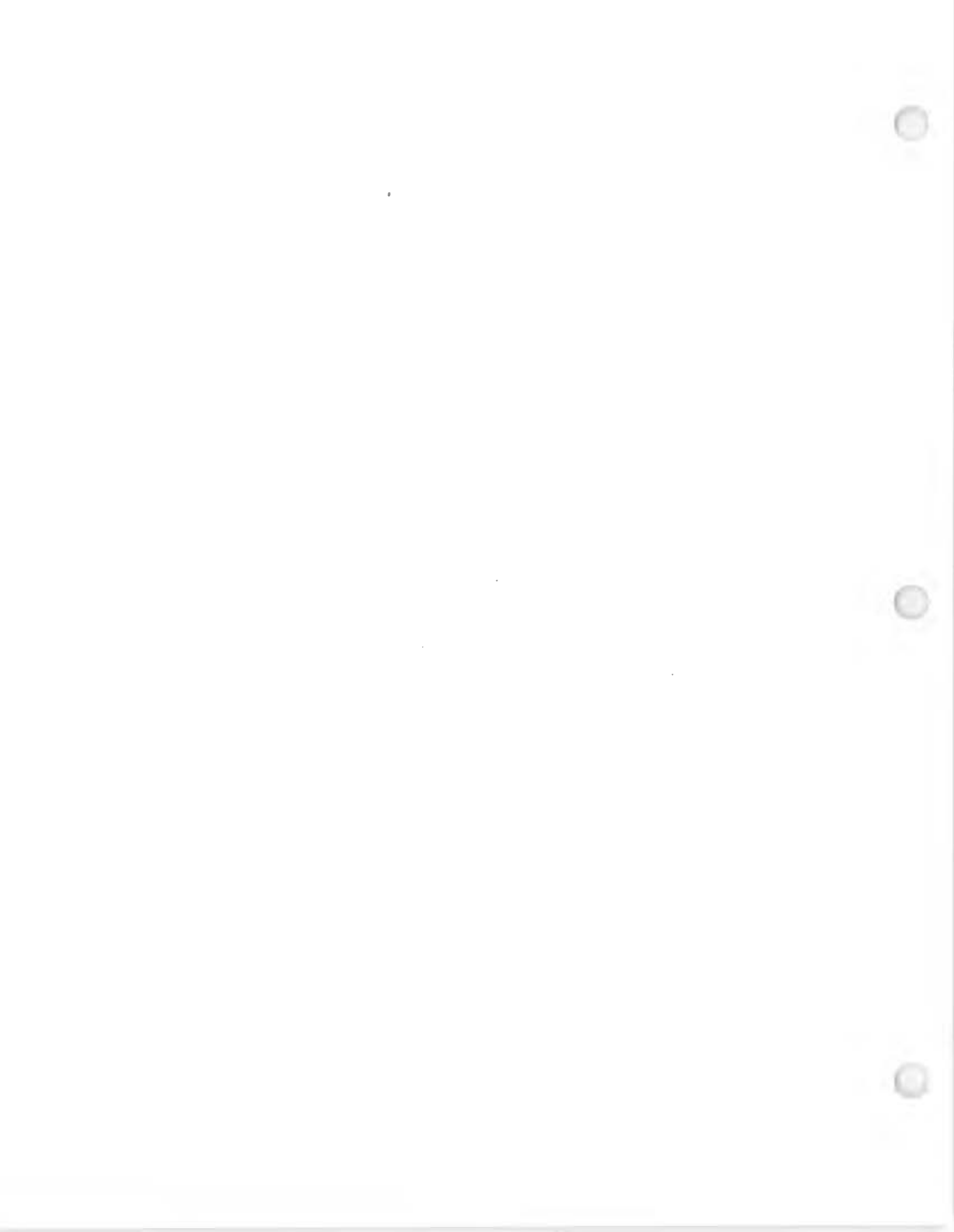
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



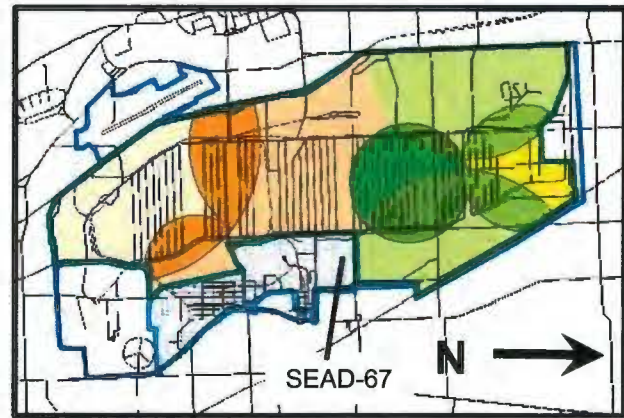
Attachment O-1
Five Year Review - Site Visit Photo Log
SEAD-67 Dump Site East of Sewage Treatment Plant No. 4

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-67, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

SEAD-67 is located within the PID/Warehouse Area Parcel.

SEDA Overall Map (no scale)



 Approximate Site Boundary

 Photo Viewing Direction

2015 Site Visit Photo 1



Status as of: 6/1/15
 Description: SEAD-67

Photo ID: IMG_6606.JPG

2015 Site Visit Photo 2



Status as of: 6/1/15
 Description: SEAD-67

Photo ID: IMG_6604.JPG

Bing.com (Microsoft) Birds Eye Aerial of SEAD-67; actual date of aerial photo is unknown but based on observable features at SEDA it may be from Spring 2007.





ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD <u>-67</u>	Date of inspection: June 6, 2015																								
Location and Region: <u>PID area</u>	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: <u>57°F</u> <u>Light rain</u>																								
Inspector: Dave Babcock, PE	Signature: <u>[Signature]</u>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <u>No visual evidence of recent development or groundwater use.</u> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <u>No visual evidence of recent development or groundwater use.</u>																						
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <u>Photos by BBO</u>																									
II. INTERVIEWS (Check all that apply)																									
1. O&M site manager <u>None</u> <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																	
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2. O&M staff _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> <tr> <td colspan="3"> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ </td> </tr> <tr> <td colspan="3"> Problems, suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																	
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

APPENDIX P

**SEAD-43: BUILDING 606 OLD MISSILE PROPELLANT TEST LABORATORY,
SEAD-56: BUILDING 606 HERBICIDE AND PESTICIDE STORAGE, AND SEAD-69:
BUILDING 606 DISPOSAL AREA**



**APPENDIX P: SEAD-43 Building 606 Old Missile Propellant Test
Laboratory, SEAD-56 Building 606 Herbicide and Pesticide Storage and
SEAD-69 Building 606 Disposal Area**

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEADs 43, 56, and 69 are located in the southeastern corner of the Depot on property that currently is associated with the New York State Department of Correctional Services' Five Points Correctional Facility. These areas are discussed as one AOC because SEAD-43 and SEAD-56 both represent historic uses of Building 606; SEAD-69 is a disposal area situated close to Building 606, which was previously suspected of receiving wastes from the two other AOCs.

In the 1960s, Building 606 was used as a missile propellant test laboratory; this use is designated as SEAD-43, the Old Missile Propellant Test Laboratory, which was used for quality assurance (QA) surveillance testing of military ordnance items. After 1976, Building 606 was used as a pesticide and herbicide storage and mixing facility; this historic use is designated as SEAD-56, Herbicide/Pesticide Storage. In 1989, the pesticide/herbicide storage area was upgraded when a new rinseate building was constructed to the east of Building 606, and the historic underground rinseate storage tank was replaced with a new vaulted tank that complied with the then-prevailing environmental regulations. SEAD-69 is a disposal area in an open field that is located southeast of Building 606 (Parsons, 2007a).

1.2 Initial Response

Field investigations were conducted at SEADs 43, 56, and 69 in February of 1994 as part of the "ESI for Eight Moderately Low Priority AOCs" (Parsons, 1995a), and complete analytical results for the soil and groundwater samples collected can be found in that document. Test pits revealed the presence of buried bricks, concrete blocks, construction debris, and piping. No impacted soil or obvious contamination was observed in the three test pits investigated.

1.3 Basis for Taking Action

An action was required at SEADs 43/56/69 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

Operations performed in SEAD-43 included the operation or functional testing of explosive devices. Inhibited Red-Fuming Nitric Acid (IRFNA) was used in, and stored at and near Building 606 prior to its disposal at SEAD-13. As SEAD-56, Herbicide/Pesticide Storage, storage of pesticides and herbicides occurred at a now-demolished building formerly located west of Building 606. A historic concrete underground tank was also used for the intermittent storage of wastewater generated during the rinsing of the portable truck-mounted tank that was used for mobile spraying operations at the Depot. It is suspected that waste from the IRFNA storage and pesticide/herbicide mixing was disposed at SEAD-69. SEAD-69 measures approximately 100 ft. by 100 ft. in size, and contained various types of construction debris, including bricks and concrete blocks, visible at the surface.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEADs 43, 56, and 69 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. Table 7-6 of the ROD (Parsons, 2007a) summarizes the calculated cancer and non-cancer risks for all receptors and exposure routes considered in the risk assessment presented in "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

An ecological risk assessment was completed and no COCs were identified.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)" requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on an LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility ("Prison Area") currently is located. SEAD 43/56/69 are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") (USACE, 2006) implemented land use controls for the SEAD PID/Warehouse Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the "Prison Area".

SEADs 43/56/69 are located within the "Prison Area" property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The "Prison Area" has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for unrestricted use and unlimited exposure. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area's continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEADs 43/56/69 recommendations in the previous FYR were implemented as intended. The LUCs continued to be implemented and were inspected on an annual basis since the previous FYR. Annual LUC inspections were not conducted; however, LTM and other activities were conducted within Seneca during 2012 and 2013. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main Five-Year Review report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

An interview of the correctional facility manager was conducted on June 13, 2016 to determine whether required LUCs imposed by the approved RODs at SEADs 43/56/69 are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEADs 43/56/69 continues to be used as a state maximum security correctional facility.

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEADs 43/56/69 in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2, transfer deed, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEADs 43/56/69 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-43/56/69.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEADs 43/56/69.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEADs 43/56/69. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

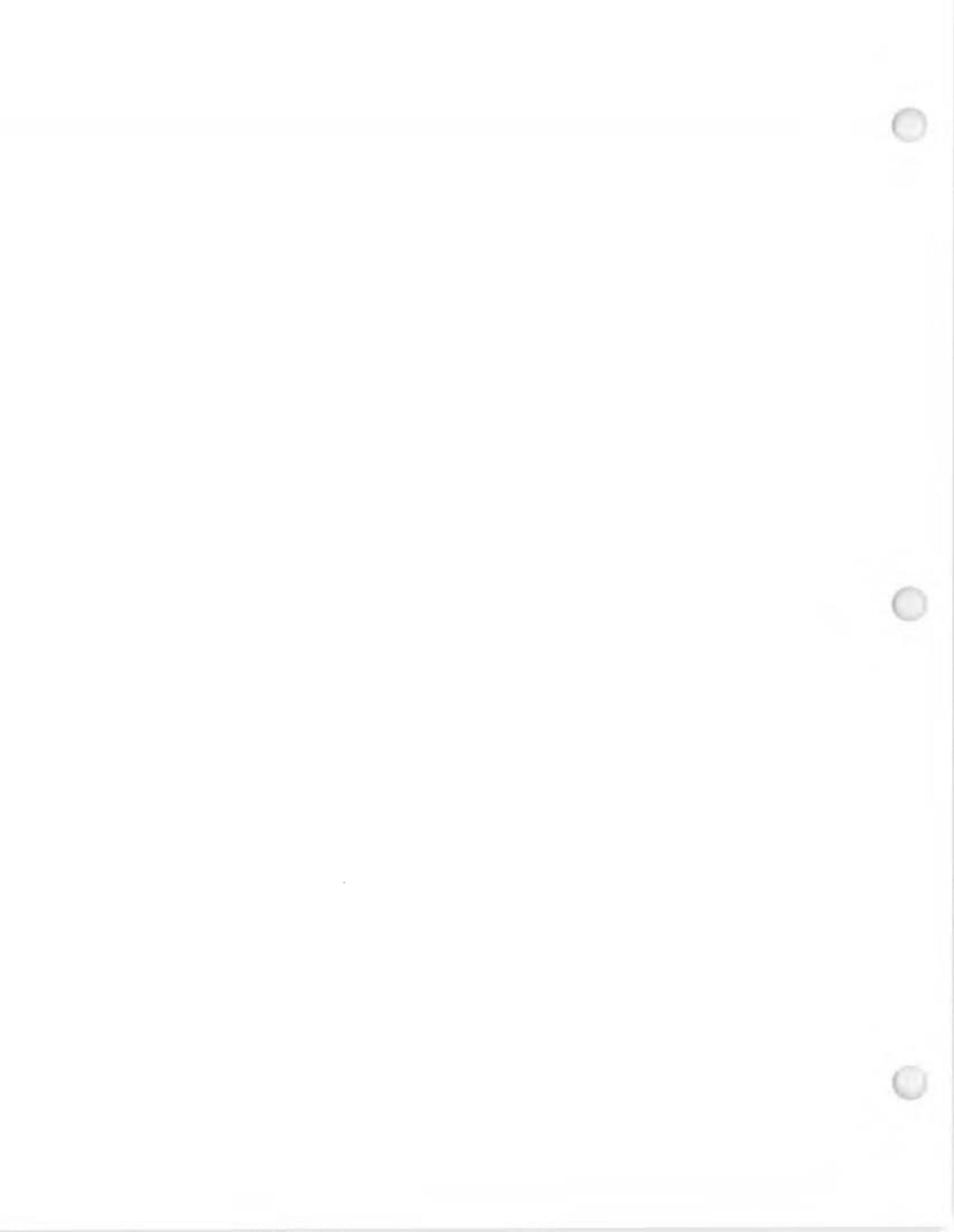
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment P-1 Five Year Review - Site Visit Photo Log Prison Area Parcel

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

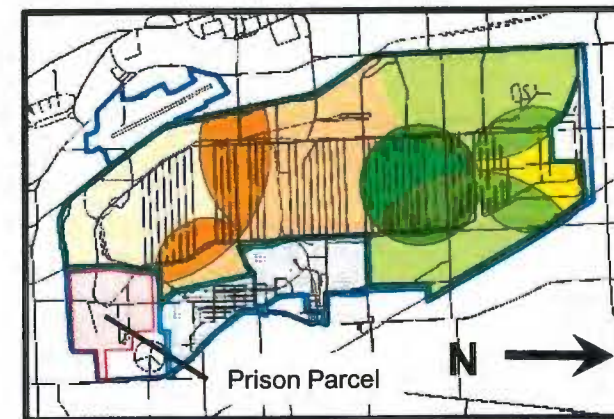
LOCATION: Prison Parcel, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



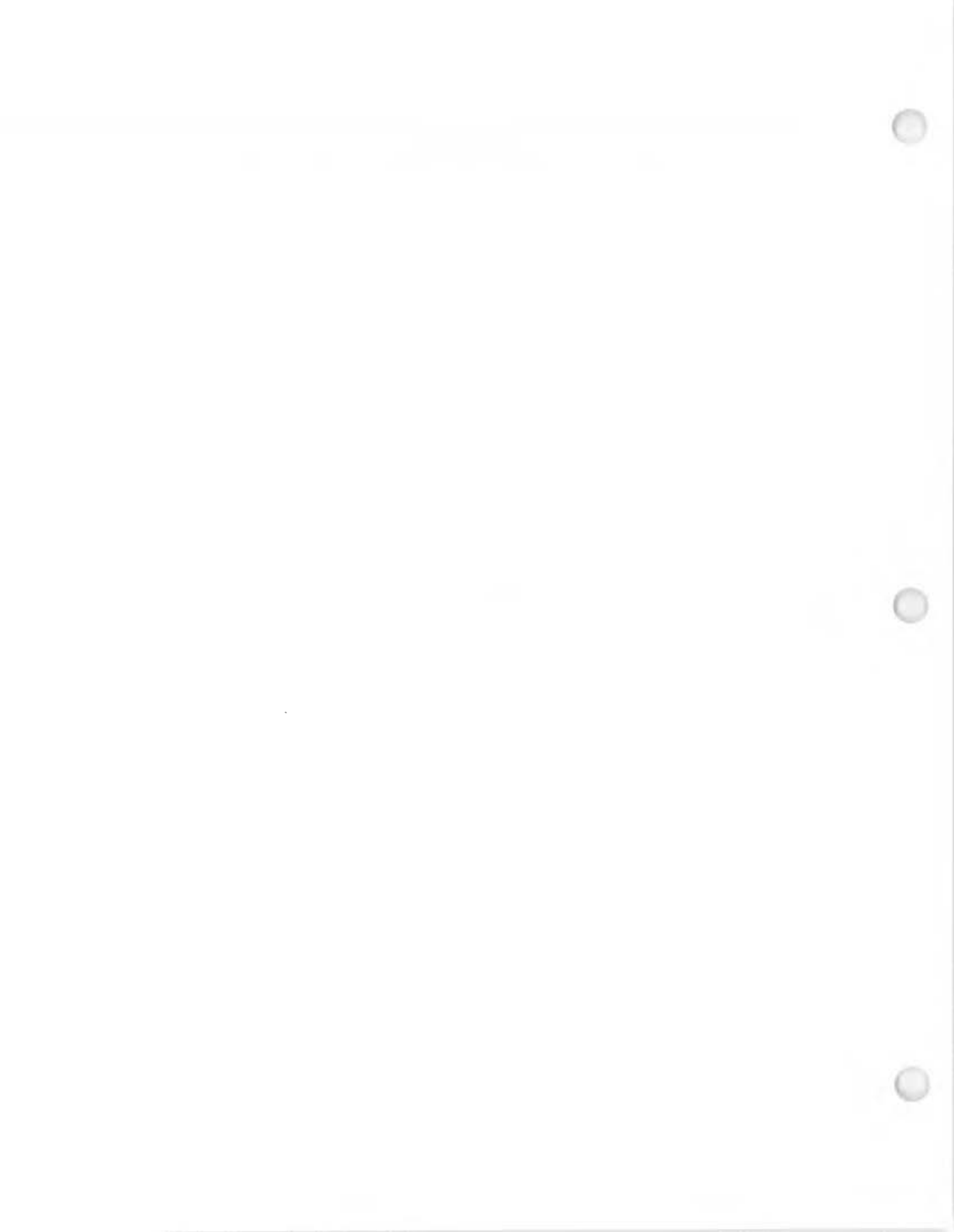
Photos within the Correctional Facility are prohibited.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD -43	Date of inspection: June 2, 2015																								
Location and Region: Prison area	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 58°F Cloudy																								
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td> </tr> </table> <p style="margin-left: 40px;"><i>Prison Parcel Reversenary Road in place. No changes since last check in April 2014.</i></p>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other													
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<input type="checkbox"/> Other																									
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached																									
II. INTERVIEWS (Check all that apply)																									
1. O&M site manager <u>Paul Rainis</u> <u>Plant Facility Engr.</u> <u>6/2/15</u> <div style="display: flex; justify-content: space-between; margin-left: 40px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached <u>None</u>																									
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3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td colspan="6">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table> <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Contact _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td colspan="6">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone no. _____	Problems; suggestions; <input type="checkbox"/> Report attached _____						Agency _____	Contact _____	Name _____	Title _____	Date _____	Phone no. _____	Problems; suggestions; <input type="checkbox"/> Report attached _____					
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

APPENDIX Q
SEAD-44A: QUALITY ASSURANCE TEST LABORATORY



APPENDIX Q: SEAD-44A Quality Assurance Test Laboratory

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-44A (Quality Assurance Test Laboratory) is located in the southeastern portion of the Depot, approximately 1,000 ft. east of Brady Road and 1,500 ft. north of South Patrol Road on property that is currently associated with the New York State Department of Correctional Services' Five Points Correctional Facility. Building 416 was located at the AOC and a number of earthen berms that ran parallel to an unnamed dirt road at the AOC were present. The earthen berms were historically used for QA testing of ordnance items, including various pyrotechnics, firing devices, and 40-millimeter practice and chemical smoke grenades. The above-ground testing of landmines also reportedly occurred in SEAD-44A in a separate bermed area.

1.2 Initial Response

Site investigations at SEAD-44A included a LSP in 1993 and 1994, followed by a TCRA in 2000 and 2002.

1.3 Basis for Taking Action

An action was required at SEAD-44A to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

During the period of its use, it is suspected that the area of SEAD-44A contained high levels of metals, cyanide, and other contaminants associated with ordnance testing. A drainage swale runs east to west along the middle of the AOC; this feature drains surface water runoff to the west towards Silver Creek. Complete analytical results for the samples collected during the LSP can be found in the "Expanded Site Investigation – Eight moderately Low Priority AOCs - SEADs 5,9,12 (A and B), (43, 56, 69), 44 (A and B), 50, 58, and 59" (Parsons, 1995a).

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64C there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. The results of total cancer risk and total non-cancer HI are summarized in Table 7-7 of the ROD (Parsons, 2007a) and in the "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

An ecological risk assessment was completed and no COCs were identified.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)" requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on an LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility (“Prison Area”) currently is located. SEAD-64C are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the SEAD PID/Warehouse Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the “Prison Area”.

SEAD-64C is located within the “Prison Area” property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The “Prison Area” has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for unrestricted use and unlimited exposure. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area’s continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-44A recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five

year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-44A was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEAD-64C continues to be used as a state maximum security correctional facility

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-44A in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2, transfer deed, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-44A is currently protective of human health and the environment

because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, 44A, 44B, 52, 62, and 64C as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-64C.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEAD-44A.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-44A comprising the area known as the Prison Area. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION	
Site name: <u>SEAD-56</u>	Date of inspection: <u>6/2/2015</u>
Location and Region: <u>Prison area</u>	EPA ID: <u>NY0213820830</u>
Agency, office, or company leading the five-year review: <u>Parsons</u>	Weather/temperature: <u>58°F cloudy</u>
Inspector: <u>Dave Babcock, PE</u>	Signature: <u>[Signature]</u>
Remedy Includes: (Check all that apply) <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other <u>Prison Parcel Reversing road remains in place. No changes since last checked in April 2014.</u> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls	
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Paul Rainis</u> <u>Plant Facility Eng.</u> <u>6/2/15</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached <u>None</u>	
2. O&M staff <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____	
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____	
4. Other interviews (optional) <input type="checkbox"/> Report attached.	

Attachment Q-1 Five Year Review - Site Visit Photo Log Prison Area Parcel

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

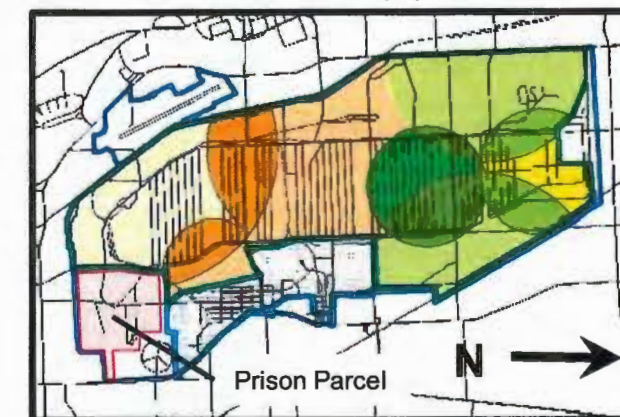
LOCATION: Prison Parcel, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



Photos within the Correctional Facility are prohibited.

ATTACHMENT 2
Site Inspection Checklist

APPENDIX R
SEAD-44B: QUALITY ASSURANCE TEST LABORATORY



APPENDIX R: SEAD-44B Quality Assurance Test Laboratory

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5.0	TECHNICAL ASSESSMENT	R-3
5.1	Question A: Is the remedy functioning as intended by the decision documents?.....	R-3
5.2	Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?.....	R-4
5.3	Question C: Has any other information come to light that could call into question the protectiveness of the remedy?	R-4
5.4	Issues, Recommendations and Follow-Up Actions.....	R-4
5.5	Protectiveness Statement.....	R-4

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-44B (Quality Assurance Test Laboratory) runs along the west side of Brady Road and occupies an area that is approximately 350 ft. by 200 ft. on property that is currently associated with the New York State Department of Correctional Services' Five Points Correctional Facility. Two buildings were originally associated with SEAD-44B. The buildings were part of a QA test area for pyrotechnics, chemical smoke grenades, and other fire devices.

1.2 Initial Response

The investigative work at SEAD-44B included an ESI in 1993 and 1994. A summary of the surface soil, groundwater, surface water, and sediment data from the ESI are presented in Tables 6-17 to 6-20 of the ROD (Parsons, 2007a), respectively. Complete soil and groundwater analytical results for the samples collected can be found in "Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B," Final (Parsons, 2002a).

1.3 Basis for Taking Action

An action was required at SEAD-44B to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

When SEAD-44B was designated as a AOC in the FFA, the Army indicated that the site might contain high levels of metals and possible UXO debris. Subsequent inspections of the AOC by the Army as part of the DoDs BRAC Ordnance and Explosives Archive Search Report indicate that ordnance was not found at SEAD-44B or in the vicinity of the two berms that were observed near the buildings (Parsons, 2007a). All of the samples were analyzed for TCL VOCs, SVOCs, pesticide/PCBs, TAL metals, and cyanide according to NYSDEC CLP SOW, and explosives by USEPA Method 353.2.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64C there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. Table 7-8 in the ROD (Parsons, 2007a) summarizes the calculated cancer and non-cancer risks for all receptors and exposure routes considered in the risk assessment presentation "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)" requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on a LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility (“Prison Area”) currently is located. SEAD-64C are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the SEAD PID/Warehouse Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the “Prison Area”.

SEAD-64C is located within the “Prison Area” property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The “Prison Area” has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for unrestricted use and unlimited exposure. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area’s continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-44B recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five

year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-44B was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEAD-44B continues to be used as a state maximum security correctional facility

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-44B in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2, transfer deed, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-44B is currently protective of human health and the environment

because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and is currently being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, 44A, 44B, 52, 62, and 64C as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-44B.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEAD-44B.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-44B. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

Attachment R-1 Five Year Review - Site Visit Photo Log Prison Area Parcel

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

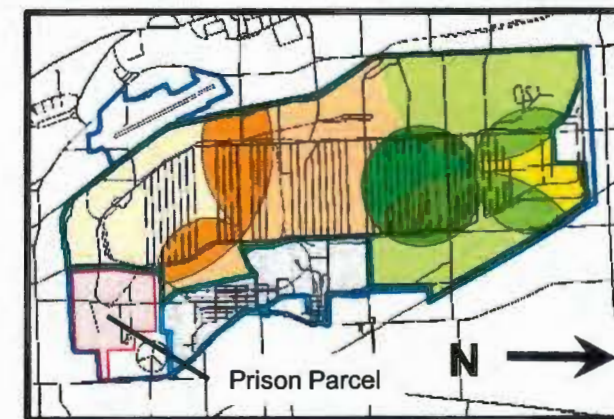
LOCATION: Prison Parcel, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



Photos within the Correctional Facility are prohibited.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																															
Site name: SEAD -44B	Date of inspection: June 2, 2015																														
Location and Region: Prisma area	EPA ID: NY0213820830																														
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 53°F cloudy																														
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																														
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td> </tr> </table> <p style="margin-left: 20px;"><i>Prisma parcel Reversprng dead in place. No changes since last checked in April 2014.</i></p>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other																			
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<input type="checkbox"/> Groundwater pump and treatment																															
<input type="checkbox"/> Surface water collection and treatment																															
<input type="checkbox"/> Other																															
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached																															
II. INTERVIEWS (Check all that apply)																															
1. O&M site manager <u>Paul Raimis</u> <u>Plant Facility Engr.</u> <u>6/2/15</u> <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached <u>None</u>																															
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____																															
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td>Contact _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table> <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 20%;">Agency _____</td> <td style="width: 20%;">Name _____</td> <td style="width: 20%;">Title _____</td> <td style="width: 20%;">Date _____</td> <td style="width: 20%;">Phone no. _____</td> </tr> <tr> <td>Contact _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">Problems; suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Agency _____	Name _____	Title _____	Date _____	Phone no. _____	Contact _____					Problems; suggestions; <input type="checkbox"/> Report attached _____					Agency _____	Name _____	Title _____	Date _____	Phone no. _____	Contact _____					Problems; suggestions; <input type="checkbox"/> Report attached _____				
Agency _____	Name _____	Title _____	Date _____	Phone no. _____																											
Contact _____																															
Problems; suggestions; <input type="checkbox"/> Report attached _____																															
Agency _____	Name _____	Title _____	Date _____	Phone no. _____																											
Contact _____																															
Problems; suggestions; <input type="checkbox"/> Report attached _____																															
4. Other interviews (optional) <input type="checkbox"/> Report attached.																															

APPENDIX S
SEAD-52: BUILDING 608 AND 612 AMMUNITION BREAKDOWN AREA



APPENDIX S: SEAD-52 Building 608 and 612 Ammunition Breakdown Area

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-52 (Building 608 and 612 Ammunition Breakdown Area) is located in the southeastern portion of SEDA on land currently occupied by the Five Points Correctional Facility. The area is characterized by developed and undeveloped land.

SEAD-52 was active from the mid-1950s to the late 1990s. The area consists of four buildings: Buildings 608, 610, 611, and 612. Building 608 was previously used for the storage of ammunition magazines; Building 610 was used for ammunition powder collection; Building 611 was used for storage of equipment, paints, and solvents; and Building 612 was used for the breakdown and maintenance of ammunition. None of these buildings currently are active or used for storage of materials.

1.2 Initial Response

The field investigation at SEAD-52 included a LSP that focused on soil sampling that was performed in 1993. Complete soil and groundwater analytical results from the LSP investigations are presented in "Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B," Final (Parsons, 2002a).

1.3 Basis for Taking Action

An action was required at SEAD-52 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

The LSP was performed in 1993 to evaluate the presence of explosives in the soil at SEAD-52 (Parsons, 2007a). The results of the investigation indicated that three explosive compounds were detected in one or more of the collected soil samples.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-52 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer (HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. A summary of the risk assessment results is presented in Table 7-10 of the ROD (Parsons, 2007a), and a full discussion is presented in the "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

An ecological risk assessment were completed and no COCs were identified. No remedial actions were undertaken (Parsons, 2007a).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)” requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on an LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility (“Prison Area”) currently is located. SEAD-52 are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the SEAD PID/Warehousing Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the “Prison Area”.

SEAD-52 is located within the “Prison Area” property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The “Prison Area” has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for unrestricted use and unlimited exposure. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area’s continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-52 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 15.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-52 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEAD-52 continues to be used as a state maximum security correctional facility

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-52 in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2, transfer deed, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-52 currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and is currently being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID Area has been implemented and is currently being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, 44A, 44B, 52, 62, and 64C as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-64C.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEAD-52.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-52 comprising the area known as the Prison Area. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. The remedy continues to minimize explosive safety hazards. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



**Attachment S-1
Five Year Review - Site Visit Photo Log
Prison Area Parcel**

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

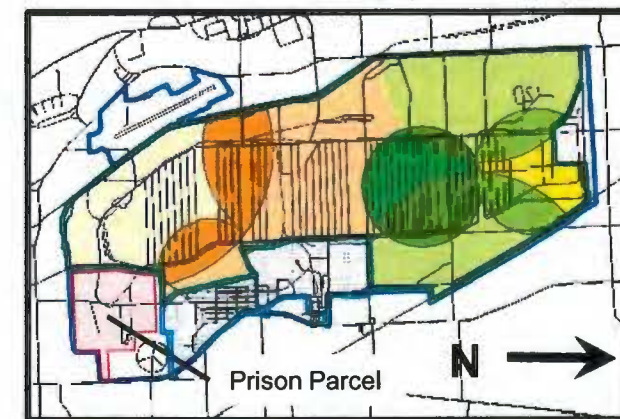
LOCATION: Prison Parcel, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



Photos within the Correctional Facility are prohibited.

ATTACHMENT 2
Site Inspection Checklist

APPENDIX T: SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612

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3.2	Progress on Recommendations	T-2
4.0	FIVE-YEAR REVIEW PROCESS	T-3
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4.3	Site Inspection.....	T-3
4.4	Interviews	T-3
4.5	Institutional Controls Verification	T-3
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5.4	Issues, Recommendations and Follow-Up Actions.....	T-4
5.5	Protectiveness Statement.....	T-4

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Nicotine Sulfate Disposal Area (SEAD-62) is located in the southeastern portion of SEDA. It measures approximately one-half mile by one-quarter mile in size and is characterized by mostly undeveloped land with the exception of bunkers and buildings along the western perimeter.

1.2 Initial Response

The field investigation at SEAD-62 included an ESI that was performed in 1994. Complete soil and groundwater analytical results from the ESI are presented in “Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B,” Final (Parsons, 2002a).

1.3 Basis for Taking Action

An action was required at SEAD-62 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

Colloquial evidence suggests that two drums containing nicotine sulfate were disposed of in the area surrounding Buildings 606 and 612 (Parsons, 2002a). Summaries of the soil and groundwater results are presented in Table 6-22 and 6-23 of the ROD (Parsons, 2007a), respectively.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-62 there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. A summary of the risk assessment results is presented in Table 7-10 of the ROD (Parsons, 2007a), and a full discussion is presented in the “Decision Document – Mini Risk Assessment” (Parsons, 2002a).

An ecological risk assessments were completed and no COCs were identified. No remedial actions were undertaken (Parsons, 2007a).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)” requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on an LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility (“Prison Area”) currently is

located. SEAD-62 are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the SEAD PID/Warehouse Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the “Prison Area”.

SEAD-62 is located within the “Prison Area” property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The “Prison Area” has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for unlimited use and unrestricted exposure. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area’s continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-62 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during

which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended..

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-62 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEAD-62 continues to be used as a state maximum security correctional facility

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-62 in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2 transfer deed, and the FYR site visit conducted between June 1 and 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-62 currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing, Institutional, and Airfield Parcel of the former Depot has been implemented and currently is being maintained, monitored and

reported upon periodically;

- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and currently is being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, 44A, 44B, 52, 62, and 64C as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-62.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEAD-62.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for the eight sites (SEADs 43/56/69, 44A, 44B, 52, 62, and 64C) comprising the area known as the Prison Area. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

Attachment T-1
Five Year Review - Site Visit Photo Log
Prison Area Parcel

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

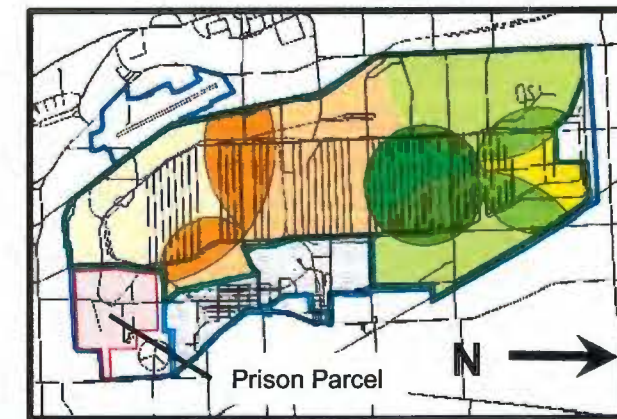
LOCATION: Prison Parcel, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



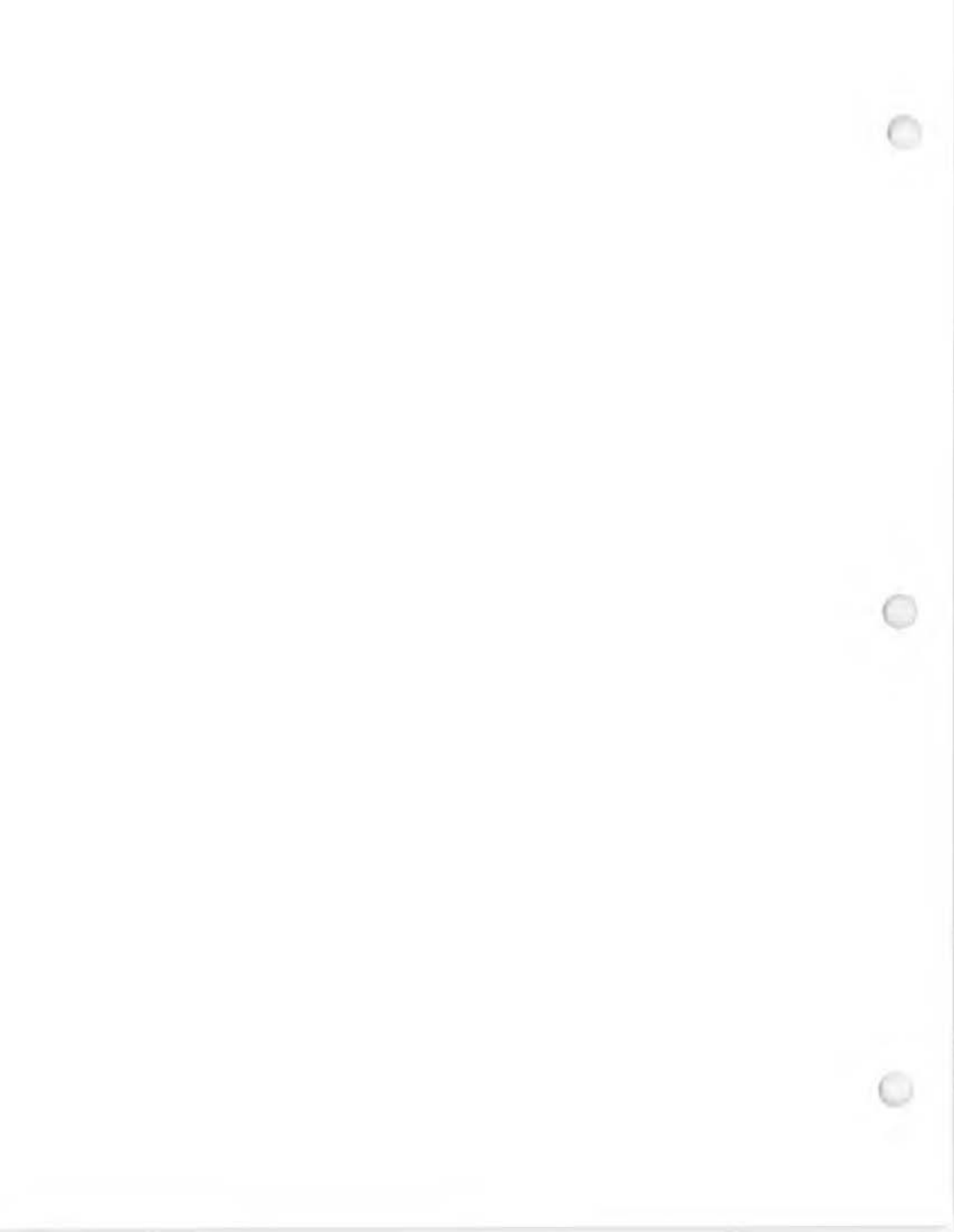
Photos within the Correctional Facility are prohibited.

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: <u>SEADs 602 and 52</u>	Date of inspection: <u>6/2/2015</u>												
Location and Region: <u>Prison area</u>	EPA ID: <u>NY0213820830</u>												
Agency, office, or company leading the five-year review: <u>Parsons</u>	Weather/temperature: <u>Cloudy 58°F</u>												
Inspector: <u>Dave Babcock, PE</u>	Signature: <u>[Signature]</u>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td> </tr> </table> <p style="margin-left: 40px;"><u>Prison Parcel Reversonary, Deed remains in place. No changes since last checked in April 2014.</u></p>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other													
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>Paul Rainis</u> <u>Plant Facility Engr.</u> <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 40px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input checked="" type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached <u>None</u>													
2. O&M staff _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 40px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____													
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 40px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 40px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____													
4. Other interviews (optional) <input type="checkbox"/> Report attached.													

APPENDIX U
SEAD 64C GARBAGE DISPOSAL AREA



APPENDIX U: SEAD-64 Garbage Disposal Area

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Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The location of the rumored Garbage Disposal Area at SEAD-64C is near the intersection of East Patrol Road and South Patrol Road in the southeastern corner of SEDA. This former AOC is located within the bounds of the New York State Department of Correctional Service's Five Points Correctional Facility.

1.2 Initial Response

The field investigation at SEAD-64C included an ESI that was performed in 1994. Complete analytical results from the ESI are presented in "Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B," Final (Parsons, 2002a). Surface soil samples, subsurface soil samples, and groundwater samples were collected at SEAD-64C and submitted for chemical analysis. All of the samples were analyzed for TCL VOCs, SVOCs, pesticides/PCBs, TAL metals, and cyanide according to the NYSDEC CLP SOW.

1.3 Basis for Taking Action

An action was required at SEAD-64C to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

SEAD-64C is the location of a proposed SEAD landfill. An Army Pollution Abatement report concluded that the proposed site could be used for a sanitary landfill; however, no available information indicates that a formal landfill was established on-site. Information presented in the SMWU classification report suggests limited dumping may have occurred at the site and that transmission power lines may be buried throughout the site; however, the Army notified the NYSDEC that the area designated at SEAD-64C was misidentified as a historic landfill site and no waste was ever identified during the Army's investigations (Parsons, 2002a; 2007a) Summaries of the soil and groundwater results obtained during the ESI are presented in Table 6-28 and 6-29 of the ROD (Parsons, 2007a), respectively.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64C there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the construction worker are less than 1.0. The risk assessment evaluated risk to receptors under the Prison land use scenario. It should be noted that the described property is being used and maintained for a correctional facility in perpetuity. A summary of the risk assessment results is presented in Table 7-12 of the ROD (Parsons, 2007a), and a full discussion is included in the "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

An ecological risk assessment was completed and no COCs were identified.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “Record of Decision for 17 No Action/No Further Action SWMUs Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B and 122E)” requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, and reporting on an LUC that requires the continued restricted use of the property as a state maximum security correctional facility (Parsons, 2007a).

The Army had previously documented and imposed LUCs within a portion of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility (“Prison Area”) currently is located. SEAD-64C are located within land covered by the existing LUCs imposed on land within the Prison Area parcel. Within the ROD (Parsons, 2007a), the Army formalized and documented its intention to impose the existing LUCs on the AOCs located within the Prison Area parcel under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) (USACE, 2006) implemented land use controls for the SEAD PID/Warehouse Area. Addendum 2 (USACE, 2008a) expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the “Prison Area”.

SEAD-64C is located within the “Prison Area” property that the Army transferred to the State of New York for use as a correction facility. This property was transferred prior to the issuance of the ROD signed on July 3, 2007 and there was no requirement for an Environmental Easement.

The “Prison Area” has an existing deed with a reversionary clause. The area consists of eight AOCs that were transferred in September 2000 under a public benefit conveyance that conveyed the land in the southeastern part of the former Depot to the people of the State of New York for the construction of the Five Points Correctional Facility. The existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives and require the State of New York to use the property for the purpose of adult incarceration. Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property legally reverts to the United States (Parsons, 2007a).

Hazardous substances may be present at one or more of the listed historic AOCs at concentrations that do not allow for UU/UE. However, based on the results of previous investigations, risk assessments, and/or removal actions, these AOCs do not pose or represent a risk or threat to human health and the environment, given consideration of the area’s continuing restricted use as a state maximum security correctional facility.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-64C recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-64C was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No violations of the institutional or land use controls were observed; and
- Continued restricted use of the property as a state maximum security correctional facility.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Based on an interview with a representative from Five Points Correctional Facility during the FYR process, SEAD-64C continues to be used as a state maximum security correctional facility

4.5 Institutional Controls Verification

The LUCs, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-64C in the Prison Area have been completed and documented. No continuing active remediation is required for the Prison Area. Based on a review of the LUC RD Addendum 2 transfer deed, and the FYR site visit conducted between June 1 and 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-64C currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing (Area, Institutional, and Airfield Parcel of the former Depot has been implemented and currently is being maintained, monitored and reported upon periodically;
- a second LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at the three site, and which also has been expanded to include all land within the PID/Warehousing Area has been implemented and currently is being maintained, monitored, and reported upon periodically;
- existing deed provisions require the State of New York to use the property containing SEADs 43/56/69, 44A, 44B, 52, 62, and 64C as a correction facility for the purpose of adult incarceration. If the State chooses to stop that activity, the property reverts back to the United States of America. Should the property revert to the Federal Government, the LUC will terminate and a remedy substitution will be agreed to.

The selected remedy is still protective of public health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-64C.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy at SEAD-64C.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-64C. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for the Prison Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

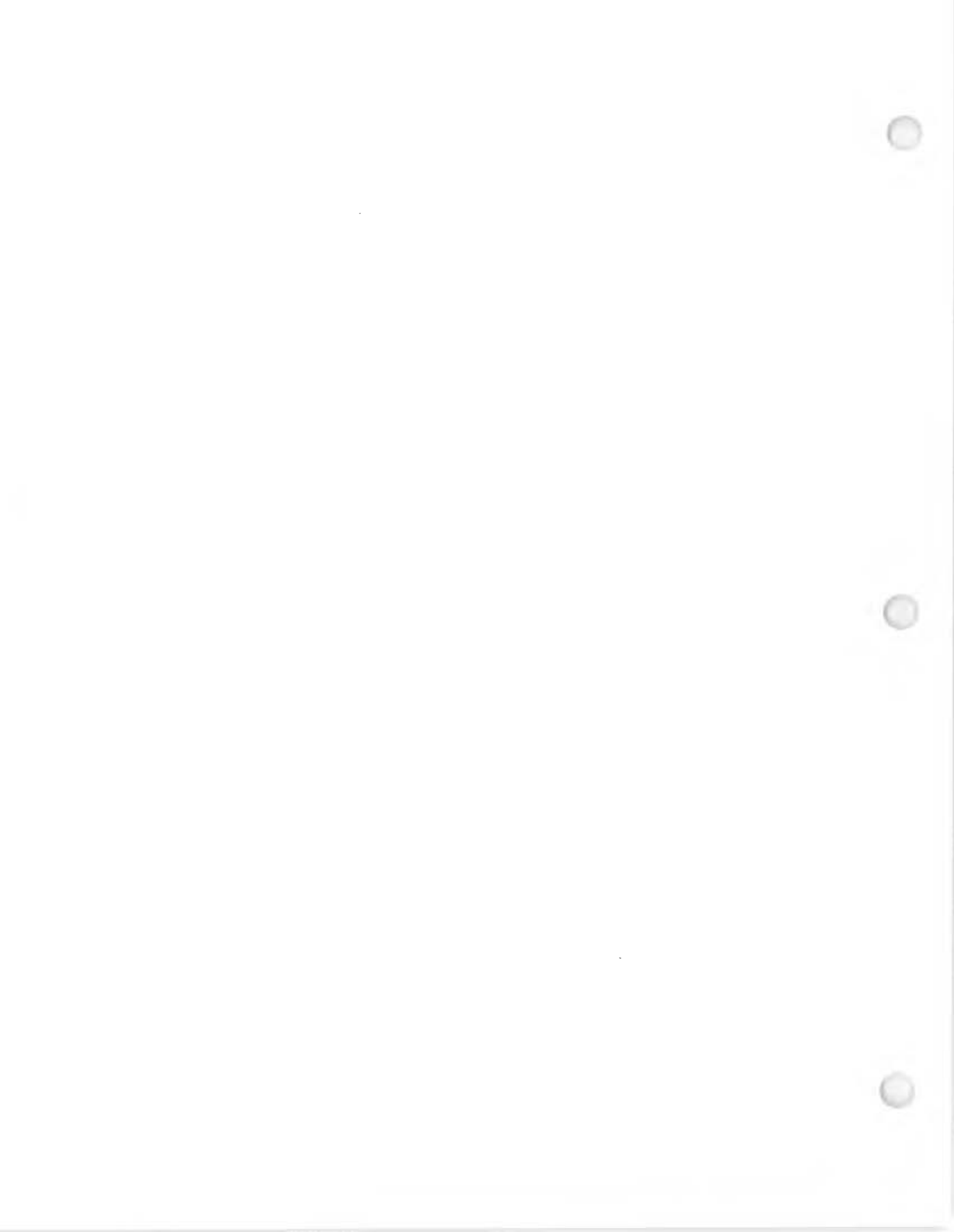
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



**Attachment U-1
Five Year Review - Site Visit Photo Log
Prison Area Parcel**

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

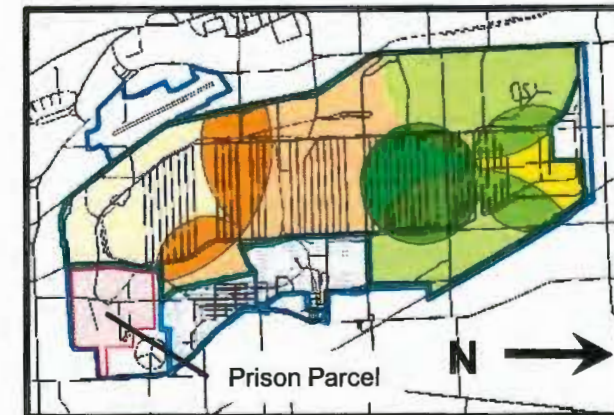
LOCATION: Prison Parcel, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



Prison Parcel contains the following:

- SEAD-43 Building 606 Old Missile Propellant Test Laboratory
- SEAD-44A Quality Assurance Test Laboratory
- SEAD-44B Quality Assurance Test laboratory
- SEAD-52 Building 608 and 612 Ammunition Breakdown Area
- SEAD-56 Building 606 Herbicide and Pesticide Storage
- SEAD-62 Nicotine Sulfate Disposal Area near Building 606 and 612
- SEAD-64C Garbage Disposal Area
- SEAD-69 Building 606 Disposal Area

SEDA Overall Map (no scale)



Photos within the Correctional Facility are prohibited.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail.

2. The second part of the document outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling techniques employed and the statistical tests used to evaluate the results.

3. The third part of the document presents the findings of the study. It shows that there is a significant correlation between the variables being studied, and it discusses the implications of these findings for practice.

4. The final part of the document concludes the study and offers suggestions for further research. It notes that while the current study has provided valuable insights, there are still several areas that need to be explored in more detail.

5. The first part of this section discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail.

6. The second part of this section outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling techniques employed and the statistical tests used to evaluate the results.

7. The third part of this section presents the findings of the study. It shows that there is a significant correlation between the variables being studied, and it discusses the implications of these findings for practice.

8. The fourth part of this section concludes the study and offers suggestions for further research. It notes that while the current study has provided valuable insights, there are still several areas that need to be explored in more detail.

9. The fifth part of this section discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail.

10. The sixth part of this section outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling techniques employed and the statistical tests used to evaluate the results.

11. The seventh part of this section presents the findings of the study. It shows that there is a significant correlation between the variables being studied, and it discusses the implications of these findings for practice.

12. The eighth part of this section concludes the study and offers suggestions for further research. It notes that while the current study has provided valuable insights, there are still several areas that need to be explored in more detail.

13. The ninth part of this section discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail.

14. The tenth part of this section outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling techniques employed and the statistical tests used to evaluate the results.

15. The eleventh part of this section presents the findings of the study. It shows that there is a significant correlation between the variables being studied, and it discusses the implications of these findings for practice.

16. The twelfth part of this section concludes the study and offers suggestions for further research. It notes that while the current study has provided valuable insights, there are still several areas that need to be explored in more detail.

ATTACHMENT 2
Site Inspection Checklist

APPENDIX V
SEAD-13 - INHIBITED RED FUMING NITRIC ACID (IRFNA)

November 2017

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APPENDIX V - SEAD-13 Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site

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Attachment 1 Photo Log

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1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-13 is located in the northeast portion of the former Depot and includes two historic disposal areas, SEAD-13-East and SEAD-13-West, which are located on the eastern and western sides of the Duck Pond's southern end, respectively. Historically, SEAD-13 was used during the early 1960s to dispose of quantities of unserviceable Inhibited Red-Fuming Nitric Acid (IRFNA), an oxidizer used in missile liquid propellant systems. SEAD-13 East contains disposal pits at the surface while the SEAD-13-West area exhibited no visible evidence of disposal pits. During the operation of the IRFNA Disposal Site, the pits were utilized as a neutralization area for IRFNA. Barrels of unserviceable IRFNA were brought to the site from other locations within the Depot, and were temporarily staged on pallets near the disposal pits. Each barrel of unserviceable IRFNA was emptied and mixed with water in an ejector. The mixture was then discharged to the disposal pit through a long polyethylene hose that discharged beneath the surface of the water in the pit being used. The disposed IRFNA/water solution mixed with the limestone in the pit to facilitate the neutralization of the acid. Ten barrels were typically discharged into each pit during one day of operation.

1.2 Initial Response

Site investigations performed at SEAD-13 included an ESI in 1993 and 1994, followed by a SI performed in 2001. The ESI work included geophysical investigations, surface and subsurface soil sampling, monitoring well installations, groundwater sampling, surface water/sediment sampling, and chemical analyses. The SI included additional soil borings (with surface and subsurface soil sampling), monitoring well installations, groundwater sampling, and chemical analysis.

1.3 Basis for Taking Action

An action was required at SEAD-13 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

Complete analytical results from both investigations are presented in "Decision Document Mini Risk Assessment SEAD-13, Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Area," Final (Parsons, 2004d).

The presence of nitrate is likely related to past activities conducted in the area. The extent of the nitrate plume is defined and restricted to the area located between the historic disposal pits observed in SEAD-13-East and the Duck Pond to the west. Groundwater data from monitoring wells in the SEAD-13-West side of this AOC does not show evidence of a nitrate plume in this area of the AOC which is hydraulically downgradient of SEAD-13-East and the Duck Pond. Chemical analyses of surface water in the Duck Pond indicate that the nitrate/nitrite-nitrogen concentrations are below the levels established for drinking water sources nationally and within the State of New York.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-13 the human health cancer risks were below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} if exposure to groundwater were to be limited. The calculated non-cancer HI for the construction worker is less than 1.0, but the greater than 1.0 for the ark

worker (HI=7) and the recreational visitor (HI=3). The human health risk assessment was conducted using the 95% UCL of the mean as the EPC.

The elevated HI for both receptors was due to ingestion of groundwater, with nitrate/nitrite-nitrogen, aluminum, and manganese in groundwater was the largest contributors to risk for both receptors. When the groundwater pathway was eliminated, the total HIs for these receptors were less than 1. The cancer risk for the park worker, recreational visitor, and the construction worker were at acceptable limits.

Risks to a future resident were also calculated, which serves to evaluate receptors under the Resort/Residential land use scenario. The cancer risk for the resident (adult), 2×10^{-4} was greater than the USEPA acceptable limit of 1×10^{-4} ; and the cancer risk for resident (child), 1×10^{-4} , was at the acceptable limit. The cancer risk was due to ingestion of groundwater. If the groundwater pathway were eliminated, the cancer risk value for future residents would be within acceptable limits.

The maximum detected concentration was used as the EPC for the ecological risk assessment. An ecological risk assessment was completed and no COCs were identified (Parsons, 2004d).

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

No action was performed at SEAD-13. A groundwater use/access restriction was selected in the ROD (Parsons, 2007a) for SEAD-13 and is intended to eliminate human contact with groundwater, thereby reducing risk to within acceptable levels for potential human receptors. There is risk associated with the use of the groundwater at SEAD-13, driven by the concentrations of nitrate, aluminum, and manganese identified. The risk from the presence of metals is associated with the suspended solids contained in the collected groundwater samples and not from the groundwater itself.

The ROD titled "Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" signed on July 3, 2007 requires the establishment of ICs: The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.
- Establishing, maintaining, monitoring, and reporting on a LUC that maintains the integrity of any current or future remedial or monitoring system.

2.2 Remedy Implementation

A LUC was implemented over the geographic area of SEAD-13 which prohibits access to or use of the groundwater. This restriction will remain in effect until the concentrations of hazardous substances in groundwater beneath the AOC have been reduced to levels that allow for UU/UE. Once groundwater cleanup standards are achieved, the groundwater use/access restriction may be eliminated, with USEPA approval (Parsons, 2007a).

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") dated December 2006 implements LUCs for the SEAD "PID/Warehouse Area". Addendum 2 expanded the LUC RD from the PID area to include sites

4.4 Interviews

Since SEAD-13 is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-13

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the ROD for SEAD-13 have been completed and documented. No continuing active remediation is required for SEAD-13. Based on a review of the LUC RD Addendum 2 and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-13 currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs, and which has been expanded to encompass all land within the PID/Warehousing Area, Institutional, and Airfield Parcel of the former Depot has been implemented and currently is being maintained, monitored and reported upon periodically;
- a second LUC that maintains the integrity of any current or future remedial or monitoring system.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-13.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the AOC since implementation of LUCs that would affect the protectiveness of the remedy selected for SEAD-13.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-13. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

that are in the area formerly known as the Conservation Area and the Airfield parcels. SEAD-13 is located on the property known as the Conservation Area Parcel and are still under the control of the Army. Addendum 2 applied the SEAD LUC RD enforcement, modification, and termination provisions to SEAD-13. The designated reuse of land within the Depot was revised in 2005 by SCIDA, and the new future land use for SEAD-13 is Residential/Resort.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-13 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See References 14.0 in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-13 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- no prohibited facilities were present or had been constructed at the site and no access to, or use of, groundwater was evident.

The selected remedy is still protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for SEAD-13 is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment V-1
5 Year Review - Site Visit Photo Log
SEAD-13 Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-13, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

Bing.com (Microsoft) Aerial of SEAD-13 West; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.



2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6609.JPG
 Description: SEAD-13



Bing.com (Microsoft) Birds Eye Aerial of SEAD-13 East; actual date of aerial photo is unknown but based on observable features at SEDA its from Spring 2007.



2015 Site Visit Photo 2



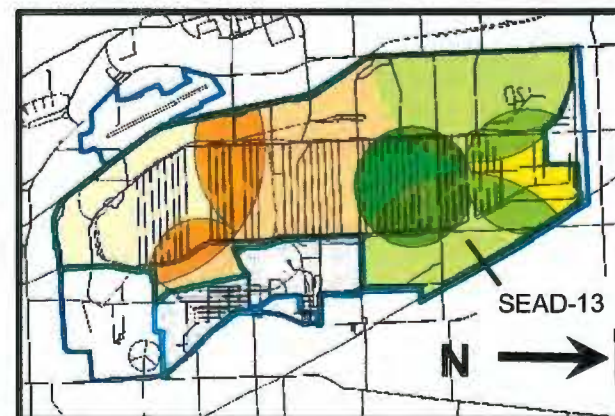
Status as of: 6/1/15 Photo ID: IMG_6608.JPG
 Description: SEAD-13

SEAD-13 is located within the Conservation Area Parcel.

Approximate Site Boundary

Photo Viewing Direction

SEDA Overall Map (no scale)



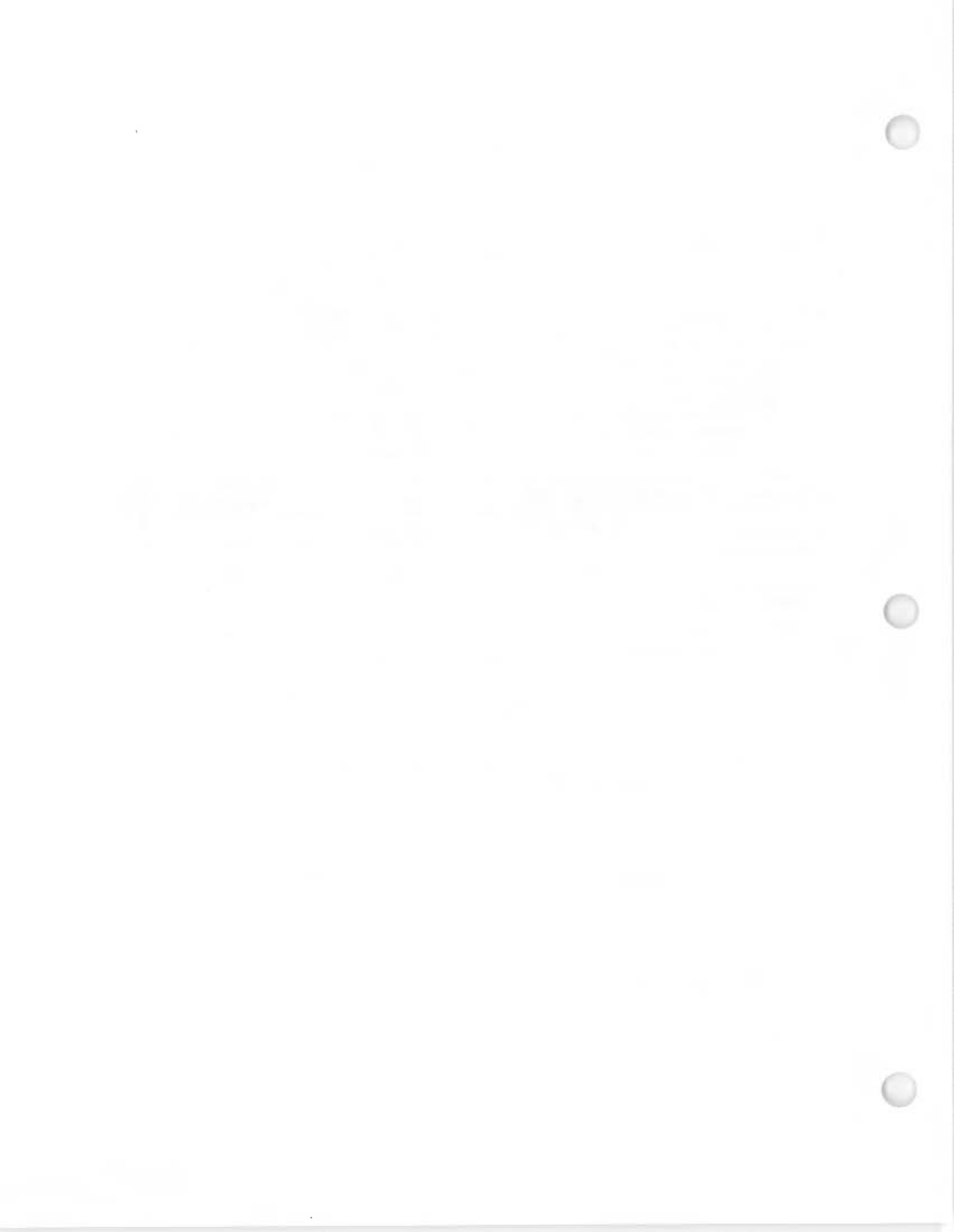
ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																													
Site name: SEAD-13 east	Date of inspection: June 1, 2015																												
Location and Region: Duck Pond	EPA ID: NY0213820830																												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F Light rain																												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual evidence of recent development of groundwater use. Wells decommissioned years ago.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual evidence of recent development of groundwater use. Wells decommissioned years ago.</i>																										
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SEDA LUC Inspections Site Inspection Checklist

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APPENDIX W
SEAD-41 - BUILDING 718 BOILER BLOWDOWN LEACHING PIT

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

A ROD titled “Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)” signed on July 3, 2007 required the establishment of ICs at the site (SEAD-41). The elements that composed the remedy included:

- Notification of future land owners of contaminated groundwater and requirement to meet all applicable laws and regulations should the owner decide to access and use the groundwater.

The selected remedy was based on the results of historic groundwater sampling data that was collected during the investigation of SEAD-41, which indicated that total petroleum hydrocarbons (TPH, 690 ppb) were present in the upper aquifer of the groundwater. The LUC selected for SEAD-41 was already in place at the time the ROD was issued, and had been documented in the deed used to transfer the North End Barracks areas of the Depot. Part of the purpose of the ROD was to formalize and document the Army’s intention to impose the existing LUC on the North End Barracks Area – SEAD-41 under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) dated December 2006 implemented land use controls for the SEAD PID/Warehousing Area. Addendum 2 expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the North Barracks Area, and applied the SEAD LUC RD enforcement, modification, and termination provisions to SEAD-41.

SEAD-41 and the North Barracks Area was transferred to the SCIDA prior to the issuance of the ROD signed on July 3, 2007 and an Environmental Easement was not required. A deed was used to document the transfer of land to SCIDA, and the existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives.

In the deed, the Army notified SCIDA that groundwater contamination had been identified in the vicinity of the former Building 718. The reported level of TPH (690 ppb) exceeds the New York State Public Water System standards for unspecified organic contamination of 100 ppb. Under New York regulations, future owners or occupants of the area would need to confirm the quality and acceptability of the groundwater as a source of potable water before it could be used for such a purpose.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-41 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data was reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-41 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- no prohibited facilities were present or had been constructed at the site and no access to, or use of, groundwater was evident.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

During the site inspection, the Hillside Children's Center maintenance manager confirmed that the facility was using the public water supply.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-41 have been completed and documented. No continuing active remediation is required for SEAD-41. Based on a review of the LUC RD Addendum 2, transfer deed and the FYR site visit conducted between June 1 and June 3, 2015, the

remedy is functioning as intended by the decision documents.

The remedy implemented at the SEAD-41 currently is protective of human health and the environment because:

- a LUC that notifies future land owners of contaminated groundwater and requirement to meet all applicable laws and regulations should the owner decide to access and use the groundwater. In addition, SEAD-41 has a groundwater use deed restriction that is more stringent than the land use control.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-41.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of ICs/LUCs that would affect the protectiveness of the remedy selected for SEAD-41.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-41. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for SEAD-41 is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

Attachment W-1
Five Year Review - Site Visit Photo Log
SEAD-41 Building 718 Boiler Plant Blowdown Leaching Pit

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-41, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

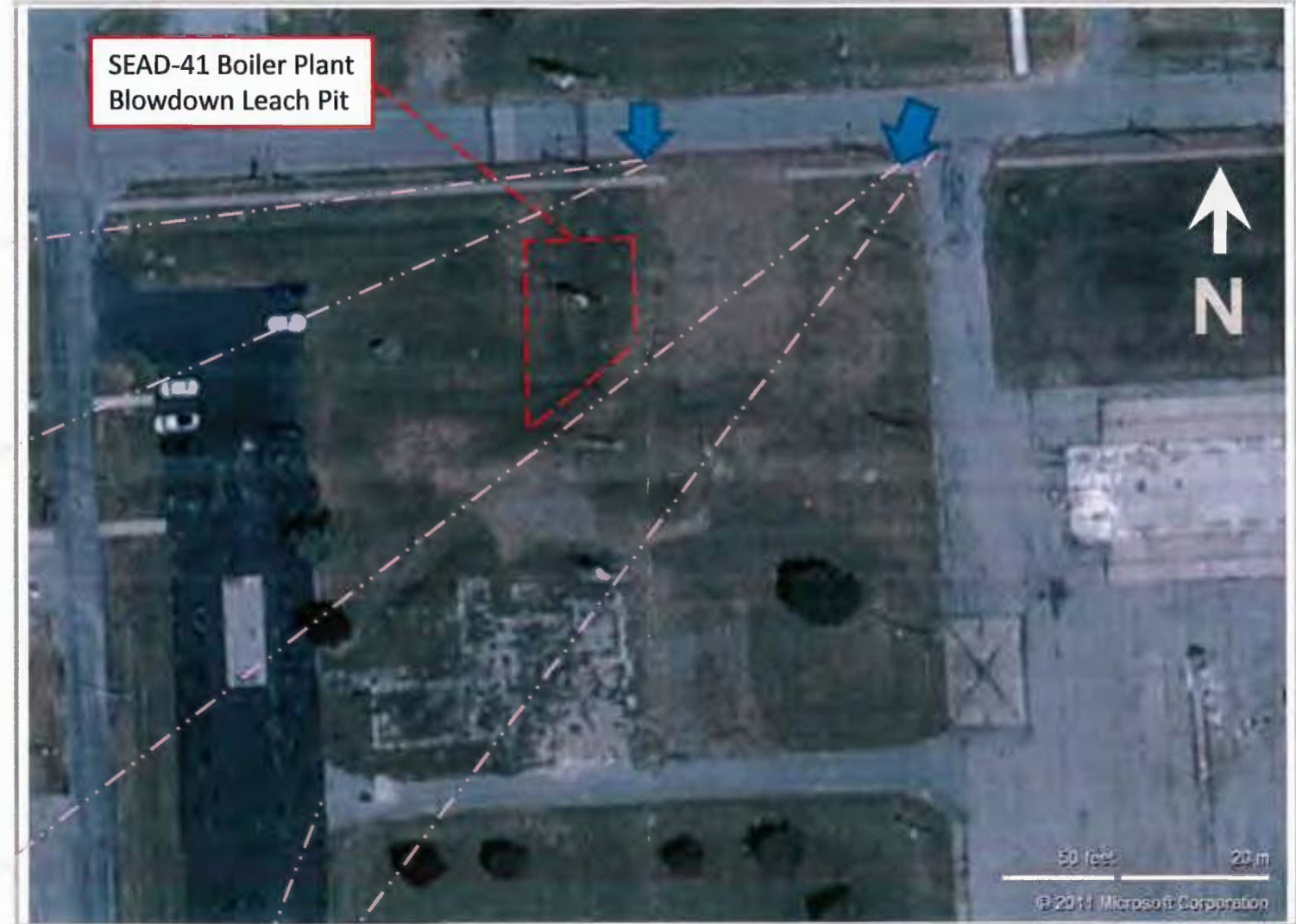
2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6619.JPG
 Description: SEAD-41



SEAD-41 is located within the Institutional /Training Area Parcel.



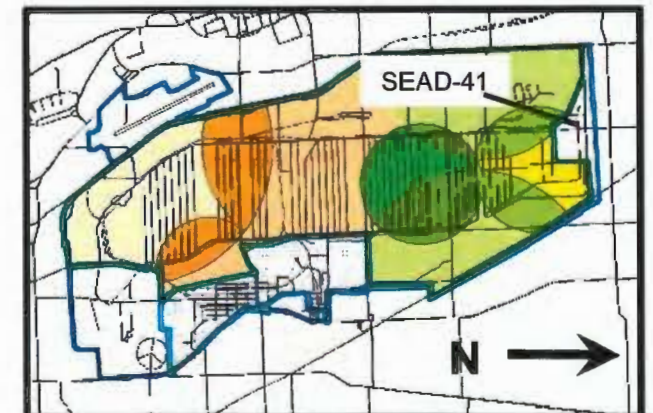
Bing.com (Microsoft) Aerial of SEAD-41; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2010.

2015 Site Visit Photo 2



Status as of: 6/1/15 Photo ID: IMG_6616.JPG
 Description: SEAD-41

SEDA Overall Map (no scale)



SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD - 4	Date of inspection: June 1, 2015												
Location and Region: <i>Millside</i>	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: <i>58°F Light rain</i>												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photo by BBO.</i>													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <i>Millside contact for to confirm phone call</i> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Name</td> <td style="width: 30%;">Title</td> <td style="width: 40%;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date									
Name	Title	Date											
2. O&M staff _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Name</td> <td style="width: 30%;">Title</td> <td style="width: 40%;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date									
Name	Title	Date											
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Name</td> <td style="width: 30%;">Title</td> <td style="width: 20%;">Date</td> <td style="width: 20%;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ Agency _____ Contact _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Name</td> <td style="width: 30%;">Title</td> <td style="width: 20%;">Date</td> <td style="width: 20%;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date	Phone no.	Name	Title	Date	Phone no.				
Name	Title	Date	Phone no.										
Name	Title	Date	Phone no.										
4. Other interviews (optional) <input type="checkbox"/> Report attached.													

ATTACHMENT 2
Site Inspection Checklist

APPENDIX W
SEAD-41 - BUILDING 718 BOILER BLOWDOWN LEACHING PIT

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-41 is the blowdown leaching area suspected to have existed in the drainage ditch located approximately 40 ft. west of Building 718, an abandoned boiler plant located in the northern end of the Depot, on property currently occupied by the Hillside Children's Center.

1.2 Initial Response

Work performed at SEAD-41 included a LSP conducted in 1993/1994, followed by a TCRA conducted in 2000. During the 1993/1994 sampling program, petroleum hydrocarbons were detected in all of the soil samples collected from SEAD-41. The surface samples collected nearest the point where the blowdown liquids were suspected of being discharged contained the greatest concentration of petroleum hydrocarbons. The sampling program delineated the extent of petroleum-impacted soil to an area approximately 40 ft. long by 3 ft. wide. The TCRA was conducted to remove the petroleum-contaminated soils identified during the LSP, and approximately 5 cy of petroleum contaminated soils were removed.

1.3 Basis for Taking Action

An action was required at SEAD-41 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

Prior to connecting the boiler blowdown points to the sewer in 1979-1980, blowdown was reportedly released three times a day, and the discharged liquid was allowed to flow onto the ground at the blowdown point where it either infiltrated into the ground or flowed into the nearby drainage ditch. Each boiler is reported to have discharged between 400 and 800 gallons of blowdown liquids per day. The boiler blowdown is suspected to have contained water, tannins, caustic soda (sodium hydroxide), and sodium phosphate (Parsons, 2007a).

SVOCs were found in the soil samples collected at SEAD-41, with concentrations of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, chrysene, and dibenzo(a,h)anthracene exceeding their NYSDEC TAGM #4046 cleanup objective level values. Table 6-8 in the ROD (Parsons, 2007a) summarizes the TCRA soil analytical results. The excavated soil was transported to another location within the Depot for use in a LTTD study at the SEDA.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-41 the human health cancer risks are within or below the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0. Maximum concentrations of analytes found at the AOC were used as the EPCs for the area evaluated under the risk approach.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

A ROD titled "Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" signed on July 3, 2007 required the establishment of ICs at the site (SEAD-41). The elements that composed the remedy included:

- Notification of future land owners of contaminated groundwater and requirement to meet all applicable laws and regulations should the owner decide to access and use the groundwater.

The selected remedy was based on the results of historic groundwater sampling data that was collected during the investigation of SEAD-41, which indicated that total petroleum hydrocarbons (TPH, 690 ppb) were present in the upper aquifer of the groundwater. The LUC selected for SEAD-41 was already in place at the time the ROD was issued, and had been documented in the deed used to transfer the North End Barracks areas of the Depot. Part of the purpose of the ROD was to formalize and document the Army's intention to impose the existing LUC on the North End Barracks Area – SEAD-41 under CERCLA.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") dated December 2006 implemented land use controls for the SEAD PID/Warehousing Area. Addendum 2 expanded the LUC RD from the PID/Warehouse Area to include sites that are in the area formerly known as the North Barracks Area, and applied the SEAD LUC RD enforcement, modification, and termination provisions to SEAD-41.

SEAD-41 and the North Barracks Area was transferred to the SCIDA prior to the issuance of the ROD signed on July 3, 2007 and an Environmental Easement was not required. A deed was used to document the transfer of land to SCIDA, and the existing deed provisions ensure the property is used in a manner consistent with the above LUC Objectives.

In the deed, the Army notified SCIDA that groundwater contamination had been identified in the vicinity of the former Building 718. The reported level of TPH (690 ppb) exceeds the New York State Public Water System standards for unspecified organic contamination of 100 ppb. Under New York regulations, future owners or occupants of the area would need to confirm the quality and acceptability of the groundwater as a source of potable water before it could be used for such a purpose.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

APPENDIX X
SEAD-64B - GARBAGE DISPOSAL AREA

LIST OF ATTACHMENTS

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Attachment 2 Site Inspection Checklist

APPENDIX W: SEAD-41 Building 718 Boiler Blowdown Leaching Pit

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1.3.1	Contaminants of Concern	W-1
1.3.2	Human Health and Ecological Risk Assessment.....	W-1
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5.3	Question C: Has any other information come to light that could call into question the protectiveness of the remedy?	X-4
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5.5	Protectiveness Statement.....	X-4

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Garbage Disposal Area at SEAD-64B is located immediately north of Ovid Road near Building 2086 in the southern end of SEDA. SEAD-64B was used for garbage disposal from 1974 to 1979, which corresponds to a period when the Depot's solid waste incinerator was not in operation. It appears that one or two truckloads of household waste were disposed at SEAD-64B based on the size of the fill area and amount of debris observed.

1.2 Initial Response

SEAD-64B is a historic landfill that is subject to regulation under the State of New York's Solid Waste Management Regulations (see 6 NYCRR Part 360). As a historic solid waste landfill, the site was subject to final closure in accordance with requirements of 6 NYCRR Part 360 in effect as of August 28, 1977. Once solid waste disposal ceased at SEAD-64B in the late 1970s, the Army applied a permanent soil cover over the disposed waste and allowed the area to revegetate naturally. The field investigation at SEAD-64B included an ESI performed in 1994. The former landfill continues to be covered and has an established vegetative covering. The Army requested formal closure of this historic landfill from the NYSDEC in letters dated May 24, 2005 and August 14, 2006. In a letter dated September 11, 2006, the NYSDEC agreed that SEAD-64B and SEAD-64D are closed under the New York Solid Waste Regulations.

No action subsequent to the installation of the landfill cap has been performed at SEAD-64B.

1.3 Basis for Taking Action

An action was required at SEAD-64B to ensure land use remains protective of site users. The training area classification for SEAD-64B suggests that the area will be used in a manner consistent with light industrial areas.

1.3.1 Contaminants of Concern

Complete analytical results from the ESI investigation are presented in "Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B," Final (Parsons, 2002a).

No COCs were identified for SEAD-64B.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64B there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0. The cancer and non-cancer risks for all future potential receptors under the Conservation/Recreation land use scenario and exposure routes for SEAD-64B were evaluated during the risk assessment. A summary of the risk assessment results is presented in Table 7-11 of the ROD (Parsons, 2007a), and a full discussion is included in the "Decision Document – Mini Risk Assessment" (Parsons, 2002a).

An ecological risk assessments were completed and no COCs were identified.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

A ROD titled "Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" signed on July 3, 2007 requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits unauthorized excavation and maintenance of the existing soil cover

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") dated December 2006 implements LUCs for the SEAD "PID/Warehouse Area". Addendum 2 expanded the LUC RD from the PID area to include sites that are in the area formerly known as the Conservation Area and the Airfield parcels. SEAD-64B is located on the property formerly known as the Conservation Area Parcel.

An Environmental Easement for SEAD-64B was recorded prior to the transfer of SEAD-64B from the federal government and was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-64B as transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The Conversation Area parcel property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-64B recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-64B.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-64B. On-going remedial monitoring activities include periodic evaluations of the effectiveness of the remedy. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for SEAD-64B is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-64B was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- no prohibited facilities were present or had been constructed at the site and no unauthorized excavations or digging were evident.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-64B is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-64B.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-64B have been completed and documented. No continuing active remediation is required for SEAD-64B. Based on a review of the LUC RD Addendum 2, Environmental Easements, transfer deeds, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at SEAD-64B currently is protective of human health and the environment because:

- a LUC that prevents unauthorized excavation, and preserves the maintenance of the existing soil cover.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist


ATTACHMENT 1

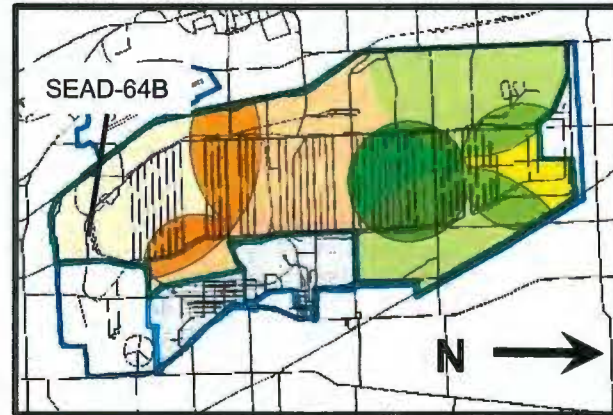
Photo Log

Attachment X-1
 5 Year Review - Site Visit Photo Log
 SEAD-64B Garbage Disposal Area

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-64B, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

 Approximate Site Boundary
 Photo Viewing Direction



SEDA Overall Map
 (no scale)

SEAD-64B is located within the
 Training Area Parcel.

2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IM_6577.JPG
 Photo ID: IM_6581.JPG Description: SEAD-64B

2015 Site Visit Photo 2



Status as of: 6/1/15 Photo ID: IM_6576.JPG
 Description: SEAD-64B



Bing.com (Microsoft) Birds Eye Aerial of SEAD-64B; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.

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ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																															
Site name: SEAD <i>-64B</i>	Date of inspection: June 1, 2015																														
Location and Region: <i>Ammo area</i>	EPA ID: NY0213820830																														
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: <i>55°F, Light rain</i>																														
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																														
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>Vegetative cover intact - degrading vegetation. Cover not maintained. No visual evidence of recent excavation.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>Vegetative cover intact - degrading vegetation. Cover not maintained. No visual evidence of recent excavation.</i>																												
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2. O&M staff _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Name</td> <td style="width: 20%;">Title</td> <td style="width: 30%;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date																											
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APPENDIX Y
SEAD-64D - GARBAGE DISPOSAL AREA



APPENDIX Y: SEAD-64D

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-64D covers an area located between West Patrol Road and the railroad tracks located to the west along North-South Baseline Road in the southwestern portion of SEDA. Portions of SEAD-64D were used for garbage disposal from 1974 to 1979 when the SEDA solid waste incinerator was not in operation. The type of waste disposed at SEAD-64D was primarily household waste, although according to information contained in the "SWMU Classification Report, Final" (Parsons, 1994a) and conditions observed during test pitting, construction debris was also disposed of at SEAD-64D.

1.2 Initial Response

SEAD-64D is a historic solid waste management unit (historic landfill) that is subject to regulation under the State of New York's Solid Waste Management Regulations (see 6 NYCRR Part 360). The Army ceased use of this unit in the late 1970s. As a historic solid waste landfill, the site was subject to final closure in accordance with requirements of 6 NYCRR Part 360 in effect as of August 28, 1977.

Once solid waste disposal ceased at SEAD-64D in the late 1970s, the Army applied a permanent soil cover over the disposed waste and allowed the area to revegetate naturally. The former landfill continues to be covered and has an established vegetative covering. The Army requested formal closure of the historic landfill from the NYSDEC in letters dated May 24, 2005 and August 14, 2006. In a letter dated September 11, 2006, the NYSDEC agreed that SEAD-64B and SEAD-64D are closed under the New York Solid Waste Regulations.

1.3 Basis for Taking Action

An action was required at SEAD-64D to ensure land use remains protective of site users. The training area classification for SEAD-64D suggests that the area will be used in a manner consistent with light industrial areas.

1.3.1 Contaminants of Concern

The field investigation at SEAD-64D included an ESI that was performed in 1994. During the ESI, soil, and groundwater samples were collected at SEAD-64D and submitted for chemical analysis. All samples were analyzed for TCL VOCs, SVOCs, pesticides/PCBs, TAL metals, and cyanide according to the NYSDEC CLP SOW. Complete analytical results from the ESI are presented in "Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B," Final (Parsons, 2002a). Summaries of the soil and groundwater results were presented in Table 6-30 and 6-31 of the ROD (Parsons, 2007a), respectively.

No COCs were identified for SEAD-64D.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-64D there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for the construction worker is less than 1.0. Table 7-13 in the ROD (Parsons, 2007a) summarizes the calculated

cancer and non-cancer risks for all future potential receptors under the Conservation/Recreation land use scenario and exposure routes considered in the risk assessment conducted at SEAD-64D in 2001 and 2002. The HI is equal to or greater than 1 for the park worker (HI=3) and the recreational child visitor (HI=1). The elevated HI for both receptors was due solely to ingestion of groundwater, and the elevated concentrations of metals in the groundwater samples associated with observed elevated turbidity levels. If the groundwater pathway was eliminated, the non-cancer risk would be reduced to within acceptable levels.

An ecological risk assessments was completed and no COCs were identified.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

A ROD titled "Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" signed on July 3, 2007 requires the establishment of ICs. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures ;
- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits unauthorized excavation; and
- Maintain the integrity of any current or future remedial or monitoring system and maintain the existing soil cover

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") dated December 2006 implements LUCs for the SEAD "PID/Warehouse Area". Addendum 2 expanded the LUC RD from the PID area to include sites that are in the area formerly known as the Conservation Area and the Airfield parcels, and applies the SEAD LUC RD enforcement, modification, and termination provisions to SEAD-64D. SEAD 64D is located on the property formerly known as the Conservation Area Parcel.

An Environmental Easement for SEAD-64D was recorded prior to the transfer of SEAD-64D from the federal government and was recorded in the Seneca County Clerk's office on June 10, 2011.

SEAD-64D as transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The Conversation Area parcel property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for SEAD-64B have been completed and documented. No continuing active remediation is required for SEAD-64B. Based on a review of the LUC RD Addendum 2 Environmental Easements, transfer deeds, and the FYR site visit conducted between June 1 and June 3, 2015, the remedy is functioning as intended by the decision documents.

The remedy implemented at SEAD-64D currently is protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater within the identified AOCs has been implemented and currently is being maintained, monitored and reported upon periodically;
- a second LUC that prevents unauthorized excavation, and preserves the maintenance of the existing soil cover.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-64D

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy for SEAD-64D.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-64D. On-going remedial monitoring activities include periodic evaluations of the effectiveness of the remedy. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-64D recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data were reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-64D was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- no prohibited facilities were present or had been constructed at the site and no access to, or use of, groundwater was evident.
- no unauthorized excavations or evidence of digging were observed.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-64D is uninhabited and unoccupied, no interviews were conducted during the Five-Year Review process for SEAD-64D.

5.5 Protectiveness Statement

The remedy implemented for SEAD-64D is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

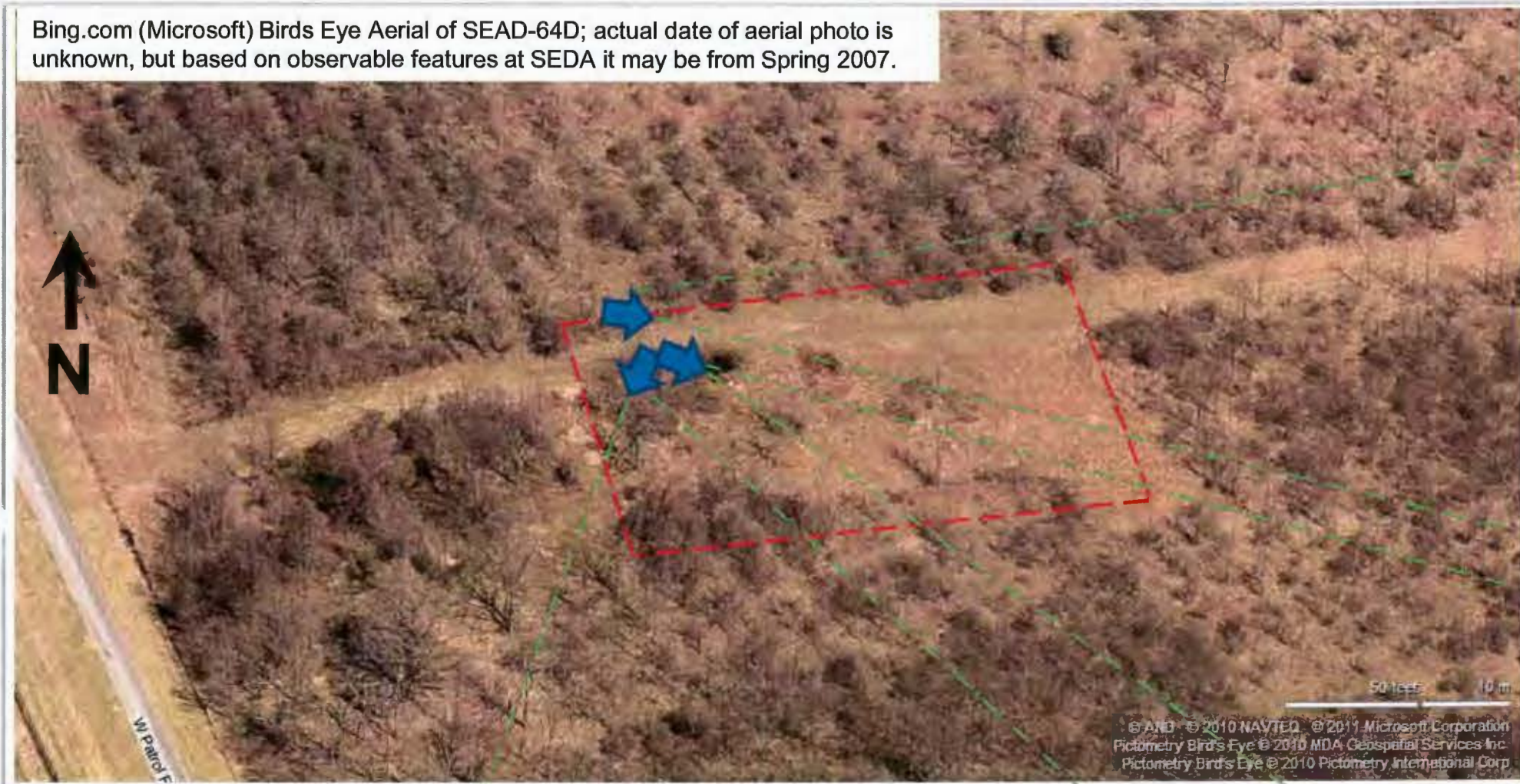


Attachment Y-1
5 Year Review - Site Visit Photo Log
SEAD-64D Garbage Disposal Area

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-64D, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

Bing.com (Microsoft) Birds Eye Aerial of SEAD-64D; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.



SEAD-64D is located within the Training Area Parcel.

2015 Site Visit Photo 2



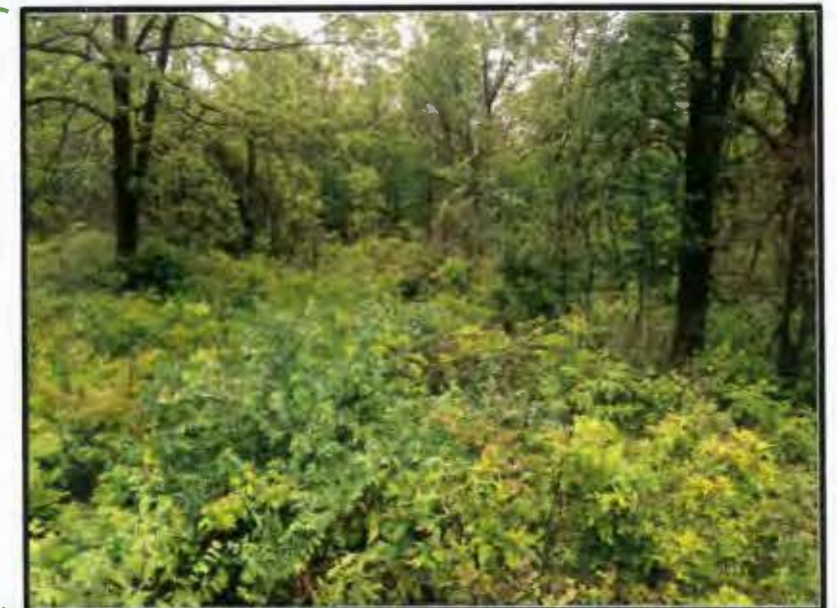
Status as of 6/1/15 Photo ID: IMG_6581.JPG
 Description: SEAD-64D

2015 Site Visit Photo 1



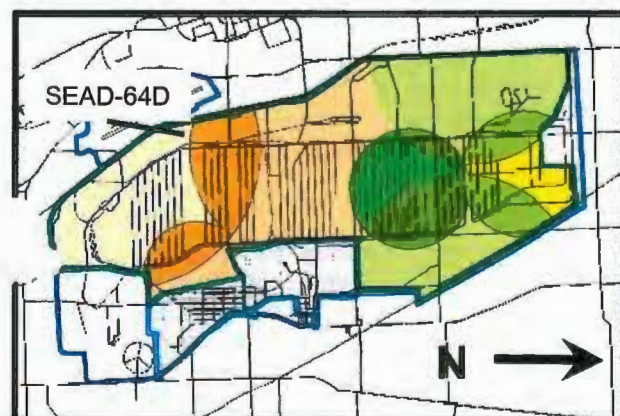
Status as of: 6/1/15 Photo ID: IMG_6584.JPG
 Description: SEAD-64D



2015 Site Visit Photo 3



Status as of: 6/1/15 Photo ID: IMG_6583.JPG
 Description: SEAD-64D

SEDA Overall Map (no scale)



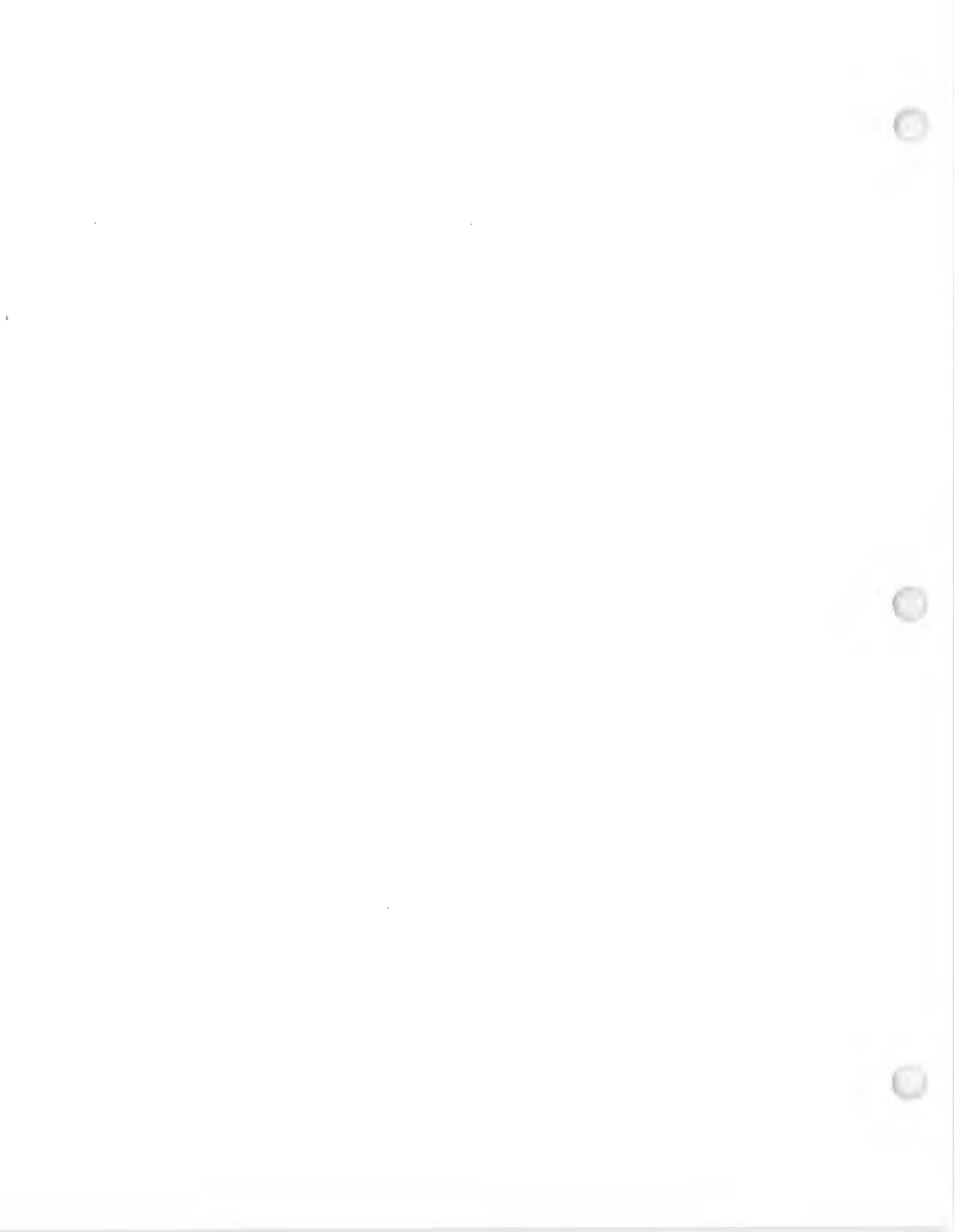
-  Approximate Site Boundary
-  Photo Viewing Direction

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																																	
Site name: SEAD -640	Date of inspection: June 6 2015																																
Location and Region: Ammo area	EPA ID: NY0213820830																																
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 55° light rain																																
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																																
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Other</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other																					
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<input type="checkbox"/> Surface water collection and treatment																																	
<input checked="" type="checkbox"/> Other																																	
<i>Table 1 indicates wells but no evidence of any wells.</i>																																	
<i>No visual evidence of recent activity or groundwater use. (excavation)</i>																																	
<i>Vegetative cover not maintained.</i>																																	
Attachments: <input type="checkbox"/> Inspection team roster attached	<input type="checkbox"/> Site map attached																																
II. INTERVIEWS (Check all that apply)																																	
1. O&M site manager _____ <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> </tr> <tr> <td colspan="3">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____</td> </tr> <tr> <td colspan="3">Problems, suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____																									
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Problems, suggestions; <input type="checkbox"/> Report attached _____																																	
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Problems; suggestions; <input type="checkbox"/> Report attached _____																																	
4. Other interviews (optional) <input type="checkbox"/> Report attached.																																	

APPENDIX Z
ASH LANDFILL OPERABLE UNIT (SEADS 3, 6, 8, 14, AND 15)



Appendix Z – Ash Landfill Operable Unit (SEADs 3, 6, 8, 14, and 15)

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

an appendix of the “Draft Remedial Design Work Plan for the Ash Landfill Operable Unit” (Parsons, 2006a, b).

Since a wall material other than iron was selected, the Army conducted a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews were performed until the first FYR. The typical FYR schedule followed thereafter.

1.3 Basis for Taking Action

1.3.1 Contaminants of Concern

The primary COCs at the Ash Landfill site are VOCs, including chlorinated and aromatic compounds, SVOCs (mainly PAHs), and, to a lesser degree, metals. The COCs are believed to have been released to the environment during former activities conducted at the Ash Landfill OU. The source of the VOCs was most likely the three alleged solvent dump areas located at the “Bend in the Road” area northwest of the Ash Landfill site. The source of the VOCs that were allegedly disposed in this area is unknown.

The primary media investigated at the Ash Landfill site included soil (from soil borings and test pits), groundwater, and surface water and sediment (from Kendaia Creek and on-site wetlands and drainage swales). Based on these investigations, soil and groundwater were found to be the media that were the most significantly impacted by a release of chemicals on-site.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at Ash Landfill there are no human health cancer risks above the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors are less than 1.0 under the current and expected receptor scenarios.

The carcinogenic risks for potential future residents using groundwater for drinking at SEDA is 1.4×10^{-3} , and the HI is 3.2. Although risks exist for potential future residents using groundwater for drinking at SEDA, the LRA does not intend to use this land for residential purposes. The future intended use for the site has been determined by the LRA as a conservation/recreation area.

An ecological risk assessment performed based on the site soils, surface water, and sediment suggested a slightly elevated ecological risk due to the presence of heavy metals. However, the criteria for these media are not considered ARARs since none of the criteria are promulgated standards. NYSDEC and federal AWQSS, which are promulgated standards for Kendaia Creek, are considered ARARs. No exceedances of the AWQSS were observed for downstream samples from Kendaia Creek, which is classified by NYSDEC as a Class C stream.

Metal exceedances were identified for ecological guidelines and reported literature values for on-site soil, sediment, and surface water. The actual ecological risk caused by these exceedances is not readily observable. Phase I and Phase II field evaluations for the RI included fish trapping and counting, benthic macroinvertebrate sampling and counting, and small mammal species sampling and counting. The results of the Phase I data collection did not indicate stressed biological or plant communities.

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Ash Landfill site is located along the western boundary of SEDA. The site is bounded on the north by Cemetery Road, on the east by a SEDA railroad line, on the south by open grassland and brush, and on the west by the Depot's boundary. The Ash Landfill site was initially estimated to encompass an area of approximately 130 acres. This larger area was investigated to ensure that no previously unknown waste disposal areas were overlooked. Following the remedial investigation, the area of the Ash Landfill site was refocused to an area of approximately 23 acres. This area is comprised of five AOCs including: Incinerator Cooling Water Pond (SEAD-3), the Ash Landfill (SEAD-6), the Non-Combustible Fill Landfill (NCFL) (SEAD-8), the Refuse Burning Pits (SEAD-14), and the Abandoned Solid Waste Incinerator Building (SEAD-15). The Debris Piles are located near SEAD-14. The Ash Landfill (SEAD-6) also includes a groundwater plume that emanates from the northern western side of the landfill area (Parsons, 2005c).

From 1941 to 1974, household trash and depot refuse was burned in a series of Refuse Burning Pits near the Abandoned Incinerator Building (Building 2207). During approximately this same period (1941 until the late 1950s or early 1960s) the ash from the Refuse Burning Pits was buried in the Ash Landfill. The Incinerator Building was built in 1974. Between 1974 and 1979, materials intended for disposal were transported to the incinerator. The source for the refuse was domestic waste from Depot activities and family housing. Large items that could not be burned were disposed of at the NCFL. The NCFL is located southeast of the Incinerator Building (immediately south of the SEDA railroad line). The NCFL was used as a disposal site for non-combustible materials, including construction debris, from 1969 until 1977. Ash and other residues from the incinerator were temporarily disposed of in the Incinerator Cooling Water Pond immediately north of the Incinerator Building. Approximately every 18 months, when the pond filled, the fly ash and residues were removed, transported, and buried in the adjacent Ash Landfill, east of the Cooling Pond. A fire destroyed the incinerator in May 1979, and the landfill was subsequently closed. A vegetative cover, comprised of native soils and grasses, was observed over the Ash Landfill during the 1994 RI (Parsons ES, 1994c).

1.2 Initial Response

Prior to the listing of SEDA on the NPL, two removal actions were performed at the Ash Landfill. The first action was the removal of a former 1000-gallon underground storage tank (UST) that was used to store heating oil and was located on the east side of the abandoned Incinerator Building. The second, a Non-Time Critical Removal Action (NTCRA), was conducted by the Army in 1994/1995 and consisted of the excavation and thermal treatment of soil impacted with VOCs (Parsons, 2005c).

As part of a demonstration study, a 650-foot long permeable reactive iron wall (zero valent iron [ZVI]) was installed near the western property line of the Ash Landfill AOC (ETI, 2001). A pilot study was performed by Parsons and the Army from July 2005 to February 2006 to show that the use of mulch as the selected wall medium (i.e. biowalls) would effectively control migration of groundwater contaminants at the site. The components and findings of the mulch biowall pilot study, which serve as the basis of design for the biowalls is presented in the "Evaluation Report for the Mulch Biowalls at the Ash Landfill" submitted as

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Record of Decision for the Ash Landfill Operable Unit" (Parsons, 2004) requires the establishment of ICs. The elements that composed the remedy included:

- Excavation and off-site disposal of debris piles and establishment and maintenance of a vegetative soil cover for the Ash Landfill and the NCFL for source control;
- Installation of three in-situ permeable reactive barrier walls, and maintenance of the proposed walls and the existing wall for migration control of the groundwater plume;
- A Contingency Plan would be developed to include one of the following options;
 - provision of an alternative water supply for potential downgradient receptors (farmhouse) or
 - air sparging of the plume in the event that groundwater conditions downgradient of the recommended remedial action described above exceed trigger values.
- LUCs to attain the RAOs; and,
- Completion of a review of the selected remedy every five-years (at minimum), in accordance with Section 121(c) of the CERCLA. If a wall material other than iron is selected, the Army would conduct a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews will be performed until the first FYR. The typical FYR schedule will be followed thereafter.

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") dated December 2006 implements land use controls for the SEAD PID/Warehouse Area. Addendum 3 (USACE, 2008b) expanded the LUC RD from the PID/Warehousing area to include sites that are in the area known as the Ash Landfill (SEADs-3, 6, 8, 14, and 15). The Ash Landfill is located on the property formerly known as the Conservation Area Parcel.

The RA was completed in October and November 2006 in accordance with the ROD for the Ash Landfill OU (Parsons, 2004c), the Remedial Design Work Plan (Parsons, 2006b), and the RDR (Parsons, 2006c). The RA involved the following:

- Installation of three dual biowall systems, A1/A2, B1/B2, and C1/C2, to address VOCs in groundwater that exceed NYSDEC's Class GA groundwater standards;
- Construction and establishment of a 12-inch vegetative cover over the Ash Landfill and the NCFL to prevent ecological receptors from coming into direct contact with the underlying soils that are contaminated with metals and PAHs;
- Excavation and disposal of Debris Piles A, B, and C; and
- Re-grading of the Incinerator Cooling Water Pond to promote positive drainage.

The LUC performance objectives for SEADs 3/6/8/14/15 are to:

- Prevent access to or use of the groundwater until cleanup levels are met;
- Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells and impermeable reactive barriers;
- Prohibit excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume; and
- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact (Parsons, 2005c).

An Environmental Easement for the Ash Landfill was recorded in the Seneca County Clerk's office on June 10, 2011.

The Ash Landfill as part of the "PID Retained Parcels" was transferred to the SCIDA with a Quitclaim Deed executed on May 27, 2011. The Ash Landfill was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehousing Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

As part of the RA at the Ash Landfill OU, post-closure operations include LTM. Groundwater monitoring is required as part of the remedial design, which was formulated to comply with the ROD. The groundwater LUCs are to continue until such time that the concentration of hazardous substances in the groundwater have been reduced to levels that allow for unlimited exposure and unrestricted use. Intrusive restrictions for those areas requiring a vegetative soil cover will continue indefinitely. These land use controls will be implemented over the area of the groundwater plume, NCFL, and the Ash Landfill, as shown on Figure 1-1 of the ROD (Parsons, 2004c).

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Biowall process monitoring wells (MWT-26, MWT-27, MWT-28, MWT-29, and MWT-23) will be monitored on a semi-annual basis. Each year a recharge evaluation will be completed. As stated in the RDR (Parsons, 2006b), if a recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in Figure 12 (Parsons, 2011e). MWT-28 and MWT-23 will continue to be monitored as part of the performance monitoring wells to supplement

data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-28 and MWT-23, and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion.

- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the three years of LTM events at the Ash Landfill OU, the concentrations of COCs, specifically Trichloroethylene (TCE), in the wells downgradient of the source area (near PT-18A) have decreased.
- The off-site performance monitoring well (MW-56) will continue to be monitored on a semiannual basis.
- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors.
- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the fourth year of LTM, based on the process outlined in Figure 7-3 of the RDR (Parsons, 2006a).

3.2 Progress on Recommendations

In general, the SEAD-3/6/8/14/15 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

There have been eighteen rounds of groundwater monitoring conducted at the Ash Landfill which have been documented in eight LTM reports.

These Annual Reports review the results of the LTM program as part of the ongoing evaluation of the remedy and provide conclusions and recommendations about the effectiveness of the remedial action, including the groundwater remedy and the vegetative landfill covers.

Based on the results of the long-term monitoring at the Ash Landfill since the installation of the full-scale biowalls, the Army has made the following conclusions:

- Trichloroethylene (TCE) within the biowalls remains below or close to detection limits;
- TCE, cis-Dichloroethylene (cis-DCE), and Vinyl Chloride (VC) are present in the groundwater at the site at concentrations above respective Class GA groundwater standards;
- Chemical results indicate that the concentrations of chlorinated ethenes are decreasing as they pass through the biowall systems;
- Geochemical parameters indicate that groundwater redox conditions are conducive for reductive dechlorination to occur within the biowalls;
- Concentrations of chlorinated ethenes at off-site well MW-56 are below Class GA groundwater standards;
- Continued monitoring is required to determine trends in concentrations of COCs at MWT-22, PT-22, PT-17, and MWT-7;
- Recharge of the biowalls is not necessary at this time;
- The remedial action continues to meet the requirements of the USEPA's "operating properly and successfully" designation; and
- The Army will continue to monitor the performance of the biowall system, including semi-annual periodic evaluations of the potential need to recharge the biowalls.

4.3 Site Inspection

The five SEADs (SEADs 3, 6, 8, 14, and 15) comprise the Ash Landfill OU were inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- No prohibited facilities were present or had been constructed at the site and no access to, or use of, groundwater was evident.
- The integrity of the current remedial and monitoring system, including permeable reactive barriers and monitoring wells, was found to be intact; and
- Landfill covers/containment features were in place and operating as designed and no damage to the cover/containment was observed.

The following observations were made during the site inspection:

- Recent inspection of the vegetative covers at the Ash Landfill and the NCFL continue to indicate that the covers are preventing ecological receptors from contacting the underlying soil; therefore, there is no risk to the environment.

The site inspection confirmed that no prohibited excavation has occurred, no prohibited facilities have been constructed, and no access to or use of groundwater was evident. Maintenance of the vegetative soil layer over the ash fill areas and the NCFL appears to be adequate to limit ecological contact. The integrity of the impermeable reactive barriers appears to be adequate.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since the Ash Landfill is uninhabited and unoccupied, no interviews were conducted during the FYR process for the Ash Landfill

4.5 Institutional Controls Verification

The LUCS, environmental easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed RODs for AOCs within the Ash Landfill OU have been completed and documented. Long Term Remedy Maintenance and Monitoring activities are being conducted as required in the Ash Landfill OU. Based on a review of the RDR (Parsons, 2006c), LTM Reports, LUCs RD, environmental easement, transfer deed, and the FYR site visit conducted between June 1 and 3, 2015, all remedies are functioning as intended by the decisions documents.

The remedy implemented at Ash Landfill AOCs (SEADs 3, 6, 8, 14, and 15) currently is protecting human health and the environment because:

- The remedy action required by the ROD has been conducted and completed, and the results of the implemented remedial action has been reported to, and accepted by the USEPA and the NYSDEC.
- the permeable reactive barrier walls installed to intercept and treat the contaminated groundwater plume identified within the OU have been shown to be operating properly and successfully and are promoting the reduction of the primary plume contaminant's (trichloroethene) concentrations in groundwater without allowing breakdown-product contaminants (vinyl chloride, dichloroethene, etc.) to spread beyond the bounds of the OU at levels that threaten groundwater supplies;
- the integrity of the existing monitoring wells and permeable reactive barrier walls is being monitored and maintained;
- soil covers installed over the Ash Landfill and the NCFL have re-vegetated and have been observed to be in good repair with only minor indications of small animal burrow at limited locations;
- the former abandoned incinerator (Building 2207, SEAD-15) has been demolished and the associated demolition debris has been removed from the OU and disposed at an off-site landfill;
- new construction of temporary or permanent inhabitable buildings or structures has not occurred.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for Ash Landfill.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid (**Attachment 3**). There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for the PID/Warehouse Area of the former SEDA.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the RODs for SEAD-3/6/8/14/15 and the PID/Warehousing Areas. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR.

Based on this FYR and the first nine years of long-term monitoring at the Ash Landfill OU, the Army recommends continuing the semi-annual frequency of monitoring. The recommendations for LTM during year nine of monitoring are as follows:

- Biowall process monitoring wells (MWT-26, MWT-27, MWT-28, MWT-29, and MWT-23) will be monitored on a semi-annual basis. Each year a recharge evaluation will be completed. As stated in the RDR (Parsons, 2006b), if a recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in Figure 12. MWT-28 and MWT-23 will continue to be monitored as part of the performance monitoring wells to supplement data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-28 and MWT-23, and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion;
- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the eight years of LTM events at the Ash Landfill OU, the concentrations of COCs in the wells downgradient of the source area (near PT-18A) have decreased;
- The off-site performance monitoring well (MW-56) will continue to be monitored on a semi-annual basis;

- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors; and
- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the tenth year of LTM.

5.5 Protectiveness Statement

The remedy implemented for Ash Landfill and PID/Warehousing Areas is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

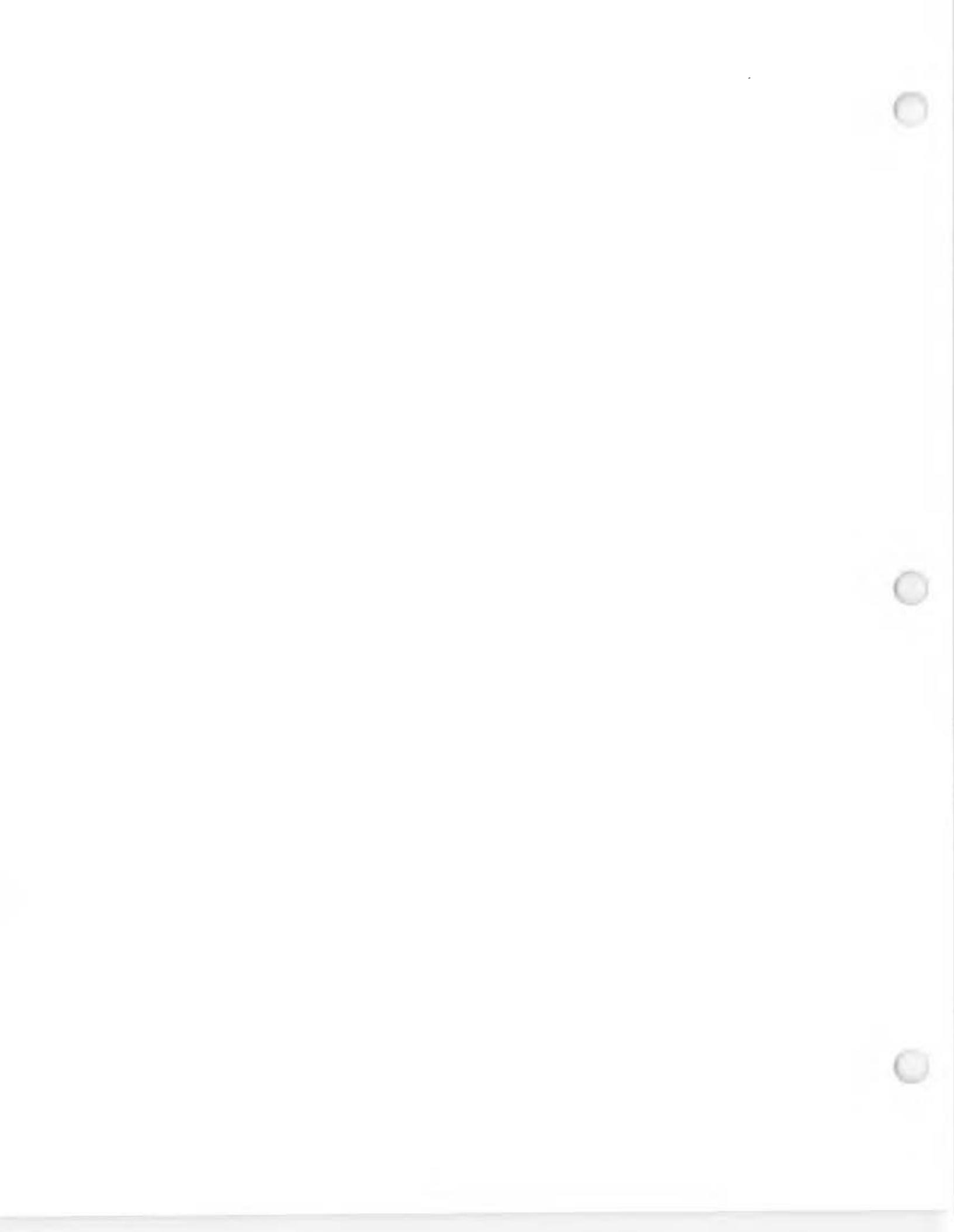
LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log



Attachment Z-1
Five Year Review - Site Visit Photo Log
Ash Landfill Operable Unit including SEADs 3, 6, 8, 14, & 15

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 7478662

Ash Landfill is located within the Development Reserve/Training Area Parcel.

LOCATION: Ash Landfill, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers



2015 Site Visit Photo 3



Status as of: 6/2/15 Photo ID: IMG_6630.JPG
 Description: Surface of NCLF.

2015 Site Visit Photo 4



Status as of: 6/2/15 Photo ID: IMG_6629.JPG
 Description: Surface of NCLF.

2015 Site Visit Photo 1

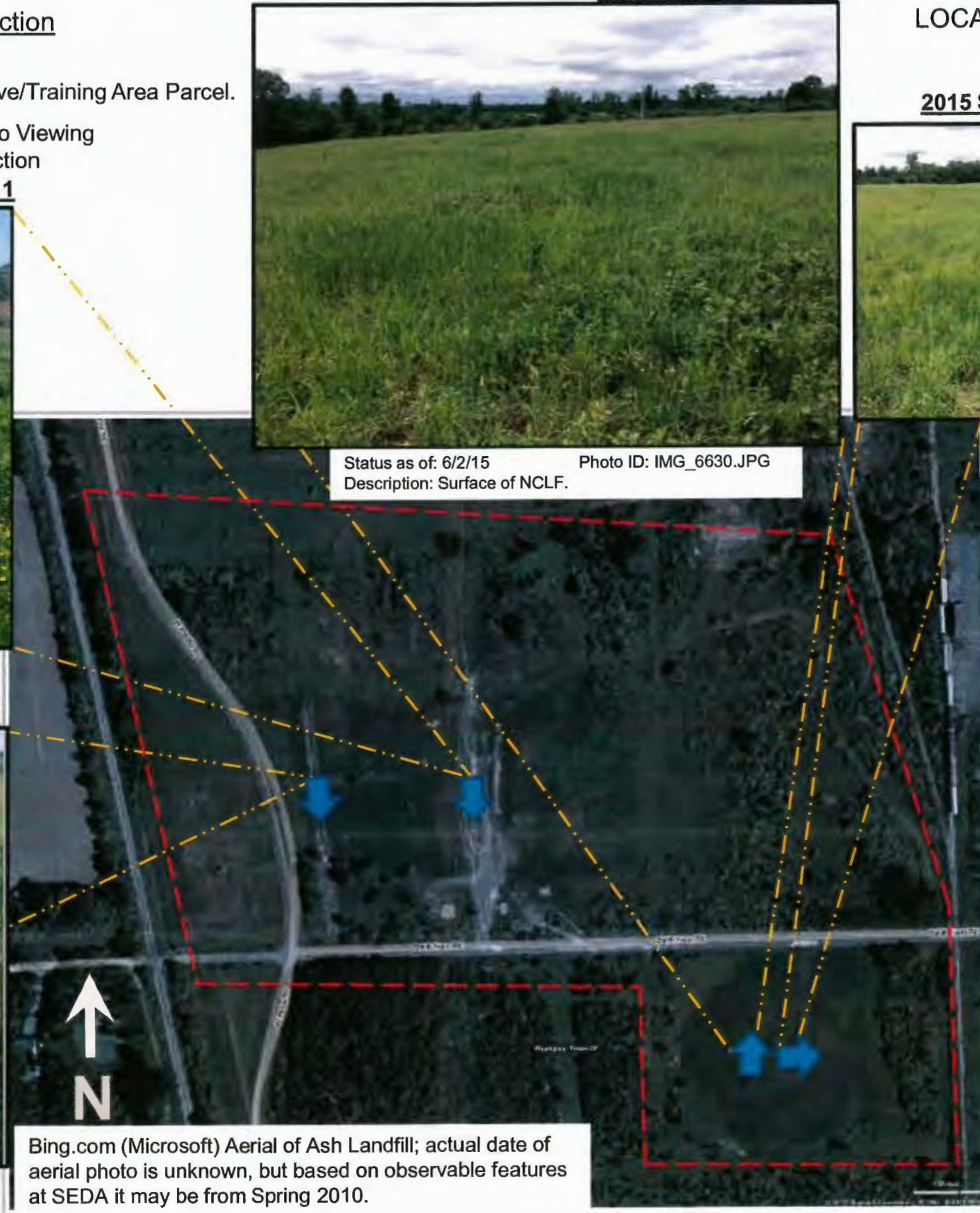


Status as of: 6/2/15 Photo ID: P6060041.JPG
 Description: View of a LTM wells.

2015 Site Visit Photo 2



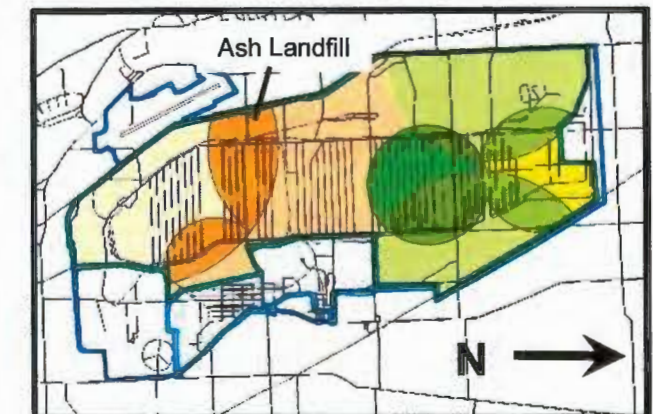
Status as of: 6/2/15 Photo ID: P604004.JPG
 Description: View of Biowall C.



Bing.com (Microsoft) Aerial of Ash Landfill; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2010.

- Ash Landfill Operable Unit consists of:
- SEAD-3 Incinerator Cooling Water Pond
 - SEAD-6 Abandoned Ash Landfill
 - SEAD-8 Non-Combustible Fill Area
 - SEAD-14 Refuse Burning Pits (2 units)
 - SEAD-15 Abandoned Solid Waste Incinerator Building

SEDA Overall Map (no scale)



ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD ³	Date of inspection: June 6, 2015																								
Location and Region: Ash landfill	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F Light rain																								
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input checked="" type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td colspan="2"> <input checked="" type="checkbox"/> Other: No visual evidence of recent excavations, structure present or groundwater use. Vegetative cover is being maintained. </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input checked="" type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other: No visual evidence of recent excavations, structure present or groundwater use. Vegetative cover is being maintained.													
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Groundwater is being monitored semi-annually. MUs secure.</i>																									
II. INTERVIEWS (Check all that apply)																									
1. O&M site manager _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 20%; text-align: center;">Date</td> <td style="width: 20%;"></td> </tr> <tr> <td>Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone</td> <td>Phone no. _____</td> <td></td> <td></td> </tr> <tr> <td colspan="4">Problems, suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Name	Title	Date		Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone	Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____															
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Problems; suggestions; <input type="checkbox"/> Report attached _____																									
4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

Photos by BPO 6/15

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD - 6	Date of inspection: June , 2015												
Location and Region: Ashlandfill	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F, light rain												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input checked="" type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Other: <i>same comments as for SEAD-3. Maintenance and monitoring ongoing.</i></td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input checked="" type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other: <i>same comments as for SEAD-3. Maintenance and monitoring ongoing.</i>	
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BBO 6/2/15.</i>													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													
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4. Other interviews (optional) <input type="checkbox"/> Report attached.													

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
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Location and Region: Ash Landfill	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F, light rain																								
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SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD -14	Date of inspection: June 1, 2015												
Location and Region: Ash Landfill	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 57°F, light rain												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>												
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Location and Region: Ashlandtill	EPA ID: NY0213820830																																
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APPENDIX AA
AIRFIELD PARCEL (SEAD-122B – AIRFIELD SMALL ARMS RANGE AND SEAD-122E PLANE DEICING AREA)



APPENDIX AA: Airfield Parcel (SEAD-122B and SEAD-122E)

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

SEAD-122B – Small Arms Range (SAR) located on the Airfield Parcel along Route 96A was previously used by the Air Force, Navy, and Army as a small arms qualification ground. The Airfield SAR is located in the southwest corner of SEDA adjacent to the SEDA Airfield. The SAR consists of two contiguous bermed small arms ranges: one previously used for small arms training, and the second previously used for machine gun targeting (Parsons, 2007a). The firing line areas were suspected to contain UXO, high lead concentrations, and possibly other high metal concentrations.

SEAD-122E is associated with the deicing of planes at three separate aircraft refueling areas at the former SEDA Airfield. The property was active from 1942 until it was officially closed in 2000, but is currently utilized by the New York State Police for training and special events. All three of the historic deicing/refueling pads that comprise SEAD-122E are located along the western side of the northwest-southeast runway. Two of the deicing/refueling pads are located near either end of the runway, while the third is located at the end of a short taxiway, west of the central portion of the runway.

1.2 Initial Response

The investigative work at SEAD-122B included an EBS in 1998, an initial site investigation in 2002, and a treatability study in 2004. As part of the 2004 treatability study, approximately 500 cubic yards of soil was excavated from locations where high concentrations of total lead were found during the 2002 investigation in the larger of the two SARs. Other metals detected at levels above their respective NYSDEC cleanup objective levels were collocated within the areas where high lead concentrations were found. The excavation area was delineated by elevated lead concentrations greater than 400 ppm and included the western face of the backstop berm and a drainage swale that carried surface water runoff away from the firing range area. The top three inches of soil on the surface of the firing range's floor were also excavated. The final results reported confirm that all excavated locations exhibited lead concentrations at levels less than 400 ppm.

The investigative work at SEAD-122E included an EBS that was performed in 1998 and 1999 (Parsons ES, 1999b).

1.3 Basis for Taking Action

An action was required at SEAD-122B and SEAD-122E to ensure land use remains protective of site users. SEAD-122B and SEAD-122E is part of the PID/Warehouse Area and the planned future use for this tract of land is for industrial, office development, and/or warehouse areas.

1.3.1 Contaminants of Concern

At SEAD-122B, TAL metals analysis indicated lead concentrations well above the TAGM SCO. In addition, antimony, arsenic, copper, silver, sodium, thallium, and zinc were detected at concentrations slightly over the SCOs. One TCLP lead concentration was above the RCRA limit of 5,000 µg/L. The Synthetic Precipitation Leaching Procedure (SPLP) metals results indicated that there were levels of antimony, iron, and thallium above the NYSDEC Class GA groundwater standards. The maximum detected

concentrations of iron and thallium were consistent with SEDA background levels. Groundwater was found to not be impacted by contact with or contaminant migration from the SAR soil (Parsons, 2004e).

For SEAD-122E, the Final EBS Report was issued to USEPA and NYSDEC in May 1999 (Parsons, 1999b). The constituents of concern are SVOCs and principal components of deicing fluids (alcohols/glycols, i.e., ethylene glycol, propylene glycol, total unknown alkanes) in soil and groundwater. No deicing chemicals (e.g., glycols) were detected in any of the six soil samples characterized during this event. None of the compounds detected in the four groundwater samples exceeded groundwater standards.

1.3.2 Human Health and Ecological Risk Assessment

A risk assessment was not performed for SEAD-122B, where the results of the treatability study indicated that the cleanup objectives established for the treatability study had been achieved and all lead concentrations remaining at the AOC were below the USEPA's guidance value for residential soils.

For SEAD-122E, the risk assessment concluded that at SEAD-122E the human health cancer risks were the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} for the industrial worker and the construction worker. The cancer risk values for the day care center worker and day care center child, 2×10^{-4} and 1×10^{-4} , respectively, are above or at the acceptable level. The unacceptable cancer risk is due to dermal contact to soil and ingestion of soil. The contributing COCs are cPAHs in soils. A summary of the risk assessment results is presented in Table 7-15 of the ROD (Parsons, 2007a). The calculated non-cancer HI for all receptors are less than 1.0.

For comparison purposes, risk to residential receptors was evaluated. The non-cancer HIs were less than 1.0. Cancer risk values were above USEPA acceptable limits due to the presence of cPAHs in the soil.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Seventeen SWMU Requiring Land Use Controls (SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)" signed on July 3, 2007 required the establishment of ICs at the two sites (SEADs 122B and 122E) comprising the area known as the Airfield Parcel required the establishment of an IC. The elements that composed the remedy included:

- Establishing, maintaining, monitoring, and reporting on a LUC that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the AOCs; and,

2.2 Remedy Implementation

The LUC RD for SEAD 27, 66, and 64A ("SEAD LUC RD") implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 2 expanded the LUC RD from the PID area to include sites that are in the area formerly known as the Conservation Area and the Airfield parcels, and applied the SEAD LUC RD enforcement provisions to SEADs 122B and 122E.

An Environmental Easement for the PID/Warehouse Area (expanded to include the Airfield parcel) was recorded in the Seneca County Clerk's office on July 9, 2009.

SEAD-122B and SEAD-122E were transferred to the SCIDA with a Quitclaim Deed executed on June 8, 2009. The PID/Warehouse Area property was transferred with the land use restrictions, consistent with the LUC Objectives as defined in the LUC RD. The deed for the PID/Warehouse Area incorporated by reference the land use restrictions set forth in the Environmental Easement.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the Five-Year Review and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous Five-Year Review, the Army made the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-122B and SEAD-122E recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data was reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-122B and SEAD-122E was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- no prohibited facilities were present or had been constructed at the site and no access to, or use of, groundwater was evident.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEADs 122B and 122E are uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-64B.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the completed ROD for the Airfield Parcel have been completed and documented. Based on a review of the LUCs RD Addendum 2, Environmental Easement, transfer deed, and the FYR site visit conducted between June 1 and 3, 2015, the remedy is functioning as intended by the decision documents.

The selected remedy is still protective of human health and the environment because:

- the LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds, and which also has been expanded to include land within the PID Area and Airfield parcel has been implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-122B and SEAD-122E.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of LUCs that would affect the protectiveness of the remedy selected for the Airfield Parcel.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEADs 122B and 122E. On-going remedial monitoring activities include periodic evaluations of the effectiveness of the remedy. There have been no changes in the physical conditions of the site that would

affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

One issue was identified during this FYR. The Army has the following recommendations:

- Continue the implementation of LUCs and the annual frequency of periodic reviews;
- Based on EPA request, the Army has agreed to sample for perfluoroalkyl substances [PFAS] at sites where Aqueous Film Forming Foams (AFFF) (e.g., firefighting foams) may have been used. As part of this program, future sampling for PFAS at SEAD-122E is expected. A sampling plan for SEAD-122E will be documented in a future report.

5.5 Protectiveness Statement

The remedy implemented for Airfield Parcel is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

0

0

0

Attachment AA-1
Five Year Review - Site Visit Photo Log
SEAD-122B Small Arms Range, Airfield Parcel

PROJECT: Seneca Army Depot LUC Inspection
 PROJECT #: 748662

LOCATION: SEAD-122B, Seneca Army Depot
 CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1

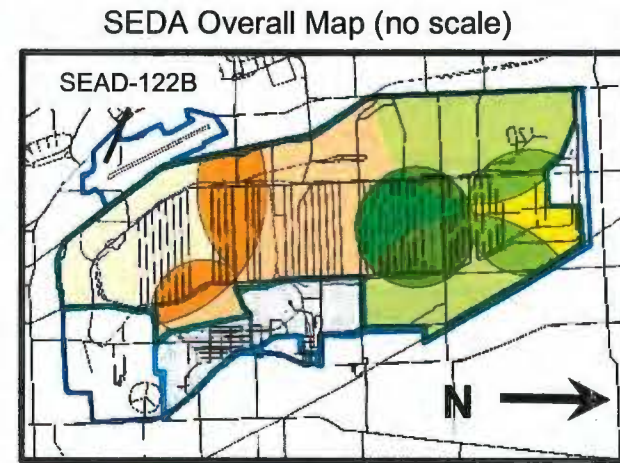


Status as of: 6/1/15
 Description: SEAD-122B
 Photo ID: IMG_6621.JPG

2015 Site Visit Photo 2



Status as of: 6/1/15
 Description: SEAD-122B
 Photo ID: IMG_6620.JPG

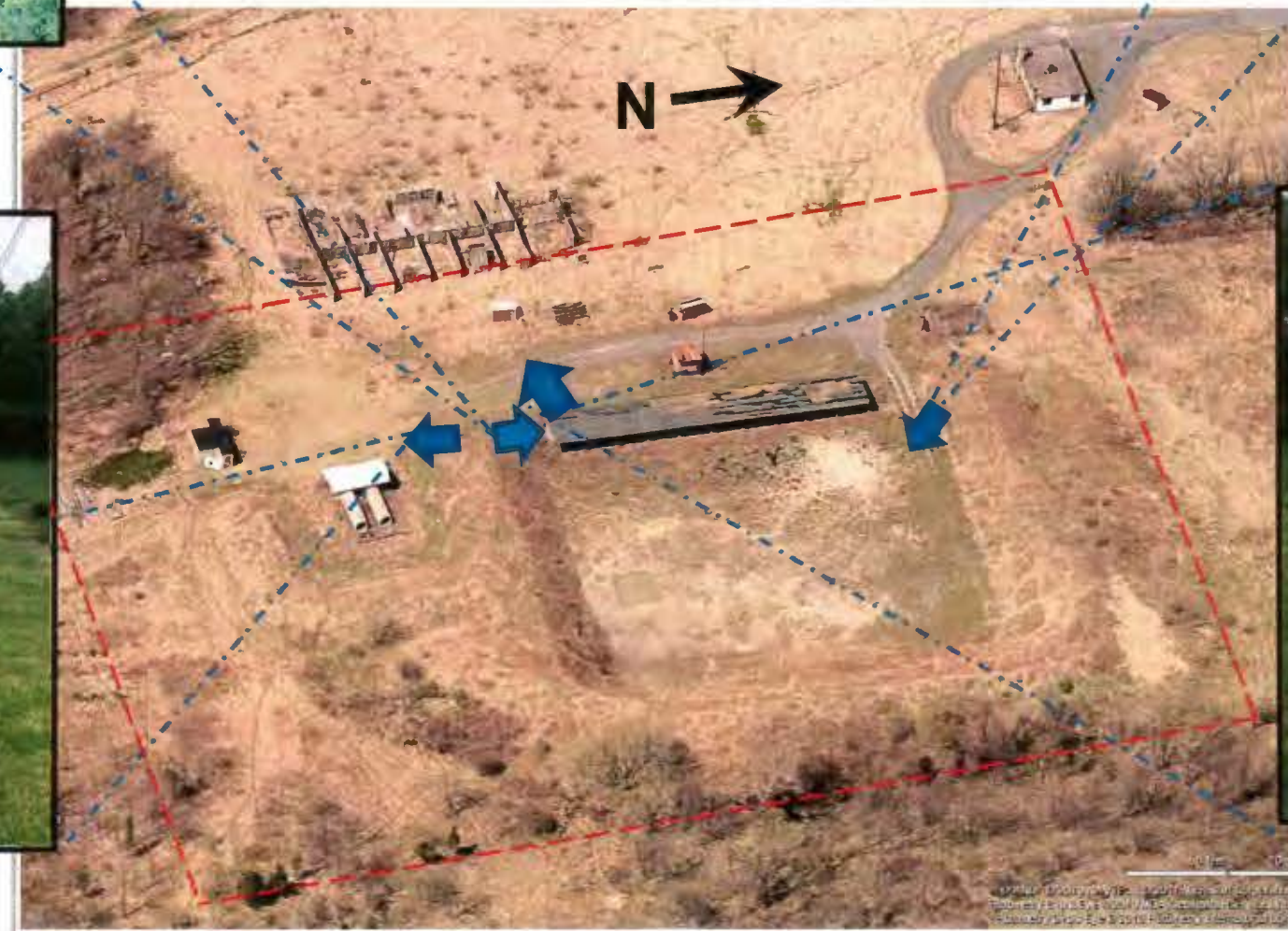


SEAD-122B is located within the Airfield Parcel.

Approximate Site Boundary

Photo Viewing Direction

Bing.com (Microsoft) Birds Eye Aerial of SEAD-122B; actual date of aerial photo is unknown, but based on observable features at SEDA it may be from Spring 2007.



2015 Site Visit Photo 3



Status as of: 6/1/15
 Description: SEAD-122B
 Photo ID: IMG_6623.JPG

2015 Site Visit Photo 4



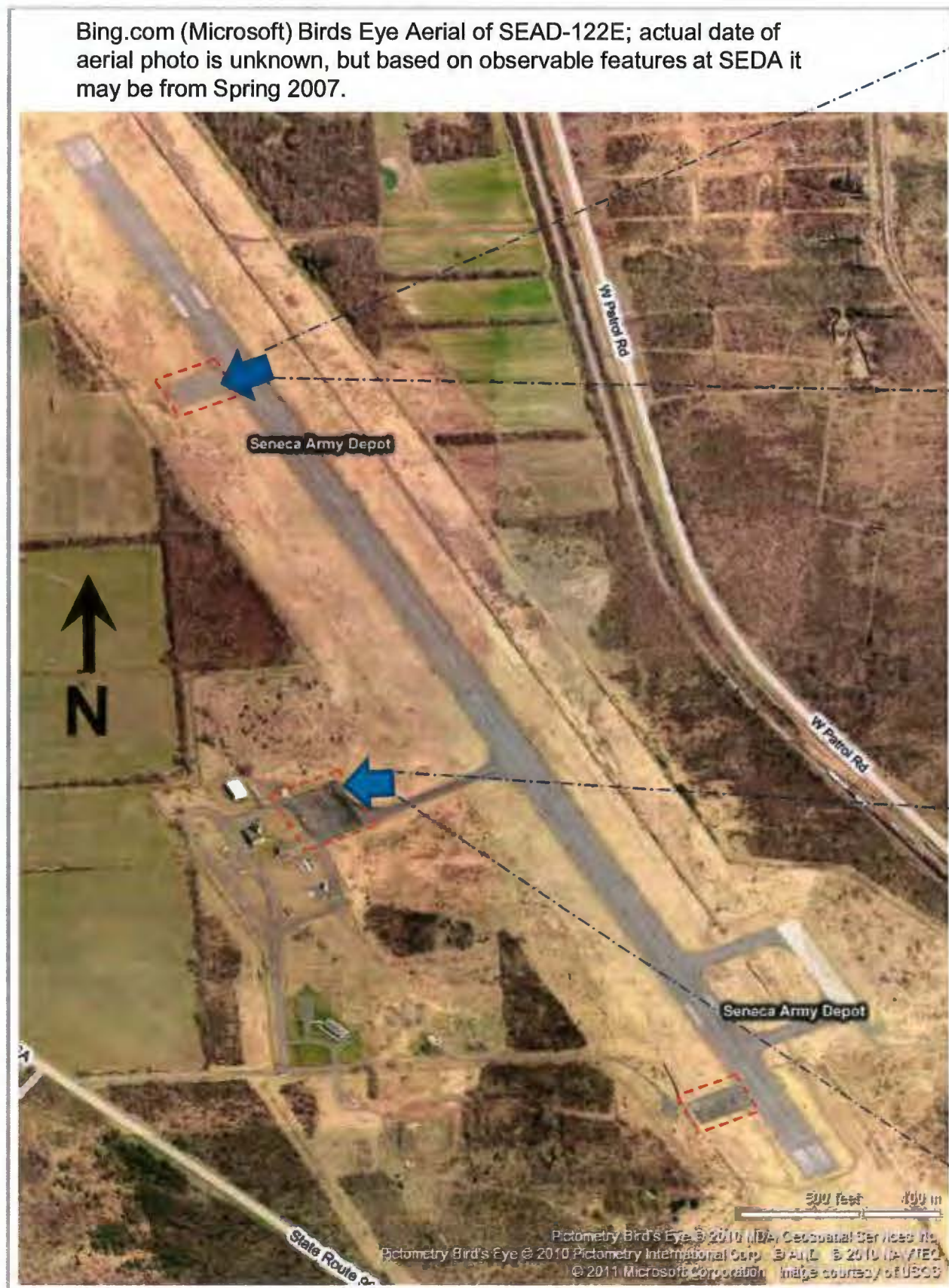
Status as of: 6/1/15
 Description: SEAD-122B
 Photo ID: IMG_6622.JPG



**Attachment AA-1
Five Year Review - Site Visit Photo Log
SEAD-122E Plane Deicing Area**

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-122E, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers



2015 Site Visit Photo 1



Status as of: 6/1/15 Photo ID: IMG_6626JPG
Description: SEAD-122E

2015 Site Visit Photo 2

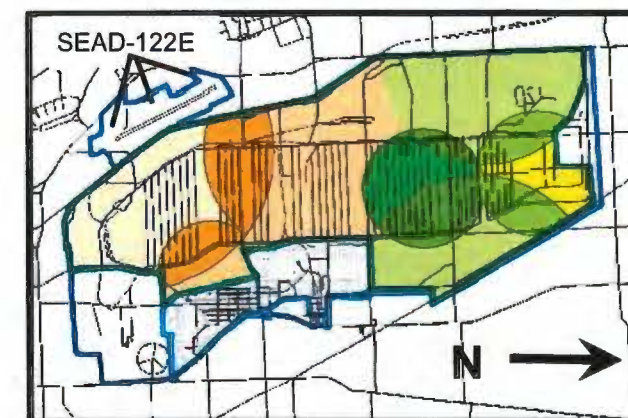


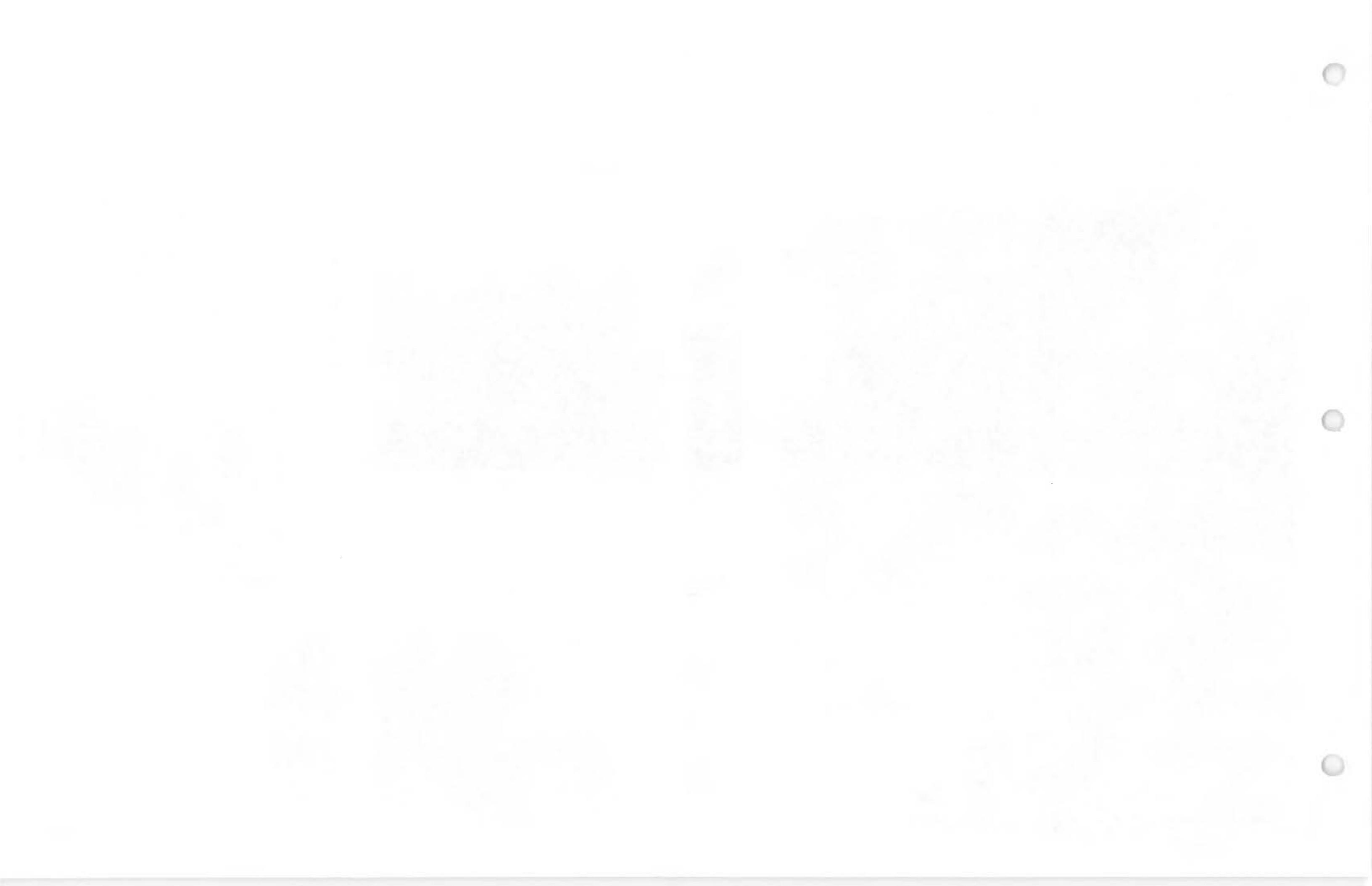
Status as of: 6/1/15 Photo ID: IMG_6628JPG
Description: SEAD-122E

SEAD-122E is located within the Airfield Parcel.

-  Approximate Site Boundary
-  Photo Viewing Direction

SEDA Overall Map (no scale)





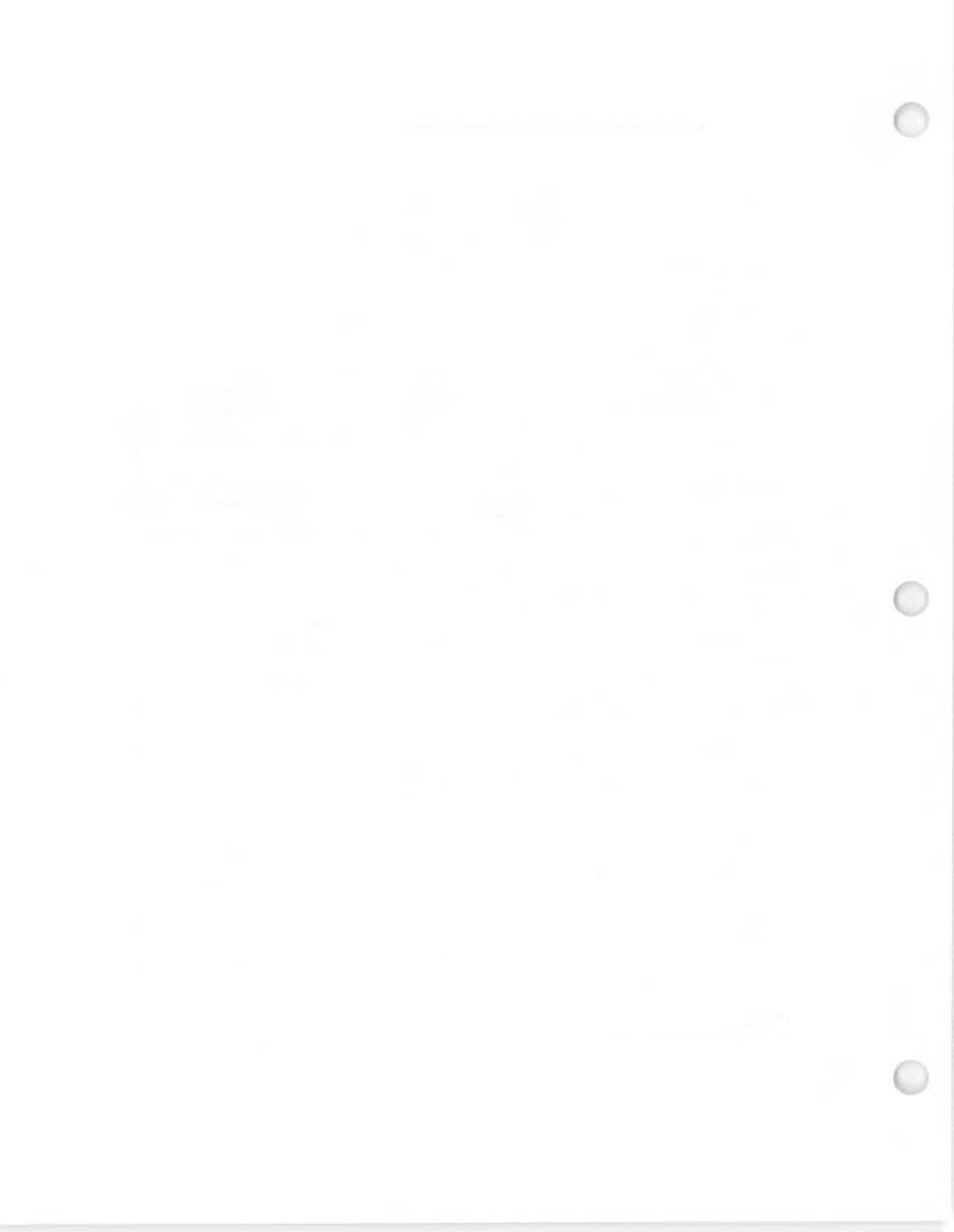
ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD - 122B	Date of inspection: June 1, 2015												
Location and Region: Former Airfield	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 60°F Cloudy												
Inspector: Dave Babcock, PE	Signature: <i>[Handwritten Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual evidence of recent development.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual evidence of recent development.</i>										
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BDO.</i>													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <i>State police contact to notify about view</i> <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date									
Name	Title	Date											
2. O&M staff _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 30%; text-align: center;">Name</td> <td style="width: 30%; text-align: center;">Title</td> <td style="width: 40%; text-align: center;">Date</td> </tr> </table> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____		Name	Title	Date									
Name	Title	Date											
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 15%;">Agency _____</td> <td style="width: 15%;">Contact _____</td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 15%; text-align: center;">Date</td> <td style="width: 15%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____ <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 15%;">Agency _____</td> <td style="width: 15%;">Contact _____</td> <td style="width: 20%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 15%; text-align: center;">Date</td> <td style="width: 15%; text-align: center;">Phone no.</td> </tr> </table> Problems; suggestions; <input type="checkbox"/> Report attached _____		Agency _____	Contact _____	Name	Title	Date	Phone no.	Agency _____	Contact _____	Name	Title	Date	Phone no.
Agency _____	Contact _____	Name	Title	Date	Phone no.								
Agency _____	Contact _____	Name	Title	Date	Phone no.								
4. Other interviews (optional) <input type="checkbox"/> Report attached.													

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION													
Site name: SEAD -122E (3 Former res)	Date of inspection: June 1, 2015												
Location and Region: Former Airfield	EPA ID: NY0213820830												
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 60°F Cloudy												
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual or other evidence of recent development of any kind.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual or other evidence of recent development of any kind.</i>										
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Agency _____	Contact _____	Name	Title	Date	Phone no.								
Agency _____	Contact _____	Name	Title	Date	Phone no.								
4. Other interviews (optional) <input type="checkbox"/> Report attached.													



APPENDIX AB
SEAD-12 - RADIOACTIVE WASTE BURIAL SITES

November 2017

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APPENDIX AB: SEAD-12 Radioactive Waste Burial Sites

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LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The Radioactive Waste Burial Site (SEAD-12) is located in the north-central portion of the former Seneca Army Depot also known as the high security area and referred to as the "Q Area". The SEAD-12 remedial investigation covered 624 acres of the Q Area including the burial areas noted above. After the ESI, Building 715 and the portion of Reeder Creek adjacent to SEAD-12 were also included in the RI at SEAD-12. Building 715 is a wastewater treatment plant that received wastewater from the buildings within the Q Area during the period of their Army use. This facility currently receives wastewater from the Hillside Children's Center, which is now located in the AOCs former Troop Area to the north and west of SEAD-12. Reeder Creek receives the surface water runoff from SEAD-12, and other locations within the former Depot, as well as the wastewater discharge from Building 715.

The contaminant sources at SEAD-12 were the military-related items and other debris associated with the historic waste burial activity within the AOC. Prior test pitting operations conducted as part of the SEAD-12 ESI and the SEAD-12 RI indicated that buried material contained in the burial pits included an undefined quantity of military-related debris, other conventional forms of debris (e.g., construction and demolition [C&D] debris, miscellaneous debris, etc.), and fill material, all of which was covered by known thicknesses of native, overburden soil.

1.2 Initial Response

An ESI was conducted for SEAD-12A and SEAD-12B in 1994, and included the sampling and analyses of surface and subsurface soil, groundwater, surface water, and sediment. A RI was started at SEAD-12 in 1997 and the final RI Report was issued in 2002. The RI consisted of geophysical investigations; radiological investigations, including the building surveys mentioned above; a soil gas survey; test pitting; sampling and analysis of surface and subsurface soil, groundwater, surface water, and sediment; a baseline human health risk assessment (HHRA); an ecological investigation; and a SLERA.

Analytical data collected during the 1995 ESI and 2002 RI are presented, summarized, and discussed for each potential release area in the SEAD-12 RI Report. Based on the investigation data and available documentation of activity associated with the former AOC operations, three potential release areas (i.e., the Former Dry Waste Disposal Pit, Disposal Pit A/B, and Disposal Pit C) were considered impacted to the greatest extent by former activities performed in the AOC. At two of these areas military-related items were identified during test pitting operations during the ESI and RI. Analytical data for conventional chemical and radiological contaminants identified in soil from each of these three areas were combined with AOC-wide analytical results for conventional chemical and radiological contaminants in surface water, sediment, and groundwater and used as the basis of the risk assessments for SEAD-12. Based on the conclusions in the RI, a supplemental RI (SRI) was conducted in 2006 to further characterize TCE found north of Building 813 and conduct additional soil sampling at EM-5.

The radiological building survey conducted as part of the RI concludes that all buildings in SEAD-12 are in compliance with the NYSDEC cleanup guideline (i.e., 10 mrem/yr) identified in the NYSDEC *Cleanup*

Guidelines for Soils Contaminated with Radioactive Materials (DSHM-RAD-05-01). Results of the radiological building survey are presented in the *Final Radiological Survey Report* (Parsons, 2002d).

A SRI was conducted during 2004 and 2005 to further investigate the extent of TCE found in groundwater in the Buildings 813/814 area and the level of ^{210}Pb present in the area of EM-5.

The Army performed a removal action during 2009 in the historic waste burial pits to excavate material contained within the pits and allow the Army to examine the contents so that military-related items could be identified, removed, and secured, pending any final demilitarization, dismantling, and disposal. Recovered military-related items were not found to coexist with conventional chemical hazardous substances at concentrations of particular concern, but in many cases the recovered military-related items did exhibit levels of residual radiation at levels in excess of regional background. 5433 tons of soil and comingled debris were disposed of at an off-site licensed landfill, 122 ton of material were recycled and 13.25 tons of military-related items with radiological residuals in excess of background levels were secured and disposed of at an off-site licensed low-level radioactive waste disposal site.

1.3 Basis for Taking Action

An action was required at SEAD-12 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

The contaminant sources at SEAD-12 were the military-related items and other debris associated with the historic waste burial activity within the AOC. The source of the TCE was remediated to the limit of the building foundation; however, no investigation was conducted under the building structure. The history of the previous TCE contamination is noted since the condition under the adjacent building is unknown. The areas of concern are where residual TCE-contaminated soil and where contaminated groundwater may exist. Table 6-1 of the ROD (Parsons, 2015g) presents a comparison of the ESI and RI soil analytical results to the NYSDEC Unrestricted Use SCOs and the USEPA RSLs for Chemical Contaminants at Superfund Sites for residential soil.

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-12 for all future receptors under the institutional/training/commercial scenario the human health cancer risks were within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} , and the calculated non-cancer HI for all receptors except for the industrial worker are less than 1.0. Table 7-1 in the ROD summarizes risks calculated for exposures to SEAD-12 impacted media (soil, groundwater, surface water, and sediment/ditch soil).

A potential risk is assumed to exist in the vicinity of the previously noted TCE contamination that was identified in the soil and groundwater in the immediate vicinity of Buildings 813/814 and former well MW12-37. Residual VOC contamination in soil does not pose a direct-contact hazard but has the potential to pose a future vapor intrusion exposure. With no future planned use of Buildings 813/814, a risk assessment was not performed to evaluate potential risks via the indoor air exposure pathway. To assure that SEAD-12 will not pose a future unacceptable risk if Building 813 or 814 were to be occupied, or if any building overlying the current buildings' footprints or on adjacent land were to be constructed,

an investigation of vapor intrusion potential and indoor air quality would be needed to assess and estimate potential risks from VOC vapor intrusion.

As part of the RI, a SLERA was conducted. The results of the SLERA indicate that soil, surface water, or sediment at SEAD-12 does not significantly impact ecological receptors in the area (i.e., short-tailed shrew, meadow vole, red-tailed hawk, great blue heron, mourning dove, largemouth bass, amphibian, and invertebrates). No COCs were identified for SEAD-12 soil, sediment, or surface water, and SEAD-12 does not pose significant risks to ecological receptors.

Results of the CERCLA risk assessment for SEAD-12 indicate that soil in the three most impacted areas (Disposal Pit A/B; Disposal Pit C; and the Former Dry Waste Disposal Pit) and other environmental media (groundwater, sediment, surface water) do not pose unacceptable risks to human health or the ecological receptors based on the unrestricted use scenario. Therefore, no further CERCLA action is warranted at any location within SEAD-12, exclusive of the area where Buildings 813/814 are located.

The Army and the USEPA have determined that no further CERCLA action is warranted at any locations in SEAD-12 and SEAD-72, exclusive of the area underlying and surrounding Buildings 813/814 where a future vapor intrusion risk analysis would be warranted prior to occupation.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled “The Radioactive Waste Burial Sites (SEAD-12) and The Mixed Waste Storage Facility (SEAD-72)” (Parsons, 2015g) require the establishment of ICs. The elements that composed the remedy included:

- Implementation, monitoring, and maintenance of an environmental LUC restricting access to and use of the existing vacant Buildings 813/814 and the construction of inhabitable structures (temporary or permanent) above the area and within a fifty foot perimeter of Buildings 813/814 and fifty foot radius from MW12-37 where TCE-contaminated soil was previously identified, and where contaminated groundwater may exist; and
- Implementation, monitoring, and maintenance of a LUC that prohibits access to and use of groundwater in the vicinity of Buildings 813/814.
- Prohibit the development and use of the property for residential housing, elementary and secondary schools, child care facilities and playgrounds until soil and groundwater standards for unrestricted use and unlimited exposure are achieved.

2.2 Remedy Implementation

The LUC RD for SEAD-12 implemented the LUCs. The LUC RD for SEAD 27, 66, and 64A (“SEAD LUC RD”) implemented land use controls for the entire SEAD PID/Warehouse Area. Addendum 5 to the SEAD LUC RD added SEAD 12 in accordance with the SEAD LUC RD Supplementation provision.

The Army will maintain and enforce the LUCs until the concentration of hazardous substances in soil and groundwater are at such levels to allow for unrestricted use and exposure or until the property is

transferred. The LUC will be implemented through an Environmental Easement which documents and transfers the LUC objectives and responsibilities to the future owners. The Environmental Easement will be recorded and identified in the Deed when the property is transferred.

The Environmental Easement, the implementing document granted upon property transfer out of federal ownership, will state that the future property owner will perform an investigation of vapor intrusion potential and indoor air quality with the results of the surveys reviewed and approved by the Army, USEPA, and NYSDEC before the buildings, or any newly constructed buildings in the designated area may be occupied. The groundwater access and use restriction, established by the Environmental Easement, will be maintained and in effect until a future property owner demonstrates with new analytical data provided to, and approved by the Army, USEPA, and NYSDEC to indicate that groundwater in the LUC-zone (e.g., vicinity of Building 813 and 814, and former well MW12-37) meets GA groundwater standards.

As the selected remedies do not allow unrestricted use and unlimited exposures, the Army or its successors are required to complete a review of the selected remedies at least once every five years, in accordance with Section 121(c) of the CERCLA. The selected LUC remedy is reviewed in accordance with this inspection frequency; the LUCs are inspected as part of the FYR and on an annual basis.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

Not applicable, the ROD for SEAD-12 was executed in March 2015, and this AOC was not inspected as part of the first FYR.

3.2 Progress on Recommendations

Not Applicable.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

No data was reviewed as part of the FYR Process.

4.3 Site Inspection

SEAD-12 was inspected between June 1 and June 3, 2015 to assess whether required LUCs imposed by the approved RODs are being maintained. FYR-site visit photo logs are contained in **Attachment 1** and completed FYR site inspection checklists are contained in **Attachment 2**.

The following observations were made during the site inspection:

- Buildings 813/814 were not occupied
- No residential housing units, elementary or secondary schools, childcare facilities or playgrounds were observed at SEAD-12.
- No access to or use of groundwater.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-12 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-12.

4.5 Institutional Controls Verification

The LUCS, Environmental Easements, and deed restrictions are in place. The LUC performance objectives are listed in Section 2.0.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by completed ROD for SEAD-12 have been completed and documented. No continuing active remediation is required at SEAD-12. Based on a review of Closure Reports, LUC RD, Environmental Easement, transfer deeds and FYR site visit conducted between June 1 and 3, 2015 all remedies are functioning as intended by the decisions documents.

The remedy implemented at the SEAD-12 is currently protective of human health and the environment because:

- a LUC that prevents access to, and use of, groundwater at the SEAD-12 LUC-zone has been implemented and is currently being maintained, monitored and reported upon periodically. The LUC-zone includes a small portion of SEAD-12 being the area equal to i) fifty feet from the perimeter of Building 813/814 and ii) fifty feet from monitoring well MW12-37 where contamination by VOCs, primarily TCE, is at levels exceeding federal and state groundwater drinking water standards and state SCO levels. VOCs remain at sufficient concentrations to pose a potential risk via vapor intrusion to future users or occupants of the buildings or land;
- a second LUC that prevents the use of existing Buildings 813 and 814 and/or the construction of new inhabitable structures (temporary or permanent) above the area where there is the potential for TCE contaminated groundwater and/or soil, until a vapor intrusion study is conducted in the building(s) or in the restricted area and shows that potential risks from VOC intrusion does not pose unacceptable risk or hazard levels to future users or occupants of the structures or the land; and
- a third LUC that prevents the use of or the development of the property for residential housing, elementary or secondary schools, childcare facilities, or playgrounds at SEAD-12 has been

implemented and is currently being maintained, monitored, and reported upon periodically.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-12.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the exposure pathway or changes in the physical conditions of the site since completion of remedial action activities and implementation of LUCs that would affect the protectiveness of the remedy selected for SEAD-12 of the former SEDA.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-12. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment.

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. The Army has the following recommendations;

- Continue the implementation of LUCs and the annual frequency of periodic reviews.

5.5 Protectiveness Statement

The remedy implemented for SEAD-12 is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

LIST OF ATTACHMENTS

Attachment 1 Photo Log

Attachment 2 Site Inspection Checklist

ATTACHMENT 1

Photo Log

Attachment AB-1
Five Year Review - Site Visit Photo Log
SEAD-12 Radioactive Waste Burial Sites

PROJECT: Seneca Army Depot LUC Inspection
PROJECT #: 748662

LOCATION: SEAD-12, Seneca Army Depot
CLIENT: U.S. Army Corp of Engineers

2015 Site Visit Photo 1



Status as of: 6/1/15
Description: SEAD-12

Photo ID: IMG_6614.JPG

SEDA Overall Map (no scale)



Approximate Site Boundary Photo Viewing Direction

2015 Site Visit Photo 2



Status as of: 6/1/15
Description: SEAD-12

Photo ID: IMG_6613.JPG

Bing.com (Microsoft) Birds Eye Aerial of SEAD-12; actual date of aerial photo is unknown.



2015 Site Visit Photo 3



Status as of: 6/1/15
Description: SEAD-12

Photo ID: IMG_6612.JPG

ATTACHMENT 2
Site Inspection Checklist

SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION																									
Site name: SEAD -12	Date of inspection: June 1, 2015																								
Location and Region: Q Area	EPA ID: NY0213820830																								
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 58°F Light rain																								
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>																								
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>NO visible evidence of recent development or groundwater use.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>NO visible evidence of recent development or groundwater use.</i>																						
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BBO</i>																									
II. INTERVIEWS (Check all that apply)																									
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3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 30%;">Agency _____</td> <td style="width: 30%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td>Contact _____</td> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> </tr> <tr> <td></td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone no.</td> </tr> <tr> <td colspan="3"> Problems; suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table> <table style="width: 100%; border: none; margin-top: 10px;"> <tr> <td style="width: 30%;">Agency _____</td> <td style="width: 30%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td>Contact _____</td> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> </tr> <tr> <td></td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone no.</td> </tr> <tr> <td colspan="3"> Problems; suggestions; <input type="checkbox"/> Report attached _____ </td> </tr> </table>		Agency _____			Contact _____	Name	Title		Date	Phone no.	Problems; suggestions; <input type="checkbox"/> Report attached _____			Agency _____			Contact _____	Name	Title		Date	Phone no.	Problems; suggestions; <input type="checkbox"/> Report attached _____		
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4. Other interviews (optional) <input type="checkbox"/> Report attached.																									

APPENDIX AC: SEAD-23 Open Burning Grounds

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1.0 AREA SPECIFIC BACKGROUND INFORMATION

1.1 History of Contamination

The OB Grounds (SEAD-23) site occupies approximately 30 acres on gently sloping terrain in the northwest corner of SEDA as shown in Figure 3-1. The OB Grounds is bounded on the east by Reeder Creek, which is a perennial creek that is generally less than 1 foot deep and eventually flows into Seneca Lake. The quality of surface water in Reeder Creek has been designated by the State of New York as a Class C water body. Seneca Lake is located approximately 10,000 feet west of the site and is used as a source of drinking water for SEDA and surrounding communities.

The land at the OB Grounds had been used for demilitarization of munitions for approximately forty years. The open burning procedure involved the preparation of combustible beds of pallets and wooden boxes on the pads followed by the placement of ammunition or the components to be demilitarized on the beds. A trail of propellant was placed on the ground leading to the combustible bed. Once ignited the energetic material was allowed to burn until only ash and casing residues remained. Items burned included various military munitions such as propellants and projectiles.

The burning of munitions had been performed at designated burning pads, which ranged in size from approximately 100 by 100 feet to 300 by 800 feet. Designated munitions waste was open-burned on the nine separate burning pads until 1987. After 1987, munitions were destroyed by burning them within an aboveground steel tray to minimize the impact of the burning on the environment.

1.2 Initial Response

The open burning of waste munitions was identified as a RCRA regulated process. Due to the nature of SEDA's former mission, it was necessary for the facility to treat, store, and dispose of hazardous wastes including waste munitions. Consequently, a RCRA permit was a regulatory requirement for SEDA to perform these operations as a TSD facility.

SEDA applied for a RCRA Part A and Part B permit on May 1, 1987 and operated the facility under the interim status provisions of RCRA. Interim status allows a facility to operate as a TSD facility during the RCRA Part B permit application process.

Final closure of the OB Grounds under RCRA guidelines was deferred when SEDA was nominated for inclusion of the NPL in July 1989; SEDA was listed on the NPL in Group 14 on the Federal Section. Following SEDA's NPL listing, the Army, EPA, and NYSDEC agreed that any corrective actions required for any targeted problem sites would be regulated under CERCLA guidelines. RCRA requirements are an Applicable or Relevant and Appropriate Requirement (ARAR) pursuant to Section 121 of CERCLA.

1.3 Basis for Taking Action

An action was required at SEAD-23 to ensure land use remains protective of site users.

1.3.1 Contaminants of Concern

The primary media investigated at the OB Grounds included soil, surface water and sediment (from Reeder Creek, on-site areas and drainage swales), and groundwater. The primary COCs identified included metals,

PAHs, explosive compounds, and phthalates. These components were likely released to the environment during the historic open burning activities.

During the 1999 remedial investigation, the burn pads at the OB Grounds were sampled for explosives including: HMX; RDX; 1,3,5-trinitrobenzene; 1,3-dinitrobenzene; tetryl; 2,4,6-trinitrotoluene; 4-amino-2,6-dinitrotoluene; 2-amino-4,6-dinitrotoluene; 2,6-dinitrotoluene; and 2,4-dinitrotoluene. None of the detections of explosives within soil were above the current EPA Industrial SCO (no state standards exist for these compounds).

1.3.2 Human Health and Ecological Risk Assessment

The risk assessment concluded that at SEAD-23, the human health cancer risks were within the CERCLA cancer risk management range of 1×10^{-4} to 1×10^{-6} and the he calculated non-cancer HI were less than 1.0 for all receptors. Table 7-3 in the ROD (Parsons, 1999c) summarizes the results for total carcinogenic risks and non-carcinogenic hazard.

The ecological risk assessment for the OB Grounds began by evaluating the COCs found at the site in conjunction with the site-specific biological species/habitat information. Soils and sediment, in particular on-site soils and sediment in the low lying wet areas suggest that site conditions may pose an elevated ecological risk due to the presence of heavy metals, especially copper and lead. This risk is increased in the low-lying areas where sediment from runoff accumulates. Sediments in Reeder Creek may also pose an elevated ecological risk due to the presence of heavy metals, such as copper and lead.

2.0 REMEDIAL ACTIONS

2.1 Remedy Selection

The ROD titled "Final ROD Former Open Burning (OB) Grounds Site" (Parsons, 1999c) outlines the elements that composed the remedy:

- Although OE is not expected to be found at depth at this site, through a combination of geophysics, excavation, sifting, removal and soil cover, the Army will nevertheless remediate OE to meet the DoD Explosive Safety Board (DDESB) requirements for unrestricted use or put into place land use restrictions as may be required by the DDESB.
- Excavation of soils with lead concentrations above 500 mg/kg and sediments from Reeder Creek with concentrations of copper and lead above the NYSDEC criteria of the 16 mg/kg and 31 mg/kg, respectively.
- Treatment of soils exceeding the TCLP, estimated to be approximately 3,800 cy of the excavated soil, via solidification /stabilization will be performed to remove the RCRA characteristic of toxicity. This will allow the soil to be landfilled, in accordance with the requirements of the LDR of RCRA.
- Disposal of the excavated and solidified soil in an off-site Subtitle D landfill. The total quantity of soil to be disposed of was estimated to be 17,900 cy, including the 3,800 cy of solidified soil.

- Construction of a soil cover of at least 9 inches of compacted soils in the areas of the OB Grounds with soils remaining on the site with lead concentrations above 60 ppm. The area to be covered is estimated to be approximately 27.5 acres, which encompasses most of the area of the OB Grounds. The cap will be vegetated with indigenous grasses to prevent erosion and to prevent direct contact and incidental soil ingestion by terrestrial wildlife. The monitoring program will ensure that the 9-inch soil/vegetative cover is maintained after the remedy is complete.
- Control of surface water runoff, as necessary, to prevent erosion of the vegetative cover and solids loading to the creek. This will be accomplished with vegetation, regrading of site topography and drainage swales.
- Conducting a monitoring program for site groundwater and sediment in Reeder Creek. This program will monitor metals. For groundwater, the level of detection will be to below 15 µg/L, the federal action level for lead in groundwater. For sediment, the detection limit for lead will be to 10 mg/kg. Should a significant exceedance be noted, the exceedance will be confirmed through additional sampling and, if confirmed, appropriate corrective measures will be implemented to eliminate the threat posed by the exceedance. For groundwater, this action may include metals removal via filtering. A similar process will apply for a sediment exceedance observed in Reeder Creek. First, the source of the exceedance will be identified and confirmed. If the exceedance is determined to originate from the OB Grounds site, then maintenance of or improvements to the existing erosion control systems will be instituted to reduce the threat due to erosion of on-site soils to the Creek. This may include revegetation or the construction of drainage control swales or structures.
- Periodic monitoring of groundwater quality at the OB Grounds for lead and copper content;
- Periodic monitoring of the vegetated, compacted soil cover placed over the lead contaminated soil remaining at the OB Grounds to assess whether evidence of erosion or protective cover breaching were present, which could result in the potential migration of contaminated soil; and,
- Periodic monitoring of the sediment in Reeder Creek for lead and copper content.

2.2 Remedy Implementation

The OB Grounds Soil and Sediment Remediation Completion Report documents the remediation at the OB Grounds in accordance with WESTON's Revised Draft Work Plan dated April 1999, Parsons' Section C - Technical Specifications dated August 1998, and the ROD (Parson ES, 1999c). The primary activities completed by WESTON to achieve the remediation objectives for the Site included excavation and disposal of soils with concentrations of lead greater than 500 mg/kg, removal of sediment from Reeder Creek in areas adjacent to the OB Grounds, application of 9 inches of clean soil cover to areas where lead concentrations exceed 60 mg/kg, and establishment of a vegetative cover to prevent soil erosion.

Remediation activities at the site were conducted between June 1999 and May 2004. Work was conducted over this five year period in several different mobilizations and included the following tasks:

- Mobilization and site preparation, including surveying and excavation area layout.

- Decommissioning of 33 groundwater monitoring wells and one ground boring where a monitoring well (MW-28) had reportedly been installed but was not found at the time of the fieldwork.
- Excavation of approximately 88,000 cubic yards of Case I soil (>800 milligrams per kilogram (mg/kg) total lead), Case II soil (500 mg/kg – 800 mg/kg total lead), and Case III soil (<500 mg/kg total lead).
- Diversion of Reeder Creek and excavation of approximately 2,300 cubic yards of creek sediments.
- Post-excavation confirmation sampling and characterization sampling.
- Stabilization of soils and sediments to meet TCLP hazardous waste disposal criteria.
- Off-site disposal of approximately 7,000 tons of untreated soil and 50,400 tons of treated (stabilized) soils and sediment as non-hazardous material at a licensed disposal facility.
- Off-site disposal of approximately 283,300 gallons of wastewater generated from site activities.
- Site restoration including: backfilling, grading, and seeding the site.

Following a review of the confirmatory soil sample results, it was concluded that the horizontal and vertical extents of lead in soil at the burn pad locations has been sufficiently delineated and removed from the OB Grounds to below 60 mg/kg (20.6 mg/kg average). In addition, all adjacent surface soils (within the 1-ft cut and site perimeter) have been reduced to below 500 mg/kg (89.6 mg/kg average). Combined, the burn pad, 1-ft cut, and site perimeter total lead average is 55.1 mg/kg (based on 274 samples).

SEAD-23 (OB Grounds) Soil Removal Cleanup Goals		
Analyte	Cleanup Goal (mg/Kg)	Goal Met?
Lead	60	Yes

A total of approximately 2,300 cy of sediment from Reeder Creek was removed and disposed of off-site, 32 monitoring wells were decommissioned, approximately 50,426 tons of soil were stabilized on-site prior to off-site disposal, and approximately 57,424 tons of soil was disposed of as RCRA Subtitle D Non-Hazardous soil at an approved facility.

A total of 25 grids encompassing an area of approximately 7 acres were backfilled to a depth of 9 inches using excavated soils containing less than 60 mg/kg total lead. All accessible areas of the OB Grounds were fine-graded and seeded.

LTM is ongoing, and the collection of groundwater quality data is needed to monitor the effectiveness of the implemented remedy at the site for preventing future impacts to groundwater at the OB Grounds and to sediments in Reeder Creek. Additionally, monitoring of the vegetated compacted soil cover placed over the buried soils at the OB Grounds is required to assure its long-term integrity and to prevent direct contact to, and incidental ingestion of, soils containing lead at concentrations up to 500 mg/kg by terrestrial wildlife at the site.

2.3 System Operations/Operation and Maintenance

Not applicable; no active remedy.

3.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

3.1 Recommendations

In the previous FYR, the Army made the following recommendations;

- Continue the annual frequency of periodic reviews.

3.2 Progress on Recommendations

In general, the SEAD-23 recommendations in the previous FYR, the LUC recommendations were implemented as intended. The LUCs continued to be implemented and were inspected between the five year reviews. Annual LUC inspections were not conducted in 2012 and 2013; however, LTM and other activities were conducted within Seneca during this time and observations were consistent with previous inspection notes. New construction or use of the groundwater would most likely have been noted during these other activities. In addition, annual LUC inspections were conducted in 2014, 2015 and 2016 during which no new construction or access to, or use, of groundwater were observed. Therefore the LUCs are functioning as intended.

4.0 FIVE-YEAR REVIEW PROCESS

4.1 Document Review

See Section 14.0 References in the main FYR report for a summary of the documents, data, and information which were reviewed in completing this FYR.

4.2 Data Review

LTM is an integral component of the approved remedy implemented at the OB Grounds. The ROD, Former Open Burning Grounds Site, Final” (Parsons, 1999c) indicated that monitoring of groundwater and the vegetated soil cover at the OB Grounds, and of the sediment within Reeder Creek was required. In accordance with the approved remedy as presented in the ROD, the current LTM activities at the Site per the LTM Monitoring Plan for the OB Grounds (Parsons, 2007d) include the following three components:

- The annual collection and analysis of groundwater samples for lead and copper concentrations;
- The inspection of the vegetated, compacted soil cover that has been constructed over interred lead-contaminated soil as part of the Site remedial actions in order to assess if erosion or breaching of the protective cover has occurred, which could result in the potential migration of contaminated soil; and
- The inspection of Reeder Creek where the Creek abuts the OB Grounds to evaluate the potential for inward migration and deposition of soil from the OB Grounds.

The collection of groundwater quality data is needed to monitor the effectiveness of the implemented remedy at the site for preventing future impacts to groundwater at the OB Grounds and to sediments in

Reeder Creek. Additionally, monitoring of the vegetated compacted soil cover placed over the buried soils at the OB Grounds is required to assure its long-term integrity and to prevent direct contact to, and incidental ingestion of, soils containing lead at concentrations up to 500 mg/kg by terrestrial wildlife at the site.

LTM began at the OB Grounds site in November 2007. LTM at the OB Grounds site was initially scheduled to occur on a quarterly basis. The results of the first four LTM rounds were combined and summarized in an annual report, in which, the recommended frequency of monitoring was recommended to change from quarterly to annually. Based on comments received from EPA and NYSDEC in 2009, the Army authorized the performance of an inspection of Reeder Creek. The monitoring frequency of groundwater was agreed upon by EPA and NYSDEC in February 2010 to be conducted annually. Subsequent to Round 5, investigations at the OB Grounds have included yearly groundwater sampling and inspection of both the soil caps and Reeder Creek. A summary of the groundwater trends based on the RI results, post-remedial action to date is summarized in the 2014 Long-Term Monitoring Annual Report for the Open Burning Grounds (Parsons, 2015).

The LTM data supports that groundwater at the Site has not been impacted by residual levels of copper and lead that remain in the soils at the Site. Total copper has not been detected above its RL in the groundwater during any of the post remedial action sampling rounds. Total lead has not been detected in the groundwater above the action level of 15 µg/L during any of the post remedial action sampling rounds. Six of the seven lead detections have been estimated concentrations and the maximum concentration of lead detected in nine rounds of sampling was 5.4 µg/L at well MW23-4 during Round 2. Evaluation of the water quality parameters measured at Site wells during current (and previous) LTM activities indicate generally mild alkaline conditions, which suggest that lead should not be readily mobile in groundwater under current Site conditions.

A visual inspection of the Reeder Creek streambed was conducted on October 14, 2014 at locations adjacent, down-gradient, and up-gradient to the OB Grounds. Based on the October 2014 inspection, there were no visible signs that OB Grounds site soils are being released via overland flow to Reeder Creek. As such, the Army does not see any evidence to suggest that a release of lead or copper above background levels is occurring from the OB Grounds site.

4.3 Site Inspection

SEAD-23 was inspected during the 2015 LTM event to assess whether the conditions of the approved RODs are being maintained.

The following observations were made during the site inspection:

- No animal burrowing activity was observed in any of the capped areas. Signs of past minor erosion, as noted in the 2014 Annual Report, continue to be observed along the sloped edges of Grid I8 adjacent to the drainage ditch (between Grids J8 and J9) as a result of surface water run-off from the western portion of the Site towards Reeder Creek. However, the erosion area has not grown in size or depth. The sloped edges of Grid I8 were also observed to have lower vegetation density than the rest of the Grid. Overall, the erosion along the edges of the soil cover in Grid I8 has not changed since the October 2014 inspection and no corrective action is warranted at this time. The condition

of this location will be reassessed during the next inspection event to determine if corrective measures are needed.

- Signs of minor erosion were observed where the soil cover transitions to the native ground surface at the western edge of the soil cover within Grid I7 and at the northern edge of the soil cover within Grid I6. These areas where signs of minor erosion had been observed had lower vegetation density than the rest of the respective Grids. The condition of these locations will be reassessed during the next inspection event and no corrective action is warranted at this time.
- The northeast corner of Grid A5 and east side of Grid D7 contained areas with sporadic vegetation. Each of these grids had areas which were not as densely vegetated as the surrounding area. In each case, no disturbances to the soil cap were observed, and no signs of erosion were evident. The condition of these locations were similar to conditions observed in October 2014 and previous inspections. The condition in these areas will be reassessed during the next inspection event. No corrective action is warranted at this time.
- The shallow tire ruts in Grid C7 which had been regraded and filled with crushed shale following the October 2014 inspection were in good condition. No disturbances to this corrective measure or the remaining sections of the soil cap in Grid C7 were observed. The condition of the corrective measure will be reassessed during the next inspection event.

The selected remedy is still protective of human health and the environment.

4.4 Interviews

Since SEAD-23 is uninhabited and unoccupied, no interviews were conducted during the FYR process for SEAD-23.

4.5 Institutional Controls Verification

Not applicable.

5.0 TECHNICAL ASSESSMENT

5.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes. Remedial actions required by the ROD for the OB Grounds have been completed and documented (Weston, 2005b). No continuing active remediation is required in OB Grounds. Based on a review of the remediation completion report, LTM Reports, and the FYR site visit conducted between June 1 and June 3, 2015 the remedy is functioning as intended by the decisions documents.

The remedy implemented at SEAD-23 is currently protective of human health and the environment because:

- Residual lead and copper concentrations remaining in the soils have not impacted groundwater at, or in the immediate vicinity of the Site above the applicable action levels.
- During ten rounds of groundwater sampling, copper and lead concentrations have not been detected above their RL enough times to perform a meaningful statistical analysis of the historical data thus indicating little to no migration of these COCs into the groundwater.

- The integrity of the vegetated soil cover overlying interred contaminated soils at the OB Grounds Site was intact and there was no evidence that terrestrial wildlife are exposed or will be exposed to the lead-contaminated soils interred below the 9-inch soil cover.
- The Army will continue to monitor soil cover erosion and will note any instance of cover erosion or exposed native or interred soil.
- Based on evaluation of the groundwater data and the results of the cover inspection, there is no evidence to suggest that the OB Grounds may be contributing to the degradation of sediment quality in Reeder Creek.
- Field observations noted that the erosion control sandbags previously placed at the OB Grounds to prevent transported soil material from entering the spillways were still working as intended.
- The Army will continue to inspect Reeder Creek for evidence of sediment deposition and if it is observed, a sediment sampling and analysis program plan will be prepared, submitted for approval, and implemented for Reeder Creek at locations adjacent to the OB Grounds.

The selected remedy is still protective of human health and the environment. No opportunities for optimization or early indicators of potential issues have been identified for SEAD-23. Recommendations for optimization of the LTM program are discussed further in Section 5.4.

5.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?

Yes. The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid (**Attachment 3**). There have been no changes in the exposure pathway or changes in the physical conditions of the site since implementation of the remedy that would affect the protectiveness of the remedy.

5.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no new information of significance that would affect the protectiveness of the remedy.

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD for SEAD-23. On-going remedial monitoring activities include periodic evaluations of the effectiveness of the remedy. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the RODs remain protective of human health and the environment

5.4 Issues, Recommendations and Follow-Up Actions

No issues were identified for this FYR. Based on the results of the LTM sampling events conducted at the OB Grounds, the Army recommends discontinuing LTM of the groundwater. As presented and summarized above, available monitoring data shows no evidence of total lead or total copper in the groundwater above the cleanup goals subsequent to the completion of the remedial action for the Site. These findings are consistent with the groundwater analytical results obtained during the remedial investigation stage (1990s) of work at the Site, indicating that there is no evidence of groundwater quality deterioration over

approximately 20 years. Further, the annual inspections of the soil cover have shown minimal evidence of erosion or animal breaching of the protective soil cover.

The examination of spillways connecting the OB Grounds to Reeder Creek indicate that measures performed to eliminate overland soil transport from the OB Grounds to Reeder Creek continue to exist and have been effective, as there is no indication that soil or debris from the OB Grounds is located in the spillways downgradient of the control measures. Finally, the inspection of Reeder Creek indicates that the bedrock that underlies the watercourse adjacent to the OB Grounds continues to be scoured by the perennial flow within the creek. Currently, there is no indication that sediment is being redeposited at locations from which it was previously excavated. Therefore, due to the absence of any evidence that suggests contaminants of concern have been mobilized from the OB Grounds either via the groundwater or overland flow of storm-event waters, and due to the continued scouring of the creek bed by the perennial flow of water, there is no reason to develop or implement a sediment monitoring plan for Reeder Creek at this time.

With mutual agreement of all parties, no further LTM monitoring of the groundwater will occur at the OB Grounds. Soil cover inspections will continue and be performed as part of annual LUC inspections. A review of the results and conclusions from the OB Grounds LTM program will be provided in the third FYR in 2021.

5.5 Protectiveness Statement

The remedy implemented for SEAD-23 is protective of the environment and protects human health. The remedy continues to minimize explosive safety hazards. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

ATTACHMENT 3
Cleanup Levels, Toxicity and Risk Evaluation



ATTACHMENT THREE

Cleanup Levels, Toxicity and Risk Evaluation

The effects of significant changes in standards that were used at the time of remedy selection that may impact the protectiveness of the remedy were evaluated as part of the technical assessment of the five-year review at Seneca Army Depot Activity. This was done according to USEPA (2016) guidance as explained in Section 9.0 of the introductory text and Sections 5 of the individual site appendices within this five-year review report.

The first step in this process is determining which COPCs have new or changed standards since the time of the ROD. Cleanup levels for COPCs presented in the ROD were compared to the current potentially applicable federal or state standards. For soils, 6 CRR-NY 375-6.8 (b) Restricted Use Soil Cleanup Objectives (Industrial) for all soil compounds are applicable. Federal regional screening levels (TR=1E-06, HQ=1) (May 2016) for industrial soil were used for comparison or when a state screening level was not available. Current groundwater standards presented include state 6 CRR-NY 703.5 (f) Water Quality Standards for Surface Waters and Groundwater, GA Water Class and federal EPA regional screening levels (TR=1E-06, HQ=1) (May 2016) Maximum Contaminant Level (MCL) values. At sites where sediment was not within a freshwater source (e.g., lake, stream) the values were compared to the soil screening criteria. For OB Grounds (SEAD-23) Reeder Creek sediment, cleanup goals were compared with 6 CRR-NY 375-6.8 (b) Restricted Use Soil Cleanup Objectives (Protection of Ecological Resources) and EPA Region III Freshwater Sediment Screening Benchmarks as this is a recognized freshwater source by NYSDEC. **Table A3-1** illustrates the comparison between the ROD cleanup goals and current standards.

The majority of the cleanup goals presented in the site-specific RODs are equal to, or lower, than current state and/or federal standards. Where there are differences (i.e., SEAD 16/17), the ROD cleanup goals were derived risk-based values for carcinogenic PAHs and metals specific to the site. The future use scenario (industrial), receptors, and the exposure pathways have not changed since the ROD was published, therefore the derived risk-based cleanup goals are considered protective.

It should be noted that lead, which was found at elevated levels in soil at both SEAD-16 and SEAD-17, was not considered in the quantitative risk assessment because an allowable reference dose (RfD) is not available. In the absence of a formal quantitative risk assessment for lead, other means were used to determine how to evaluate risk posed by lead in the soils. Based on discussions between the Army and the USEPA and NYSDEC and review of the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996), a value of 1,250 mg/Kg was selected as a cleanup level for the site for future industrial use. It was agreed by all three parties that the 1,250 mg/Kg value would be protective of human health under an industrial scenario. At SEAD-121C, the same lead cleanup level was used, but risk associated with lead in soil were evaluated for the industrial worker using central tendency exposure factors as described in the document above, 2003 revision.

**Table A3-1 - Evaluation of Changes in Chemical-Specific Standards
Five-Year Review
Seneca Army Depot Activity**

AOC (matrix and units)	COPCs Listed in ROD	Former Standard/Cleanup Goal (in ROD)	Current NYSDEC Cleanup Level†	Current Federal Cleanup Level†	Is there a newly promulgated cleanup goal or is the new level more stringent? (Y/N)
SEAD 16/17 (Soil) mg/Kg Note 2	PAHs				
	Benzo(a)anthracene	20.4	1.1	2.9	Note 2
	Benzo(a)pyrene	2	1.1	0.29	Note 2
	Benzo(b)fluoranthene	20.4	11	2.9	No
	Benzo(k)fluoranthene	50	110	29	No
	Chrysene	50	110	290	No
	Dibenz(a,h)anthracene	2	1.1	0.29	Note 2
	Indeno(1,2,3-cd)pyrene	20.4	11	2.9	Note 2
	Metals				
	Antimony	29	--	470	No
	Arsenic	20	16	3	Note 2
	Cadmium	14	60	980	No
	Copper	331	10,000	47,000	No
	Lead	1250 ^a	3,900	800	No ^a
	Mercury	0.54	5.7	46	No
	Thallium	2.6	--	12	No
	Zinc	773	10,000	350,000	No
SEAD 25 (Soil) mg/Kg	VOCs				
	1,1,1-Trichloroethane	0.8	1,000	36,000	No
	1,1-Dichloroethane	0.2	480	16	No
	Benzene	0.1	89	5.1	No
	Chloroform	0.3	700	1.4	No
	Ethyl Benzene	5.5	780	25	No
	Toluene	1.5	1,000	47,000	No
	Trichloroethene	0.7	400	6	No
	Xylene (total)	1.2	1,000	2,500	No
	SVOCs				
	2-Methylnaphthalene	36.4	--	3,000	No
	Naphthalene	13	1,000	17	No
	Phenol	0.03	1,000	250,000	No
SEAD 25 (Groundwater) ug/L	VOCs				
	1,1,1-Trichloroethane	5	5	200	No
	1,1-Dichloroethane	5	5	--	No
	1,2-Dichloroethene (total)	5	5	5	No
	Benzene	1	1	5	No
	Chloroform	7	7	80	No
	Ethyl Benzene	5	5	700	No
	Toluene	5	5	1,000	No
	Trichloroethene	5	5	5	No
	Xylene (total)	5	5	10,000	No
	SVOCs				
	2-Methylphenol	1	--	--	No
	2,4-Dimethylphenol	1	50	--	No
	3,3'-Dichlorobenzidine	5	--	--	No
	4-Methylphenol	1	--	--	No
Phenol	1	1	--	No	
SEAD 25 (Sediment) mg/Kg	SVOCs				
	Benzo(a)anthracene	0.224 or MDL ^b	1.10	2.9	No
	Benzo(a)pyrene	0.061 or MDL ^b	1.10	0.29	No
	Benzo(b)fluoranthene	1.1	11.00	2.9	No

**Table A3-1 - Evaluation of Changes in Chemical-Specific Standards
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AOC (matrix and units)	COPCs Listed in ROD	Former Standard/Cleanup Goal (in ROD)	Current NYSDEC Cleanup Level†	Current Federal Cleanup Level†	Is there a newly promulgated cleanup goal or is the new level more stringent? (Y/N)
SEAD 26 (Soil) mg/kg	Total Carcinogenic PAHs	10 ^c	--	--	No
SEAD 26 (Groundwater) ug/L	VOCs				
	Benzene	1	1	5	No
	Ethyl Benzene	5	5	700	No
	Xylene (total)	5	5	10000	No
	1,2,4-Trimethylbenzene	5	5	--	No
	1,3,5-Trimethylbenzene	5	5	--	No
	n-Propylbenzene	5	5	--	No
p-Isopropyltoluene	5	5	--	No	
Ash Landfill (Soil) mg/Kg	VOCs				
	1,1,1-Trichloroethane	-- ^d	1,000	36,000	
	Vinyl Chloride	0.2	27	1.7	No
	1,2-Dichloroethene (total)	0.3	1,000	--	No
	Trichloroethene	0.7	400	6	No
	SVOCs				
	2-Metylnaphthalene	36.4	--	3,000	No
	Acenaphthylene	41	1,000	45,000	No
	Dibenzofuran	6.2	1,000	1,000	No
	Phenanthrene	50	1,000	--	No
	Benzo(a)anthracene	0.22 or MDL ^b	11	2.9	No
	bis(2-ethylhexyl)phthalate	50	--	160	No
	Benzo(b)fluoranthene	1.1	11	1.8	No
	Benzo(k)fluoranthene	1.1	110	29	No
	Benzo(a)pyrene	0.061 or MDL ^b	1.1	0.29	No
	Indeno(1,2,3-cd)pyrene	3.2	11	2.9	Yes ⁱ
	Dibenz(a,h)anthracene	0.014 or MDL ^b	1.1	0.29	No
	Benzo(g,h,i)perylene	50	1,000	--	No
	Pesticides/PCBs				
	Aroclor-1260	1	--	0.99	No
	Metals				
	Cadmium	1.8 ^e	60	980	No
	Chromium	26 ^e	6,800	1,800,000	No
Copper	25	10,000	47,000	No	
Lead	500 ^f	3,900	800	No	
Zinc	89.1	10,000	350,000	No	
Ash Landfill (Groundwater) ug/L	VOCs				
	1,1,1-Trichloroethane	5	5	200	No
	Vinyl Chloride	2	2	2	No
	1,2-Dichloroethene (total)	5	5	--	No
	Trichloroethene	5	5	5	No
	Metals				
	Cadmium	10	5	5	Yes ^{ik}
	Chromium	50	50	100	No ^k
	Copper	200	200	1300	No ^k
	Lead	25	25	15	Yes ^k
Zinc	300	2000	--	No ^k	

**Table A3-1 - Evaluation of Changes in Chemical-Specific Standards
Five-Year Review
Seneca Army Depot Activity**

AOC (matrix and units)	COPCs Listed in ROD	Former Standard/Cleanup Goal (in ROD)	Current NYSDEC Cleanup Level†	Current Federal Cleanup Level†	Is there a newly promulgated cleanup goal or is the new level more stringent? (Y/N)
OB Grounds [SEAD-23] (Soil and Sediment) mg/Kg	Lead	500	3,900	800	No
OB Grounds [SEAD-23] Reeder Creek (Sediment) mg/Kg	Copper	16	50	31.6 ^g	No
	Lead	31	63	35.8 ^g	No
SEAD-121C (Soil) mg/Kg	Lead ^a	1,250	3,900	800	No ^a
SEAD-121I (Soil) mg/Kg	Iron	100,000	--	820,000	No
	Manganese	10,000 ^h	10,000	26,000	No

Note 1: Cleanup goals presented in the table originate from the site-specific ROD

Note 2: At SEAD 25/26, soil cleanup goals (CUGs) are derived human health risk-based values. These values are protective of the most conservative receptor under an industrial use scenario, a future construction worker (a daycare facility is prohibited), unless otherwise noted. The CUG values for metals are normalized according to the post-remediation HQ distribution for a future construction worker. Soil CUGs are for surface, subsurface, and ditch soils.

† State soil cleanup goals are from 6 CRR-NY 375-6.8 (b) Restricted Use Soil Cleanup Objectives (Industrial) 11/30/16. State groundwater cleanup goals are 6 CRR-NY 703.5 (f) Water Quality Standards Surface Waters and Groundwater, 11/30/16. Federal soil standards are EPA Regional Screening Levels (RSL) for Industrial Soil. Federal groundwater standards are EPA RSL MCLs. Federal Freshwater standards are EPA Region III Freshwater Sediment Screening Benchmarks (Reeder Creek only).

a) This value was derived in accordance with the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996). This publication suggests a range of lead cleanup levels (750 mg/Kg to 1750 mg/Kg) that may result in an acceptable residual risk under an industrial use scenario. Based on discussions held at a BRAC Cleanup Team (BCT) meeting, as well as several correspondences between the Army, NYSDEC, and USEPA, the Army has proposed adopting the midpoint of this range (1250 mg/Kg) as the industrial soil cleanup goal at SEAD-16 and SEAD-17.

b) For semivolatile organic compounds, the minimum detection limit (MDL) was 0.330 mg/Kg.

c) Carcinogenic PAH (cPAH) human health risk was evaluated using the method approved in USEPA (1993) Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (USEPA, 2016 <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=49732>) in addition to the approach accepted by NYSDEC (NYSDEC, 2006). The Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by multiplying the concentration of the individual cPAHs in each sample by the cPAH toxicity factors in the table below (based on USEPA IRIS Database) and summing the results. All of the BAP toxicity equivalence values at SEAD-16 (4 samples) were below one and one sample was 9.01. At SEAD-26 all of the samples (N=45) had a BAP toxicity equivalence below 3.6. Based on the guidance provided above, the cleanup goal of 10ppm is expected to be protective.

Benzo(a)pyrene	1
Dibenz(a,h)anthracene	1
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Indeno(1,2,3-cd)pyrene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01

**Table A3-1 - Evaluation of Changes in Chemical-Specific Standards
Five-Year Review
Seneca Army Depot Activity**

AOC (matrix and units)	COPCs Listed in ROD	Former Standard/Cleanup Goal (in ROD)	Current NYSDEC Cleanup Level†	Current Federal Cleanup Level†	Is there a newly promulgated cleanup goal or is the new level more stringent? (Y/N)
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d) Identified in ROD as a COPC, but no cleanup level was assigned to this chemical.

e) Site background for soil was used.

f) Site-specific goal.

g) Federal freshwater standards were used. See note †.

h) Defined as the 95th UCL of the mean of the dataset. No individual sample to have a concentration above 19,500 mg/Kg.

i) The EPC for indeno(1,2,3-cd)pyrene in soil was 0.635 mg/Kg and was found to pose no risk to human health or ecological receptors.

j) The EPC for cadmium in groundwater was 3.09 ug/L and was found to pose no risk to human health.

k) Elevated turbidity during the RI sampling stage was the cause of the elevated metals concentrations and the reason metals were carried through as COPCs in the ROD. Subsequent to the ROD, quarterly groundwater sampling using EPA low flow methods at the Ash Landfill indicates that metals concentrations are no longer of concern.

"--" Indicates no criteria/MCL or not applicable

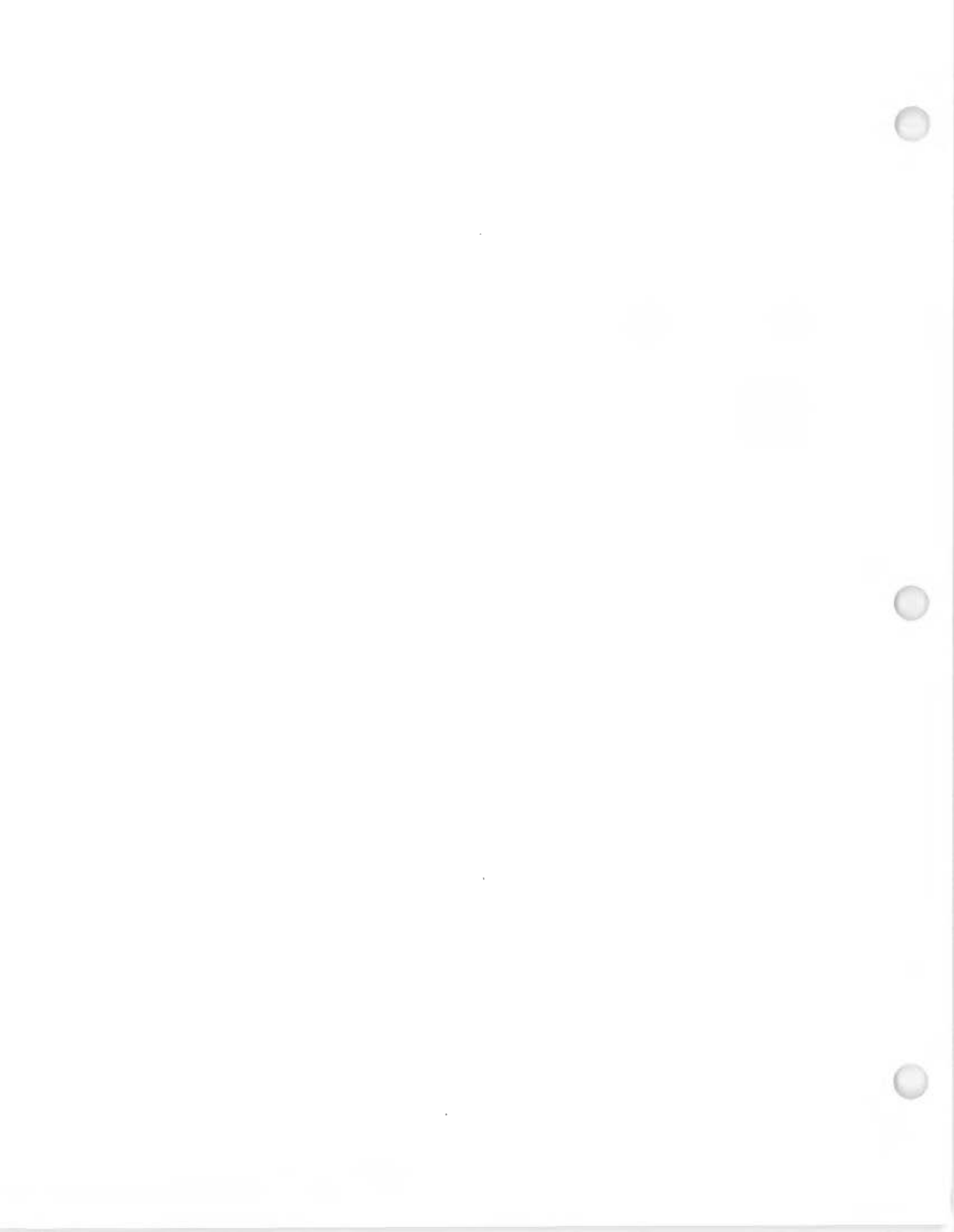
ug/L - micrograms per liter

mg/Kg - milligrams per kilogram

AOC - Area of Concern

MCL - Maximum Contaminant Level

ROD - Record of Decision



ATTACHMENT 4
Regulatory Concurrence



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau A
625 Broadway, 12th Floor, Albany, NY 12233-7015
P: (518) 402-9625 | F: (518) 402-9627
www.dec.ny.gov

January 30, 2017

Mr. Randy Battaglia
BRAC Environmental Coordinator/Caretaker
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, NY 14541-5001

Re: Seneca Army Depot Activity, NY Site No. 850006

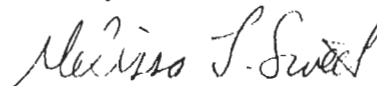
Dear Mr. Battaglia:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the following documents, has no further comments on the documents, and finds them satisfactory.

- Draft Final Five Year Review Seneca Army Depot, SEAD 1, 2, 5, 12, 13, 16, 17, 25, 26, 27, 39, 40, 41, 43, 44A, 44B, 52, 56, 59, 62, 64A, 64B, 64C, 64D, 66, 67, 69, 71, 121C, 211, 122B, 122E, and the Ash Landfill Operable Unit (SEADs 3, 6, 8, 14, and 15) dated January 2017
- Draft Final UFP-QAPP for Long-Term Monitoring at Seneca Army Depot dated January 2017

If you have any questions or comments, please contact me at melissa.sweet@dec.ny.gov or at (518) 402-9614.

Sincerely,



Melissa L. Sweet
Project Manager
Bureau A, Section C
Division of Environmental Remediation

cc: J. Vasquez, USEPA
B. Badik, Parsons
M. Sergott, NYSDOH



SEDA LUC Inspections Site Inspection Checklist

I. SITE INFORMATION			
Site name: SEAD -122E (3 Former pads)	Date of inspection: June 1, 2015		
Location and Region: Former Airfield	EPA ID: NY0213820830		
Agency, office, or company leading the five-year review: Parsons	Weather/temperature: 60°F Cloudy		
Inspector: Dave Babcock, PE	Signature: <i>[Signature]</i>		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual or other evidence of recent development of any kind.</i> </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual or other evidence of recent development of any kind.</i>
<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls <i>No visual or other evidence of recent development of any kind.</i>		
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached <i>Photos by BBC</i>			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____			
2. O&M staff _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____			
3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____ Agency _____ Contact _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date Phone no. </div> Problems; suggestions; <input type="checkbox"/> Report attached _____			
4. Other interviews (optional) <input type="checkbox"/> Report attached.			

